THE IMPROVEMENTS COVERED BY THESE PLANS SHALL BE DONE IN ACCORDANCE WITH THE MICHIGAN DEPARTMENT OF TRANSPORTATION 2012 STANDARD SPECIFICATIONS FOR CONSTRUCTION.

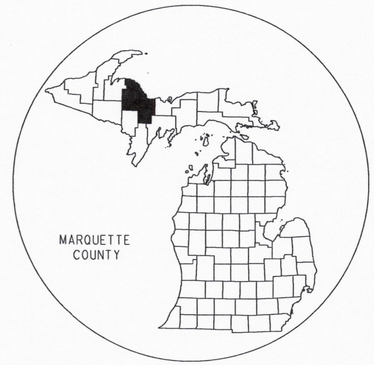
PHYSICAL ROAD NUMBER (PR#) & MILEPOST (MP) DATA ARE FROM MICHIGAN GEOGRAPHIC FRAMEWORK VERSION # 16.

CITY OF MARQUETTE

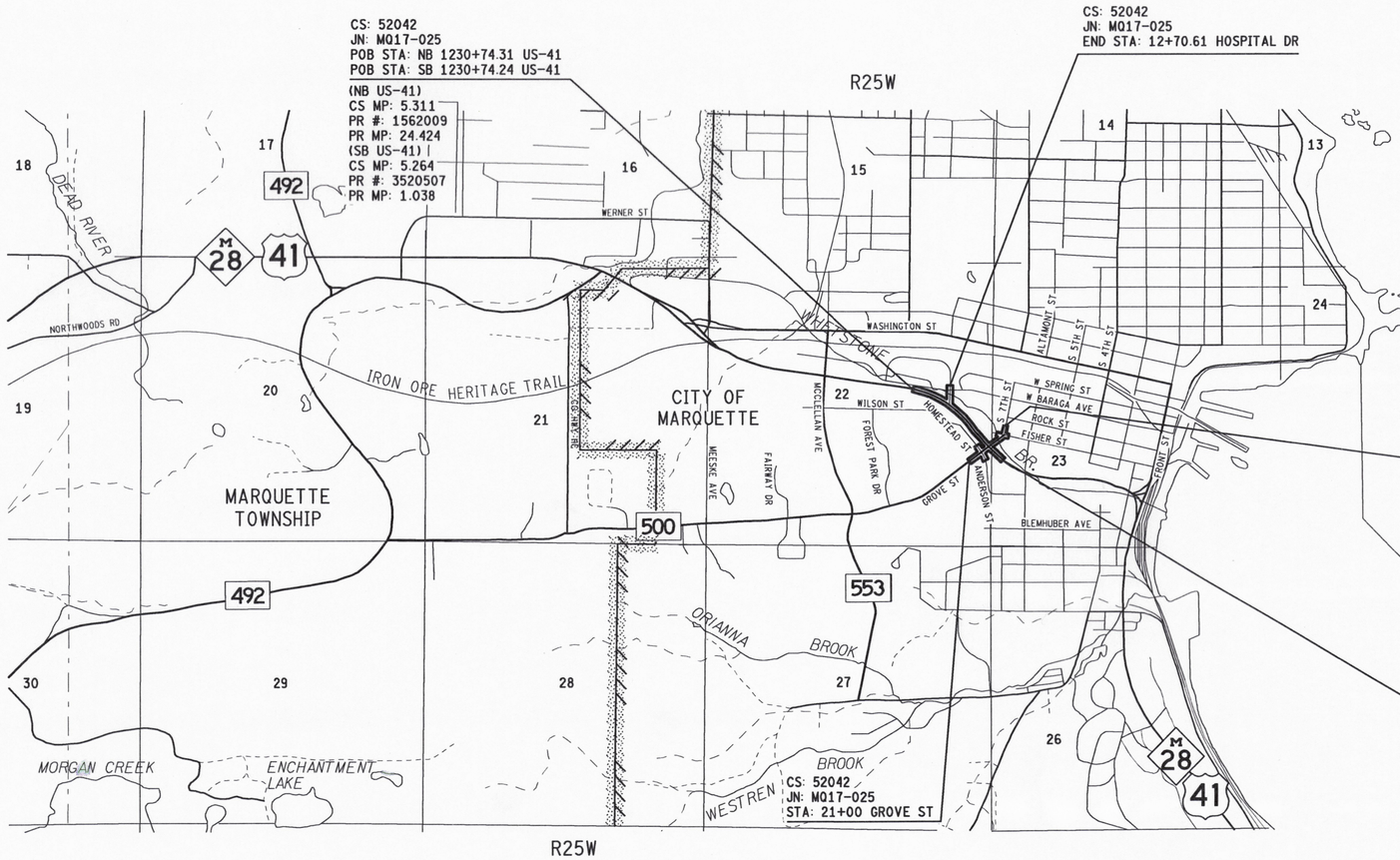
ROUTE: US-41/M-28 & HOSPITAL DRIVE
CITY OF MARQUETTE
MARQUETTE COUNTY

ROAD	YEAR	TRAFFIC DATA ADT	DHV	COMM	SPEED DATA DESIGN	POSTED	LIMITS
US-41/M-28	2017	15,500	1,550	3%	60	55	WEST OF 7TH STREET
	2037	17,125	1,712	3%	**	**	
US-41/M-28	2017	17,025	1,702	3%	60	55	EAST OF 7TH STREET
	2037	18,800	1,880	3%	**	**	
S 7TH STREET	2017	5,700	570	3%	30	25	US-41/M-28 TO WASHINGTON STREET
	2037	8,130	813	3%	**	**	
GROVE STREET	2017	3,300	330	2%	30	25	US-41/M-28 TO M-533
	2037	5,780	578	2%	**	**	
FISHER STREET	2017	2,200	220	15%	30	25	7TH STREET TO ALTAMONT STREET
	2037	3,000	300	15%	**	**	
ANDERSON STREET	2017	810	81	2%	30	25	GROVE STREET TO MCMILAN STREET
	2037	1,000	100	2%	**	**	
HOMESTEAD ST	2017	500	50	2%	30	25	GROVE STREET TO WARD STREET
	2037	665	67	2%	**	**	

SECTION	CONTROL SEC	JOB NO.	MDOT PERMIT NO.
1	52042	MQ17-025	043179-16



COUNTY KEY



THESE PLANS WERE PREPARED FOR THE CITY OF MARQUETTE BY

DLZ

STATE OF MICHIGAN
MATTHEW MAURY HAMEL
ENGINEER NO. 56625
LICENSED PROFESSIONAL ENGINEER

MATTHEW M. HAMEL, P.E. — PROJECT ENGINEER — 2/22/17 DATE

DLZ
1425 KEYSTONE AVENUE
LANSING, MI 48911
517-393-6800

APPROVALS

MUNICIPAL APPROVAL:

L. M. Angeli — L. MICHAEL ANGELI - CITY MANAGER — 2/23/17 DATE

Keith M. Whittington — KEITH N. WHITTINGTON - CITY ENGINEER — 2-23-17 DATE

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 WEST BARAGA AVENUE
MARQUETTE, MICHIGAN 49855
PH. (906) 228 - 0440

MILES: 0.56

CONTRACT FOR:
RECONSTRUCTION OF US-41 FROM 1000' EAST OF MCCLELLAN AVE TO 600' EAST OF GROVE ST, INCLUDING INSTALLATION OF ROUNDABOUTS AT US-41 & THE NEW HOSPITAL DR AND US-41 & GROVE ST, INSTALLATION OF TWO CULVERTS ON WHETSTONE BROOK, DRAINAGE IMPROVEMENTS, TRAFFIC SIGNAL REMOVAL, ADA RAMP INSTALLATION, GUARDRAIL, LANDSCAPING, STREET LIGHTING, PERMANENT SIGNING AND PAVEMENT MARKINGS

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

NO SCALE

	DATE: 2/10/2017	CS: 52042	TITLE SHEET
	DESIGN UNIT: FILPUS	JN: MQ17-025	DRAWING: US41 TITLE 001
FILE: 6553_US41_TITLE001.dgn	TSC: ISHPEMING	MDOT PERMIT 043179-16	SHEET: SECT 1 / 1

PUBLIC UTILITIES

The existing utilities listed below and shown on these plans represent the best information available as obtained on our surveys. This information does not relieve the contractor of the responsibility to be satisfied as to it's accuracy and the location of existing utilities.

Name Of Owner	Type Of Utility
AT & T Attention: Kurt Babcock 200 N 3rd Street, Marquette,MI 49855 Phone: (906) 225 - 6168 Email: kb3261@att.com	Communication
SEMCO Attention: Val Lindsay 34 U.S. 41 East Negaunee,MI 49866 Phone: (800) 476 - 1441 Email: Val.Lindsay@semcoenergy.com	Gas
Charter Communications Attention: Brian Koski 359 U.S. 41 East Negaunee,MI 49866 Phone: (906) 401 - 0639 Email: brian.koski@charter.com	Cable TV
Marquette Board of Light and Power Attention: Karl Benstrom 2200 Wright Street Marquette,MI 49855 Phone: (906) 228 - 0309 Email: kbenstrom@mblp.org	Electricity
Marquette Township Attention: Randy Girard 1000 Commerce Drive, Marquette,MI 49855 Phone: (906) 228 - 6220 Email: randygirard@marquettetownship.org	Sanitary Sewer
Peninsula Fiber Network Attention: Dan Nedeau 108 Superior Street, Munising,MI 49862 Phone: (906) 387 - 0034 Email: DNedeau@jamadots.net	Communication
Merit Attention: Carlos Ramos 1000 Oakbrook Drive, Suite 200 Ann Arbor,MI 48104 Phone: (734) 527 - 5767 Email: cramos@merit.edu	Communication
Northern Natural Gas Company Attention: Karen Perreault 118 U.S. Highway 41 E., Negaunee,MI 49866 Phone: (402) 530 - 3102 Email: karen.perreault@nngco.com	Gas

NOTES APPLYING TO STANDARD PLANS

Where the following items are called for on plans, they are to be constructed according to the standard plan given below opposite each item unless otherwise indicated.

Title	Plan No.
ROAD	
DRAINAGE STRUCTURES	R-1-G *
COVER B	R-7-F
COVER C	R-8-D
MONUMENT BOXES	R-11-E
COVER G	R-12-E
COVER J	R-14-D
COVER K	R-15-F
COVER Q	R-18-F
SIDEWALK RAMP AND DETECTABLE WARNING DETAILS	R-28-J *
DRIVEWAY OPENINGS & APPROACHES AND CONCRETE SIDEWALK	R-29-I
CONCRETE CURB AND CONCRETE CURB & GUTTER	R-30-G
CONCRETE SHOULDER GUTTER AND SPILLWAY	R-35-D *
TRANSVERSE PAVEMENT JOINTS (PLAIN CONCRETE PAVEMENT)	R-39-J *
LOAD TRANSFER ASSEMBLIES FOR TRANSVERSE JOINTS	R-40-H
LONGITUDINAL PAVEMENT JOINTS	R-41-H
TYPICAL JOINT LAYOUTS FOR CONCRETE PAVEMENT	R-42-F
LOCATION OF TRANSVERSE JOINTS IN PLAIN CONCRETE PAVEMENT	R-43-I
GUARDRAIL TYPES A, B, BD, T, TD, MGS-8, MGS-8D, MGS-0, & MGS-0D	R-60-J *
GUARDRAIL APPROACH TERMINAL TYPES 3B & 3T	R-63-C *
GRANULAR BLANKET, UNDERDRAINS, OUTLET ENDINGS FOR UNDERDRAINS, AND SEWER BULKHEADS	R-80-E
BEDDING AND FILLING AROUND PIPE CULVERTS	R-82-D
UTILITY TRENCHES	R-83-C *
PRECAST CONCRETE END SECTION FOR PIPE CULVERT	R-86-E
STEEL END SECTION	R-88-D
CULVERT SLOPED END SECTION	R-95-F
SOIL EROSION & SEDIMENTATION CONTROL MEASURES	R-96-E
CHAIN LINK FENCE (USING TENSION WIRE)	R-98-B
SEEDING AND TREE PLANTING	R-100-H
WOVEN WIRE FENCE	R-101-B
TREATMENT OF PEAT MARSHES	R-103-C
GRADING CROSS-SECTIONS	R-105-D
SUPERELEVATION AND PAVEMENT CROWNS	R-107-H
TEMPORARY CROSSOVERS FOR DIVIDED ROADWAYS	R-113-C
BRIDGE	
MOLDING, BEVEL, LIGHT STANDARD ANCHOR BOLT ASSEMBLY AND NAME PLATE DETAILS	B-103-E
PAVEMENT MARKINGS	
PAVEMENT ARROW AND MESSAGE DETAILS	PAVE-900-E
LONGITUDINAL LINE TYPES AND PLACEMENT	PAVE-905-C
PAVEMENT MARKINGS FOR INTERSECTIONS	PAVE-930-C
LEFT TURN LANE MARKINGS	PAVE-935-C
RIGHT TURN LANE AND ISLAND PAVEMENT MARKINGS	PAVE-940-C
INTERSECTION, STOP BAR AND CROSSWALK MARKINGS	PAVE-945-C
ROUNDABOUT MARKINGS	PAVE-951-A
STATEWIDE TRAFFIC SIGNALS	
SPAN WIRE TS ON STEEL AND WOOD POLES	SIG-010-A *
CONTROLLER CABINET MOUNTED ON STEEL OR WOOD POLES	SIG-011-A *
SECONDARY SERVICE/DISCONNECT FOR WOOD POLES	SIG-012-A *
WOOD POLE GUYS AND SETTING DEPTH	SIG-019-A *
HANDHOLE- PRECAST, POLYMER CONCRETE	SIG-021-A *
CONDUIT (DIRECT BURIAL/ENCASED)	SIG-023-A *
COLOR CODE WIRING/EQUIPMENT GROUNDING	SIG-026-A *
SIGN MOUNTED BEACON	SIG-027-A *
SPAN WIRE MOUNTED TS BRACKET ASSEMBLY	SIG-030-A *
BRACKETING FOR 5- SECTION HEADS	SIG-030-B *
ALIGNMENT OF TRAFFIC SIGNAL HEADS (DIAGONAL)	SIG-030-E *
POLE MOUNTED TS CONTROLLER CABINET/FOUNDATIONS	SIG-045-B *
STEEL TRUSS BRACKETS	SIG-374-A *
VIDEO DETECTION CAMERA	SIG-380-A *
SIGNING	
STANDARD SIGN INSTALLATIONS	SIGN-100-F
STANDARD ROUTE MARKER INSTALLATIONS	SIGN-110-E *
SIGN LOCATION CODES PLACEMENT	SIGN-115-C
ROADSIDE SIGN LOCATIONS & SUPPORT SPACING	SIGN-120-D
PLACEMENT OF D3-1 SIGNS ABOVE R1-1	SIGN-140-A
SIGN SUPPORT SELECTION CHARTS	SIGN-150-D
STEEL POSTS	SIGN-200-D
WOOD POSTS	SIGN-210-B
STEEL COLUMN BREAK-AWAY (W)	SIGN-220-C
FOUNDATION (BREAK-AWAY)	SIGN-230-A
MISCELLANEOUS SIGN CONNECTION DETAILS	SIGN-740-B
WORK ZONE DEVICES	
GROUND DRIVEN SIGN SUPPORTS FOR TEMP SIGNS	WZD-100-A *
TEMPORARY TRAFFIC CONTROL DEVICES	WZD-125-E *

*** Denotes Special Detail**

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SURVEY

GENERAL

- ALIGNMENT POINT MONUMENT
- MONUMENT BOX

CONTROL

- CP CONTROL POINT
- BM BENCHMARK
- REFERENCE – GPS
- REFERENCE – NGS
- REFERENCE – USGS

BOUNDARY

- CITY LIMIT – MAP
- CITY LIMIT
- PARCEL-L – PARCEL – LEGAL
- PARCEL-NL – PARCEL – NON-LEGAL
- PLAT-L – PLAT – LEGAL
- PLAT-NL – PLAT – NON-LEGAL
- ROW – FREE ACCESS
- ROW – LIMITED ACCESS
- SEC – SECTION LINE
- SEC 1/4 – SECTION LINE – QUARTER
- SEC 1/8 – SECTION LINE – EIGHTH
- SEC 1/16 – SECTION LINE – SIXTEENTH
- TOWNSHIP LINE (MAP)
- CONCRETE MONUMENT
- CONTIGUOUS PROPERTY SYMBOL
- PCI – PARCEL CORNER – CAPPED IRON
- PARCEL CORNER – IRON PIN
- PARCEL CORNER – IRON PIPE
- PARCEL CORNER – NO ID
- 123456 – PARCEL NUMBER BOX
- PLAT CORNER
- PROPERTY OWNERSHIP ARROW
- PROPERTY OWNERSHIP ARROW – DOUBLE
- ROW MONUMENT
- SECTION CORNER – CENTER
- SECTION CORNER – MEANDER
- SECTION CORNER – QUARTER
- SECTION CORNER – QUARTER-HALF
- SECTION CORNER – SECTION
- SECTION CORNER – SECTION-HALF
- SECTION CORNER – SIXTEENTH
- SECTION CORNER – WITNESS

MONUMENT PRESERVATION

- PRESERVE – PRESERVE MONUMENT
- PROTECT – PROTECT MONUMENT

GENERAL LABELING

GENERAL

- LEFT TURN ARROW
- TRAFFIC FLOW ARROW

REMOVAL

- A – ABANDON
- B – BULKHEAD
- C – CLEARING
- R – REMOVE
- SALV – SALVAGE
- S – SAVE

CONSTRUCTION

- ADJ – ADJUST
- ADJ-B – ADJUST – STRUC COVER WITH TYPE
- ADJ-B/O – ADJUST – BY OTHERS

REMOVAL AND CONSTRUCTION

- REL-1 – RELOCATE – WITH CASE NUMBER
- REL-B/O – RELOCATE – BY OTHERS

CONSTRUCTION LIMITS

- SSL SSL – SLOPE STAKE LINE

BORINGS

- BH# – BORING

STRUCTURES

- BEAM UNDERCLEARANCE
- REFERENCE POINT
- S01 OF 12345 – STRUCTURE NO. + CONTROL SEC. LABEL

VEGETATION

- BRUSH LINE
- HEDGE LINE
- TREE LINE – CANOPY OR TRUNK
- TREE LINE – TRUNK (TRUNK LINE)
- SHRUB
- TREE – CONIFER
- TREE – DECIDUOUS
- TREE – STUMP

ENVIRONMENTAL

- 26 – EROSION CONTROL – SILT FENCE
- WETLAND – LEGAL
- WETLAND – NON-LEGAL
- CONTAMINATION – MONITORING WELL
- 12 – EROSION CONTROL NUMBER
- EROSION CONTROL – RIPRAP
- W.T. 12' – WATER TABLE – PLAN NOTE
- WETLAND – SPOT EL
- POTENTIALLY CONTAMINATED SITE

ROADSIDE / SITE

- ANTENNA
- BIG ROCK
- FLAG POLE
- PICNIC STOVE
- PICNIC TABLE
- SATELLITE DISH

NOTE:

EXISTING ITEMS ARE REPRESENTED BY THIN LINE WEIGHTS.
PROPOSED ITEMS ARE REPRESENTED BY HEAVIER LINE WEIGHTS.

RAILROAD

- TRACK
- CROSSING – GATE
- RR CROSSING – SIGNAL BOX
- CROSSING – SIGNAL FLASHING
- CROSSING – SYMBOL

SIGNS

- POST – DOUBLE
- POST – SINGLE
- STRUCTURE – CANTILEVER (EXISTING)
- STRUCTURE – CANTILEVER
- STRUCTURE – TRUSS (EXISTING)
- STRUCTURE – TRUSS
- SS SUSPENDED (EXISTING)

MAINTAINING TRAFFIC

- TYPE III BARRICADE
- CHANNELIZING DEVICE – CONE
- CHANNELIZING DEVICE – DRUM
- LIGHT – HIGH INTENSITY TYPE B
- LIGHT – STEADY BURN TYPE C
- LIGHTED ARROW PANEL – BAR
- LIGHTED ARROW PANEL
- PORTABLE CHANGEABLE MESSAGE SIGN
- TRAFFIC REGULATOR
- TEMPORARY SIGN
- TEMPORARY TRAFFIC SIGNAL
- WORK AREA

BARRIERS

- CABLE BARRIER – NOT TO SCALE
- CABLE BARRIER – TRUE SCALE
- CONCRETE BARRIER – DOUBLE FACE
- CONCRETE BARRIER – SINGLE FACE
- FENCE
- GUARDRAIL – NOT TO SCALE
- GUARDRAIL – TRUE SCALE
- NOISE BARRIER
- FENCE POST
- 123 – GUARDRAIL RUN NUMBER
- IMPACT ATTENUATOR
- POST – MAILBOX
- POST – NO ID

SURFACING

REMOVAL

- CONCRETE RUBBLIZING OR HMA CRUSH & SHAPE
- HMA COLDMILLING
- HMA SURFACE REMOVAL AND / OR PAVEMENT REMOVAL

PROPOSED

- AGGREGATE APPROACH
- BRIDGE APPROACH
- HMA APPROACH
- MISCELLANEOUS CONCRETE
- DECORATIVE SIDEWALK CONCRETE

SIDEWALK

- SIDEWALK – REMOVAL
- SIDEWALK – CONCRETE RAMP
- SIDEWALK – DETECT. WARNING SURF.
- SIDEWALK – LANDING
- SWR-F – SIDEWALK – RAMP LABEL

TYPICAL SECTION

- CONCRETE – PROPOSED
- HMA – PROPOSED

CURB & GUTTER

- CURB & GUTTER REMOVAL

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

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CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

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	DATE: 2/10/2017	CS: 52042	LEGEND SHEET
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FILE: 6553_US41_LEGEND001.dgn	TSC: ISHPEMING		

DRAWING	SHEET
US41 LEGEND 001	SECT 1 3

UTILITIES

COMBINED SEWER

- COMBINED SEWER
- COMBINED SEWER - OUT OF SERVICE
- COMBINED SEWER - TO BE TAKEN OUT OF SERVICE
- COMBINED SEWER - TO BE REMOVED

COMMUNICATION

- FO — FIBER OPTIC
- FO — FIBER OPTIC - OUT OF SERVICE
- FO-OH — FIBER OPTIC - OVERHEAD
- FIBER OPTIC MARKER
- C — CABLE
- C — CABLE - OUT OF SERVICE
- C-OH — CABLE - OVERHEAD
- CABLE MARKER
- CABLE PEDESTAL
- T — TELEPHONE
- T — TELEPHONE - OUT OF SERVICE
- T-OH — TELEPHONE - OVERHEAD
- TELEPHONE BOX
- TELEPHONE MANHOLE
- TELEPHONE PEDESTAL

FUEL / PETROLEUM

- GASOLINE FILLER PIPE
- GASOLINE PUMP
- GASOLINE UNDERGROUND TANK
- PETRO — PETROLEUM PIPELINE
- PETRO — PETROLEUM PIPELINE - OUT OF SERVICE
- PETROLEUM PIPELINE MARKER
- PETROLEUM WELL
- PROPANE TANK

NATURAL GAS

- G — GAS LINE
- G — GAS LINE - OUT OF SERVICE
- MARKER
- VALVE
- WELL

SANITARY SEWER

- MANHOLE WITH COVER (DIA VARIES)
- SEWER
- SEWER - OUT OF SERVICE
- SEWER - TO BE TAKEN OUT OF SERVICE
- SEWER - TO BE REMOVED

WATER

- FIRE HYDRANT
- GATE VALVE AND BOX
- GATE VALVE IN WELL
- IRRIGATION CONTROL VALVE
- IRRIGATION SPRINKLER HEAD
- SERVICE METER
- SERVICE SHUTOFF
- WATER WELL
- I — IRRIGATION
- W — WATER MAIN
- W — WATER MAIN - OUT OF SERVICE
- W — WATER MAIN - TO BE TAKEN OUT OF SERVICE
- W — WATER MAIN - TO BE REMOVED

STEAM

- STEAM — STEAM
- STEAM — STEAM - OUT OF SERVICE

GAS

- G — GAS

GENERIC EXISTING UTILITIES

- CATCH BASIN COVER
- MANHOLE COVER
- MARKER
- PEDESTAL
- SEWER CLEANOUT ACCESS
- STRUCTURE BOTTOM (DIA VARIES)
- UTILITY BOX
- U — UTILITY

DRAINAGE

- CATCH BASIN W/ COVER (DIA VARIES)
- 12 — DRAINAGE STRUCTURE NUMBER
- DRAIN CASTING
- DROP INLET
- END SECTION (SIZE VARIES)
- FLOW DIRECTION ARROW
- HEADWALL (SIZE VARIES)
- MANHOLE W/ COVER (DIA VARIES)
- MANHOLE BASE W/ COVER (SIZE VARIES)
- MANHOLE TEE W/ COVER (SIZE VARIES)
- OUTLET HEADWALL (SIZE VARIES)
- CULVERT - EXISTING
- CULVERT (SIZE VARIES)
- DITCH CENTERLINE
- STORM SEWER - EXISTING
- STORM SEWER
- STORM SEWER - TO BE REMOVED
- UNDERDRAIN
- WATER EDGE

NOTE:

EXISTING ITEMS ARE REPRESENTED BY THIN LINE WEIGHTS.
PROPOSED ITEMS ARE REPRESENTED BY HEAVIER LINE WEIGHTS.

ELECTRICAL

- CONTROLLER CABINET - PAD MOUNTED
- HH — HANDHOLE
- MH — MANHOLE
- POLE UTILITY - EXISTING
- POLE UTILITY
- T — TRANSFORMER - PAD MOUNTED
- T — TRANSFORMER - POLE MOUNTED
- E — CABLE
- E — CABLE - TO BE REMOVED
- E-OH — CABLE OVERHEAD
- E-OH — CABLE OVERHEAD - TO BE REMOVED
- E — CABLE IN CONDUIT
- E — CABLE IN CONDUIT - TO BE REMOVED
- CABLE IN CONDUIT - DIRECTIONAL BORE

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DRAWING	SHEET
US41 LEGEND 002	SECT 1 4

ARCHITECTURAL

- EXIT SIGN WITH EMERGENCY LIGHT
- LIGHT RECESSED FIXTURE
- MOTOR
- OUTLET BOX
- OUTLET SINGLE
- OUTLET TELEPHONE
- SERVICE DISCONNECT
- SERVICE METER
- SWITCH
- $_3$ SWITCH THREE WAY
- WALL BRACKET FIXTURE

LIGHTING

- CONTROL PANEL - EXISTING
- CONTROL PANEL
- R&S LIGHT STANDARD EXISTING - TO BE REMOVED & SALVAGED
- LIGHT STANDARD DOUBLE ARM - EXISTING
- LIGHT STANDARD DOUBLE ARM
- LIGHT STANDARD POST TOP - EXISTING
- LIGHT STANDARD POST TOP
- LIGHT STANDARD SINGLE ARM - EXISTING
- LIGHT STANDARD SINGLE ARM
- LIGHT POLE - TEMPORARY
- LUMINAIRE WALL MOUNTED UNDERBRIDGE - EXISTING
- LUMINAIRE WALL MOUNTED UNDERBRIDGE
- T- TOWER LIGHTING UNIT - EXISTING
- T- TOWER LIGHTING UNIT

ITS / SIGNALS

- DYNAMIC MESSAGE SIGN - EXISTING
- DYNAMIC MESSAGE SIGN
- ENVIRONMENTAL SENSOR STATION SITE
- FIBER OPTIC SPLICE CABINET
- HANDHOLE, ROUND, 3 FOOT DIAMETER
- HANDHOLE, ROUND, COMMUNICATIONS
- HANDHOLE, ROUND, ELECTRIC
- HANDHOLE, TYPE D
- ITS CABINET - EXISTING
- ITS CABINET
- MICROWAVE VEHICLE DETECTION SYSTEM - EXISTING
- MICROWAVE VEHICLE DETECTION SYSTEM
- MICROWAVE VEHICLE DETECTION SYSTEM ZONE COVERAGE - EXISTING
- MICROWAVE VEHICLE DETECTION SYSTEM ZONE COVERAGE
- SPUN CONCRETE POLE - EXISTING
- SPUN CONCRETE POLE
- SURVEILLANCE SYSTEM - EXISTING
- SURVEILLANCE SYSTEM
- WIRELESS LINK - EXISTING
- WIRELESS LINK
- ITS COMMUNICATIONS CABLE IN CONDUIT
- ITS COMMUNICATIONS CABLE IN CONDUIT - TO BE REMOVED

- ANTENNA
- CASE SIGN (1-WAY OR 2-WAY)
- CASE SIGN (4-WAY)
- DEDICATED SHORT RANGE COMMUNICATIONS
- CONTROLLER CABINET - POLE MOUNTED
- CONTROL EMERGENCY PREEMPTION OPTICOM
- DILEMMA ZONE DETECTION
- GLOBAL POSITIONING SYSTEM MODULE
- GUY ANCHOR
- PEDESTRIAN PEDESTAL
- PEDESTRIAN PUSHBUTTON
- POLE MAST ARM (LENGTH VARIES) - EXISTING
- POLE MAST ARM (LENGTH VARIES)
- POLE STRAIN
- ROAD SIGN W/ FLASHING SIGN OPTICAL (1-WAY)
- SIGNAL HANDHOLE - POLYMER CONCRETE
- SIGNAL HANDHOLE - 2 FOOT ROUND
- SIGNAL HANDHOLE - 3 FOOT ROUND
- SIGNAL HANDHOLE - 2 FOOT SQUARE
- TS SIGNAL HANDHOLE - 4 FOOT SQUARE
- SIGNAL HEAD PEDESTRIAN - EXISTING
- SIGNAL HEAD PEDESTRIAN 1-WAY
- SIGNAL HEAD PEDESTRIAN 2-WAY
- SIGNAL HEAD VEHICLE 1-WAY - EXISTING
- SIGNAL HEAD VEHICLE 2-WAY - EXISTING
- SIGNAL HEAD VEHICLE 3-WAY - EXISTING
- SIGNAL HEAD VEHICLE 4-WAY - EXISTING
- SIGNAL HEAD VEHICLE 1-WAY
- SIGNAL HEAD VEHICLE 2-WAY
- SIGNAL HEAD VEHICLE 3-WAY
- SIGNAL HEAD VEHICLE 4-WAY
- SIGNAL HEAD VEHICLE BAGGED
- SIGNAL HEAD VEHICLE PROGRAMMABLE
- VEHICLE DETECTION CAMERA
- VEHICLE DETECTION CAMERA - HEMISPHERICAL
- VEHICLE DETECTION LOOP
- VEHICLE DETECTION - RADAR
- WIRELESS VEHICLE DETECTION RADIO RECEIVER
- WIRELESS VEHICLE DETECTION RADIO REPEATER
- WIRELESS VEHICLE DETECTION SENSOR - EXISTING
- WIRELESS VEHICLE DETECTION SENSOR

CABLING / WIRING DIAGRAM

- CIRCUIT BREAKER
- COILED WIRE
- FUSE
- FUSE SWITCH
- GROUND
- ILLUMINATED CASE SIGN
- METER
- SERVICE DISCONNECT
- SIGNAL HEAD

NOTE:

EXISTING ITEMS ARE REPRESENTED BY THIN LINE WEIGHTS.
PROPOSED ITEMS ARE REPRESENTED BY HEAVIER LINE WEIGHTS.

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

NO SCALE

FILE: 6553_US41_LEGEND003.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

LEGEND SHEET

DRAWING: US41 LEGEND 003
SHEET: SECT 1 5

HOSPITAL DR

BARAGA AVE

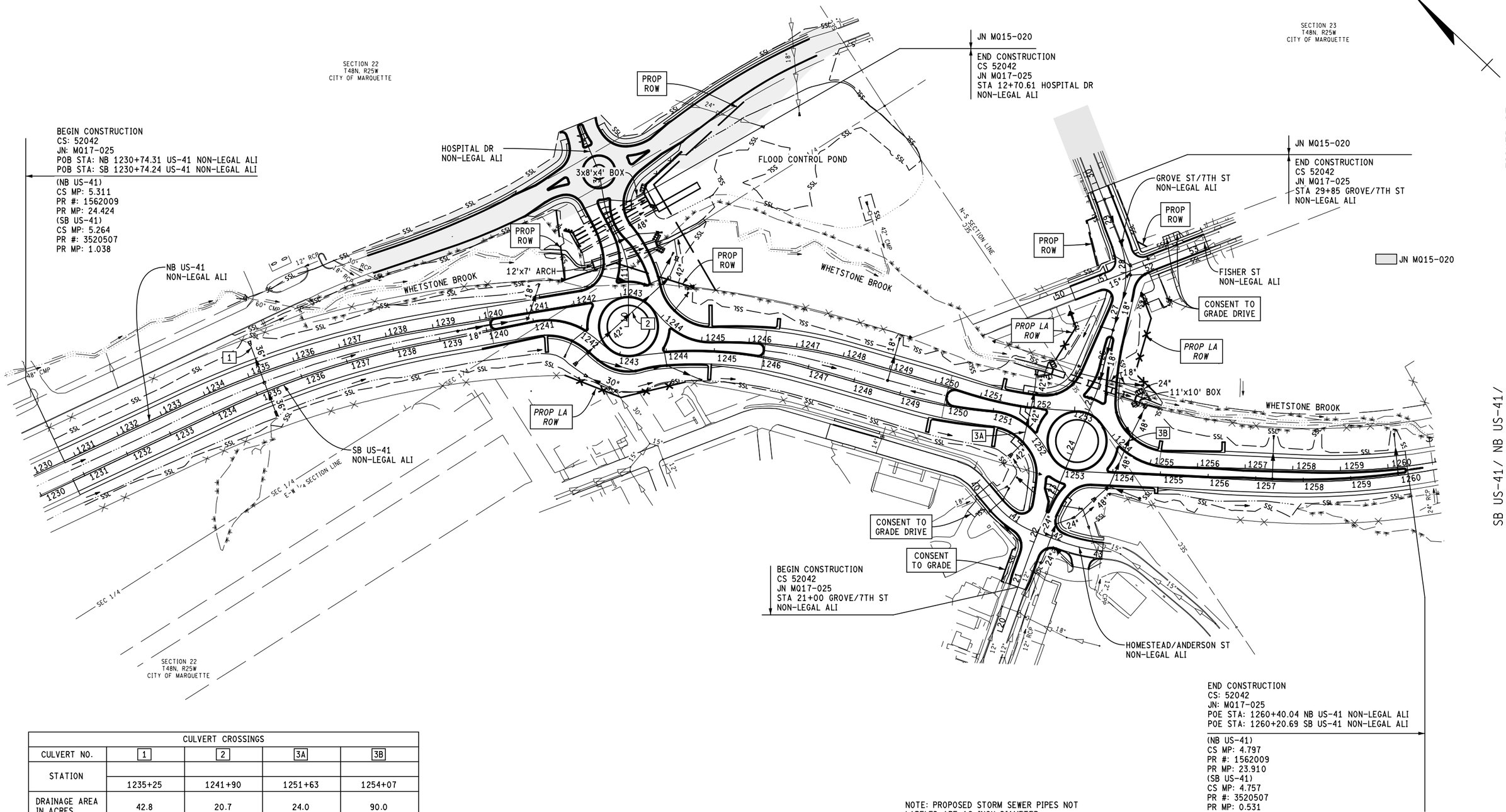
S 7TH ST

FISHER ST

SB US-41/ NB US-41/ BARAGA AVE
EB M-28 WB M-28

HOMESTEAD ST

SB US-41/ NB US-41/
EB M-28 WB M-28



CULVERT CROSSINGS					
CULVERT NO.		1	2	3A	3B
STATION		1235+25	1241+90	1251+63	1254+07
DRAINAGE AREA IN ACRES		42.8	20.7	24.0	90.0
DESIGN RUNOFF IN CFS	50 YRS	25	30	25	50
	100 YRS	35	40	35	65
DIAMETER (IN)		36	42	42	48

SEE CULVERT SHEETS FOR WHETSTONE BROOK FLOW DATA.

NOTE: PROPOSED STORM SEWER PIPES NOT LABELED ARE 12 INCH DIAMETER.

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 200

FILE: 6553_US41_VICDRN001.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

VICINITY & DRAINAGE MAP

DRAWING	SHEET
US41 VICDRN 001	SECT 1 6

GENERAL NOTES

UTILITIES

MISS DIG/UNDERGROUND UTILITY NOTIFICATION
For the protection of underground utilities and in conformance with Public Act 174 of 2013, the Contractor shall contact MISS DIG System, Inc. by phone at 811 or 800-482-7171 or via the web at either elocate.missdig.org for single address or rte.missdig.org, a minimum of 3 business days prior to excavating, excluding weekends and holidays.

MDOT's roadway lighting system, Intelligent Transportation Systems (ITS) and other miscellaneous electrical systems are not a part of Miss Dig. Contractors shall contact the following at least 5 business days in advance for staking requests. Note that these are not emergency contacts for damage to utilities.

MDOT ELECTRICAL SYSTEMS
Contractors shall contact the maintenance representative at the MDOT Region / TSC Office to have MDOT electrical systems staked.

OUT OF SERVICE UTILITIES
If plan information indicates an existing underground utility is or will be out of service within the limits of this contract, the Contractor is cautioned to treat such a line as if it were still in service and notify "Miss Dig" when working in the area of the out of service facility.

EXISTING WATER MAINS AND SEWERS
The Contractor shall be responsible for any damage to properly identified existing water mains and/or existing sewers during the construction of this project.

ROW / REAL ESTATE

PROPERTY OWNERS
The names of property owners shown on the plans are for information only, and their accuracy is not guaranteed.

MARKETABLE TIMBER
Marketable timber shall be handled in accordance with Section 201.03 of the 2012 Standard Specifications for Construction.

LAWN SPRINKLER SYSTEMS AND 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 to 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 the construction, the Contractor shall cap the system pipe and witness the location of the cap with a wooden stake for the property owner's use. The Contractor shall place the salvaged sprinkler heads on the property owner's property. 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 property owner's property for the property owner. Any other modification to the lawn sprinkler systems and/or landscaping is the responsibility of the owner and is not part of this contract. This work is included in other items of the project.

SURVEY

ADJUSTING 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.

OLD PLANS

OLD ROAD PLANS
The following old road plans were referred to in the design of this project.
CS 52042, JN 52042, Dated 1962
CS 52042, JN U52042EC8, Dated 1962
CS 52042, JN 64408-14C, Dated 1978
CS 52042, JN MQ79-010, Dated 1984
CS 52042, JN 39095A, Dated 1991
CS 52042, JN MQ88-025, Dated 1991
CS 52042, JN MQ93-406, Dated 1998
CS 52042, JN MQ15-020
CS 52042, JN WS-MICH-05-28-1004
CS 52042, JN MQ01-203, Dated 2001
CS 52042, JN 52042-01-018, Dated 1994
CS 52042, JN 52042-01-018, Dated 2001
CS 52042, JN 52042-01-018, Dated 2004
CS 52042, JN 52-23/52-32, Dated 2007
CS 52042, JN 52042-01-018, Dated 2008
CS 52042, JN MQ90-017, Dated 2009
CS 52042, JN 84231A, Dated 2009
CS 52042, JN 110839A, Dated 2012
CS 52042, JN MQ11-024, Dated 2013

In addition, other old road plans that predate this project may be available. These plans may be reviewed in the Transportation Service Center (TSC) during normal working hours.

DETAILED GRADES

GRADES FOR INTERSECTIONS
All intersections are to be considered as complete units and their grades determined before construction is started.

UNSIGNALIZED SIDE ROAD TO TRUNK LINE INTERSECTIONS:
The normal edge of pavement grade of the proposed trunk line adjacent to the side road intersection shall be carried across the intersection. The side road approach grade and crown shall be established to provide for drainage.

SIDEWALK AND SIDEWALK RAMP GRADES
All sidewalk and sidewalk ramp grades shall be staked according to Standard Plan R-28 series and as shown on the plans. Prior to constructing the sidewalk and sidewalk ramps, the Engineer will verify the grades and authorize the construction of the sidewalk and sidewalk ramps.

EARTHWORK

EARTHWORK
Earthwork quantities are computed by the average end area method based upon ground survey information.

SLOPES
Class A slopes shall be constructed on this project.

EARTH DISTURBANCE LIMITS
The earth disturbance limit for this project will be limited to 10' beyond the slope stake line or to the ROW line whichever is less for all areas except for wetland areas. For areas adjacent to wetlands, the earth disturbance limit will be limited to the slope stake line. Restoration measures have been included in this set of plans for the approved areas of disturbance. The Contractor shall submit an earth change plan for any work beyond the approved limits to the Engineer to review for approval prior to the disturbance. All costs for obtaining and executing an approved earth change plan, including restoration, shall be at the Contractor's expense.

SOIL EROSION MEASURES
Appropriate soil erosion and sedimentation control measures shall be in place prior to earth-disturbing activities. Place turf establishment items as soon as possible on potential erodable slopes as directed by the Engineer. Critical ditch grades shall be protected with either sod or seed/mulch or mulch blanket as directed by the Engineer.

PEAT EXCAVATION AT CULVERTS
At the time of peat excavation, the specific treatment called for on plans at any given swamp shall be widened out at culverts to provide stable foundation for the entire length of culvert, including head walls or end sections.

BASES

AGGREGATE BASE
Aggregate bases shall use aggregate 21AA, unless otherwise specified.

DRAINAGE

STORM SEWER OUTLET EXTENSIONS
The extension of existing storm sewer outlets on this project may require extra work to obtain a tight seal at the joint connecting new storm sewer pipe to existing storm sewer pipe. The joint between the existing and new pipes shall be constructed according to the 2012 Standard Specifications for Construction. Any extra work required to obtain tight joints will not be paid for separately, but will be included in compensation for extending storm sewer outlets.

DRAINAGE MARKER POSTS
Drainage marker posts shall not be placed in medians less than 150' wide.

ILLICIT CONNECTIONS TO STORM WATER SYSTEM
Connections to existing storm conveyance systems not shown on the plans must be reconnected with minimal interruption in service. Size, type and location by station and offset and any suspect illicit discharge observed shall be reported to the Engineer prior to reconnecting. Contractor shall proceed as directed by the Engineer.

TEMPORARY BULKHEADS
Temporary bulkheads may be required for the part width construction of the culverts and sewers. All cost associated with the temporary bulkheads are included in the item of the pipe.

PAVEMENT

PAVEMENT AND HMA SURFACE REMOVAL QUANTITIES
Pavement and HMA Surface removal as shown on the plans will be at the discretion of the Engineer. If in his/her judgment, areas of pavement may be left in place, or additional areas added to provide the proper cross-section and base. Changes will be made in the quantities.

SOIL BORINGS AND/OR PAVEMENT CORES
The soil boring logs and/or pavement cores represent point information. No inference should be made that subsurface or pavement conditions are the same at other locations.

CONCRETE HAND FINISHING
Hand finishing of concrete pours to be struck off and consolidated by hand methods will be permitted on variable width lanes and lanes formed by flexible forms for short radius curves, as directed by the Engineer

GUARDRAIL

GUARDRAIL CONNECTIONS TO EXISTING GUARDRAIL
Connections of proposed guardrail to existing guardrail shall be field drilled. Any additional cost for this work shall be included in the pay item of the proposed guardrail.

GUARDRAIL POST HOLES
Posts placed within 3' of existing culverts shall be in drilled holes and shall not be driven.

FENCING

RIGHT OF WAY FENCE
Where fence is called for along the ROW, the Engineer will check the Right of Way as actually acquired before placing fence.

TURF ESTABLISHMENT

SEED MIXTURE
The symbol for the permanent turf seed mixture on this project is symbol TUF.

LANDSCAPING
Existing vegetation shall not be damaged during construction operations, per the 2012 Standard Specifications for Construction.

Heavy equipment will not be allowed to work outside the slope stake lines in the wooded portion of the site. All equipment to be used must be approved by the engineer prior to beginning work.

Storage of equipment and materials will be restricted to areas designated by the Engineer. No equipment is permitted within the drip line of existing trees to remain.

Branches of all trees to be saved shall not be removed, or damaged by construction equipment. If removal of lower branches is necessary, contact Roadside Development or the Region Resource Specialist for proper methods.

Do not trench within the drip line of existing trees to remain unless specifically approved by the Engineer.

Contractor shall promptly restore any property damage at no expense to MDOT.

All raw fill or cut slopes will be covered with slope restoration according to the special provision and time limitations specified in section 816.03 of the 2012 Standard Specifications for Construction.

All excavated material will become the property of the contactor. Any excavated material not used on the project will be removed from the site and disposed of in accordance with section 205.03.P. of the 2012 Standard Specification for Construction and any applicable state and/or local ordinances.

No cereal rye seeding shall be used on this project.

Protect existing sidewalks from damage.

Plant material, soil, fertilizer and mulch will be inspected/approved by the Engineer/Region Resource Specialist or the Landscape Architect prior to installation. Plant inspection may occur at the nursery source or when plants arrive on site.

Entire planting bed will be mulched with 5-6" of shredded hardwood bark mulch and paid for as Site Preparation.

Remove unacceptable plants fall inspection. Remove entire plant (including root ball) and dispose of offsite. Restore planting hole to existing conditions according to Sections 107.7 and 816 of the 2012 Standard Specifications for Construction.

Staking will be completed within 5 working days of establishing final grade in the interior of the Central Island.

Final staking may be adjusted to avoid conflicts with utilities and legally permitted billboards.

SIGNS

GENERAL
All signs shall be installed, removed and/or salvaged according to the current edition of "Michigan Manual on Uniform Traffic Control Devices" and the current edition of Michigan Department of Transportation (MDOT) "Standard Specifications for Construction."

All signs on the plans or in the log that do not have a recommendation are to be retained.

EXISTING SIGN RELOCATION
Any permanent signs requiring relocation due to Contractor operations shall be salvaged and reset by the Contractor at locations designated by the Engineer. Signs and posts damaged during the removal and storage operations shall be replaced with new signs and posts. The cost of this work shall be borne by the Contractor.

At least two weeks prior to construction to remove / relocate Michigan Logo or tourist oriented directional signs; the Contractor shall contact Mike Kovalchick, (888) 645-6467 from Michigan Logos.

DELINEATOR POST REPLACEMENT
The Contractor shall remove and dispose of all existing delineator posts along the roadway where new posts are placed. This work will be considered as included in the cost of placing new delineator posts.

PLAN SCALE
The final plans submitted with the proposal are not to scale. Where proposed on plan sheets, the signs and structures shall be fabricated in accordance to Typical Plans, Standards, and/or Details at locations described.

SIGN LAYOUT
Sign layouts shall be according to the current English edition of "Standard Highway Signs" manual or as detailed in plans. Legend length shall be determined using the "SignCAD" software.

SHEETING
Handling and installation of all signs shall conform to the sheeting manufacturer's specifications and guidelines.

Splice sheeting used for Type I signs with a 3" overlap.

Signs that have wrinkled or twisted sheeting may be rejected.

MDOT SUPPLIED SIGNS
MDOT supplied signs must be ordered from the MDOT Operations Field Services Division Statewide Sign Shop by MDOT personnel. The contractor will send a request to the Engineer who will then request the signs from the sign shop. Allow 90 days for the signs to be fabricated. Once the signs are fabricated the MDOT Statewide Sign Shop will notify the Engineer who will then notify the contractor. The contractor must pick up the signs at the MDOT Operations Field Services Division Statewide Sign Shop located at 6333 Lansing Rd, Lansing, Michigan 48917 within 30 days of the notice of completion. Any costs associated with picking up the signs from the sign shop will be considered included in the item Installing Department Supplied Sign, Type__.

SIGN INSTALLATION
When attaching signs to supports, tighten the nut, not the bolt head.

Nylon washers shall be placed between the steel washer and the sign face sheeting. The nylon washers are to be considered part of the attaching devices and hardware. Nylon washers shall have a 3/8 inch inner diameter, a 7/8 inch outer diameter and a 1/16 inch thickness.

The Contractor shall attach a date sticker to the back of all signs installed on the contract. Stickers will be supplied to the Contractor at the preconstruction meeting by the Engineer. Stickers will be supplied by MDOT Operations Field Services Division Statewide Sign Shop, Lansing, which can be contacted at 517-322-3357.

SIGNALS

PREVIOUS GENERAL NOTES
Some notes previously included in “General Notes” are now located within the Frequently Used Special Provision titled “Traffic Signal Work - Construction Methods”.

MAINTAINING AGENCY CONTACT INFORMATION
- MDOT: Statewide Signal Shop (517-322-3360)

NOTIFICATIONS TO MAINTAINING AGENCIES
Contact MDOT (and any other maintaining agency) seven working days prior to start of construction and seven working days prior to signal activation.

CABINET SET UP AND CONTROLLER TIMING
Contractor shall deliver where required to the appropriate maintaining agency, the T.S. Cabinet and Controller for set up and timing. Contractor shall pick-up cabinet from the appropriate maintaining agency when ready for installation.

FACILITIES NOT ON PLANS
Existing O.H. & T.S. facilities are not necessarily shown on plans.

WOOD POLE INSTALLATION
Install wood poles so as not to interfere with traffic or future construction stages.

SALVAGED WOOD POLES
All salvaged wood poles shall be poles previously installed new on this contract.

EXISTING STREET SIGNS
All traffic street signs such as "no parking", "no standing", etc. shall be transferred from old std. or pole to new std. or pole at same location or in close proximity by the Contractor.

CONTINUOUS TRAFFIC SIGNAL OPERATION
Proposed T.S. shall be put into operation at time of removal of existing T.S. facilities, contractor shall notify MDOT (and any other maintaining agency) if unable to maintain T.S. in an operable condition at all times.

UNDERGROUND UTILITY SEPARATION
A minimum clearance of 3'-6" horizontal & 1'-0" vertical must be maintained between proposed facilities & existing U.G. water facilities.

INTERCONNECT PHONE SERVICE
Contact local telephone company and MDOT (and any other maintaining agency) for installation of local telephone company service (interconnect).

SIGNAL EQUIPMENT DISPOSAL
Disposal of all traffic signal equipment is included in the removal pay items and shall also include the following:
- Notification to MDOT (and any other maintaining agency) that traffic signal equipment is being removed.
- Temporary storage of equipment in a dumpster on site (or as directed by the Engineer) allowing MDOT (and any other maintaining agency) 48 hours to salvage any equipment.
- Proper disposal of any equipment containing environmentally sensitive materials (mercury relay switches for example)
- Disabling or destruction of all remaining equipment to the satisfaction of the engineer such that it cannot be reused or resold.
- Proper disposal of all remaining equipment.

PLAN DEVIATIONS DURING CONSTRUCTION
No changes from plans in location of supporting structures signal head placement or traffic signal equipment will be allowed without prior approval of the Michigan Department Of Transportation, Traffic Signals Unit in Lansing, MI; (517-373-2323).

POLE BAND CLAMP ACCEPTANCE
The current basis of acceptance for this material is now part of the QPL (Qualified Product List). This can be found in the materials Acceptance Requirements Table, published in the MQAP and repeated for convenience in the Materials Source Guide.

INNERDUCT
Contractor must install a continuous flexible non-metallic tubing (innerduct) for low voltage communication type cable from the device to the controller cabinet. Innerduct is not required if communication cable is 600V rated.

SIGNAL HEAD LANDING POINT
Ensure each traffic signal head assembly has its own landing point with all neutrals connected together with a metal type jumper.

PROJECT SPECIFIC NOTES

PEAT EXCAVATION
Boring number 60494 shows peat from 5’ to 10’ below the surface. The Hospital Drive Profile Sheet shows the approximate extent of the proposed peat excavation. The extent of the peat excavation shall be field verified as directed by the Engineer.

AGENCY CONTACT INFORMATION
CITY OF MARQUETTE
Keith M. Whittington
(906) 228-0440
kwhittington@mqtcty.org

MDOT ISHPEMING TSC
Ken Filpus
(906) 485-6322 ext 127
filpusk@michigan.gov

MDEQ BARAGA FIELD OFFICE
Ryan McCone
(906) 228-4802
mcconer@michigan.gov

Linda Hansen
(906) 353-7522
hansenl6@michigan.gov

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906) 228 - 0440

NO SCALE

	DATE: 2/10/17	CS: 52042	NOTE SHEET
	DESIGN UNIT: FILPUS	JN: MQ17-025	
FILE: 6553_US41_Note_Sheet.doc	TSC: ISHPEMING	MDOT PERMIT 043179-16	

DRAWING	SHEET
US41 NOTE 002	SECT 1 8

MISCELLANEOUS QUANTITIES

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:

JN MQ17-025	MISCELLANEOUS QUANTITIES
0.5 LSUM	Resident Notification
0.5 LSUM	Mobilization, Max
46 Sta	Clearing, Fence
1000 Dlr	Asbestos Materials, Rem and Disposal
20 Ft	Exploratory Investigation, Vertical
200 Cyd	Non Haz Contaminated Material Handling and Disposal, LM
1000 Cyd	Subgrade Undercutting, Type I
2000 Cyd	Subgrade Undercutting, Type II
250 Cyd	Trench Undercut and Backfill
3726 Ft	Video Taping Sewer and Culv Pipe
20 Ft	Dr Structure, Adj, Add Depth
2450 Ft	Underdrain Outlet, 6 inch
49 Ea	Underdrain, Outlet Ending, 6 inch
19500 Dlr	HMA Quality Initiative
25300 Dlr	Longitudinal Joint Density Quality Initiative
20 Ton	Hand Patching
52450 Dlr	Conc Quality Initiative
500 Ft	Fence, Woven Wire with Wood Post
8620 Syd	Slope Restoration, Type A
12930 Syd	Slope Restoration, Type B
17240 Syd	Slope Restoration, Type C
4310 Syd	Slope Restoration, Type D
2000 Syd	Forested Wetland Seed Mixture
5 Ea	Monument Box
6 Ea	Monument Preservation
4 Ea	Protect Corners
0.5 LSUM	Contractor Staking
57 Hr	Staking Plan Errors and Extras, One Person
23 Hr	Staking Plan Errors and Extras, Two Person
34 Hr	Staking Plan Errors and Extras, Three Person

THE FOLLOWING ITEMS OF WORK SHALL BE DONE AS DIRECTED BY THE ENGINEER THESE ITEMS ARE IN ADDITION TO THE ITEMS SHOWN ON THE PLAN AND PROFILE SHEETS AND ARE TO BE USED AS DIRECTED BY THE ENGINEER.

JN MQ17-025	EROSION CONTROL AND SEDIMENTATION CONTROL
80 Ft	Erosion Control, Check Dam, Stone (37)
3 Ea	Erosion Control, Gravel Access Approach (14)
8 Ea	Erosion Control, Inlet Protection, Fabric Drop (29)
50 Cyd	Erosion Control, Maintenance, Sediment Removal
20 Cyd	Erosion Control, Sediment Basin (21)
900 Ft	Erosion Control, Silt Fence (26)

MISCELLANEOUS QUANTITIES CONTINUED

THE FOLLOWING ITEMS OF WORK ARE ESTIMATED FOR THE ENTIRE PROJECT FOR MAINTENANCE OF TRAFFIC:

JN MQ17-025	MAINTENANCE OF TRAFFIC
6 Ea	Culv, End, Rem, Less than 24 inch
550 Ft	Guardrail, Rem
3720 Cyd	Embankment, CIP
3570 Cyd	Excavation, Earth
3134 Cyd	Subbase, CIP
345 Ton	Aggregate Base
5400 Syd	Aggregate Base, 6 inch
535 Syd	Shoulder, Cl II, 6 inch, Temp
6 Ea	Culv End Sect, 12 inch
100 Ft	Slotted Drain, Galv, 12 inch
1 LSUM	Bypass Pumping, Storm Sewer
1 Ea	Dr Structure Cover, Adj, Case 1
8775 Syd	HMA Surface, Rem
285 Ton	HMA, LVSP
1135 Ton	HMA, Temp Pavt (3E3)
1320 Ton	HMA, Temp Pavt (4E3)
550 Ft	Guardrail, Type BD
35 Ea	Barricade, Type III, High Intensity, Lighted, Furn
35 Ea	Barricade, Type III, High Intensity, Lighted, Oper
2 Ea	Conc Barrier Ending, Temp, Detail 4, Furn
2 Ea	Conc Barrier Ending, Temp, Detail 4, Oper
3 Ea	Culv, Temp
5 Ea	Lighted Arrow, Type A, Furn
5 Ea	Lighted Arrow, Type A, Oper
1 LSUM	Minor Traf Devices
1 Ea	Mobile Attenuator
26000 Ft	Pavt Mrkg, Longit, 6 inch or Less Width, Rem
400 Ft	Pavt Mrkg, Type NR, Tape, 4 inch, White, Temp
400 Ft	Pavt Mrkg, Type NR, Tape, 4 inch, Yellow, Temp
24600 Ft	Pavt Mrkg, Wet Reflective, Type R, Tape, 4 inch, White, Temp
31000 Ft	Pavt Mrkg, Wet Reflective, Type R, Tape, 4 inch, Yellow, Temp
250 Ea	Plastic Drum, High Intensity, Furn
250 Ea	Plastic Drum, High Intensity, Oper
25 Ea	Sign Cover
8 Ea	Sign, Portable, Changeable Message, Furn
8 Ea	Sign, Portable, Changeable Message, Oper
115 Sft	Sign, Type A, Temp, Prismatic, Furn
115 Sft	Sign, Type A, Temp, Prismatic, Oper
2290 Sft	Sign, Type B, Temp, Prismatic, Furn
2290 Sft	Sign, Type B, Temp, Prismatic, Oper
250 Sft	Sign, Type B, Temp, Prismatic, Special, Furn
250 Sft	Sign, Type B, Temp, Prismatic, Special, Oper
1 LSUM	Traf Regulator Control
260 Ea	Tubular Marker
50 Ea	Tubular Marker, Replacement
9035 Syd	Slope Restoration, Type B

STRUCTURAL QUANTITIES

THE FOLLOWING ITEMS OF WORK ARE ESTIMATED FOR STRUCTURAL WORK AND CHANNEL GRADING FOR AT 7TH ST/WHETSTONE BROOK.

JN MQ17-025	7TH ST/WHETSTONE BROOK BOX CULVERT
1 Ea	Culv, Rem, Over 48 inch
217 Cyd	Excavation, Channel
64 Cyd	Granular Material, Cl II
2510 Cyd	Backfill, Structure, CIP
1825 Cyd	Excavation, Fdn
2 Ea	Erosion Control, Filter Bag
669 Ft	Erosion Control, Silt Fence
440 Ft	Underdrain, Fdn, 6 inch
10 Ft	Underdrain Outlet, 6 inch
2 Ea	Underdrain, Outlet Ending, 6 inch
150 Cyd	Culv Bedding, Box Culv
184 Ft	Culv, Precast Conc Box, 11 foot by 10 foot
9 Cyd	Conc, Grade S2
10756 Lb	Reinforcement, Steel, Epoxy Coated
95 Cyd	Substructure Conc
378 Syd	Riprap, Special, Class II

STRUCTURAL QUANTITIES CONTINUED

THE FOLLOWING ITEMS OF WORK ARE ESTIMATED FOR STRUCTURAL WORK AND CHANNEL GRADING AT HOSPITAL DR/WHETSTONE BROOK AND THE FLOOD CONTROL POND.

JN MQ17-025	HOSPITAL DR/WHETSTONE BROOK 3-SIDED CULVERT
1 LSUM	Structures, Rem (Constriction Structure)
244 Cyd	Excavation, Channel
97 Cyd	Granular Material, Cl II
1535 Cyd	Backfill, Structure, CIP
2335 Cyd	Excavation, Fdn
280 Ft	Erosion Control, Silt Fence
140 Ft	Culv, Precast Arch, 12 foot by 7 foot
2230 Sft	Steel Sheet Piling, Permanent
21201 Lb	Reinforcement, Steel, Epoxy Coated
343 Cyd	Substructure Conc
18 Syd	Riprap, Grouted
102 Syd	Riprap, Heavy
461 Syd	Riprap, Special, Class II
94 Ton	Riprap, Under Structures, Class I

JN MQ17-025	HOSPITAL DR 48" FLOOD CONTROL CULVERT
1 Ea	Culv, Rem, 24 inch to 48 inch
50 Cyd	Excavation, Channel
35 Cyd	Backfill, Structure, CIP
352 Ft	Erosion Control, Silt Fence
1 Ea	Culv End Sect, Conc, 48 inch
176 Ft	Culv, Cl A, Conc, 48 inch
850 Sft	Steel Sheet Piling, Permanent
1751 Lb	Reinforcement, Steel, Epoxy Coated
32 Cyd	Substructure Conc
480 Lb	Structural Steel, Mixed, Erect
480 Lb	Structural Steel, Mixed, Furn and Fab
26 Syd	Riprap, Heavy
38 Syd	Riprap, Plain

JN MQ17-025	HOSPITAL DR FLOOD CONTROL BOX CULVERTS
1 LSUM	Structures, Rem (Triple Box Culvert)
670 Cyd	Backfill, Structure, CIP
2005 Cyd	Excavation, Fdn
344 Ft	Erosion Control, Silt Fence
250 Cyd	Culv Bedding, Box Culv
516 Ft	Culv, Precast Conc Box, 8 foot by 4 foot
1887 Lb	Reinforcement, Steel, Epoxy Coated
34 Cyd	Substructure Conc
190 Syd	Riprap, Heavy

JN MQ17-025	HOSPITAL DR FLOOD CONTROL SHEET PILING WALL
220 Cyd	Backfill, Structure, CIP
3050 Sft	Steel Sheet Piling, Permanent
44 Cyd	Conc, Grade D
1946 Lb	Reinforcement, Steel, Epoxy Coated
95 Syd	Texturing Conc
1 LSUM	Shear Developers
724 Lb	Structural Steel, Mixed, Erect
724 Lb	Structural Steel, Mixed, Furn and Fab
1 LSUM	Conc Surface Coating

JN MQ17-025	FLOOD CONTROL POND OUTLET
1 LSUM	Structures, Rem Portions
509 Lb	Reinforcement, Steel, Epoxy Coated
2 Cyd	Substructure Conc
244 Lb	Structural Steel, Mixed, Erect
244 Lb	Structural Steel, Mixed, Furn and Fab
28 Ea	Adhesive Anchoring of Vertical Bar, 1/2 inch

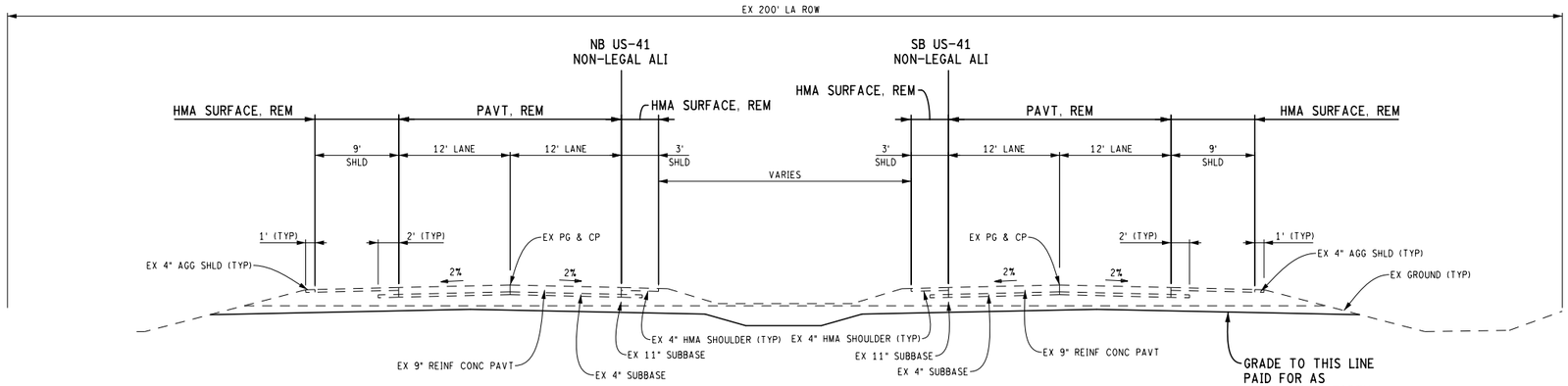
FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

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CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

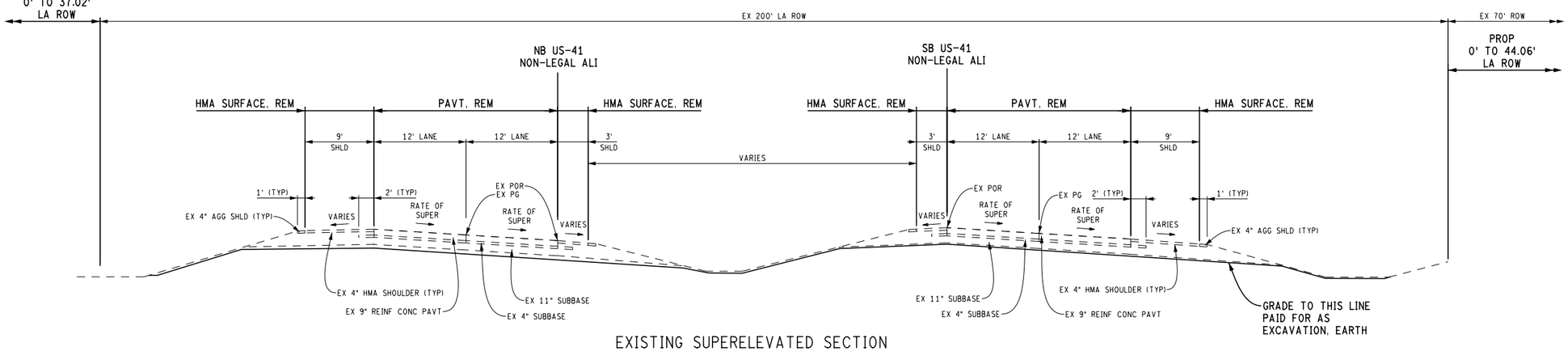
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FILE: 6553_US41_MSCQTY001.dgn	TSC: ISHPEMING	MDOT PERMIT 043179-16		9



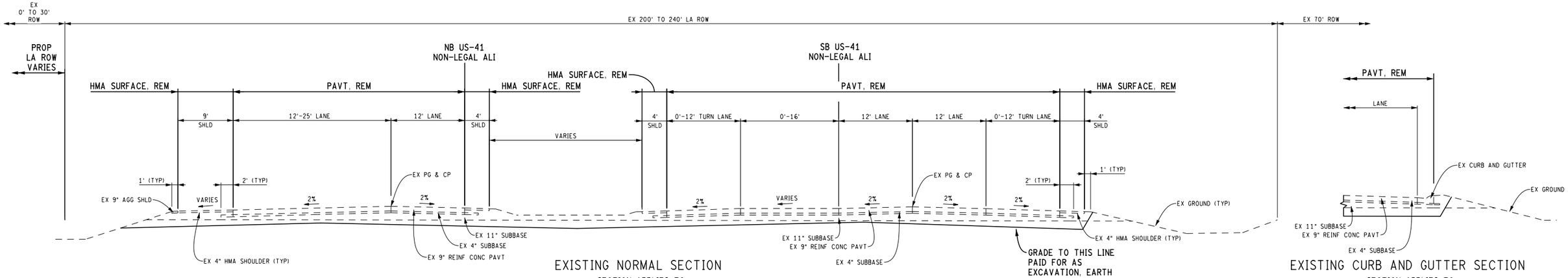
EXISTING NORMAL SECTION

SECTION APPLIES TO:
NB US-41/M-28 STA 1230+74.31 (POB) TO STA 1231+75
SB US-41/M-28 STA 1230+74.24 (POB) TO STA 1231+75



EXISTING SUPERELEVATED SECTION

SECTION APPLIES TO:
NB US-41/M-28 STA 1231+75 TO STA 1248+46
SB US-41/M-28 STA 1231+75 TO STA 1247+98



EXISTING NORMAL SECTION

SECTION APPLIES TO:
NB US-41/M-28 STA 1248+46 TO STA 1253+76
SB US-41/M-28 STA 1247+98 TO STA 1253+40

EXISTING CURB AND GUTTER SECTION

SECTION APPLIES TO:
NB US-41/M-28 STA 1252+37 TO STA 1253+77 LT
SB US-41/M-28 STA 1252+15 TO STA 1253+70 RT
SB US-41/M-28 STA 1250+38 TO STA 1252+17 LT

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
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0 VERT. (FT) 16
0 HORZ. (FT) 16

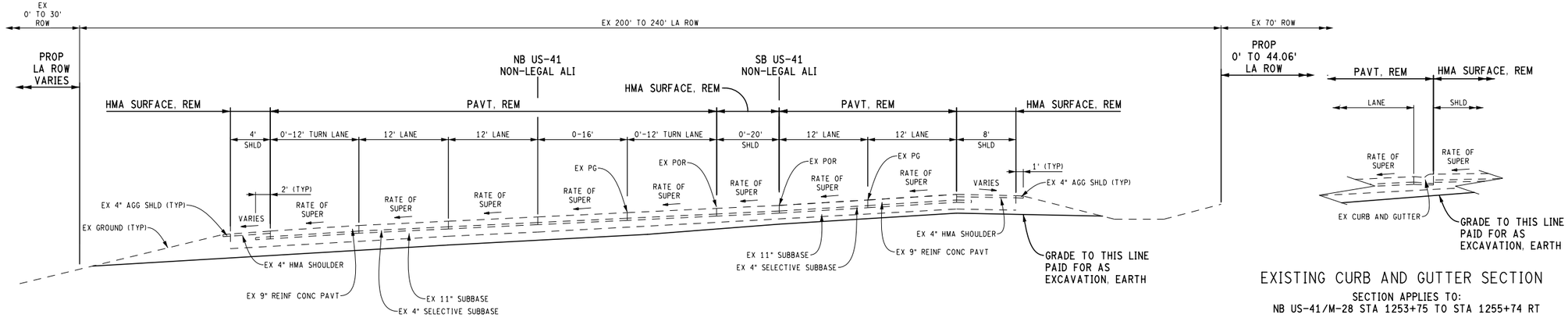
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DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

EXISTING TYPICAL CROSS SECTIONS
US-41/M-28

DRAWING: US41 EXTYP 001
SHEET: SECT 1 10

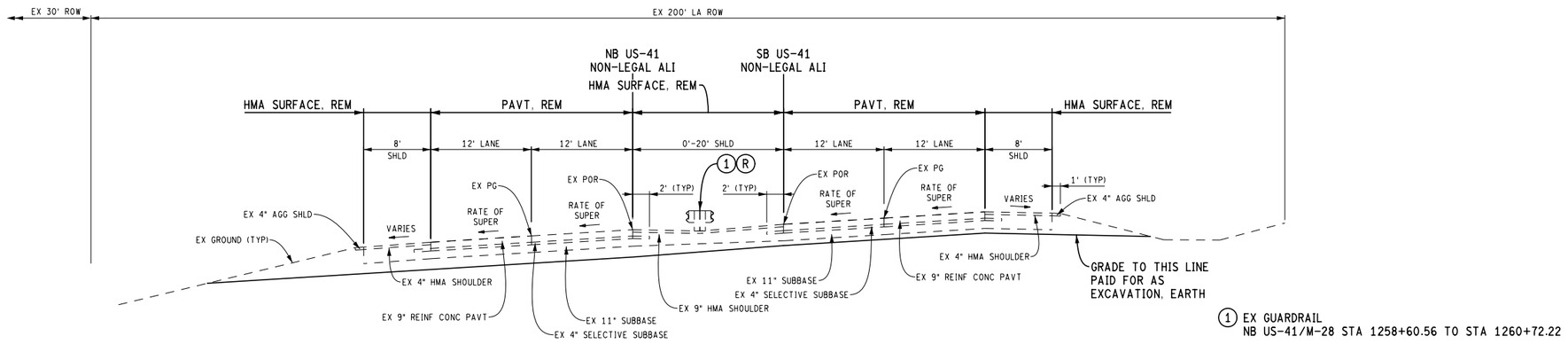


EXISTING SUPERELEVATED SECTION

SECTION APPLIES TO:
NB US-41/M-28 STA 1253+76 TO STA 1258+17
SB US-41/M-28 STA 1253+40 TO STA 1257+96

EXISTING CURB AND GUTTER SECTION

SECTION APPLIES TO:
NB US-41/M-28 STA 1253+75 TO STA 1255+74 RT



(1) EX GUARDRAIL
NB US-41/M-28 STA 1258+60.56 TO STA 1260+72.22

EXISTING SUPERELEVATED SECTION

SECTION APPLIES TO:
NB US-41/M-28 STA 1258+17 TO STA 1260+40.04 (POE)
SB US-41/M-28 STA 1257+96 TO STA 1260+20.69 (POE)

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VERT. (FT) 0 16
HORZ. (FT) 0 16

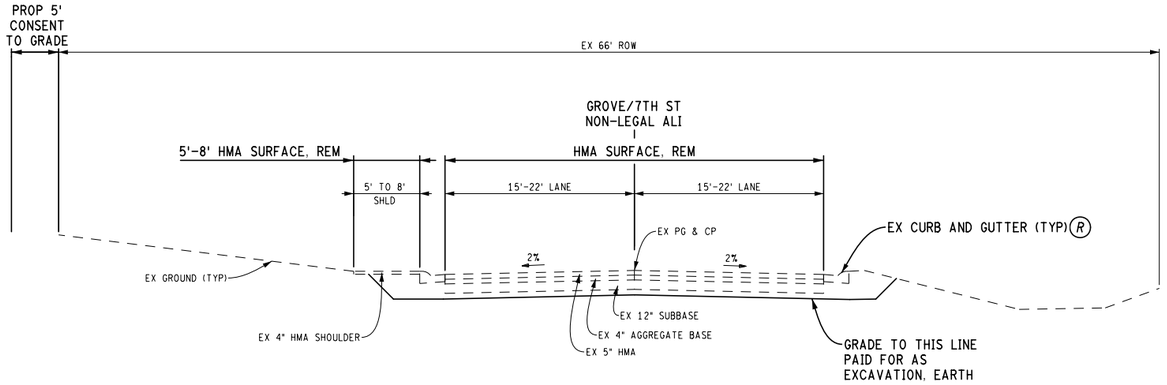
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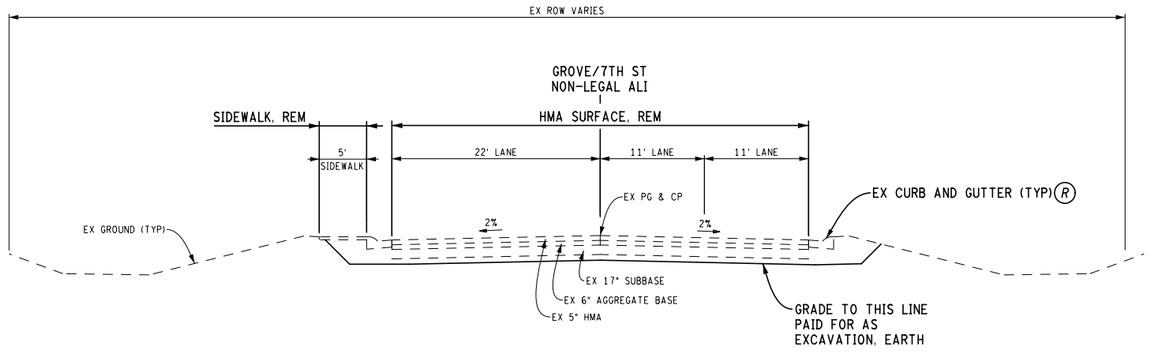
EXISTING TYPICAL CROSS SECTIONS
US-41/M-28

DRAWING: US41 EXTYP 002
SHEET: SECT 1 11



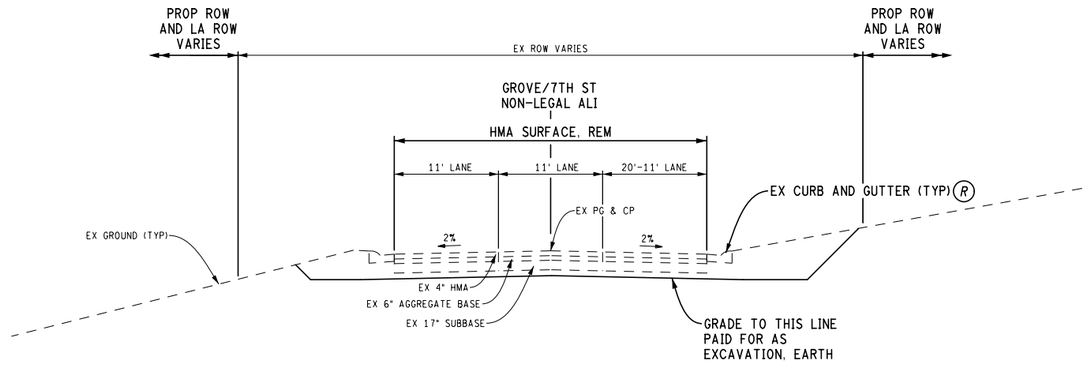
EXISTING NORMAL SECTION

SECTION APPLIES TO:
GROVE ST STA 21+00 TO STA 21+60.12



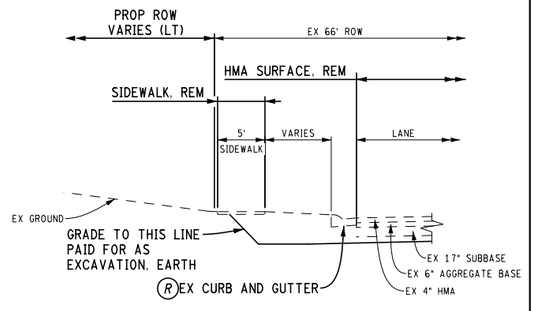
EXISTING NORMAL SECTION

SECTION APPLIES TO:
GROVE ST STA 21+60.12 TO STA 24+80



EXISTING NORMAL SECTION

SECTION APPLIES TO:
S 7TH ST STA 24+80 TO STA 29+85



EXISTING SIDEWALK SECTION

SECTION APPLIES TO:
S 7TH ST STA 28+20 TO STA 29+85 LT
S 7TH ST STA 28+33 TO STA 29+85 RT

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0 VERT. (FT) 16
0 HORZ. (FT) 16

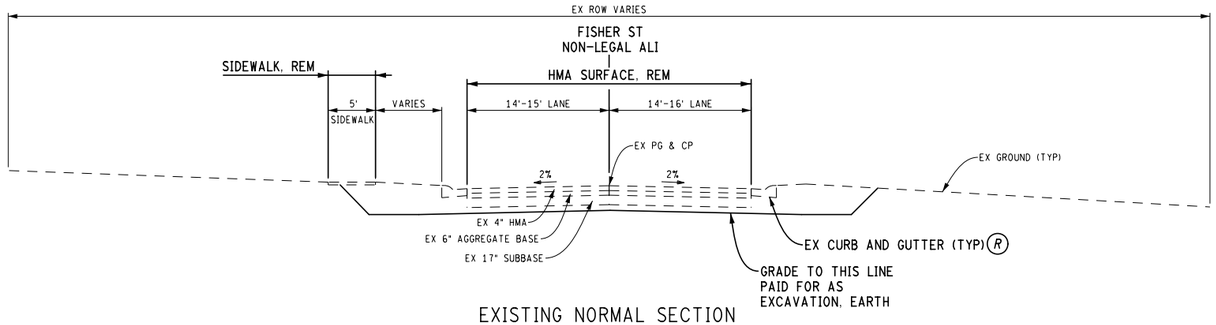
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MDOT PERMIT 043179-16

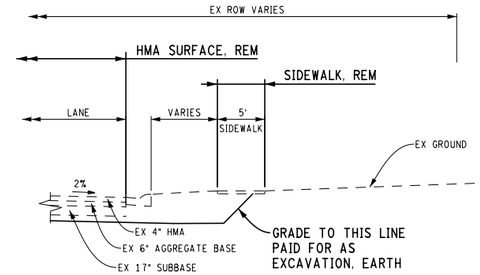
EXISTING TYPICAL CROSS SECTIONS
GROVE ST & S 7TH ST

DRAWING: US41 EXTYP 003
SHEET: SECT 1 12



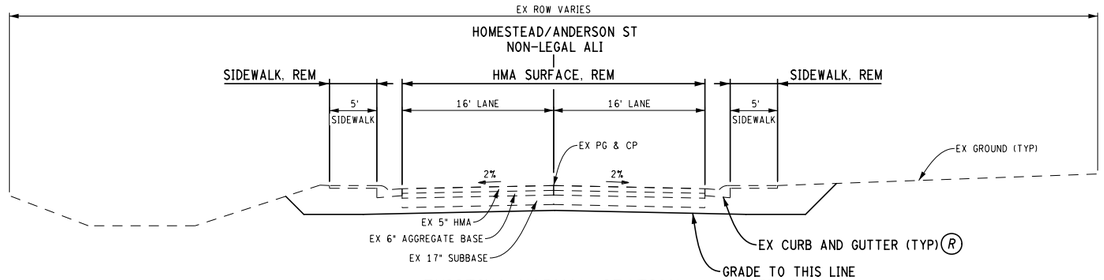
EXISTING NORMAL SECTION

SECTION APPLIES TO:
FISHER ST STA 50+40 TO STA 53+40



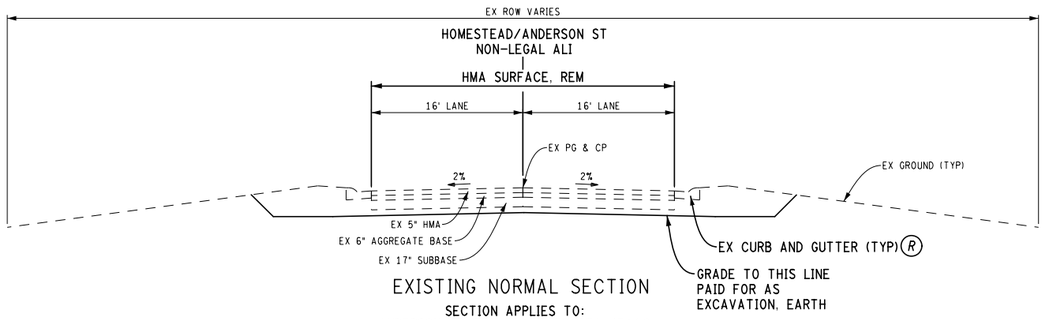
EXISTING SIDEWALK SECTION

SECTION APPLIES TO:
FISHER ST STA 52+05 TO STA 53+40 RT



EXISTING NORMAL SECTION

SECTION APPLIES TO:
HOMESTEAD ST STA 40+20 TO STA 41+65



EXISTING NORMAL SECTION

SECTION APPLIES TO:
ANDERSON ST STA 41+65 TO STA 43+10

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0 VERT. (FT) 16
0 HORZ. (FT) 16

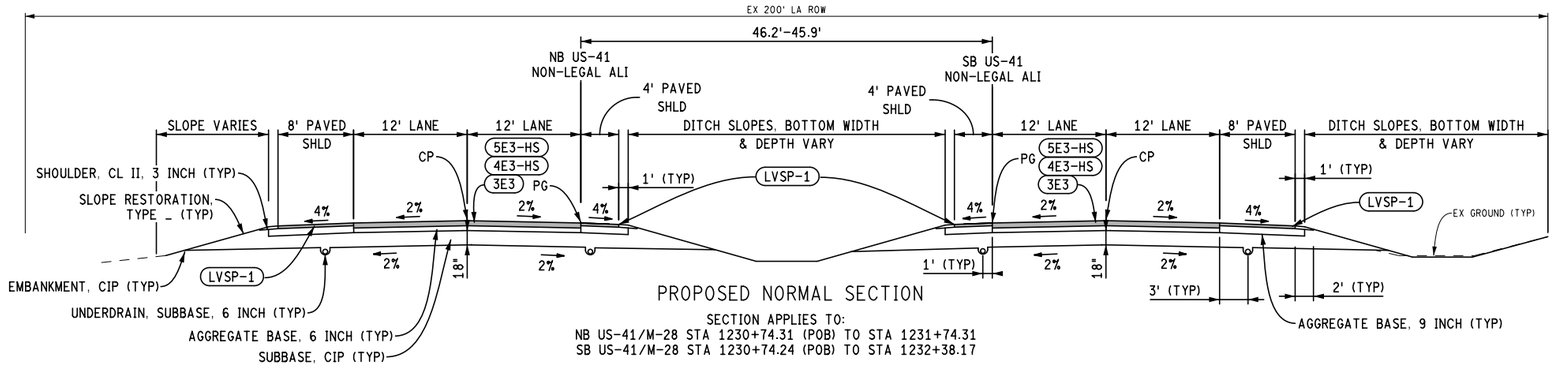
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CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

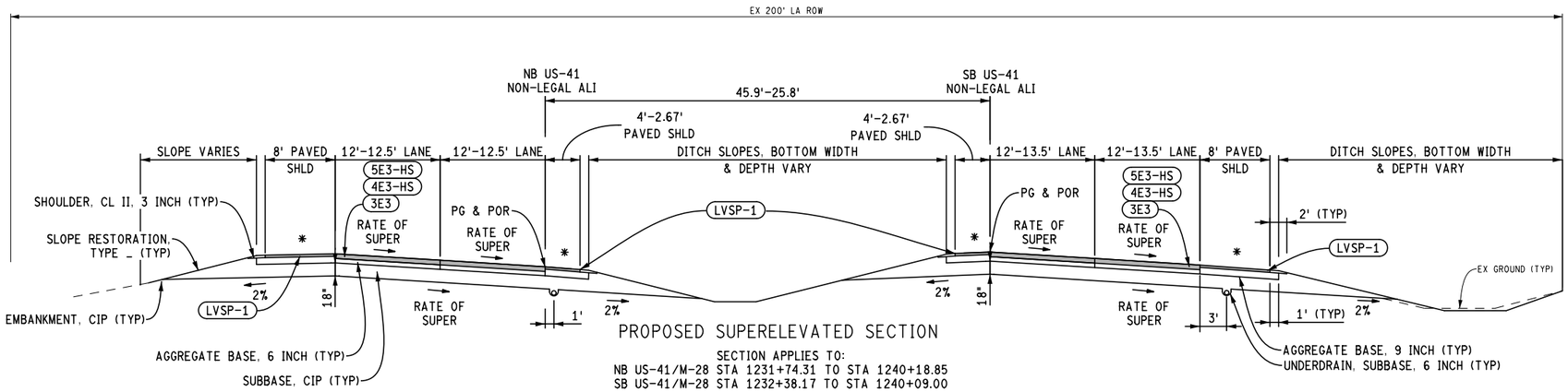
EXISTING TYPICAL CROSS SECTIONS
FISHER ST, HOMESTEAD ST & ANDERSON ST

DRAWING: US41 EXTYP 004
SHEET: SECT 1 13



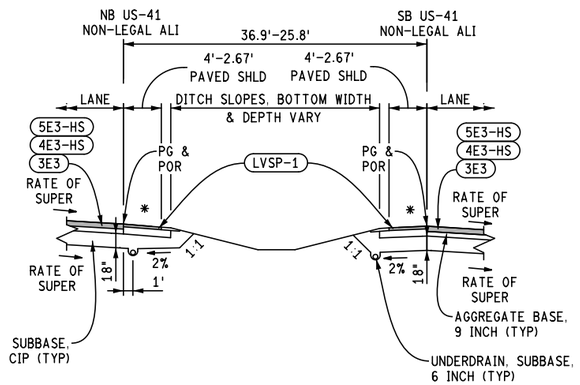
PROPOSED NORMAL SECTION

SECTION APPLIES TO:
NB US-41/M-28 STA 1230+74.31 (POB) TO STA 1231+74.31
SB US-41/M-28 STA 1230+74.24 (POB) TO STA 1232+38.17



PROPOSED SUPERELEVATED SECTION

SECTION APPLIES TO:
NB US-41/M-28 STA 1231+74.31 TO STA 1240+18.85
SB US-41/M-28 STA 1232+38.17 TO STA 1240+09.00



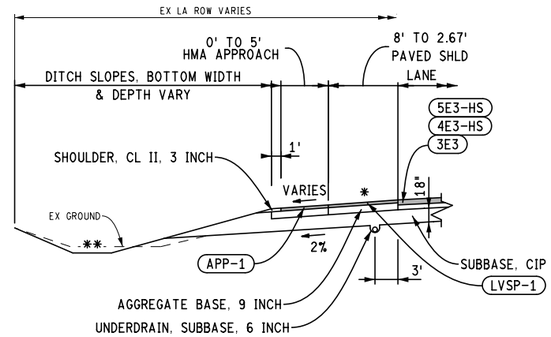
PROPOSED SUPERELEVATED DETAIL

SECTION APPLIES TO:
NB US-41/M-28 STA 1236+56.46 TO STA 1240+18.85
SB US-41/M-28 STA 1236+50.00 TO STA 1240+09.00

HMA APPLICATION ESTIMATE

IDENT NO.	ITEM	RATE LBS PER SYD	PERFORMANCE GRADE	REMARKS
5E3-HS	HMA, 5E3, HIGH STRESS	165	64-34P	TOP COURSE, AWI=260
4E3-HS	HMA, 4E3, HIGH STRESS	220	64-34P	LEVELING COURSE
3E3	HMA, 3E3	330	58-28	BASE COURSE
APP-1	HMA APPROACH	385	58-28	TOP COURSE: HMA, LVSP @ 165#/SYD LEVELING COURSE: HMA, LVSP @ 220#/SYD
APP-2	HMA APPROACH	330	64-28P	DRIVEWAYS TOP COURSE: HMA, 5E1, HIGH STRESS @ 165#/SYD LEVELING COURSE: HMA, 4E1, HIGH STRESS @ 165#/SYD
LVSP-1	HMA, LVSP	385	58-28	SHOULDER TOP COURSE: HMA, LVSP @ 165#/SYD LEVELING COURSE: HMA, LVSP @ 220#/SYD
5E1	HMA, 5E1, HIGH STRESS	165	64-28P	TOP COURSE, AWI=260
4E1	HMA, 4E1, HIGH STRESS	220	64-28P	LEVELING COURSE
4E3-T	HMA, TEMP PAVT (4E3)	385	58-28	TOP COURSE: HMA, TEMP PAVT @ 165#/SYD LEVELING COURSE: HMA, TEMP PAVT @ 220#/SYD
3E3-T	HMA, TEMP PAVT (3E3)	330	58-28	BASE COURSE
	* BOND COAT	0.05-0.15 GAL		

*FOR INFORMATION ONLY



PROPOSED DETAIL

SECTION APPLIES TO:
NB US-41/M-28 STA 1238+00.00 TO STA 1241+31.00 LT
NB US-41/M-28 STA 1250+86.00 TO STA 1251+40.00 LT
SB US-41/M-28 STA 1244+95.00 TO STA 1245+41.00 RT

NOTES:

*FOR SHOULDER SLOPES IN SUPER TRANSITION AND FULL SUPER, SEE STANDARD PLAN R-107 SERIES.

**NB DOES NOT HAVE A DITCH FROM STATION 1250+86.00 TO STA 1251+40.00 LT. SEE PROPOSED TYPICAL FOR THIS STATION RANGE.

OUTLET UNDERDRAINS TO PROPOSED DRAINAGE STRUCTURES. THE SB US-41 RIGHT DITCH, OR TOWARDS THE NB US-41 ROW LINE TAKING CARE TO AVOID THE DELINEATED WETLANDS. IT MAY BE NECESSARY TO USE SLOPES LESS THAN 4% TO OUTLET THE UNDERDRAINS AS DIRECTED BY THE ENGINEER.

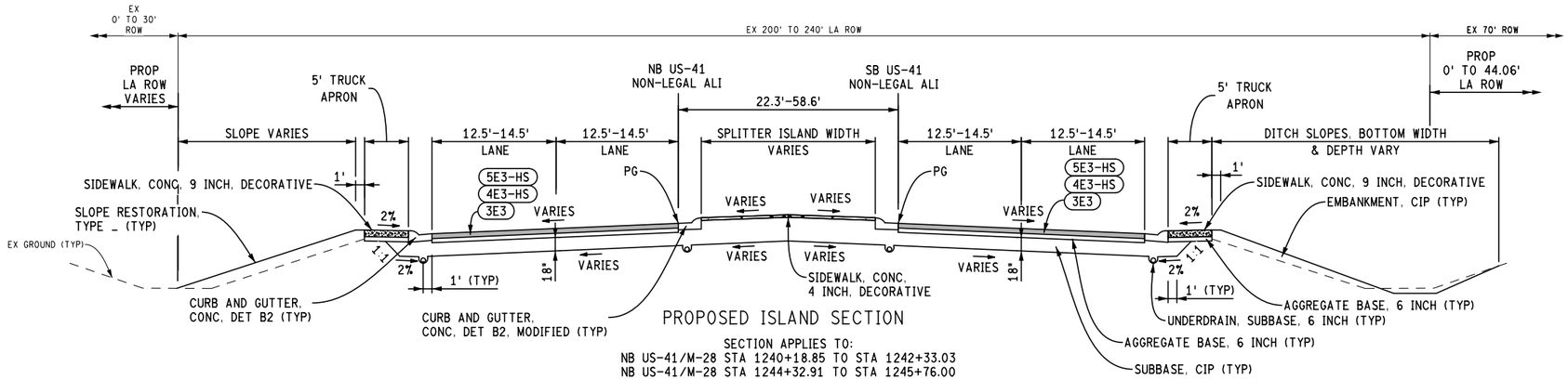
FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
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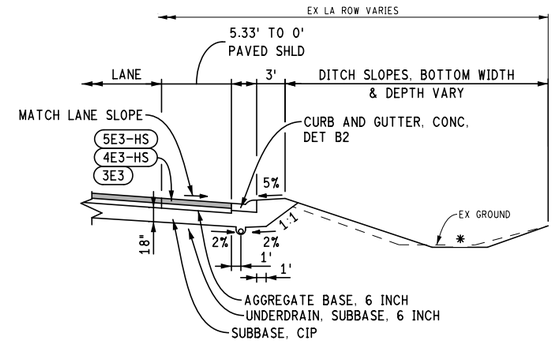
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0 HORZ. (FT) 16

	DATE: 2/10/2017	CS: 52042	PROPOSED TYPICAL CROSS SECTIONS	DRAWING	SHEET
	DESIGN UNIT: FILPUS	JN: MQ17-025	US-41/M-28	US41 PRTYP 001	SECT 1 14
FILE: 6553_US41_PR-TYP001.dgn	TSC: ISHPEMING	MDOT PERMIT 043179-16			



PROPOSED ISLAND SECTION

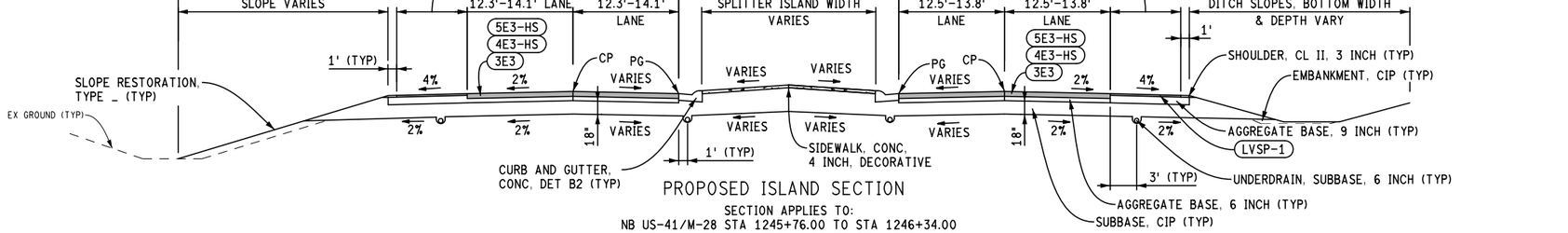
SECTION APPLIES TO:
NB US-41/M-28 STA 1240+18.85 TO STA 1242+33.03
NB US-41/M-28 STA 1244+32.91 TO STA 1245+76.00
NB US-41/M-28 STA 1250+86.00 TO STA 1252+37.31
NB US-41/M-28 STA 1254+28.43 TO STA 1255+19.00
SB US-41/M-28 STA 1240+09.00 TO STA 1242+10.98
SB US-41/M-28 STA 1243+98.68 TO STA 1245+41.00
SB US-41/M-28 STA 1250+46.00 TO STA 1251+97.06
SB US-41/M-28 STA 1253+93.88 TO STA 1254+96.00



PROPOSED DETAIL SECTION

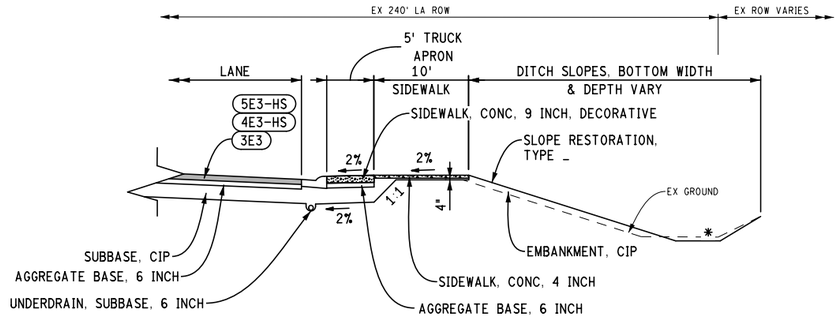
SECTION APPLIES TO:
NB US-41/M-28 STA 1245+23.00 TO STA 1246+60.50 LT
NB US-41/M-28 STA 1256+29.00 TO STA 1256+56.50 LT
SB US-41/M-28 STA 1239+83.50 TO STA 1241+21.00 RT
SB US-41/M-28 STA 1249+69.50 TO STA 1251+07.00 RT

*NB DOES NOT HAVE A DITCH. SEE PROPOSED TYPICAL FOR THIS STATION RANGE.



PROPOSED ISLAND SECTION

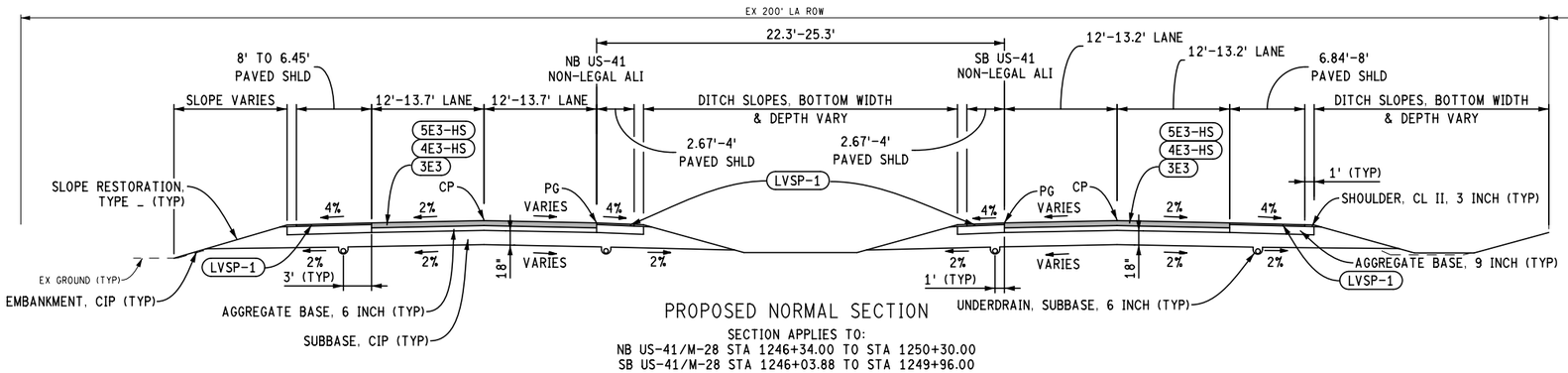
SECTION APPLIES TO:
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NB US-41/M-28 STA 1250+30.00 TO STA 1250+86.00
SB US-41/M-28 STA 1245+41.00 TO STA 1246+03.88
SB US-41/M-28 STA 1249+96.00 TO STA 1250+46.00



PROPOSED SIDEWALK SECTION

SECTION APPLIES TO:
NB US-41/M-28 STA 1251+87.13 TO STA 1252+37.31 LT
SB US-41/M-28 STA 1251+71.71 TO STA 1251+97.60 RT

*NB DOES NOT HAVE A DITCH. SEE PROPOSED TYPICAL FOR THIS STATION RANGE.



PROPOSED NORMAL SECTION

SECTION APPLIES TO:
NB US-41/M-28 STA 1246+34.00 TO STA 1250+30.00
SB US-41/M-28 STA 1246+03.88 TO STA 1249+96.00

NOTE:

OUTLET UNDERDRAINS TO PROPOSED DRAINAGE STRUCTURES, THE SB US-41 RIGHT DITCH, OR TOWARDS THE NB US-41 ROW LINE TAKING CARE TO AVOID THE DELINEATED WETLANDS. IT MAY BE NECESSARY TO USE SLOPES LESS THAN 4% TO OUTLET THE UNDERDRAINS AS DIRECTED BY THE ENGINEER.

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
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MARQUETTE, MI 49855
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VERT. (FT) 0 16
HORZ. (FT) 0 16

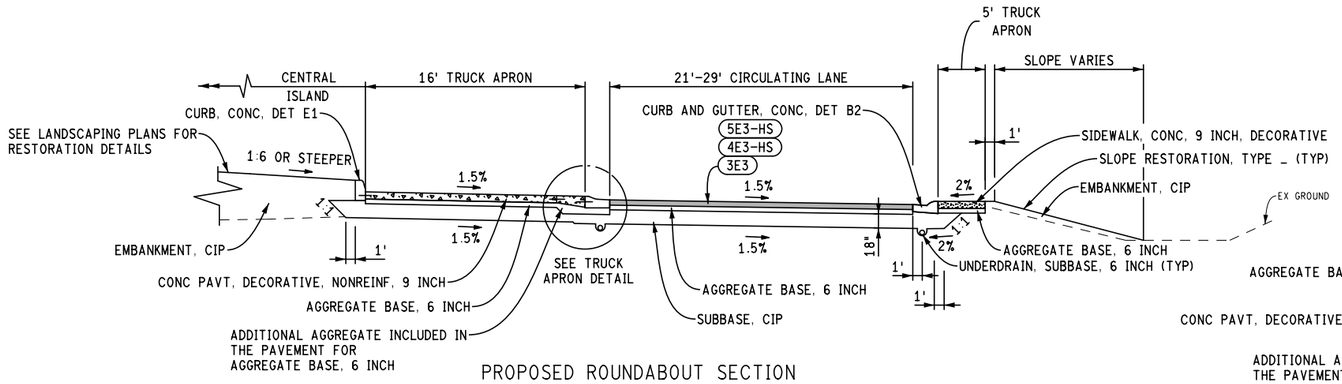
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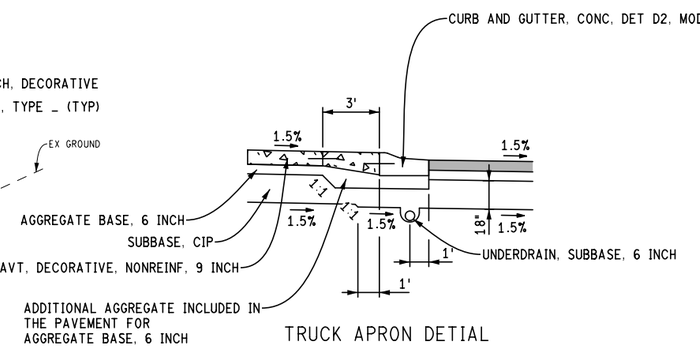
PROPOSED TYPICAL CROSS SECTIONS
US-41/M-28

DRAWING	SHEET
US41 PRTYP 002	SECT 1 15

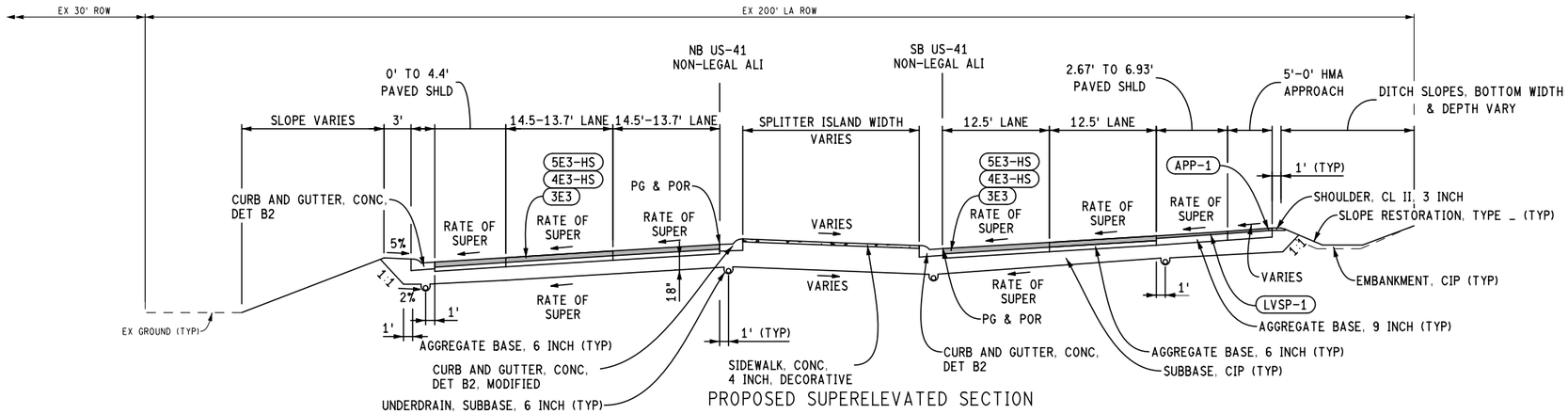


PROPOSED ROUNDABOUT SECTION

SECTION APPLIES TO:
US-42/M-28/HOSPITAL DR ROUNDABOUT
US-41/M-28/GROVE ST/7TH ST ROUNDABOUT

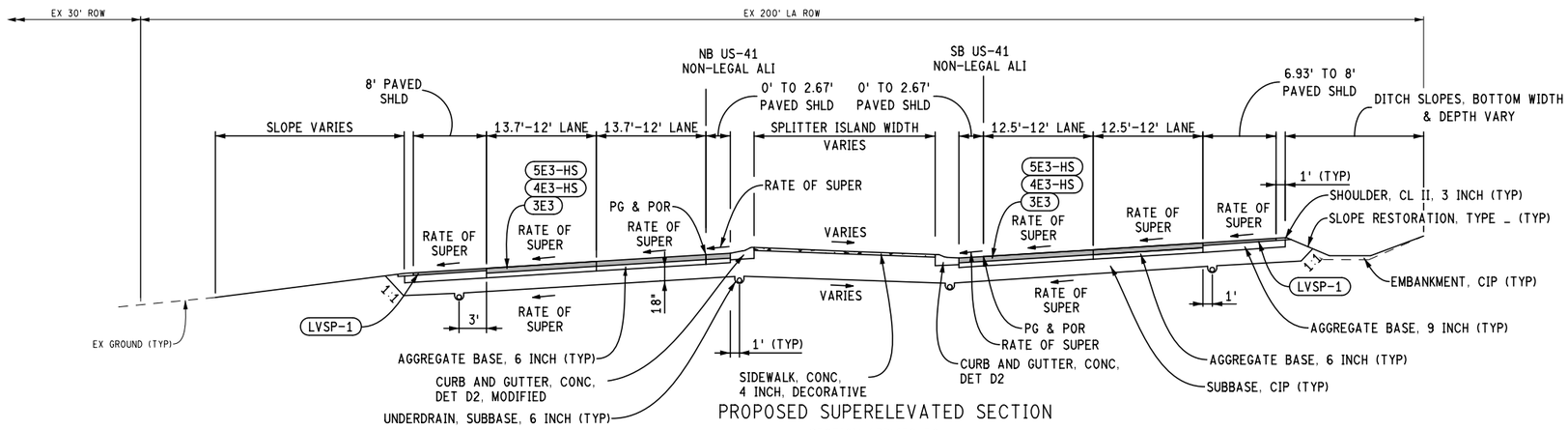


TRUCK APRON DETIAL



PROPOSED SUPERELEVATED SECTION

SECTION APPLIES TO:
NB US-41/M-28 STA 1255+19.00 TO STA 1256+29.00
SB US-41/M-28 STA 1254+96.00 TO STA 1256+06.00



PROPOSED SUPERELEVATED SECTION

SECTION APPLIES TO:
NB US-41/M-28 STA 1256+29.00 TO STA 1260+40.04 (POE)
SB US-41/M-28 STA 1256+06.00 TO STA 1260+20.69 (POE)

NOTE:

OUTLET UNDERDRAINS TO PROPOSED DRAINAGE STRUCTURES, THE SB US-41 RIGHT DITCH, OR TOWARDS THE NB US-41 ROW LINE TAKING CARE TO AVOID THE DELINEATED WETLANDS. IT MAY BE NECESSARY TO USE SLOPES LESS THAN 4% TO OUTLET THE UNDERDRAINS AS DIRECTED BY THE ENGINEER.

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

VERT. (FT) 0 16
HORZ. (FT) 0 16

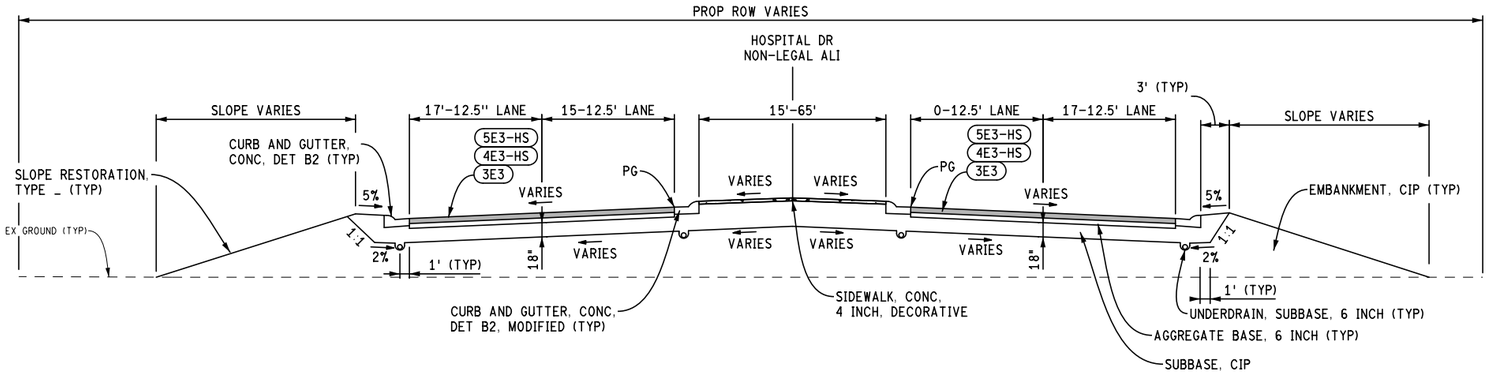
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DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

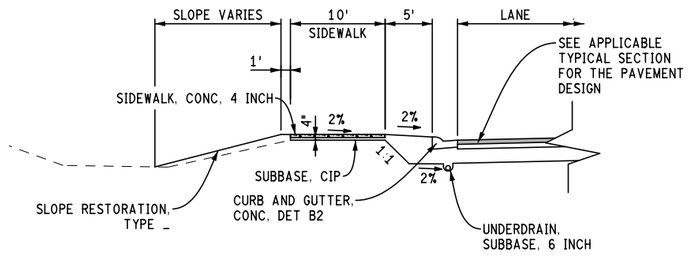
PROPOSED TYPICAL CROSS SECTIONS
US-41/M-28

DRAWING: US41 PRTYP 003
SHEET: SECT 1 16



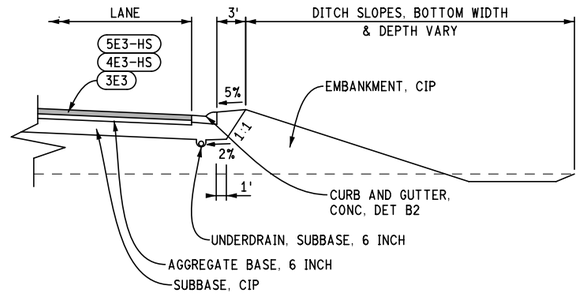
PROPOSED ISLAND SECTION

SECTION APPLIES TO:
HOSPITAL DR STA 10+92.50 TO STA 12+72.15



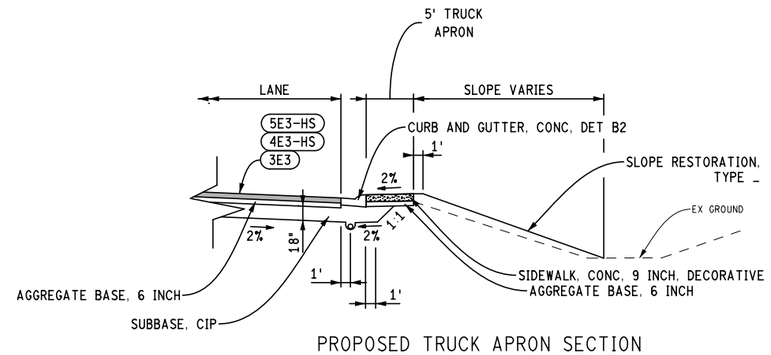
PROPOSED SIDEWALK SECTION

SECTION APPLIES TO:
HOSPITAL DR STA 12+41.53 TO STA 12+70.17 LT
HOSPITAL DR STA 12+41.58 TO STA 12+70.17 RT



PROPOSED DITCH DETAIL SECTION

SECTION APPLIES TO:
HOSPITAL DR STA 11+29.27 TO STA 11+53.35 RT



PROPOSED TRUCK APRON SECTION

SECTION APPLIES TO:
HOSPITAL DR STA 10+92.50 TO STA 11+68.37 LT
HOSPITAL DR STA 10+92.50 TO STA 11+25.31 RT
S 7TH ST STA 25+23.09 TO STA 25+79.69 RT

NOTE:

OUTLET UNDERDRAINS TO PROPOSED DRAINAGE STRUCTURES. IT MAY BE NECESSARY TO USE SLOPES LESS THAN 4% TO OUTLET THE UNDERDRAINS AS DIRECTED BY THE ENGINEER.

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
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PH. (906)228-0440

0 VERT. (FT) 16
0 HORZ. (FT) 16

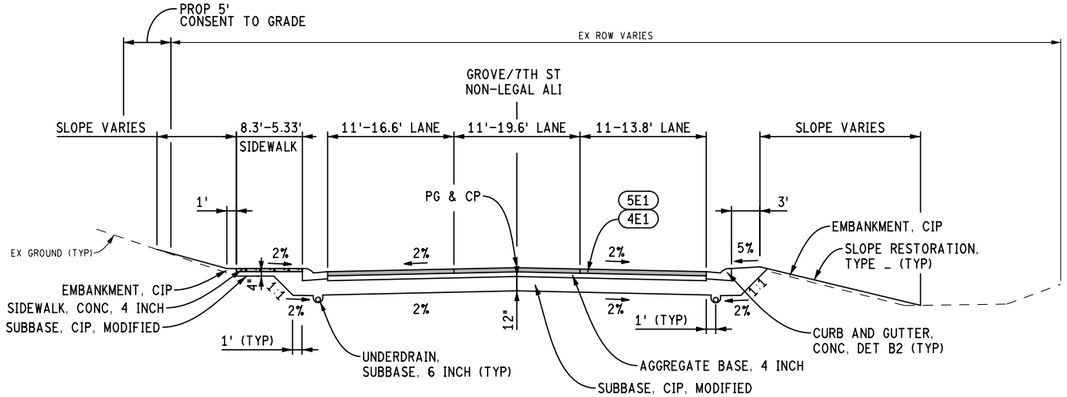
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CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

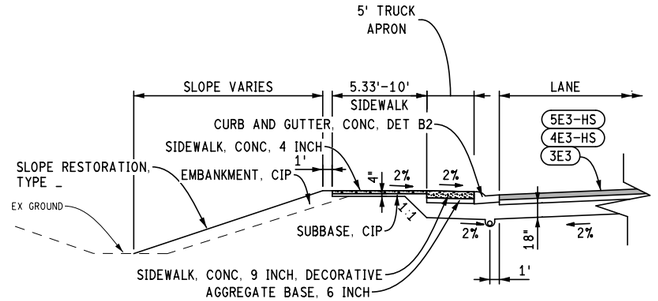
PROPOSED TYPICAL CROSS SECTIONS
HOSPITAL DR, GROVE ST AND S 7TH ST

DRAWING: US41 PRTYP 004
SHEET: SECT 1 17



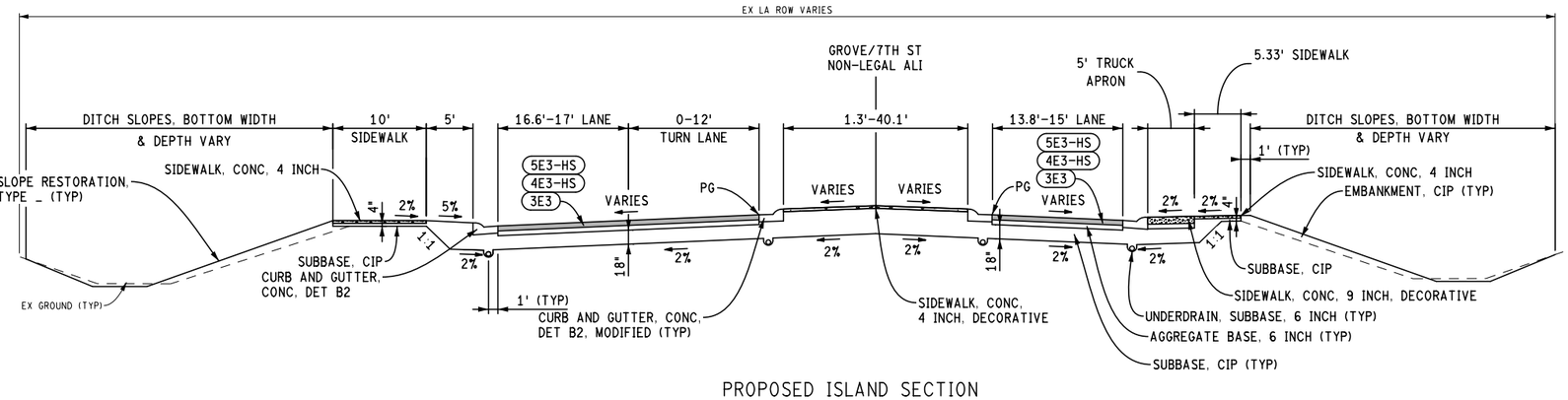
PROPOSED NORMAL SECTION

SECTION APPLIES TO:
GROVE ST STA 21+00 TO STA 22+67.14



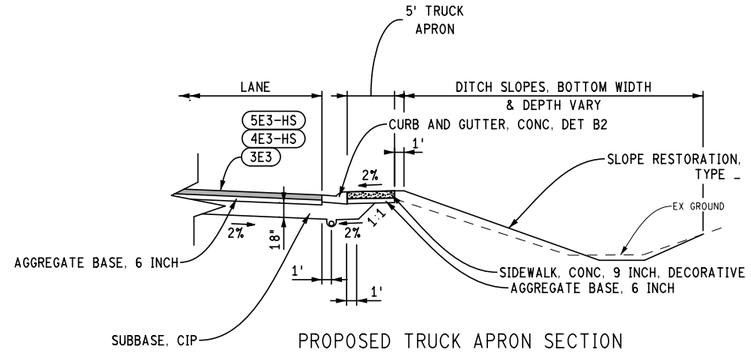
PROPOSED TRUCK APRON SECTION

SECTION APPLIES TO:
GROVE ST STA 23+05.68 TO STA 23+32.14 LT
S 7TH ST STA 25+28.09 TO STA 25+79.19 LT



PROPOSED ISLAND SECTION

SECTION APPLIES TO:
GROVE ST STA 22+67.14 TO STA 23+38.09



PROPOSED TRUCK APRON SECTION

SECTION APPLIES TO:
GROVE ST STA 23+14.75 TO STA 23+38.09 RT

NOTE:

OUTLET UNDERDRAINS TO PROPOSED DRAINAGE STRUCTURES. IT MAY BE NECESSARY TO USE SLOPES LESS THAN 4% TO OUTLET THE UNDERDRAINS AS DIRECTED BY THE ENGINEER.

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
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PH. (906)228-0440

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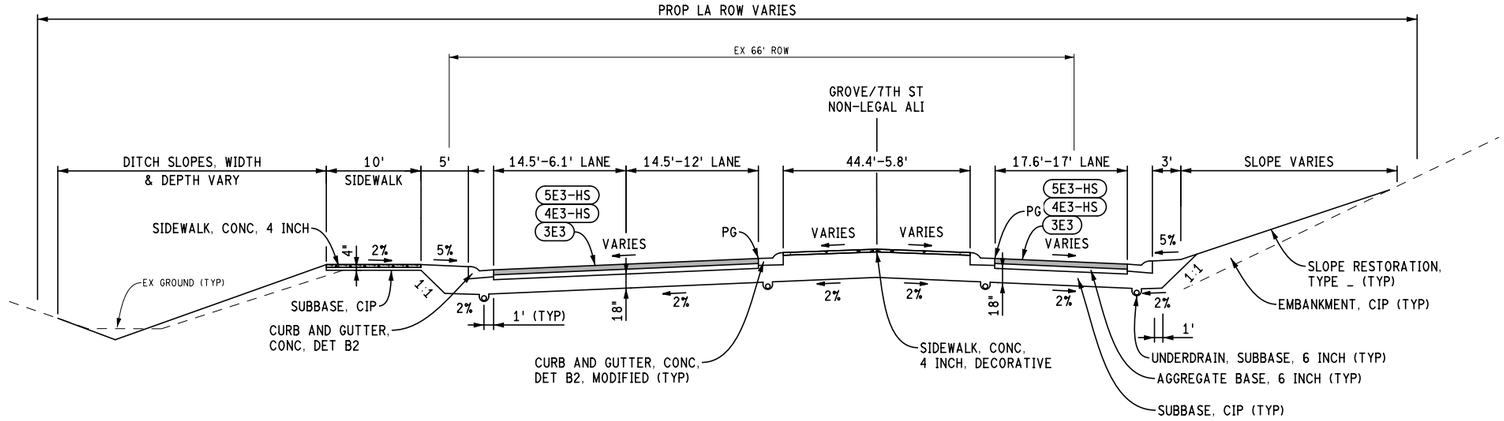
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DATE: 2/10/2017
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TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

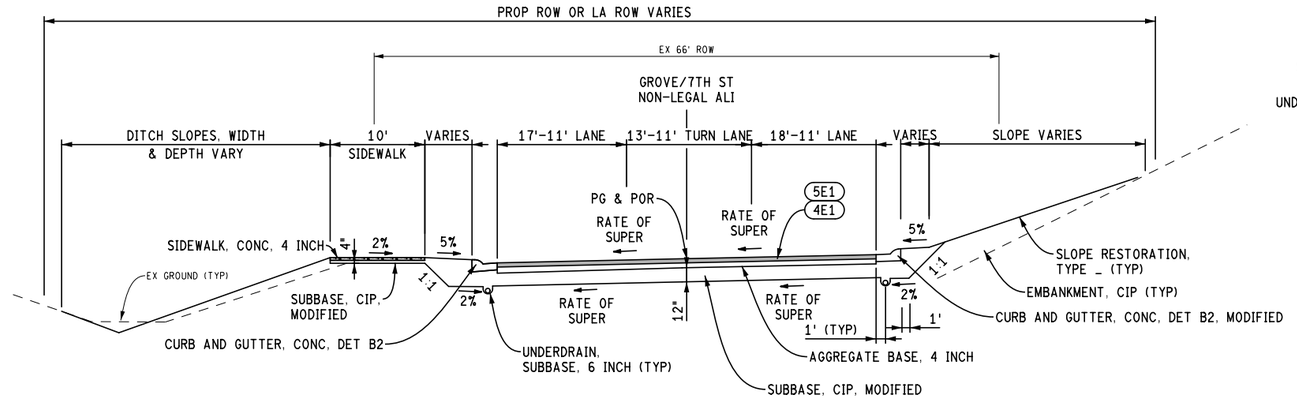
PROPOSED TYPICAL CROSS SECTIONS
GROVE ST AND S 7TH ST

DRAWING: US41 PRTYP 005
SHEET: SECT 1 18



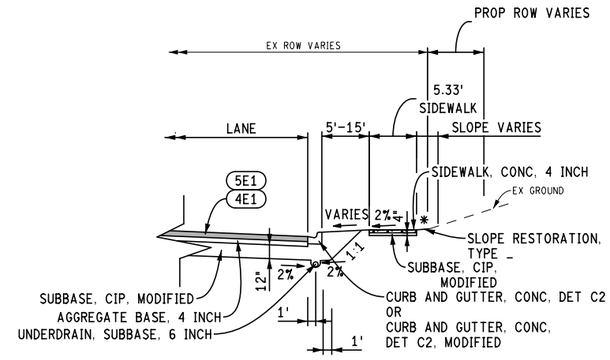
PROPOSED ISLAND SECTION

SECTION APPLIES TO:
S 7TH ST STA 25+23.09 TO STA 26+62.27



PROPOSED NORMAL SECTION

SECTION APPLIES TO:
S 7TH ST STA 26+62.27 TO STA 29+85



PROPOSED SIDEWALK SECTION

SECTION APPLIES TO:
S 7TH ST STA 28+21.11 TO STA 29+85 LT
S 7TH ST STA 28+32.26 TO STA 29+85 RT
FISHER ST STA 52+04.97 TO STA 53+40 RT

*MATCH EXISTING GROUND ELEVATION
OR AS DETAILED IN THE PLANS

NOTE:

OUTLET UNDERDRAINS TO PROPOSED DRAINAGE STRUCTURES. IT MAY BE NECESSARY TO USE SLOPES LESS THAN 4% TO OUTLET THE UNDERDRAINS AS DIRECTED BY THE ENGINEER.

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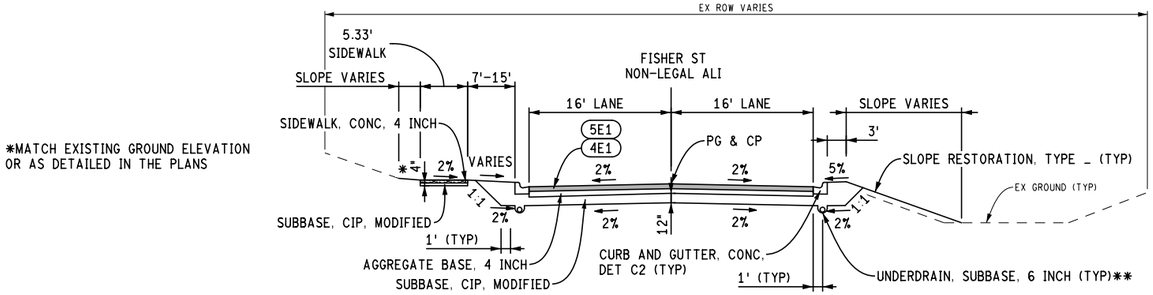
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DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

PROPOSED TYPICAL CROSS SECTIONS
GROVE ST, S 7TH ST, ANDERSON ST
AND FISHER ST

DRAWING	SHEET
US41 PRTYP 006	SECT 1 19

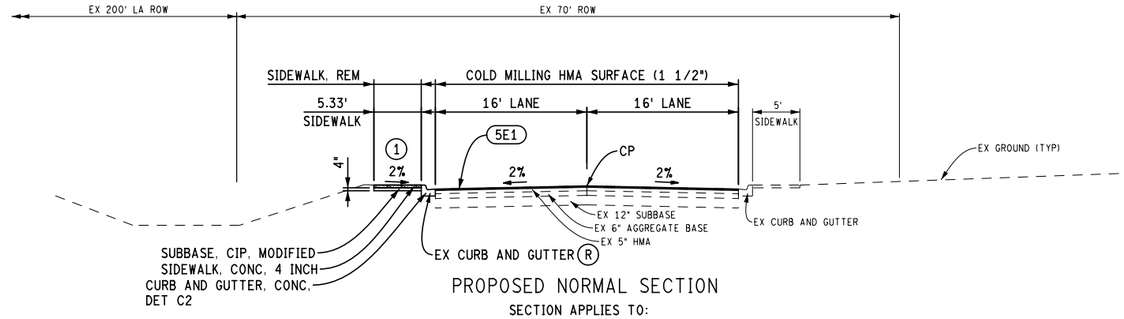


*MATCH EXISTING GROUND ELEVATION OR AS DETAILED IN THE PLANS

**DO NOT CONSTRUCT UNDERDRAINS FROM STA 50+40 TO STA 51+50.

PROPOSED NORMAL SECTION

SECTION APPLIES TO:
FISHER ST STA 50+40 TO STA 53+40

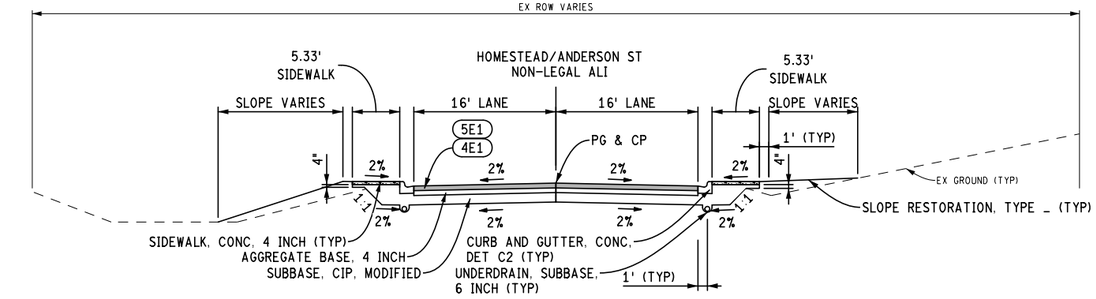


PROPOSED NORMAL SECTION

SECTION APPLIES TO:
HOMESTEAD ST
HOMESTEAD ST STA 36+66.50 TO STA 40+20

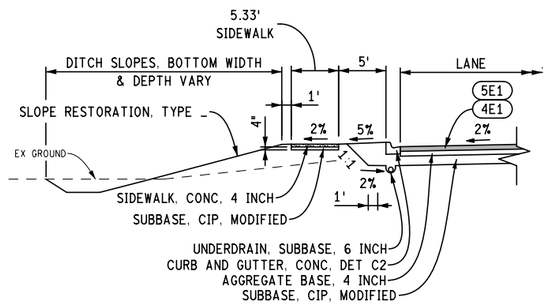
(1) SEE CONSTRUCTION AND REMOVAL PLANS FOR SIDEWALK REMOVAL AND CONSTRUCTION LIMITS.

(2) SEE CONSTRUCTION AND REMOVAL PLANS FOR CURB AND GUTTER REMOVAL AND CONSTRUCTION LIMITS.



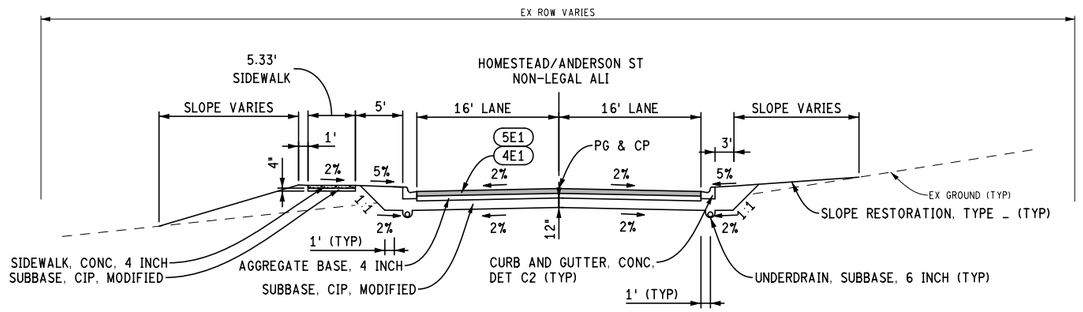
PROPOSED NORMAL SECTION

SECTION APPLIES TO:
HOMESTEAD ST STA 40+20 TO STA 41+65



PROPOSED DETAIL SECTION

SECTION APPLIES TO:
ANDERSON ST STA 42+25 TO STA 43+10



PROPOSED NORMAL SECTION

SECTION APPLIES TO:
ANDERSON ST STA 41+65 TO STA 43+10

NOTE:

OUTLET UNDERDRAINS TO PROPOSED DRAINAGE STRUCTURES. IT MAY BE NECESSARY TO USE SLOPES LESS THAN 4% TO OUTLET THE UNDERDRAINS AS DIRECTED BY THE ENGINEER.

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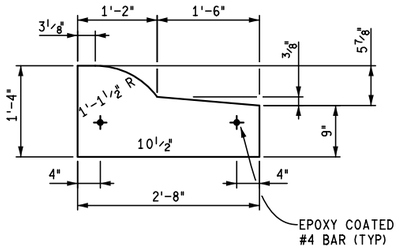
FILE: 6553_US41_PR-TYP007.dgn

DATE: 2/10/2017
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CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

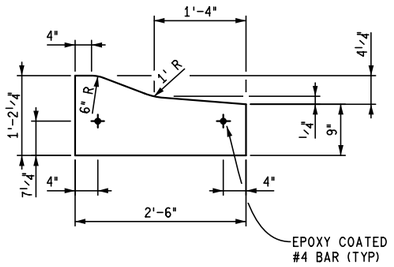
PROPOSED TYPICAL CROSS SECTIONS
FISHER ST, HOMESTEAD ST & ANDERSON ST

DRAWING: US41 PRTYP 007
SHEET: SECT 1 20



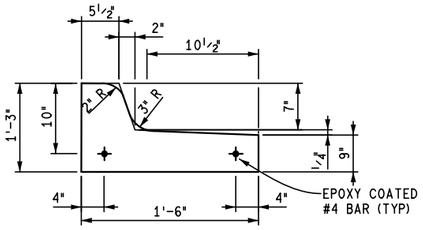
CURB AND GUTTER, CONC, DET B2, MODIFIED

NOT TO SCALE



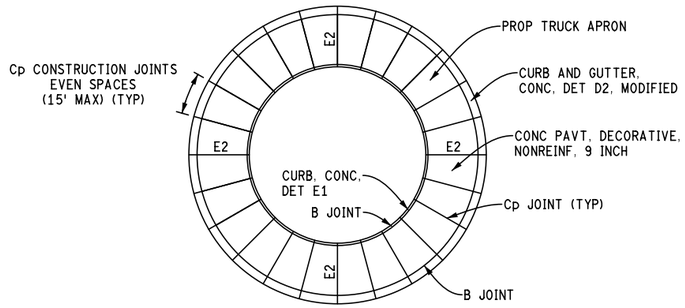
CURB AND GUTTER, CONC, DET D2, MODIFIED

NOT TO SCALE



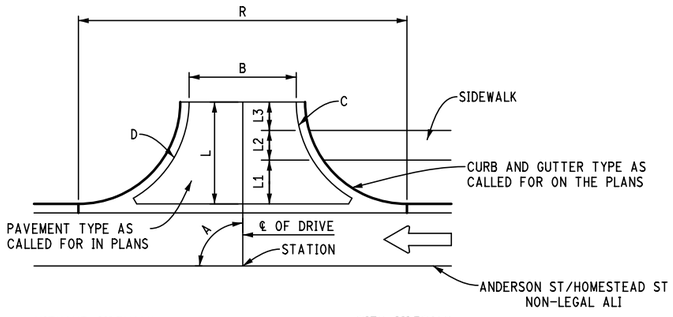
CURB AND GUTTER, CONC, DET C2, MODIFIED

NOT TO SCALE



TRUCK APRON

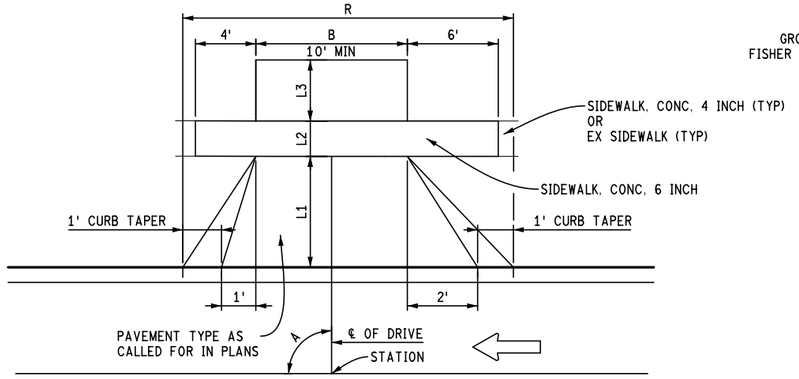
NOT TO SCALE



TYPE M

DRIVEWAY DETAIL

FOR DIMENSIONS, SEE DRIVEWAY TABLES ON
CONSTRUCTION SHEETS

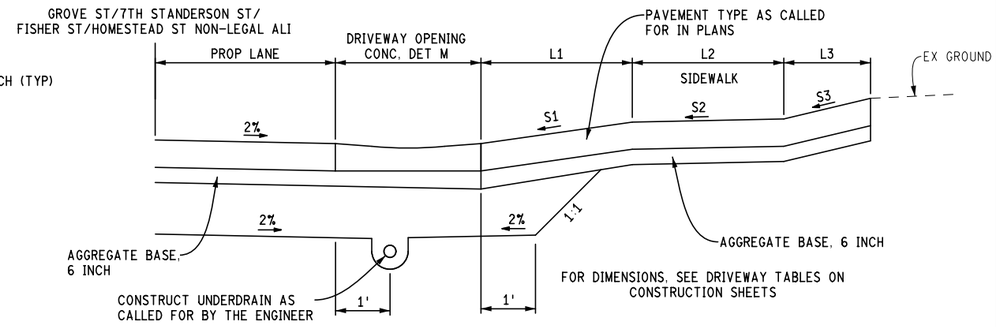


S 7TH ST/GROVE ST/
FISHER ST NON-LEGAL ALI

TYPE L

DRIVEWAY DETAIL

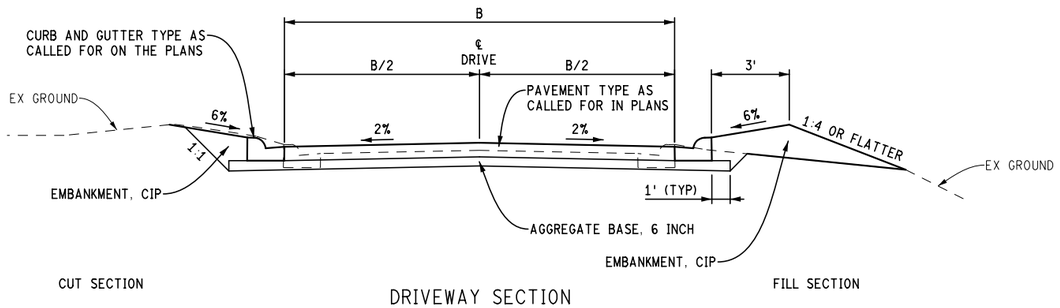
FOR DIMENSIONS, SEE DRIVEWAY TABLES ON
CONSTRUCTION SHEETS



DRIVEWAY SLOPE DIAGRAM

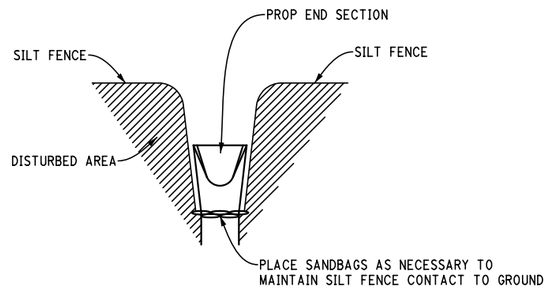
FOR DIMENSIONS, SEE CONSTRUCTION SHEETS

THE (+) OR (−) SLOPES SHOWN IN THE DRIVEWAY TABLE INDICATE UPWARD (+) OR DOWNWARD (−). SLOPES ARE FROM THE OUTSIDE EDGE OF THE DRIVEWAY OPENING, CONC, DET M OR DET L.



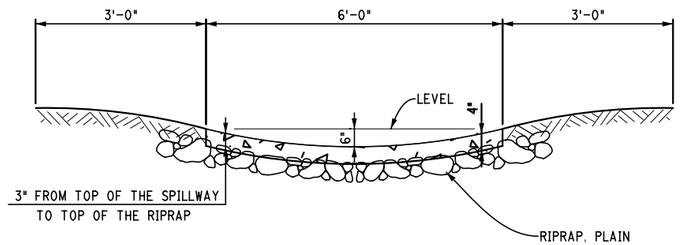
DRIVEWAY SECTION

NOT TO SCALE
B = DRIVEWAY WIDTH
FOR DIMENSIONS, SEE DRIVEWAY TABLES ON
CONSTRUCTION SHEETS



SILT FENCE INSTALLATION DETAIL - CULVERTS

NOT TO SCALE



SPILLWAY CONCRETE/RIPRAP DETAIL

NOT TO SCALE

NOTE: SEE STANDARD PLAN R-35 SERIES FOR WIRE MESH AND GEOTEXTILE LINER REQUIREMENTS

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
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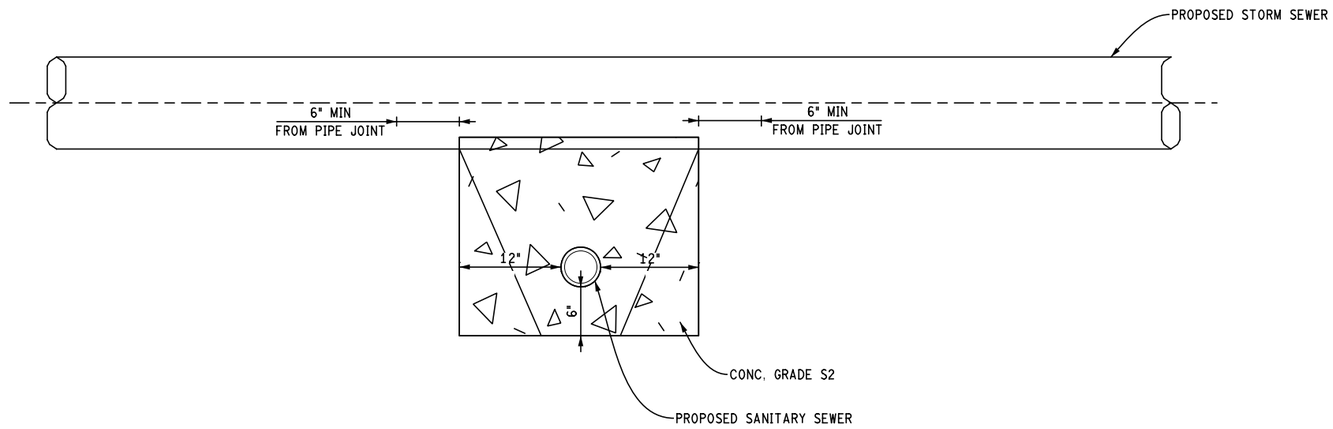
DLZ

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PH. (906)228-0440

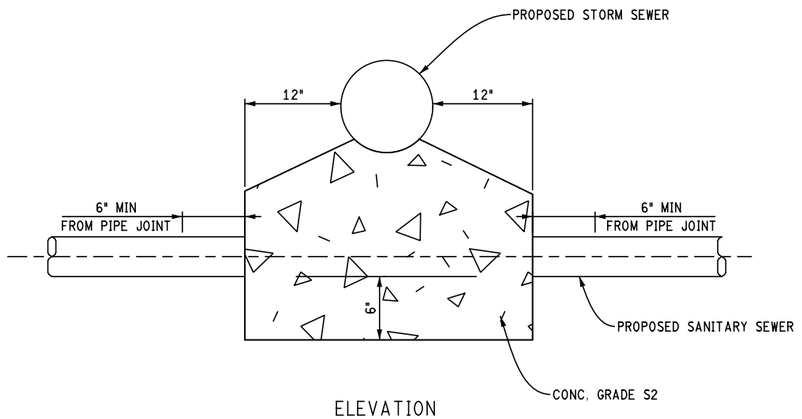
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	DATE: 2/10/2017	CS: 52042	MISCELLANEOUS DETAILS
	DESIGN UNIT: FILPUS	JN: MQ17-025	
FILE: 6553 US41 MSCDET001.dgn	TSC: ISHPEMING	MDOT PERMIT 043179-16	

DRAWING	SHEET
US41 MSCDET 001	SECT 1 21



SECTION



ELEVATION

PIPE SADDLE DETAIL

NOT TO SCALE

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
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CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

NO SCALE

	DATE: 2/10/2017	CS: 52042	MISCELLANEOUS DETAILS	DRAWING	SHEET
	DESIGN UNIT: FILPUS	JN: MQ17-025		US41 MSCDET 002	SECT 1 22
FILE: 6553 US41 MSCDET002.dgn	TSC: ISHPEMING	MDOT PERMIT 043179-16			

NOTES

COORDINATE SYSTEM: GROUND COORDINATE DEVELOPED BY THE CITY OF MARQUETTE.

ZONE:

ELLIPSOID:

HORIZONTAL DATUM:

VERTICAL DATUM: NAVD88

GEOID:

UNITS: INTERNATIONAL FEET

GRID / GROUND DISTANCE CONVERSION

GROUND BASED SYSTEM NO CONVERSION NECESSARY.

PLAN ELEVATION

THE VERTICAL CONTROL FOR THIS PROJECT WAS DETERMINED BY USING BM R329. ALL INTERMEDIATE CONTROL POINTS HAVE ELEVATIONS AND SHOULD BE USED AS THE BASIS OF ELEVATION FOR THIS PROJECT.

PRIMARY CONTROL

NONE

INTERMEDIATE CONTROL

PC1
DESCRIPTION: 39.4" FENO SPIKE WITH 2" ALUMINUM CAP. POINT WAS SET NORTH OF THE DETENTION POND AND SOUTH OF W. BARAGA AVE.
COORDINATES: N=641748.985 E=26144300.740 ELEV= 702.274
ACTION: PRESERVE WITH L.C.R.C. IN A MONUMENT BOX.
WITNESSES:

S20°W	173.01'	NAIL IN POWER POLE
N74°W	290.57'	NAIL IN POWER POLE
N47°W	67.48'	NAIL IN POWER POLE
N85°E	83.74'	7" BASSWOOD

PC2
DESCRIPTION: 39.4" FENO SPIKE WITH 2" ALUMINUM CAP. POINT WAS SET EAST OF GROVE STREET.
COORDINATES: N=640646.572 E=26144330..376 ELEV=699.375
ACTION: PRESERVE WITH L.C.R.C. IN A MONUMENT BOX.
WITNESSES:

N02°W	47.65'	NAIL IN POWER POLE
N43°E	113.47'	NAIL IN POWER POLE
S44°E	104.03'	NAIL IN POWER POLE
S89°W	182.38'	NAIL IN POWER POLE

PC3
DESCRIPTION: 39.4" FENO SPIKE WITH 2" ALUMINUM CAP. POINT WAS SET IN THE SOUTHEAST VISION TRIANGLE AT THE US-41 AND S. McCLELLAN AVE.
COORDINATES: N=642013.134 E=26141148.265 ELEV=783.857
ACTION: INFORMATION ONLY
WITNESSES:

S44°W	189.05'	NAIL IN POWER POLE
N68°W	137.08'	MDOT REF. TAG IN POWER POLE
N31°W	30.20'	MDOT REF. TAG IN POWER POLE
N60°E	189.34'	NAIL IN SOUTH POST OF DOUBLE POST SIGN
S10°E	52.90'	CENTER OF MANHOLE COVER

BENCHMARKS

BM R329 ELEV= 776.16
DESCRIPTION: THE MARK IS A ROD IN A 5 INCH DIAMETER ACCESS BOX WITH COVER. THE ACCESS BOX IS ON A PVC PIPE THAT IS INCASED WITH CONCRETE. MARK IS 8 FEET NORTH OF NORTH EDGE OF BITUMINOUS PAVED PARKING LOT OF SUBWAY. 2.1 FEET WEST OF BACK OF CURB OF RUBLEIN STREET. 2.4 FEET NORTH OF FACE OF POWER POLE AND 2.1 FEET NORTH OF CARSONITE WITNESS.

GOVERNMENT CORNERS

CORNER: H-07 T48N-R25W NORTH QUARTER CORNER 22 AND 15
DESCRIPTION: FD. MATQUETTE COUNTY REMON. MONUMENT PER L.C.R.C. LIBER 1, PAGE 281
COORDINATES: N= 644315.117 E= 26141906.680
ACTION: INFORMATION ONLY
WITNESSES:

S.W. CORNER APT. BLDG.	N29°E	38.28'
POWER POLE	S30°E	56.88'
POWER POLE	N87°E	64.11'
POWER POLE	S55°W	80.03'
11" W. BIRCH	S45°W	104.23'
7" MAPLE	N10°W	45.03'
9" MAPLE	N04°W	67.11'

NOTE: THE ABOVE WITNESSES ARE FROM L.C.R.C. LIBER 1, PAGE 281. BY GERALD CARLSON IN 1995. ADDITIONAL INFORMATION CAN BE FOUND IN L.C.R.C. LIBER 5, PAGE 210 BY ALAN PIERCE IN 1989.

CORNER: I-09 T48N-R25W SOUTHEAST CORNER 22, 23, 26 AND 27
DESCRIPTION: FD. MATQUETTE COUNTY REMON. MONUMENT PER L.C.R.C. LIBER 1, PAGE 126
COORDINATES: N= 638968.883 E= 26144506.310
ACTION: PROTECT
WITNESSES:

26" MAPLE	N45°W	46.14'
20" POPLAR	S84°W	19.72'
9" MAPLE	S09°W	33.80'
EASTERN MOST GATE POST	S78°E	14.75'
STEEL SIGN POST	S67°E	12.2'

NOTE: THE ABOVE WITNESSES ARE FROM L.C.R.C. LIBER 1, PAGE 126. BY GERALD CARLSON IN 1994. ADDITIONAL INFORMATION CAN BE FOUND IN LIBER 4, PAGE 370 BY CHARLS CLARK IN 1987.

CORNER: I-08 T48N-R25W EAST QUARTER CORNER 22 AND 23
DESCRIPTION: FD. MATQUETTE COUNTY REMON. MONUMENT PER L.C.R.C. LIBER 1, PAGE 127
COORDINATES: N= 641606.793 E= 26144490.230
ACTION: PRESERVE WITH RECORDED L.C.R.C.
WITNESSES:

POWER POLE	S87°W	241.21'
POWER POLE	N53°W	332.02'
NORTHMOST SOUTHWEST COR. FOUNDATION	N10°E	107.68'
STEEL SIGN POST	N59°E	2.64'

NOTE: THE ABOVE WITNESSES ARE FROM L.C.R.C. LIBER 1, PAGE 127. BY GERALD CARLSON IN 1994. ADDITIONAL INFORMATION CAN BE FOUND IN LIBER 5, PAGE 104 BY CHARLES CLARK IN 1987.

PROPERTY CORNERS

NONE

ALIGNMENT(S) POINTS

ALIGNMENT POINT 2 (PC) @ STA. 1233+50.87
ALIGNMENT REFERENCED: LEGAL ALIGNMENT
DESCRIPTION: 24" IRON BAR WITH UPEA CAP PS #43053
COORDINATES: N= 641877.39 E= 26142915.88
ACTION: PRESERVE WITH L.C.R.C. IN A MONUMENT BOX.
WITNESSES:
NO WITNESSES AVAILABLE

ALIGNMENT POINT 3 (PI) @ STA. 1240+73.65
ALIGNMENT REFERENCED: LEGAL ALIGNMENT
DESCRIPTION: SMALL BOAT SPIKE
COORDINATES: N= 641771.87 E= 26143630.92
ACTION: INFORMATION ONLY
WITNESSES:

S23°W	6.03'	22" MAPLE
N31°W	16.27'	6" POPPLE
N52°E	38.78'	9" POPPLE
S25°E	25.54'	6" CADAR

ALIGNMENT POINT 4 (PT) @ STA. 1247+32.81 BACK
STA. 1247+53.21 AHEAD
ALIGNMENT REFERENCED: LEGAL ALIGNMENT
DESCRIPTION: 24" IRON BAR WITH UPEA CAP PS #43053
COORDINATES: N= 641219.38 E= 26144096.94
ACTION: PRESERVE WITH L.C.R.C. IN A MONUMENT BOX.
WITNESSES:

N59°W	215.72'	NAIL IN WEST POST OF DOUBLE POST SIGN
N86°W	151.97'	NAIL IN LIGHT POLE
S42°W	168.30'	16" POPPLE
S85°E	120.80'	11" ELM

ALIGNMENT POINT 5 (PC) @ STA. 1253+95.57
ALIGNMENT REFERENCED: LEGAL ALIGNMENT
DESCRIPTION: PK NAIL
COORDINATES: N= 640728.36 E= 26144511.10
ACTION: PRESERVE WITH L.C.R.C. IN A MONUMEMENT BOX.
WITNESSES:

S81°W	76.36'	NAIL IN SIGN POST
N28°E	87.23	NAIL IN POWER POLE
N71°E	75.83'	NAIL IN SIGN POST
S45°E	471.52	NAIL IN GUARD RAIL POST

ALIGNMENT POINT 6 (PI) @ STA. 1260+31.98
ALIGNMENT REFERENCED: LEGAL ALIGNMENT
DESCRIPTION: 24" IRON BAR WITH UPEA CAP PS #43053
COORDINATES: N= 640241.89 E= 26144921.43
ACTION: INFORMATION ONLY
WITNESSES:

S37°W	13.65'	10" MAPLE
N33°W	7.25'	11" CEDAR
N10°E	19.40'	6" CEDAR
S50°E	3.10'	12" CEDAR

ALIGNMENT POINT 7 (PT) @ STA. 1265+93.49
ALIGNMENT REFERENCED: LEGAL ALIGNMENT
DESCRIPTION: 24" IRON BAR WITH UPEA CAP PS #43053
COORDINATES: N= 640219.81 E= 26145557.45
ACTION: INFORMATION ONLY
WITNESSES:

S69°E	160.33'	NAIL IN SIGN POST
N79°W	122.88'	NAIL IN GUARD RAIL POST
N64°W	230.77'	NAIL IN GUARD RAIL POST
S89°E	139.69'	NAIL IN GUARD RAIL POST

MONUMENT PRESERVATION SUMMARY

MONUMENT PRESERVATION:		
NEED RECORDED L.C.R.C	0	EACH
NEED L.C.R.C.	6	EACH
TOTAL	6	
MONUMENT PRESERVATION VERTICAL:	0	EACH
MONUMENT BOX:	5	EACH
PROTECT CORNERS:	4	EACH
MONUMENT BOX, ADJUST	0	EACH
MONUMENT BOX, REMOVE	0	EACH
MONUMENT BOX, UNCOVER:	0	EACH

THERE ARE FOUR PROPERTY CORNERS SHOWN ON THE PLANS NEAR THE 7TH/FISHER INTERSECTION. THREE OF THESE CORNERS ARE TO BE PROTECTED AND ONE IS TO BE PRESERVED AS INDICATED IN THE PLANS. THESE FOUR PROPERTY CORNERS HAVE BEEN ADDED TO THE ABOVE MONUMENT PRESERVATION SUMMARY.

NOTE:

PAYMENT FOR "MONUMENT BOX, UNCOVER' SHALL BE CONSIDERED INCLUDED IN OTHER CONTRACT ITEMS.

PAYMENT FOR "MONUMENT BOX, REMOVE" SHALL BE CONSIDERED INCLUDED IN THE ITEM BID FOR "MONUMENT BOX"

THE MICHIGAN DEPARTMENT OF TRANSPORTATION **2012 STANDARD SPECIFICATIONS FOR CONSTRUCTION, SECTION 821 "PRESERVATION OF LAND MONUMENTS, CONTROL POINTS, AND PROPERTY CORNERS"** SHALL BE USED ON THIS PROJECT.

NOTE: THE COORDINATES REPORTED IN THIS PLAN SET ARE IN A GROUND BASED COORDINATE SYSTEM. INTERMEDIATE CONTROL POINTS HAVE BEEN SET AS CONTROL FOR THIS PROJECT.

COORDINATES ARE NOT IN A STATE PLANE SYSTEM

ALIGNMENT KEY

US-41 LEGAL ALI: US-41/M-28 LEGAL ALIGNMENT FOR THE MARQUETTE HOSPITAL TRANSPORTATION IMPROVEMENTS PROJECT AS SURVEYED IN 2016
NB US-41 NON-LEGAL ALI: US-41 NORTHBOUND CONSTRUCTION ALIGNMENT AS PROPOSED FOR THE MARQUETTE HOSPITAL TRANSPORTATION IMPROVEMENTS PROJECT
SB US-41 NON-LEGAL ALI: US-41 SOUTHBOUND CONSTRUCTION ALIGNMENT AS PROPOSED FOR THE MARQUETTE HOSPITAL TRANSPORTATION IMPROVEMENTS PROJECT
GROVE/7TH ST NON-LEGAL ALI: GROVE/7TH ST CONSTRUCTION ALIGNMENT AS PROPOSED FOR THE MARQUETTE HOSPITAL TRANSPORTATION IMPROVEMENTS PROJECT
HOSPITAL DR NON-LEGAL ALI: HOSPITAL DR CONSTRUCTION ALIGNMENT AS PROPOSED FOR THE MARQUETTE HOSPITAL TRANSPORTATION IMPROVEMENTS PROJECT
HOMESTEAD/ANDERSON ST NON-LEGAL ALI: HOMESTEAD/ANDERSON ST CONSTRUCTION ALIGNMENT AS PROPOSED FOR THE MARQUETTE HOSPITAL TRANSPORTATION IMPROVEMENTS PROJECT

SECTION 22
T48N, R25W
CITY OF MARQUETTE

SB US-41 NON-LEGAL ALI CURVE 1
Δ = 13° 51' 42" (RT)
D = 3° 10' 59"
T = 218.81'
L = 435.48'
R = 1,800.00'
E = 13.25'
PC = 1234+24.84 N = 641,843.44 E = 26,142,985.64
PI = 1236+43.64 N = 641,811.19 E = 26,143,202.06
PT = 1238+60.31 N = 641,728.03 E = 26,143,404.44
PROP SUPER = 4.4%
Δ% = 0.42

NB US-41 NON-LEGAL ALI CURVE 1
Δ = 15° 51' 02" (RT)
D = 2° 57' 51"
T = 269.08'
L = 534.71'
R = 1,932.86'
E = 18.64'
PC = 1233+53.82 N = 641,899.41 E = 26,142,922.11
PI = 1236+22.89 N = 641,859.75 E = 26,143,188.25
PT = 1238+88.53 N = 641,748.91 E = 26,143,433.44
PROP SUPER = 4.1%
Δ% = 0.41

US-41 LEGAL ALI CURVE 1
Δ = 41° 27' 30" (RT)
D = 3° 00' 00"
T = 722.78'
L = 1,381.94'
R = 1,909.85'
E = 132.19'
PC = 1233+50.87 N = 641,877.39 E = 26,142,915.88
PI = 1240+73.65 N = 641,771.87 E = 26,143,630.92
PT = 1247+32.81 N = 641,219.38 E = 26,144,096.94

CONTROL SECTION 52042
JOB NUMBER MQ17-025
POB STA 1230+74.31 NB US-41 NON-LEGAL ALI
POB STA 1230+74.24 SB US-41 NON-LEGAL ALI

(NB US-41)
CS MP: 5.311
PR #: 1562009
PR MP: 24.424
(SB US-41)
CS MP: 5.264
PR #: 3520507
PR MP: 1.038

N

BARAGA AVE

SB US-41/ NB US-41/
EB M-28 WB M-28

EX 66' ROW

1/4 CORNER SECTION 15 & 22
N = 644,315.12, E = 26,141,906.68

15 15 22 22

S 0° 09' 24" E 2289.73'
N-S 1/4 SECTION LINE

EX 100' LA ROW

NB US-41
NON-LEGAL ALI

PC=1233+53.82

US-41 LEGAL ALI

PI=1236+22.89

PT=1238+88.53

PI=1236+43.64

1230 1231 1232 1233 1234 1235 1236 1237 1238 1239

S 81° 31' 26" E

S 81° 36' 19" E

S 65° 40' 24" E

S 67° 39' 44" E

1

PT=1238+60.31

PC=1234+24.84

SB US-41
NON-LEGAL ALI

PC=1233+50.87

1223

1223+37.07

S 0° 09' 24" E 1/4 SEC LINE

2650.80'

361.07'

1/4 CORNER SECTION 22
N = 641,664.32, E = 26,141,913.93

22 22 22 22

SEC 1/4

THE HOMESTEAD ADDITION

E-W 1/4 SECTION LINE
SECTION 22

PLAT-NE

#43 #44 #45 #46 #47 #48 #49 #50

EX 40' ROW

EX 50' ROW

STATION RELATIONS

(1) POT STA 1239+94.34 SB US-41 NON-LEGAL ALI =
POT STA 1239+98.41 US-41 LEGAL ALI

SECTION 22
T48N, R25W
CITY OF MARQUETTE

WILSON ST

WARD ST

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 80

FILE: 6553_Align001.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

ALIGNMENT/ROW SHEET
US-41/M-28 STA 1230+74.31 (POB) TO 1240+00

DRAWING: US41 ALI 001
SHEET: SECT 1 24

STATION RELATIONS

1. POT STA 1241+95.00 SB US-41 NON-LEGAL ALI = POT STA 1241+95.13 US-41 LEGAL ALI
2. POT STA 1243+15.39 NB US-41 NON-LEGAL ALI = POT STA 10+63.50 HOSPITAL DR NON-LEGAL ALI
3. POT STA 1244+53.16 NB US-41 NON-LEGAL ALI = POT STA 1244+10.69 US-41 LEGAL ALI
4. POT STA 1245+72.89 NB US-41 NON-LEGAL ALI = POT STA 1245+28.72 US-41 LEGAL ALI

US-41 LEGAL ALI CURVE 1
Δ = 41° 27' 30" (RT)
D = 3° 00' 00"
T = 722.78'
L = 1,381.94'
R = 1,909.85'
E = 132.19'
PC = 1233+50.87 N = 641,877.39 E = 26,142,915.88
PI = 1240+73.65 N = 641,771.87 E = 26,143,630.92
PT = 1247+32.81 N = 641,219.38 E = 26,144,096.94

HOSPITAL DR NON-LEGAL ALI CURVE 1
Δ = 27° 42' 55" (LT)
D = 28° 38' 52"
T = 49.34'
L = 96.74'
R = 200.00'
E = 6.00'
PC = 10+96.37 N = 641,599.67 E = 26,143,840.24
PI = 11+45.71 N = 641,640.72 E = 26,143,867.61
PT = 11+93.12 N = 641,689.79 E = 26,143,872.75
PROP SUPER = NC

HOSPITAL DR NON-LEGAL ALI CURVE 2
Δ = 17° 31' 57" (RT)
D = 28° 38' 52"
T = 30.84'
L = 61.20'
R = 200.00'
E = 2.36'
PC = 12+11.38 N = 641,707.95 E = 26,143,874.65
PI = 12+42.22 N = 641,738.62 E = 26,143,877.87
PT = 12+72.58 N = 641,766.90 E = 26,143,890.17
PROP SUPER = NC

HOSPITAL DR NON-LEGAL ALI NO CURVE
Δ = 12° 43' 27" (LT)
PI = 13+34.69 N = 641,823.85 E = 26,143,914.95

HOSPITAL DR NON-LEGAL ALI CURVE 3
Δ = 3° 44' 47" (RT)
D = 11° 27' 33"
T = 16.35'
L = 32.69'
R = 500.00'
E = 0.27'
PC = 13+99.52 N = 641,887.54 E = 26,143,927.09
PI = 14+15.87 N = 641,903.61 E = 26,143,930.15
PT = 14+32.21 N = 641,919.43 E = 26,143,934.25
PROP SUPER = NC

NB US-41 NON-LEGAL ALI CURVE 2
Δ = 58° 15' 13" (RT)
D = 90° 13' 46"
T = 35.38'
L = 64.56'
R = 63.50'
E = 9.19'
PC = 1243+05.00 N = 641,577.35 E = 26,143,812.93
PI = 1243+40.39 N = 641,562.77 E = 26,143,845.17
PT = 1243+69.56 N = 641,527.69 E = 26,143,849.74
PROP SUPER = NC

NB US-41 NON-LEGAL ALI CURVE 3
Δ = 16° 02' 48" (LT)
D = 32° 00' 32"
T = 25.23'
L = 50.13'
R = 179.00'
E = 1.77'
PC = 1243+95.73 N = 641,501.74 E = 26,143,853.12
PI = 1244+20.96 N = 641,476.72 E = 26,143,856.38
PCC = 1244+45.87 N = 641,453.57 E = 26,143,866.42
PROP SUPER = NC

NB US-41 NON-LEGAL ALI CURVE 4
Δ = 34° 01' 47" (LT)
D = 44° 24' 55"
T = 39.48'
L = 76.62'
R = 129.00'
E = 5.90'
PCC = 1244+45.87 N = 641,453.57 E = 26,143,866.42
PI = 1244+85.34 N = 641,417.36 E = 26,143,882.14
PRC = 1245+22.48 N = 641,396.15 E = 26,143,915.44
PROP SUPER = NC

NB US-41 NON-LEGAL ALI CURVE 5
Δ = 17° 15' 42" (RT)
D = 5° 27' 24"
T = 159.38'
L = 316.34'
R = 1,050.00'
E = 12.03'
PRC = 1245+22.48 N = 641,396.15 E = 26,143,915.44
PI = 1246+81.86 N = 641,310.51 E = 26,144,049.85
PT = 1248+38.82 N = 641,188.84 E = 26,144,152.79
PROP SUPER = NC

SB US-41 NON-LEGAL ALI CURVE 2
Δ = 36° 38' 10" (RT)
D = 38° 27' 13"
T = 49.33'
L = 95.27'
R = 149.00'
E = 7.95'
PC = 1241+00.73 N = 641,636.65 E = 26,143,626.82
PI = 1241+50.06 N = 641,617.90 E = 26,143,672.45
PCC = 1241+96.01 N = 641,575.63 E = 26,143,697.88
PROP SUPER = NC

SB US-41 NON-LEGAL ALI CURVE 3
Δ = 14° 25' 03" (RT)
D = 32° 00' 32"
T = 22.64'
L = 45.04'
R = 179.00'
E = 1.43'
PCC = 1241+96.01 N = 641,575.63 E = 26,143,697.88
PI = 1242+18.65 N = 641,556.23 E = 26,143,709.55
PT = 1242+41.05 N = 641,534.53 E = 26,143,716.02
PROP SUPER = NC

SB US-41 NON-LEGAL ALI CURVE 4
Δ = 48° 38' 31" (LT)
D = 90° 13' 46"
T = 28.70'
L = 53.91'
R = 63.50'
E = 6.18'
PC = 1242+75.69 N = 641,501.34 E = 26,143,725.92
PI = 1243+04.39 N = 641,473.84 E = 26,143,734.12
PRC = 1243+29.60 N = 641,461.82 E = 26,143,760.19
PROP SUPER = NC

SB US-41 NON-LEGAL ALI CURVE 5
Δ = 25° 00' 58" (RT)
D = 6° 56' 42"
T = 183.02'
L = 360.21'
R = 825.00'
E = 20.06'
PRC = 1243+29.60 N = 641,461.82 E = 26,143,760.19
PI = 1245+12.62 N = 641,385.20 E = 26,143,926.39
PT = 1246+89.80 N = 641,245.48 E = 26,144,044.61
PROP SUPER = NC

SB US-41 NON-LEGAL ALI CURVE 6
Δ = 11° 06' 31" (LT)
D = 5° 27' 24"
T = 102.11'
L = 203.58'
R = 1,050.00'
E = 4.95'
PC = 1248+96.06 N = 641,088.02 E = 26,144,177.84
PI = 1249+98.17 N = 641,010.07 E = 26,144,243.79
PRC = 1250+99.64 N = 640,946.29 E = 26,144,323.53
PROP SUPER = NC

NOTE:
STATIONS AND OFFSETS FROM US-41 LEGAL ALI.

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 80

FILE: 6553_Align002.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

ALIGNMENT/ROW SHEETS
US-41/M-28 1240+00 TO STA 1250+00
HOSPITAL DR STA 10+00 TO STA 13+34.69

DRAWING: US41 ALI 002
SHEET: SECT 1 25

S 7TH ST

NB US-41 NON-LEGAL ALI CURVE 5
Δ = 1° 44' 07" (RT)
D = 1° 25' 57"
T = 60.58'
L = 121.15'
R = 4,000.00'
E = 0.46'
PC = 1249+45.06 N = 641,107.74 E = 26,144,221.41
PI = 1250+05.64 N = 641,061.49 E = 26,144,260.54
PRC = 1250+66.21 N = 641,014.08 E = 26,144,298.26
PROP SUPER = NC

NB US-41 NON-LEGAL ALI CURVE 6
Δ = 16° 40' 49" (LT)
D = 6° 56' 42"
T = 120.94'
L = 240.18'
R = 825.00'
E = 8.82'
PRC = 1250+66.21 N = 641,014.08 E = 26,144,298.26
PI = 1251+87.16 N = 640,919.42 E = 26,144,373.54
PRC = 1253+06.39 N = 640,850.36 E = 26,144,472.83
PROP SUPER = NC

NB US-41 NON-LEGAL ALI CURVE 7
Δ = 51° 58' 38" (RT)
D = 90° 13' 46"
T = 30.96'
L = 57.61'
R = 63.50'
E = 7.14'
PRC = 1253+06.39 N = 640,850.36 E = 26,144,472.83
PI = 1253+37.35 N = 640,832.69 E = 26,144,498.24
PT = 1253+64.00 N = 640,801.78 E = 26,144,499.97
PROP SUPER = NC

NB US-41 NON-LEGAL ALI CURVE 8
Δ = 13° 39' 10" (LT)
D = 32° 00' 32"
T = 21.43'
L = 42.65'
R = 179.00'
E = 1.28'
PC = 1253+96.77 N = 640,769.06 E = 26,144,501.80
PI = 1254+18.20 N = 640,747.66 E = 26,144,503.00
PCC = 1254+39.42 N = 640,727.15 E = 26,144,509.21
PROP SUPER = NC

NB US-41 NON-LEGAL ALI CURVE 9
Δ = 37° 47' 17" (LT)
D = 38° 27' 13"
T = 51.00'
L = 98.27'
R = 149.00'
E = 8.49'
PCC = 1254+39.42 N = 640,727.15 E = 26,144,509.21
PI = 1254+90.42 N = 640,678.35 E = 26,144,524.00
PT = 1255+37.69 N = 640,648.84 E = 26,144,565.59
PROP SUPER = NC

NB US-41 NON-LEGAL ALI CURVE 10
Δ = 12° 53' 15" (LT)
D = 4° 17' 54"
T = 150.55'
L = 299.83'
R = 1,333.00'
E = 8.47'
PC = 1258+40.21 N = 640,473.78 E = 26,144,812.32
PI = 1259+90.76 N = 640,386.66 E = 26,144,935.10
PT = 1261+40.04 N = 640,329.12 E = 26,145,074.22
PROP SUPER = 6.0%
Δ% = 0.45

SB US-41 NON-LEGAL ALI CURVE 10
Δ = 53° 59' 05" (LT)
D = 90° 13' 46"
T = 32.34'
L = 59.83'
R = 63.50'
E = 7.76'
PC = 1252+62.08 N = 640,798.83 E = 26,144,373.08
PI = 1252+94.42 N = 640,766.49 E = 26,144,372.77
PT = 1253+21.91 N = 640,747.23 E = 26,144,398.75
PROP SUPER = NC

SB US-41 NON-LEGAL ALI CURVE 11
Δ = 15° 03' 19" (LT)
D = 3° 46' 10"
T = 200.86'
L = 399.40'
R = 1,520.00'
E = 13.21'
PC = 1257+21.29 N = 640,509.35 E = 26,144,719.57
PI = 1259+22.15 N = 640,389.72 E = 26,144,880.91
PT = 1261+20.69 N = 640,316.10 E = 26,145,067.79
PROP SUPER = 5.3%
Δ% = 0.45

STATION RELATIONS
1. POT STA 24+42.57 GROVE ST/7TH ST NON-LEGAL ALI = POT STA 1252+95.28 US-41 LEGAL ALI
2. POT STA 1253+29.30 NB US-41 NON-LEGAL ALI = POT STA 24+94.09 GROVE ST/7TH ST NON-LEGAL ALI
3. POT STA 1253+00.13 SB US-41 NON-LEGAL ALI = POT STA 23+67.09 GROVE ST/7TH ST NON-LEGAL ALI
4. POT STA 1254+34.00 NB US-41 NON-LEGAL ALI = POT STA 1253+90.33 US-41 LEGAL ALI
5. POT STA 1256+18.56 NB US-41 NON-LEGAL ALI = POT STA 1255+70.22 US-41 LEGAL ALI

CONTROL SECTION 52042
JOB NUMBER MQ17-025
POE STA NB 1260+40.04 US-41 NON-LEGAL ALI
POE STA SB 1260+20.69 US-41 NON-LEGAL ALI

(NB US-41)
CS MP: 4.797
PR #: 1562009
PR MP: 23.910
(SB US-41)
CS MP: 4.757
PR #: 3520507
PR MP: 0.531

US-41 LEGAL ALI CURVE 2
Δ = 47° 51' 51" (LT)
D = 3° 59' 44"
T = 636.41'
L = 1,197.92'
R = 1,433.97'
E = 134.88'
PC = 1253+95.57 N = 640,728.36 E = 26,144,511.10
PI = 1260+31.98 N = 640,241.89 E = 26,144,921.43
PT = 1265+93.49 N = 640,219.81 E = 26,145,557.45

NOTE:
STATIONS AND OFFSETS FROM US-41 LEGAL ALI

SB US-41 NON-LEGAL ALI CURVE 7
Δ = 11° 06' 31" (LT)
D = 5° 27' 24"
T = 102.11'
L = 203.58'
R = 1,050.00'
E = 4.95'
PC = 1248+96.06 N = 641,088.02 E = 26,144,177.84
PI = 1249+98.17 N = 641,010.07 E = 26,144,243.79
PRC = 1250+99.64 N = 640,946.29 E = 26,144,323.53
PROP SUPER = NC

SB US-41 NON-LEGAL ALI CURVE 8
Δ = 37° 30' 25" (RT)
D = 44° 24' 55"
T = 43.80'
L = 84.45'
R = 129.00'
E = 7.23'
PRC = 1250+99.64 N = 640,946.29 E = 26,144,323.53
PI = 1251+43.43 N = 640,918.93 E = 26,144,357.73
PCC = 1251+84.08 N = 640,876.41 E = 26,144,368.20
PROP SUPER = NC

SB US-41 NON-LEGAL ALI CURVE 9
Δ = 14° 22' 36" (RT)
D = 32° 00' 32"
T = 22.58'
L = 44.91'
R = 179.00'
E = 1.42'
PCC = 1251+84.08 N = 640,876.41 E = 26,144,368.20
PI = 1252+06.66 N = 640,854.49 E = 26,144,373.60
PT = 1252+29.00 N = 640,831.91 E = 26,144,373.39
PROP SUPER = NC

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

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CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 80

FILE: 6553_Align003.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

ALIGNMENT/ROW SHEET
US-41/M-28 STA 1250+00 TO STA 1260+40.04

DRAWING	SHEET
US41 ALI 003	SECT 1 26

HOMESTEAD ST NON-LEGAL CURVE 1
Δ = 30° 04' 57" (LT)
D = 28° 38' 52"
T = 53.74'
L = 105.01'
R = 200.00'
E = 7.10'
PC = 40+60.00 N = 640,782.65 E = 26,144,220.83
PI = 41+13.74 N = 640,729.24 E = 26,144,226.84
PT = 41+65.01 N = 640,686.04 E = 26,144,258.81
PROP SUPER = NC

HOMESTEAD ST NON-LEGAL CURVE 2
Δ = 14° 16' 40" (LT)
D = 17° 12' 21"
T = 41.71'
L = 82.98'
R = 333.00'
E = 2.60'
PC = 42+23.49 N = 640,639.02 E = 26,144,293.59
PI = 42+65.20 N = 640,605.50 E = 26,144,318.40
PT = 43+06.47 N = 640,579.12 E = 26,144,350.71
PROP SUPER = NC

GROVE ST NON-LEGAL CURVE 1
Δ = 5° 20' 56" (RT)
D = 3° 49' 11"
T = 70.07'
L = 140.03'
R = 1,500.00'
E = 1.64'
PC = 21+51.73 N = 640,643.16 E = 26,144,204.88
PI = 22+21.79 N = 640,685.14 E = 26,144,260.98
PRC = 22+91.76 N = 640,721.71 E = 26,144,320.74
PROP SUPER = NC

GROVE ST NON-LEGAL CURVE 2
Δ = 2° 19' 48" (LT)
D = 5° 43' 46"
T = 20.34'
L = 40.67'
R = 1,000.00'
E = 0.21'
PRC = 22+91.76 N = 640,721.71 E = 26,144,320.74
PI = 23+12.09 N = 640,732.33 E = 26,144,338.09
PT = 23+32.42 N = 640,743.64 E = 26,144,354.99
PROP SUPER = NC

GROVE ST NON-LEGAL NO CURVE
Δ = 0° 43' 17" (LT)
PI = 24+30.59 N = 640,798.23 E = 26,144,436.57

GROVE ST NON-LEGAL CURVE 3
Δ = 9° 25' 51" (LT)
D = 22° 55' 06"
T = 20.62'
L = 41.15'
R = 250.00'
E = 0.85'
PC = 25+34.51 N = 640,857.11 E = 26,144,522.20
PI = 25+55.13 N = 640,868.79 E = 26,144,539.19
PRC = 25+75.66 N = 640,883.10 E = 26,144,554.04
PROP SUPER = NC

GROVE ST NON-LEGAL CURVE 4
Δ = 5° 57' 45" (RT)
D = 3° 49' 11"
T = 78.12'
L = 156.10'
R = 1,500.00'
E = 2.03'
PRC = 25+75.66 N = 640,883.10 E = 26,144,554.04
PI = 26+53.77 N = 640,937.32 E = 26,144,610.29
PRC = 27+31.75 N = 640,985.39 E = 26,144,671.86
PROP SUPER = NC

HOMESTEAD ST
SB US-41/ EB M-28
NB US-41/ WB M-28
FISHER ST

STATION RELATIONS

1. POT STA 24+42.57 GROVE ST/7TH ST NON-LEGAL ALI = POT STA 1252+95.28 US-41 LEGAL ALI
2. POT STA 1253+29.30 NB US-41 NON-LEGAL ALI = POT STA 24+94.09 GROVE ST/7TH ST NON-LEGAL ALI
3. POT STA 1253+00.13 SB US-41 NON-LEGAL ALI = POT STA 23+67.09 GROVE ST/7TH ST NON-LEGAL ALI
4. POT STA 1254+34.00 NB US-41 NON-LEGAL ALI = POT STA 1253+90.33 US-41 LEGAL ALI
5. POT STA 22+20.59 GROVE ST/7TH ST NON-LEGAL ALI = POT STA 41+68.60 HOMESTEAD ST/ANDERSON ST NON-LEGAL ALI
6. POT STA 27+99.78 GROVE ST/7TH ST NON-LEGAL ALI = POT STA 51+59.11 FISHER ST NON-LEGAL ALI

SECTION 22 T48N, R25W CITY OF MARQUETTE

SECTION 23 T48N, R25W CITY OF MARQUETTE

SECTION CORNER SECTION 22, 23, 26, 27
N = 638,968.88, E = 26,144,506.31

1/4 CORNER SECTION 22, 23
N = 641,606.79, E = 26,144,490.23

GROVE ST NON-LEGAL CURVE 5
Δ = 39° 38' 38" (LT)
D = 28° 38' 52"
T = 72.09'
L = 138.38'
R = 200.00'
E = 12.60'
PRC = 27+31.75 N = 640,985.39 E = 26,144,671.86
PI = 28+03.84 N = 641,029.75 E = 26,144,728.68
PT = 28+70.14 N = 641,100.17 E = 26,144,744.13
PROP SUPER = NC

NOTE:
STATION AND OFFSETS FROM US-41 LEGAL ALI

ANDERSON ST

S 7TH ST

GROVE ST

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CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
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FILE: 6553_Align004.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

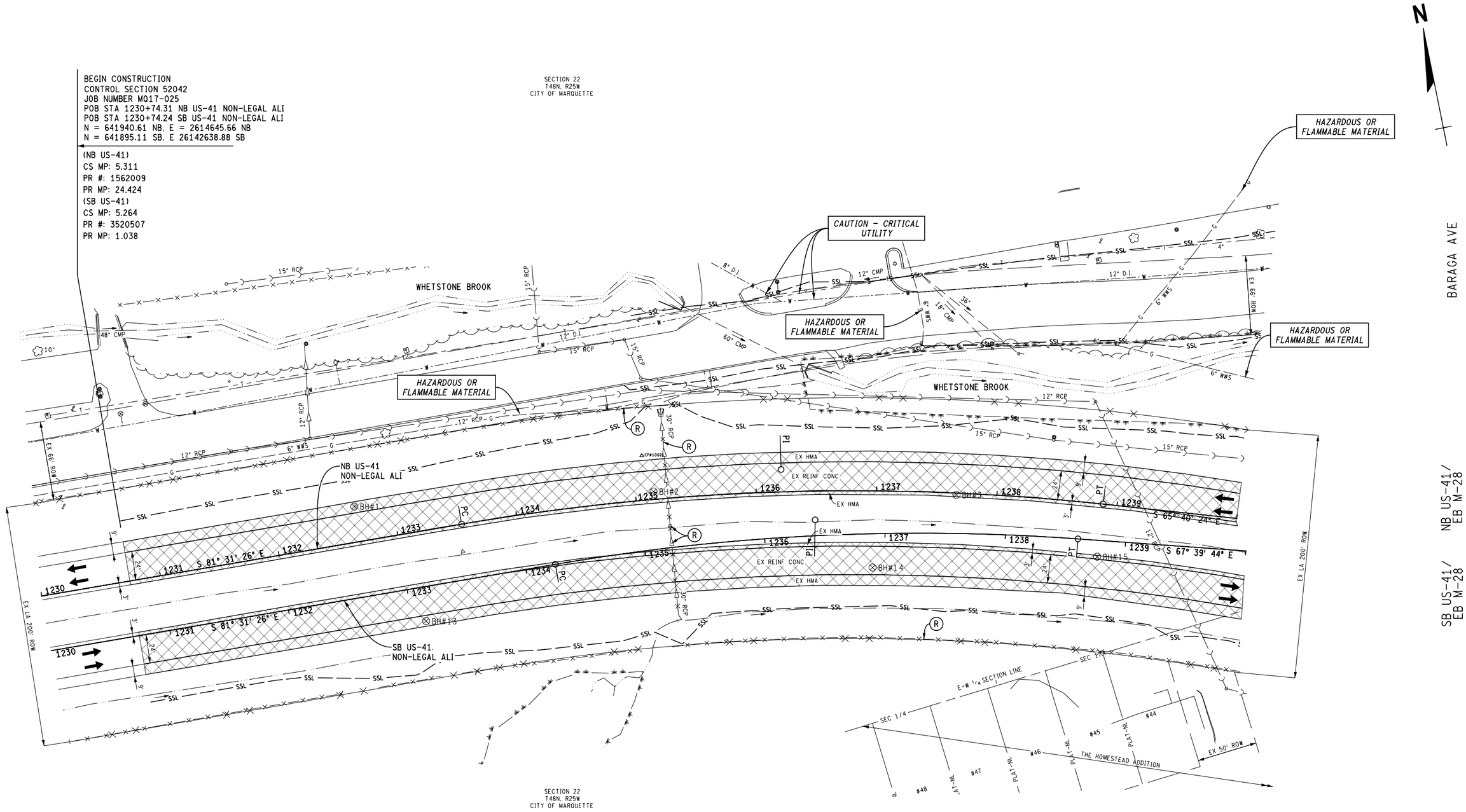
ALIGNMENT/ROW SHEET
GROVE ST STA 20+00 TO 29+85
HOMESTEAD ST STA 40+00.00 TO STA 43+10

DRAWING: US41 ALI 004
SHEET: SECT 1 27

BEGIN CONSTRUCTION
CONTROL SECTION 52042
JOB NUMBER MQ17-025
POB STA 1230+74.31 NB US-41 NON-LEGAL ALI
POB STA 1230+74.24 SB US-41 NON-LEGAL ALI
N = 641940.61 NB, E = 2614645.66 NB
N = 641895.11 SB, E 26142638.88 SB

(NB US-41)
CS MP: 5.311
PR #: 1562009
PR MP: 24.424
(SB US-41)
CS MP: 5.264
PR #: 3520507
PR MP: 1.038

SECTION 22
T48N, R25W
CITY OF MARQUETTE



SECTION 22
T48N, R25W
CITY OF MARQUETTE

JN MQ17-025 REMOVAL QUANTITIES THIS SHEET

0.5 Acre	Clearing
2 Ea	Culv, End, Rem, 24 inch to 48 inch
1 Ea	Dr Structure, Rem
166 Ft	Sewer, Rem, 24 inch to 48 inch
1286 Ft	Fence, Rem
4912 Syd	Pavt, Rem
13298 Cyd	Excavation, Earth
2479 Syd	HMA Surface, Rem

NOTES:
1. SEE PERMANENT SIGNING PLANS FOR PERMANENT SIGNING REMOVALS.
2. SEE SANITARY AND WATERMAIN PLANS FOR SANITARY AND WATERMAIN REMOVALS.

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0 HORZ. (FT) 80

FILE: 6553_US41_Rem1230.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

REMOVAL SHEET
US-41/M-28
STA 1230+74.31 TO STA 1240+00

DRAWING: US41 REM 001
SHEET: SECT 1 28

SECTION 22
T48N, R25W
CITY OF MARQUETTE

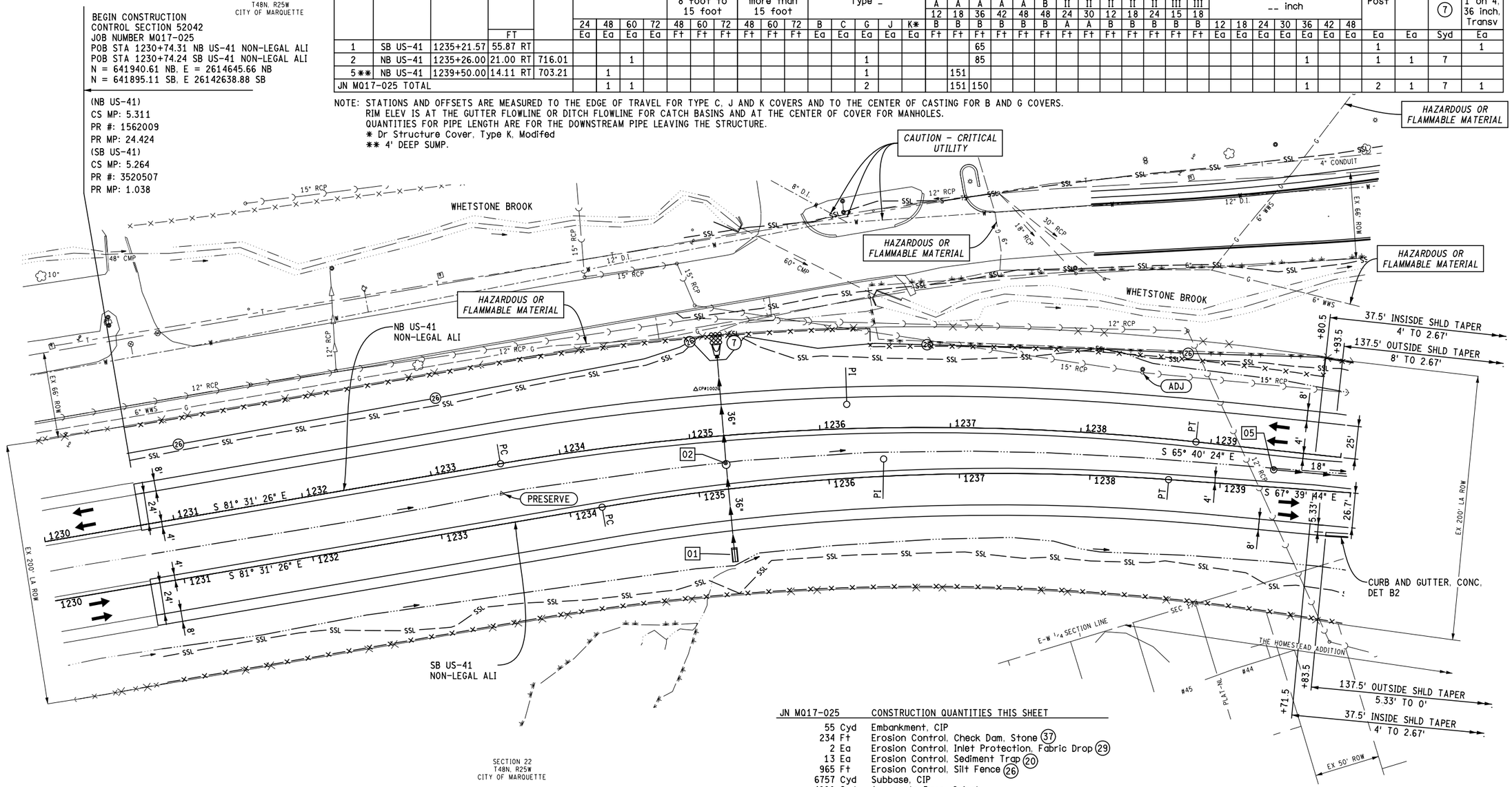
BEGIN CONSTRUCTION
CONTROL SECTION 52042
JOB NUMBER MQ17-025
POB STA 1230+74.31 NB US-41 NON-LEGAL ALI
POB STA 1230+74.24 SB US-41 NON-LEGAL ALI
N = 641940.61 NB, E = 2614645.66 NB
N = 641895.11 SB, E 26142638.88 SB

(NB US-41)
CS MP: 5.311
PR #: 1562009
PR MP: 24.424
(SB US-41)
CS MP: 5.264
PR #: 3520507
PR MP: 1.038

DRAINAGE SUMMARY

STRUCT NO.	ALIGNMENT	STATION	OFFSET	RIM ELEV	Dr Structure, __ inch dia				Dr Structure, Add Depth of __ inch dia, 8 foot to 15 foot			Dr Structure, Add Depth of __ inch dia, more than 15 foot			Dr Structure Cover, Type _					Sewer, Cl _, _ inch, Tr Det _														Culv End Sect, __ inch							Dr Marker Post	Outfall Label	Riprap, Plain	Culv, Slp End Sect, 1 on 4, 36 inch, Transv
																				A 12	A 18	A 36	A 42	A 48	B 48	II 24	II 30	II 12	II 18	II 24	III 15	III 18											
			FT		24 Ea	48 Ea	60 Ea	72 Ea	48 Ft	60 Ft	72 Ft	48 Ft	60 Ft	72 Ft	B Ea	C Ea	G Ea	J Ea	K* Ea	B Ft	B Ft	B Ft	B Ft	B Ft	B Ft	A Ft	A Ft	B Ft	B Ft	B Ft	B Ft	B Ft	12 Ea	18 Ea	24 Ea	30 Ea	36 Ea	42 Ea	48 Ea	Ea	Ea	Syd	Ea
1	SB US-41	1235+21.57	55.87 RT																			65																	1			1
2	NB US-41	1235+26.00	21.00 RT	716.01			1										1					85																1		1	1	7	
5**	NB US-41	1239+50.00	14.11 RT	703.21		1											1				151																					
JN MQ17-025 TOTAL						1	1										2				151	150																1	2	1	7	1

NOTE: STATIONS AND OFFSETS ARE MEASURED TO THE EDGE OF TRAVEL FOR TYPE C, J AND K COVERS AND TO THE CENTER OF CASTING FOR B AND G COVERS.
RIM ELEV IS AT THE GUTTER FLOWLINE OR DITCH FLOWLINE FOR CATCH BASINS AND AT THE CENTER OF COVER FOR MANHOLES.
QUANTITIES FOR PIPE LENGTH ARE FOR THE DOWNSTREAM PIPE LEAVING THE STRUCTURE.
* Dr Structure Cover, Type K, Modifed
** 4' DEEP SUMP.



JN MQ17-025	CONSTRUCTION QUANTITIES THIS SHEET
55 Cyd	Embankment, CIP
234 Ft	Erosion Control, Check Dam, Stone (37)
2 Ea	Erosion Control, Inlet Protection, Fabric Drop (29)
13 Ea	Erosion Control, Sediment Trap (20)
965 Ft	Erosion Control, Silt Fence (26)
6757 Cyd	Subbase, CIP
4980 Syd	Aggregate Base, 6 inch
2864 Syd	Aggregate Base, 9 inch
820 Syd	Shoulder, Cl II, 3 inch
1 Ea	Dr Structure Cover, Adj, Case 2
3800 Ft	Underdrain, Subbase, 6 inch
863 Ton	HMA, 3E3
576 Ton	HMA, 4E3, High Stress
432 Ton	HMA, 5E3, High Stress
496 Ton	HMA, LVSP
17 Ft	Curb and Gutter, Conc, Det B2
1882 Ft	Fence, Woven Wire with Steel Post

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

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CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
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PH. (906)228-0440

0 HORZ. (FT) 80

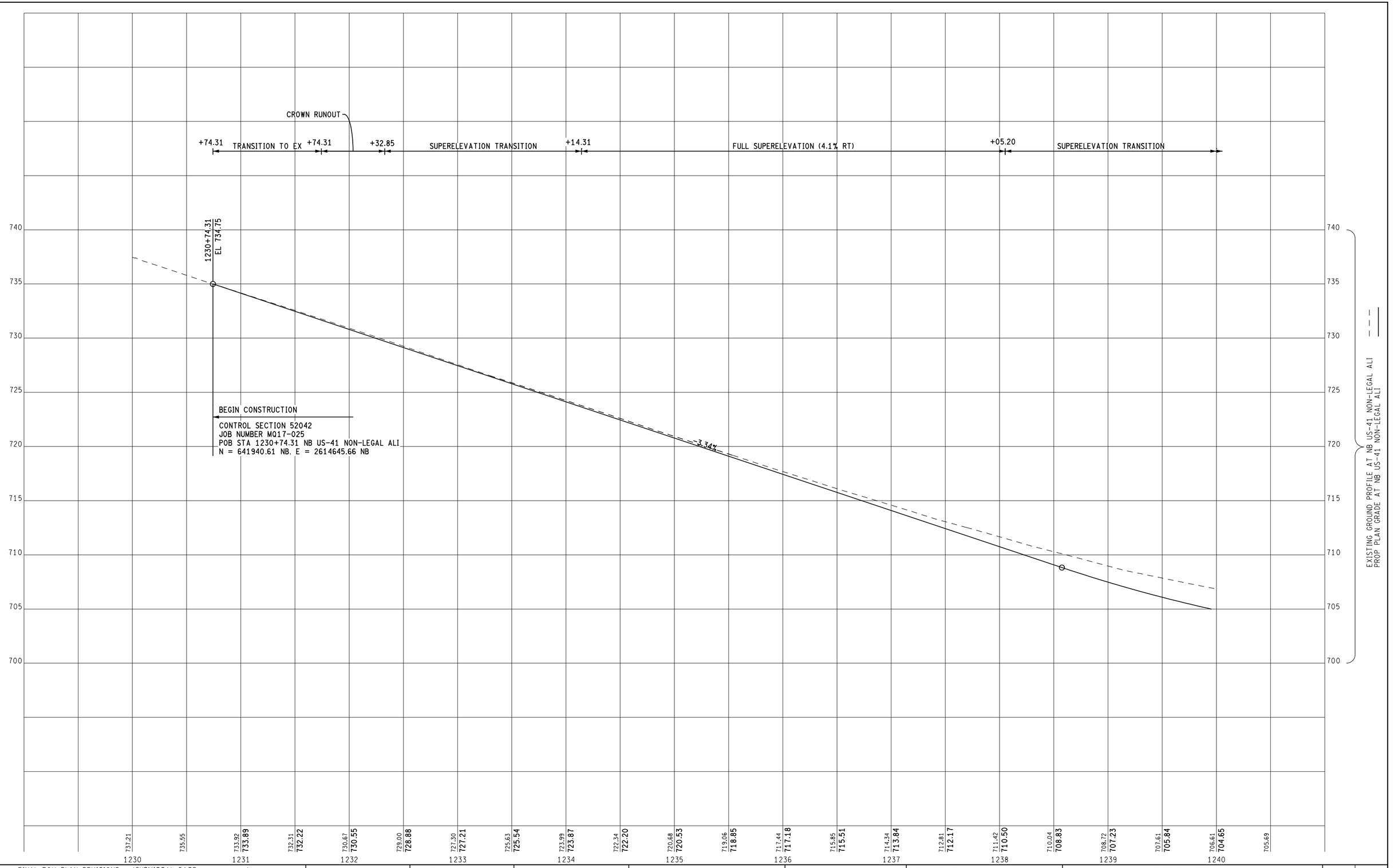
FILE: 6553_US41_Con1230.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

CONSTRUCTION SHEET
US-41/M-28
STA 1230+74.31 TO STA 1240+00

DRAWING: US41 CON 001
SHEET: SECT 1 29



FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
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CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 VERT. (FT) 8
0 HORZ. (FT) 80

FILE: 6553_Prof_US41_NB001.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

PROFILE SHEET
NB US-41/M-28
STA 1230+74.31 TO STA 1240+00

DRAWING	SHEET
NBUS41 PROF 001	SECT 1 30

730 725 720 715 710 705 700 695

+74.31

1:10 FS

+00.00 +50.00 +50.00 +00.00

TRANS IND 3' RB DITCH 1:10 FS 1:4 BS
TO IND 3' RB DITCH 1:6 FS 1:4 BS

IND 3' RB DITCH 1:6 FS 1:4 BS

TRANS IND 3' RB DITCH 1:6 FS 1:4 BS
TO IND 3' RB DITCH 1:4 FS 1:4 BS

+26.00 70.00 LT
+26.18 68.17° LT

PROP INV ELEV
709.14 36" S

EX INV ELEV
709.14 30" S (R)

+43.17
EX 4" SAN MH 49.00° LT

+73.79
EX 4" SAN MH 83.86° LT

2.88%

20 37

1238+00.00
EL 707.25

EX INV ELEV
700.35 15" NW
700.25 15" SE

EX INV ELEV
696.40 12" NW
695.75 12" SE

1240+00.00
EL 701.50

EX GROUND PROFILE 110' LT
EX GROUND POINTS 80' LT
PROP LT DITCH PROFILE

IND VAR WIDTH RB DITCH 1:4 FS 1:4 BS

20 37

1230+74.31
EL 732.72

-5.03%

1231+80.00
EL 727.40

IND VAR WIDTH RB DITCH 1:4 FS 1:4 BS +00.00

-3.29%

29 02
+26.00
PR 5' CB-G

PROP INV ELEV
711.49 36" S
709.39 36" N

1236+00.00
EL 713.57

-2.96%

29 05
+50.00
PR 4' CB-G

37 20
+1.15%

1239+50.00
EL 703.21

PROP INV ELEV
699.78 18" SE

18" @ 0.53%

EX GROUND PROFILE 20' RT
PROP RT DITCH PROFILE

1230 1231 1232 1233 1234 1235 1236 1237 1238 1239 1240

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0 VERT. (FT) 8
0 HORZ. (FT) 80

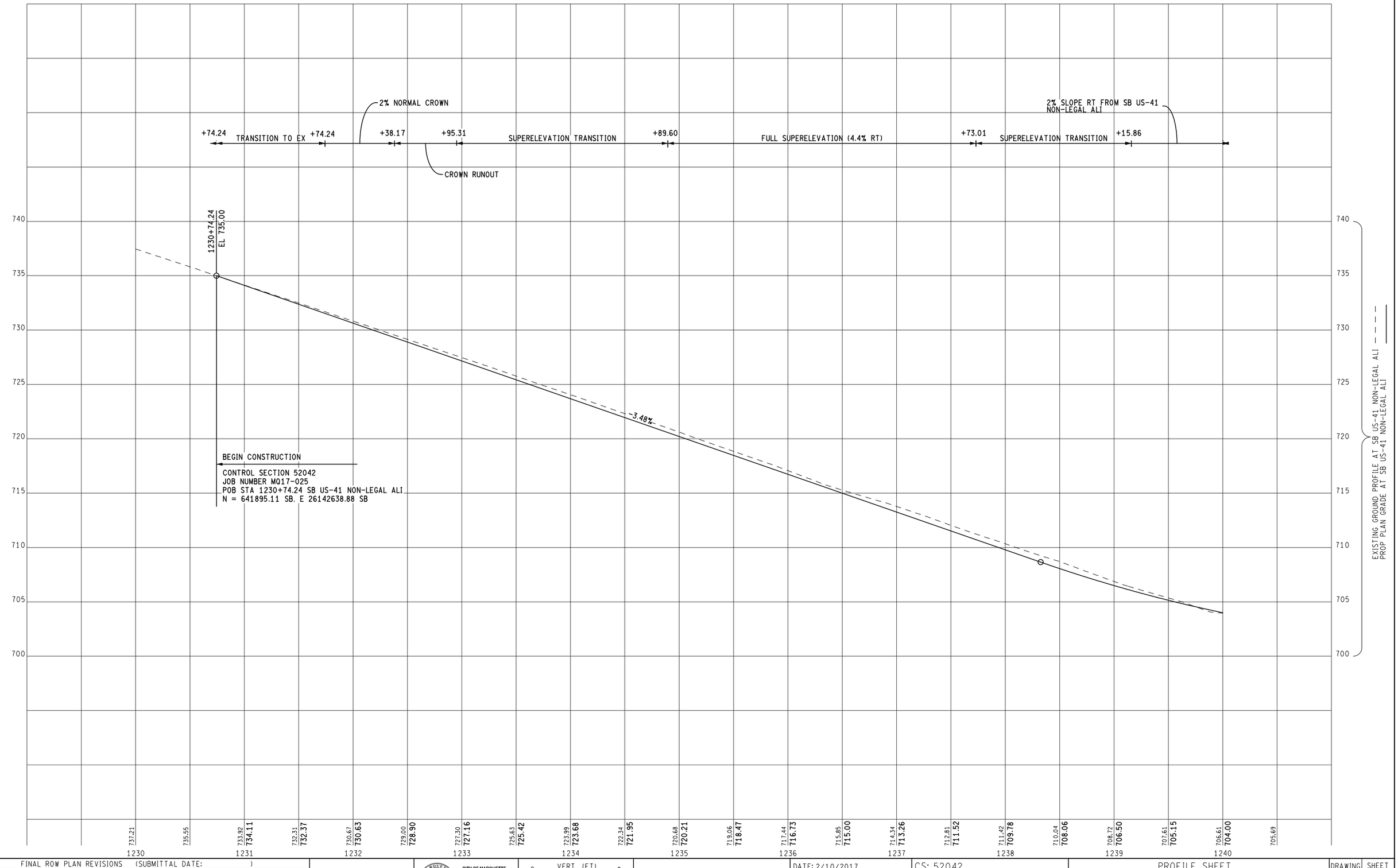
FILE: 6553_Prof_US41_NB001a.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

PROFILE SHEET
NB US-41/M-28
STA 1230+74.31 TO STA 1240+00

DRAWING	SHEET
NBUS41 PROF 001a	SECT 1 31



FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
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300 W BARAGA AVENUE
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PH. (906)228-0440

VERT. (FT) 0 — 8
HORZ. (FT) 0 — 80

	DATE: 2/10/2017	CS: 52042	PROFILE SHEET
	DESIGN UNIT: FILPUS	JN: MQ17-025	SB US-41/M-28
FILE: 6553_Prof_US41_SB001.dgn	TSC: ISHPEMING	MDOT PERMIT 043179-16	STA 1230+74.24 TO STA 1240+00

DRAWING	SHEET
SBUS41 PROF 001	SECT 1 32

+74.24 1:4 FS +00.00

+23.17 EX 4" CB 18.38' LT

EX INV ELEV 710.95 30" S

IND 6' RB DITCH TRANS 1:4 FS 1:2 BS TO 1:4 FS 1:3 BS

IND 6' RB DITCH 1:4 FS 1:4 BS

+74.24 IND 6' RB DITCH 1:4 FS 1:2 BS +50.00 +00.00 +00.00 +50.00 +00.00 IND 6' RB DITCH 1:4 FS 1:3 BS +00.00

IND 6' RB DITCH TRANS 1:4 FS 1:2 BS TO 1:4 FS 1:4 BS

IND 6' RB DITCH TRANS 1:4 FS 1:4 BS TO 1:4 FS 1:2 BS

1235+74.24 EL 732.56

20 37

-4.53%

+21.56 56.08' RT

1235+40.00 EL 713.55

PERMANENT DIKE (TOP @ 715.60)

+7.00%

PROP INV ELEV 711.99 36" N

EX INV ELEV 712.29 30" N

1235+22.00 EL 712.27

-3.18%

EX GROUND PROFILE 20' LT

EX GROUND PROFILE 60' RT
EX GROUND POINTS 90' RT
PROP RT DITCH PROFILE

735 730 725 720 715 710 705 700

1230 1231 1232 1233 1234 1235 1236 1237 1238 1239 1240

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PH. (906)228-0440

VERT. (FT) 0 8
HORZ. (FT) 0 80

FILE: 6553_Prof_US41_SB001a.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

PROFILE SHEET
SB US-41/M-28
STA 1230+74.24 TO STA 1240+00

DRAWING: SBUS41 PROF 001a
SHEET: SECT 1 33

HOSPITAL DR

SECTION 22
T48N, R25W
CITY OF MARQUETTE

NB US-41/
WB M-28

SB US-41/
EB M-28

FISHER ST

HOMESTEAD ST

EX 66' ROW

EX 200' LA ROW

EX 210' LA ROW/ROW

E-W 1/4 SECTION LINE

THE HOMESTEAD ADDITION

PROP ROW VARIES

PROP ROW

PROP LA ROW

HOSPITAL DR NON-LEGAL ALI

NB US-41 NON-LEGAL ALI

SB US-41 NON-LEGAL ALI

REL-B/O

HAZARDOUS OR FLAMMABLE MATERIAL

CAUTION - CRITICAL UTILITY

BH#4 BH#101 BH#6 BH#7 BH#16 BH#18 BH#8 BH#19

PARCEL-L

PLAT-NL

#20 #21 #24 #25 #29 #30 #32 #34 #36 #37 #43

S 65° 40' 24" E

N 33° 41' 46" E

S 7° 25' 11" E

S 16° 36' 32" E

S 40° 14' 05" E

EX HMA

EX REINF CONC

6" WWS

15" RCP

12" RCP

30" RCP

42" RCP

6" D.I.

SSL

NOTES:
1. SEE PERMANENT SIGNING PLANS FOR PERMANENT SIGNING REMOVALS.
2. SEE SANITARY AND WATERMAIN PLANS FOR SANITARY AND WATERMAIN REMOVALS.

HOMESTEAD ST

SECTION 22
T48N, R25W
CITY OF MARQUETTE

JN MQ17-025 REMOVAL QUANTITIES THIS SHEET

1.4 Acre	Clearing
3 Ea	Culv, End, Rem, 24 inch to 48 inch
1 Ea	Dr Structure, Rem
193 Ft	Sewer, Rem, 24 inch to 48 inch
1406 Ft	Fence, Rem
5417 Syd	Pavt, Rem
10503 Cyd	Excavation, Earth
2584 Syd	HMA Surface, Rem

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0 HORZ. (FT) 80

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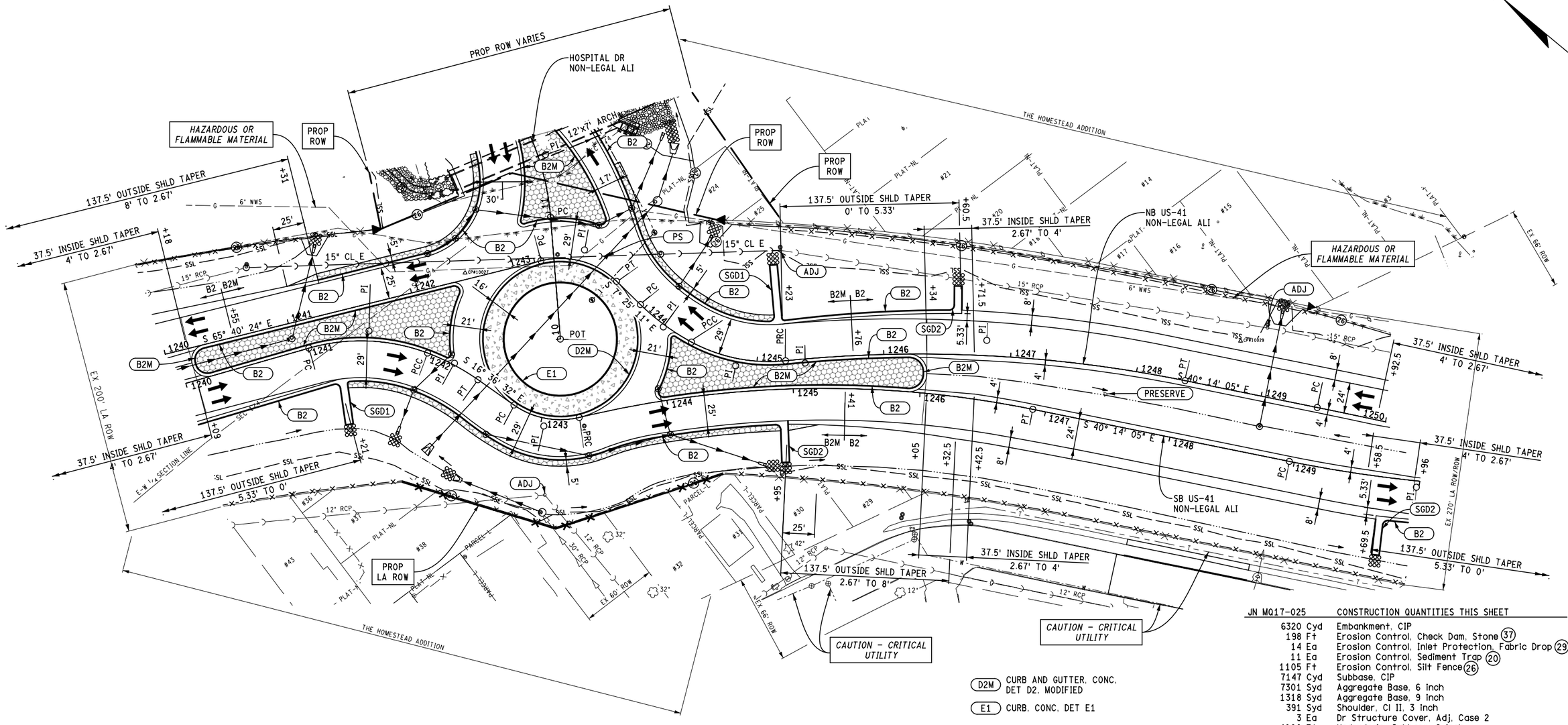
DATE: 2/10/2017
DESIGN UNIT: FILPUS
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CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

REMOVAL SHEET
US-41/M-28
STA 1240+00 TO STA 1250+00

DRAWING: US41 REM 002

SHEET: SECT 1 34



SECTION 22
T48N, R25W
CITY OF MARQUETTE

(D2M) CURB AND GUTTER, CONC, DET D2, MODIFIED

(E1) CURB, CONC, DET E1

(B2) CURB AND GUTTER, CONC, DET B2

(B2M) CURB AND GUTTER, CONC, DET B2, MODIFIED

(SGD1) SHOULDER GUTTER, CONC, DET 1

(SGD2) SHOULDER GUTTER, CONC, DET 2

(PS) PIPE SADDLE

JN MQ17-025	CONSTRUCTION QUANTITIES THIS SHEET
6320 Cyd	Embankment, CIP
198 Ft	Erosion Control, Check Dam, Stone (37)
14 Ea	Erosion Control, Inlet Protection, Fabric Drop (29)
11 Ea	Erosion Control, Sediment Trap (20)
1105 Ft	Erosion Control, Silt Fence (26)
7147 Cyd	Subbase, CIP
7301 Syd	Aggregate Base, 6 inch
1318 Syd	Aggregate Base, 9 inch
391 Syd	Shoulder, Cl II, 3 inch
3 Ea	Dr Structure Cover, Adj, Case 2
4000 Ft	Underdrain, Subbase, 6 inch
1105 Ton	HMA, 3E3
3 Ton	HMA Approach
737 Ton	HMA, 4E3, High Stress
553 Ton	HMA, 5E3, High Stress
225 Ton	HMA, LVSP
320 Ft	Joint, Contraction, Cp
64 Ft	Joint, Expansion, E2
593 Syd	Conc Pavt, Decorative, Nonreinf, 9 inch
2 Cyd	Conc, Grade S2
280 Ft	Curb, Conc, Det E1
1066 Ft	Curb and Gutter, Conc, Det B2
2 Ea	Shoulder Gutter, Conc, Det 1
3 Ea	Shoulder Gutter, Conc, Det 2
131 Ft	Spillway, Conc
755 Ft	Curb and Gutter, Conc, Det B2, Modified
384 Ft	Curb and Gutter, Conc, Det D2, Modified
9951 Sft	Sidewalk, Conc, 4 inch, Decorative
2990 Sft	Sidewalk, Conc, 9 inch, Decorative
1541 Ft	Fence, Woven Wire with Steel Post
25 Syd	Riprap, Plain

NOTES:
1. SEE ROUNDABOUT GEOMETRY SHEET FOR DIMENSIONS AND RADII NOT SHOWN.
2. TRANSITION FROM ONE CURB AND GUTTER TYPE TO ANOTHER OVER 10'.

HOMESTEAD ST

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 80

FILE: 6553_US41_Con1240.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

CONSTRUCTION SHEET
US-41/M-28
STA 1240+00 TO STA 1250+00

DRAWING: US41 CON 002
SHEET: SECT 1 35

HOSPITAL DR

SECTION 22
T48N, R25W
CITY OF MARQUETTE

SB US-41 / EB M-28

NB US-41 / WB M-28

PROP ROW VARIES

HOSPITAL DR NON-LEGAL ALI

HAZARDOUS OR FLAMMABLE MATERIAL

PROP ROW

PROP ROW

PROP ROW

HAZARDOUS OR FLAMMABLE MATERIAL

NB US-41 NON-LEGAL ALI

SB US-41 NON-LEGAL ALI

EX 200' ROW

EX LA ROW VARIES

PROP LA ROW

THE HOMESTEAD ADDITION

THE HOMESTEAD ADDITION

CAUTION - CRITICAL UTILITY

HAZARDOUS OR FLAMMABLE MATERIAL

CAUTION - CRITICAL UTILITY

HOMESTEAD ST

SECTION 22
T48N, R25W
CITY OF MARQUETTE

HOMESTEAD ST

SB US-41 / EB M-28

NB US-41 / WB M-28

NOTE:
SEE US41 DRAIN 002A FOR DRAINAGE TABLE.

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

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CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 80

FILE: 6553_US41_DRAIN1240.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

DRAINAGE SHEET
US-41/M-28
STA 1240+00 TO STA 1250+00

DRAWING: US41 DRAIN 002

SHEET: SECT 1 — 36

DRAINAGE SUMMARY

STRUCT NO.	ALIGNMENT	STATION	OFFSET	RIM ELEV	Dr Structure, -- inch dia				Dr Structure, Add Depth of -- inch dia, 8 foot to 15 foot			Dr Structure, Add Depth of -- inch dia, more than 15 foot			Dr Structure Cover, Type -					Sewer, Cl -, - inch, Tr Det -																Culv End Sect, -- inch							Dr Marker Post	Outfall Label	Riprap, Plain (7)
																				A 12	A 18	A 36	A 42	A 48	B 48	II 24	II 30	II 12	II 18	II 24	III 15	III 18											
					24	48	60	72	48	60	72	48	60	72	B	C	G	J	K*	B	B	B	B	B	B	A	A	B	B	B	B	B	12	18	24	30	36	42	48			
			FT		Ea	Ea	Ea	Ea	Ft	Ft	Ft	Ft	Ft	Ft	Ea	Ea	Ea	Ea	Ea	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ea	Ea	Ea	Ea	Ea	Ea	Ea	Ea	Ea	Syd
6	NB US-41	1241+00.00	11.50 RT	709.80		1			3						1			1			70												1						1	1	4
10	SB US-41	1242+14.98	7.80 LT	701.50		1			1									1		42																					
11	SB US-41	1241+96.01	29.00 RT	700.85		1			1									1		31												1							1		4
15	SB US-41	1243+07.39	73.71 RT	696.91			1										1								69									1				1		9
20	SB US-41	1242+70.85	29.57 RT	700.63		1												1		83																					
21	SB US-41	1243+30.00	29.00 RT	700.36		1												1		67																					
22	SB US-41	1243+93.07	11.10 LT	700.84		1			1									1		38																					
23	SB US-41	1243+98.68	25.00 RT	700.13		1												1		74												1							1		4
30	NB US-41	1242+20.00	25.00 LT	701.26		1												1		26																					
31	NB US-41	1242+45.00	31.65 LT	701.18		1												1		28																					
32	NB US-41	1242+66.54	50.30 LT	701.38		1												1		98																					
33	NB US-41	1243+41.06	29.00 LT	701.69		1			1									1		30																					
34**	NB US-41	1243+51.47	52.33 LT	701.30		1			5									1		59												1							1	1	
37	SB US-41	1242+39.00	71.00 RT																				262													1				
38**	NB US-41	1243+59.00	68.00 LT	701.30				1			2				1								40													1		1	1	18
40**	NB US-41	1244+10.00	29.00 LT	700.80		1			1									1		42												1							1		4
45**	NB US-41	1249+03.42	23.00 RT	694.00		1											1				87												1						1	1	4
JN MQ17-025 TOTAL						14	1	1	13		2				2		2	12		618	157		302				69					4	2		1		2		8	4	47

NOTE: STATIONS AND OFFSETS ARE MEASURED TO THE EDGE OF TRAVEL FOR TYPE C, J AND K COVERS AND TO THE CENTER OF CASTING FOR B AND G COVERS.
RIM ELEV IS AT THE GUTTER FLOWLINE OR DITCH FLOWLINE FOR CATCH BASINS AND AT THE CENTER OF COVER FOR MANHOLES.
QUANTITIES FOR PIPE LENGTH ARE FOR THE DOWNSTREAM PIPE LEAVING THE STRUCTURE.
* Dr Structure Cover, Type K, Modifed
** 4' DEEP SUMP.

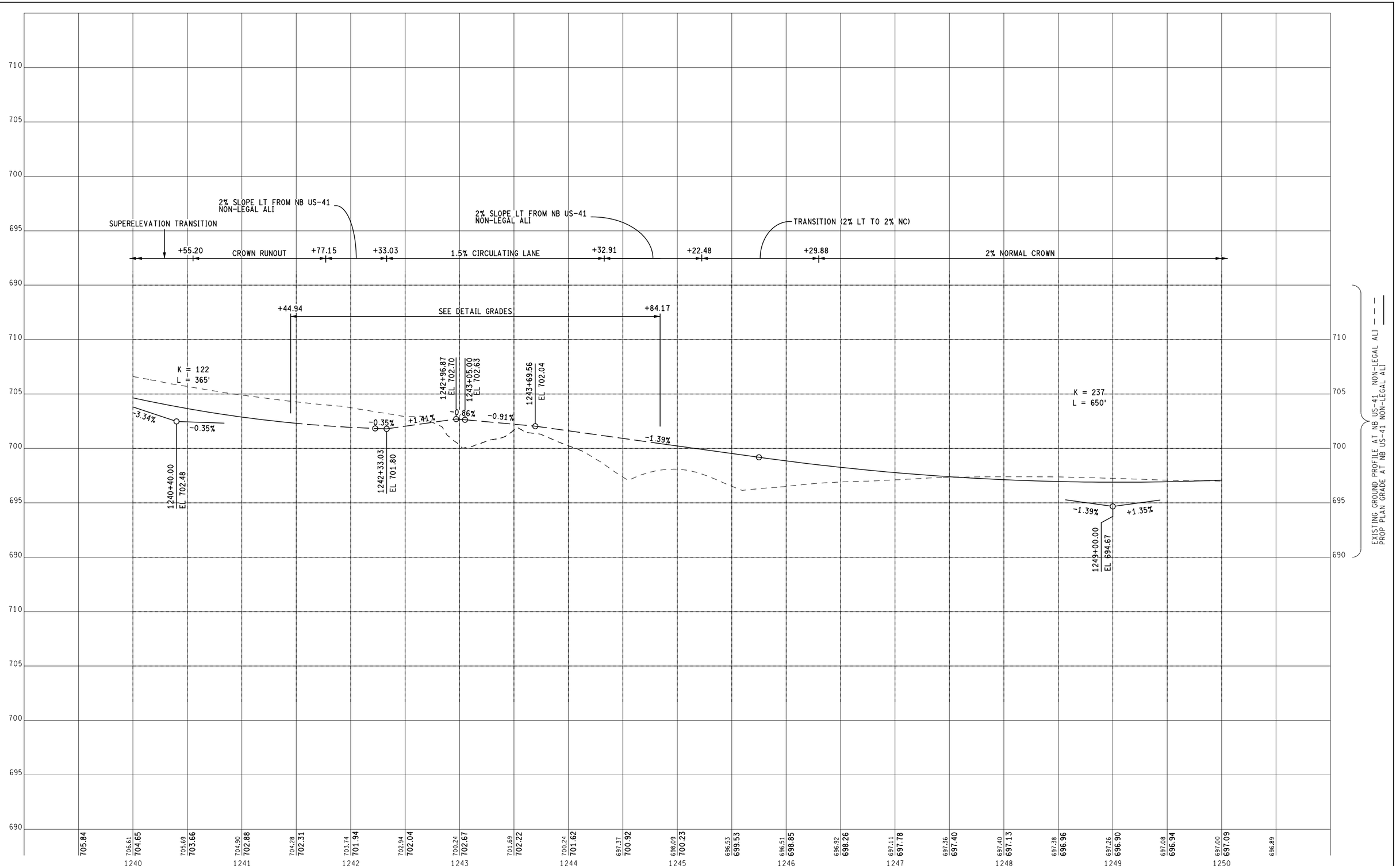
FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 80

	DATE: 2/10/2017	CS: 52042	DRAINAGE SHEET	DRAWING: US41 DRAIN 002A
	DESIGN UNIT: FILPUS	JN: MQ17-025	US-41/M-28	SHEET: SECT 1 37
FILE: 6553_US41_DRAIN1240A.dgn	TSC: ISHPEMING	MDOT PERMIT 043179-16	STA 1240+00 TO STA 1250+00	



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PH. (906)228-0440

VERT. (FT) 0 — 8
HORZ. (FT) 0 — 80

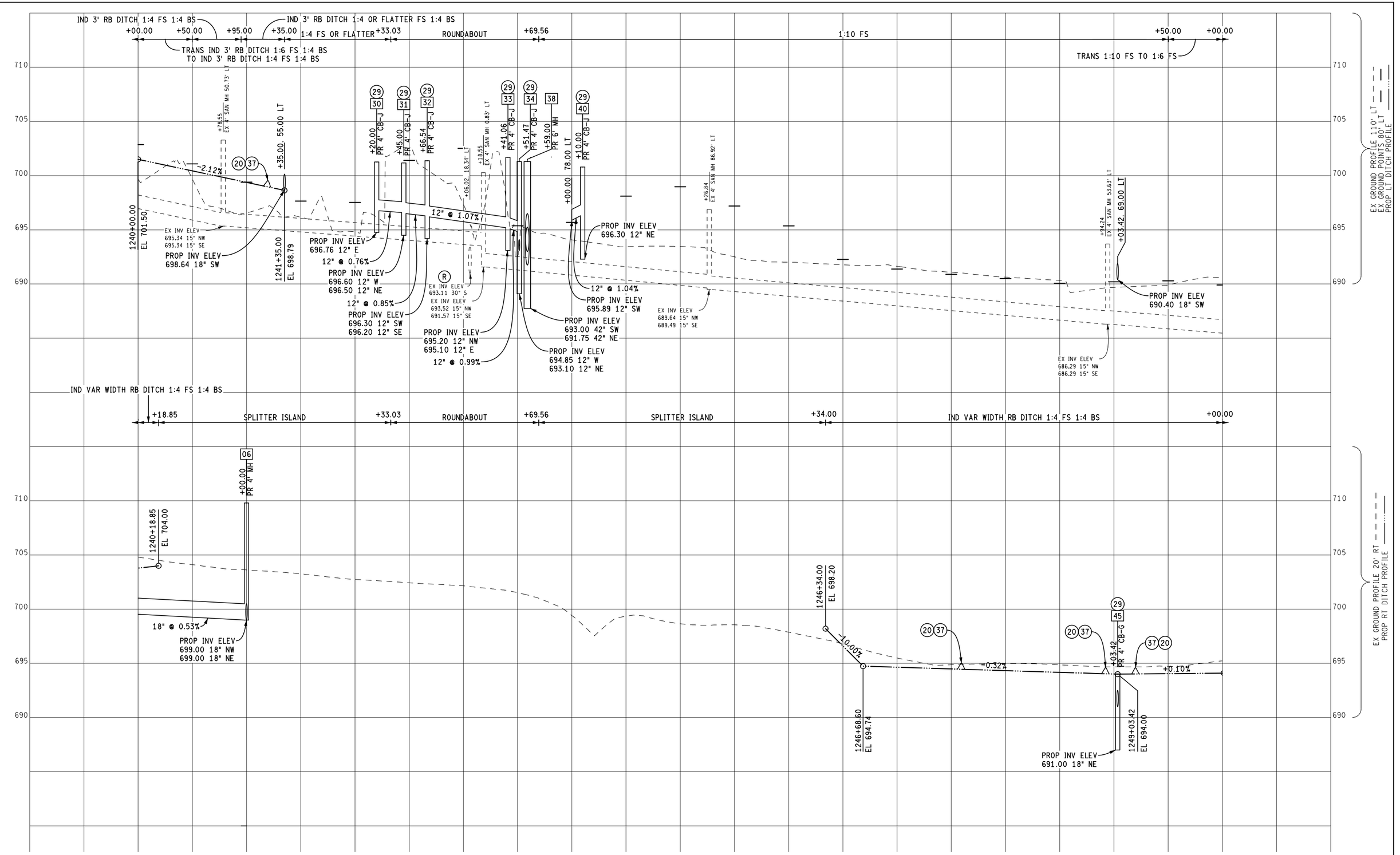
FILE: 6553_Prof_US41_NB002.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

PROFILE SHEET
NB US-41/M-28
STA 1240+00 TO STA 1250+00

DRAWING: NBUS41 PROF 002
SHEET: SECT 1 — 38



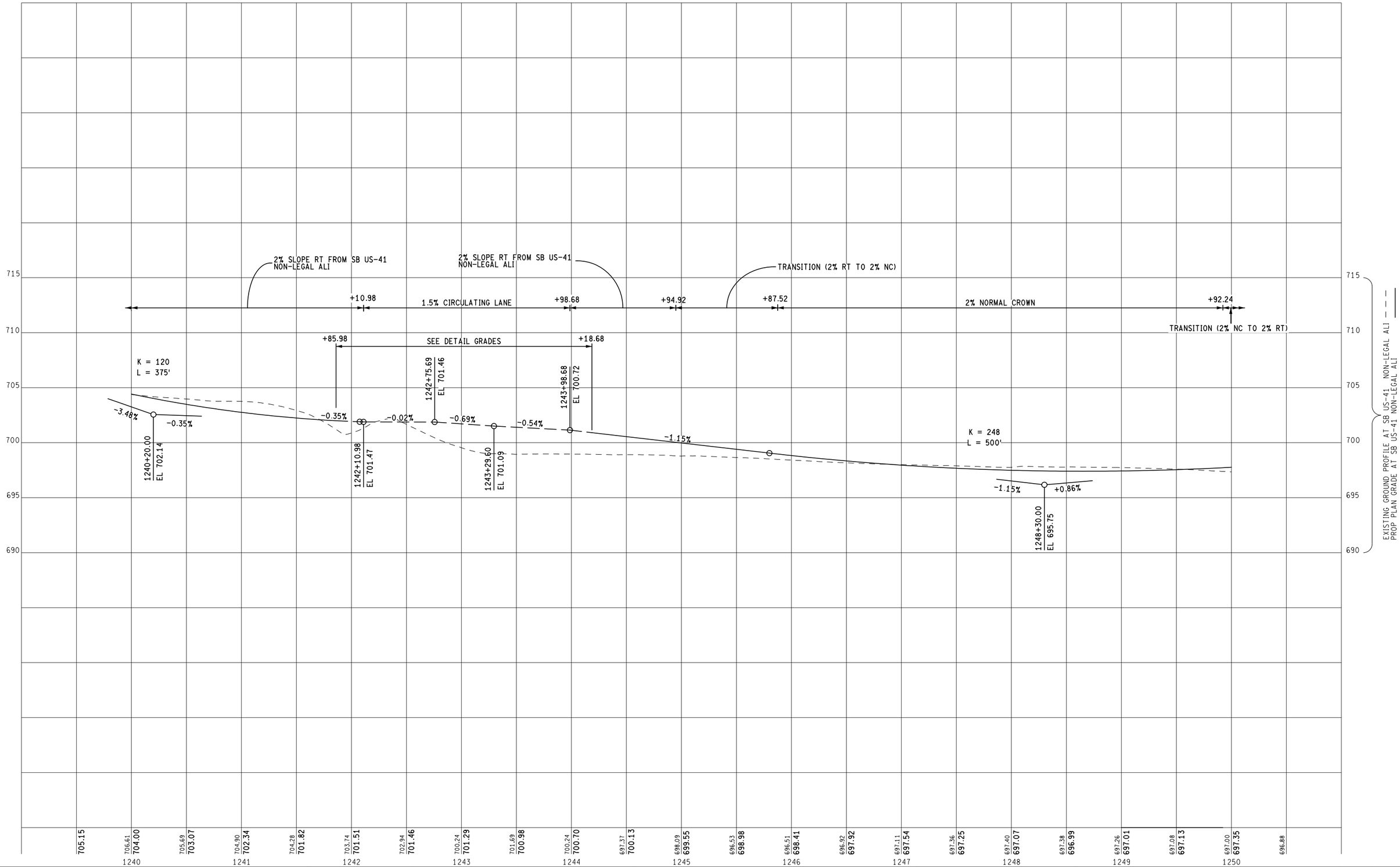
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MARQUETTE, MI 49855
PH. (906)228-0440

VERT. (FT) 0 — 8
HORZ. (FT) 0 — 80

	DATE: 2/10/2017	CS: 52042	PROFILE SHEET	DRAWING / SHEET
	DESIGN UNIT: FILPUS	JN: MQ17-025	NB US-41/M-28	NBUS41 PROF 002a / SECT 1
FILE: 6553_Prof_US41_NB002a.dgn	TSC: ISHPEMING	MDOT PERMIT 043179-16	STA 1240+00 TO STA 1250+00	39



FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 VERT. (FT) 8
0 HORZ. (FT) 80

	DATE: 2/10/2017	CS: 52042	PROFILE SHEET	DRAWING	SHEET
	DESIGN UNIT: FILPUS	JN: MQ17-025	SB US-41/M-28	SBUS41 PROF 002	SECT 1 40
FILE: 6553_Prof_US41_SB002.dgn	TSC: ISHPEMING	MDOT PERMIT 043179-16	STA 1240+00 TO STA 1250+00		

1:4 FS | +09.00 | SPLITTER ISLAND | +10.98 | ROUNDABOUT | +98.68 | SPLITTER ISLAND | +03.80 | 1:4 FS

+14.98 PR 4" CB-J (29 10)

+93.07 PR 4" CB-J (29 22)

+60.47 EX 4" CB 46.56' LT

PROP INV ELEV 697.00 12" W

PROP INV ELEV 696.34 12" S

(R) EX INV ELEV 691.95 30" N 691.95 30" N

EX GROUND PROFILE 20' LT

IND V BOTTOM DITCH 1:4 FS 1:2 BS TRANS TO IND 6' RB DITCH 1:4 FS 1:4 BS

IND 10' RB DITCH 1:4 FS 1:2 BS

IND 10' RB DITCH 1:4 FS 1:3 BS TRANS TO 1:4 FS 1:2 BS

IND 6' RB DITCH 1:4 FS 1:3 BS

IND 6' RB DITCH TRANS 1:4 FS 1:4 BS TO 1:4 FS 1:3 BS

IND 6' RB DITCH 1:4 FS 1:4 BS

+00.00 | +10.00 | +70.34 | +75.00 | +25.00 | +50.00 | +00.00

IND V BOTTOM DITCH 1:8 FS 1:2 BS

IND V BOTTOM DITCH 1:8 FS 1:2 BS TRANS TO 1:4 FS 1:2 BS

IND V BOTTOM DITCH 1:4 FS 1:2 BS

+92.23 EX 4" SAN MH 115.07' RT

PERMANENT DIKE (TOP @ 697.80)

+96.01 PR 4" CB-J (29 11)

+70.85 PR 4" CB-J (29 20) 71.00' RT

+07.39 PR 5" CB-6 (29 15)

+08.29 EX 4" SAN MH 16.72' RT

+30.00 PR 4" CB-J (29 21)

+98.68 PR 4" CB-J (29 23)

1242+85.00 EL 697.02

1243+05.00 EL 696.90

1243+40.00 EL 694.50

1244+40.00 EL 694.10

1241+90.00 EL 694.00

+39.00

+70

+75

-3.18%

-2.35%

-0.92%

+0.32%

-0.60%

-6.86%

12" @ 0.72%

12" @ 1.83%

-0.40%

-0.72%

-0.27%

12" @ 0.55%

30" @ 0.30%

EX INV ELEV 695.02 12" N 695.02 12" SE

1240+50.00 EL 697.29

PROP INV ELEV 693.80 12" NE

PROP INV ELEV 696.35 12" E 694.80 12" SW

PROP INV ELEV 693.20 42" E

PROP INV ELEV 693.40 30" SE

1242+39.00 EL 693.55

1242+70.00 EL 693.65

EX INV ELEV 690.64 12" NE 690.49 12" S

PROP INV ELEV 693.60 30" NW 693.60 30" S

EX INV ELEV 693.32 30" S (R)

PROP INV ELEV 696.13 12" SE

PROP INV ELEV 695.70 12" NW 695.60 12" SE

PROP INV ELEV 695.15 12" NW 695.15 12" N 695.05 12" SE

PROP INV ELEV 693.75 12" NW

1248+15.00 EL 691.40

EX GROUND PROFILE 30' RT
EX GROUND POINTS 90' RT
PROP RT DITCH PROFILE

710 | 705 | 700 | 695 | 690

1240 | 1241 | 1242 | 1243 | 1244 | 1245 | 1246 | 1247 | 1248 | 1249 | 1250

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)

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CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

VERT. (FT) 0 8
HORZ. (FT) 0 80

FILE: 6553_Prof_US41_SB002a.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

PROFILE SHEET
SB US-41/M-28
STA 1240+00 TO STA 1250+00

DRAWING	SHEET
SBUS41 PROF 002a	SECT 1 41

S 7TH ST

ALTAMONT ST

FISHER ST

SB US-41/
EB M-28

NB US-41/
WB M-28

SECTION 22
T48N, R25W
CITY OF MARQUETTE

SECTION 23
T48N, R25W
CITY OF MARQUETTE

END CONSTRUCTION
CONTROL SECTION 52042
JOB NUMBER MQ17-025
POE STA 1260+40.04 NB US-41 NON-LEGAL ALI
POE STA 1260+20.69 SB US-41 NON-LEGAL ALI
N = 640370.77 NB, E = 26144983.33 NB
N = 640355.79 SB, E = 26144976.02 SB

(NB US-41)
CS MP: 4.797
PR #: 1562009
PR MP: 23.910
(SB US-41)
CS MP: 4.757
PR #: 3520507
PR MP: 0.531

HAZARDOUS OR FLAMMABLE MATERIAL

PROP LA ROW VARIES

GROVE/7TH ST
NON-LEGAL ALI

PROP LA ROW

CAUTION - CRITICAL UTILITY

PROP LA ROW

HAZARDOUS OR FLAMMABLE MATERIAL

WHETSTONE BROOK

NB US-41
NON-LEGAL ALI

SB US-41
NON-LEGAL ALI

CAUTION - CRITICAL UTILITY

CAUTION - CRITICAL UTILITY

HAZARDOUS OR FLAMMABLE MATERIAL

GROVE ST

SECTION 22
T48N, R25W
CITY OF MARQUETTE

SECTION 23
T48N, R25W
CITY OF MARQUETTE

NOTES:
1. SEE PERMANENT SIGNING PLANS FOR PERMANENT SIGNING REMOVALS.
2. SEE SANITARY AND WATERMAIN PLANS FOR SANITARY AND WATERMAIN REMOVALS.
3. SEE TRAFFIC SIGNAL PLANS FOR TRAFFIC SIGNAL REMOVALS.

JN MQ17-025 REMOVAL QUANTITIES THIS SHEET

0.6 Acre	Clearing
1 Ea	Culv, End, Rem, Less than 24 inch
2 Ea	Culv, End, Rem, 24 inch to 48 inch
4 Ea	Dr Structure, Rem
169 Ft	Sewer, Rem, Less than 24 inch
163 Ft	Sewer, Rem, 24 inch to 48 inch
416 Ft	Curb and Gutter, Rem
350 Ft	Fence, Rem
214 Ft	Guardrail, Rem
7725 Syd	Pavt, Rem
3167 Cyd	Excavation, Earth
3155 Syd	HMA Surface, Rem

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PH. (906)228-0440

0 HORZ. (FT) 80

FILE: 6553_US41_Rem1250.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

REMOVAL SHEET
US-41/M-28
STA 1250+00 TO STA 1260+40.04

DRAWING: US41 REM 003
SHEET: SECT 1 42

S 7TH ST

ALTAMONT ST

JN MQ17-025	CONSTRUCTION QUANTITIES THIS SHEET
8772 Cyd	Embankment, CIP
108 Ft	Erosion Control, Check Dam, Stone (37)
9 Ea	Erosion Control, Inlet Protection, Fabric Drop (29)
6 Ea	Erosion Control, Sediment Trap (20)
1787 Ft	Erosion Control, Silt Fence (26)
6723 Cyd	Subbase, CIP
7586 Syd	Aggregate Base, 6 inch
1006 Syd	Aggregate Base, 9 inch
243 Syd	Shoulder, Cl II, 3 inch
1 Ea	Dr Structure Cover, Adj, Case 1
4000 Ft	Underdrain, Subbase, 6 inch
1165 Ton	HMA, 3E3
3 Ton	HMA Approach
777 Ton	HMA, 4E3, High Stress
583 Ton	HMA, 5E3, High Stress
176 Ton	HMA, LVSP
320 Ft	Joint, Contraction, Cp
64 Ft	Joint, Expansion, E2
593 Syd	Conc Pavt, Decorative, Nonreinf, 9 inch
4 Cyd	Conc, Grade S2
280 Ft	Curb, Conc, Det E1
971 Ft	Curb and Gutter, Conc, Det B2
407 Ft	Curb and Gutter, Conc, Det D2
2 Ea	Shoulder Gutter, Conc, Det 1
3 Ea	Shoulder Gutter, Conc, Det 2
89 Ft	Spillway, Conc
722 Ft	Curb and Gutter, Conc, Det B2, Modified
798 Ft	Curb and Gutter, Conc, Det D2, Modified
40 Ft	Detectable Warning Surface
997 Sft	Sidewalk Ramp, Conc, 6 inch
1123 Sft	Sidewalk, Conc, 4 inch
14756 Sft	Sidewalk, Conc, 4 inch, Decorative
2455 Sft	Sidewalk, Conc, 9 inch, Decorative
1158 Ft	Fence, Woven Wire with Steel Post
25 Syd	Riprap, Plain

SECTION 22
T48N, R25W
CITY OF MARQUETTE

SECTION 23
T48N, R25W
CITY OF MARQUETTE

JN MQ17-025 GUARDRAIL (001) QUANTITIES

1 Ea Guardrail Approach Terminal, Type 3B

END CONSTRUCTION
CONTROL SECTION 52042
JOB NUMBER MQ17-025
POE STA 1260+40.04 NB US-41 NON-LEGAL ALI
POE STA 1260+20.69 SB US-41 NON-LEGAL ALI
N = 640370.77 NB, E = 26144983.33 NB
N = 640355.79 SB, E = 26144976.02 SB

(NB US-41)
CS MP: 4.797
PR #: 1562009
PR MP: 23.910
(SB US-41)
CS MP: 4.757
PR #: 3520507
PR MP: 0.531

PROP LA ROW VARIES
CAUTION - CRITICAL UTILITY
GROVE/7TH ST NON-LEGAL ALI
HAZARDOUS OR FLAMMABLE MATERIAL
137.5' OUTSIDE SHLD TAPER 8' TO 2.67'
PROP LA ROW
WHETSTONE BROOK
16" D.I. CL52
11'x10' BOX
137.5' OUTSIDE SHLD TAPER 0' TO 5.33'
67' INSIDE SHLD TAPER 0' TO 2.67'
15" CL E
12" RCP
NB US-41 NON-LEGAL ALI
SB US-41 NON-LEGAL ALI
137.5' INSIDE SHLD TAPER 4' TO 2.67'
137.5' OUTSIDE SHLD TAPER 5.33' TO 0'
8" D.I. CL52
CAUTION - CRITICAL UTILITY
PRESERVE
137.5' OUTSIDE SHLD TAPER 2.67' TO 8'
67' INSIDE SHLD TAPER 0' TO 2.67'
HAZARDOUS OR FLAMMABLE MATERIAL
EX 310' LA ROW/ROW
EX LA 230' ROW
SB US-41/ NB US-41/ EB M-28 WB M-28
NB US-41/ SB US-41/ WB M-28 EB M-28

(D2) CURB AND GUTTER, CONC, DET D2
(D2M) CURB AND GUTTER, CONC, DET D2, MODIFIED
(E1) CURB, CONC, DET E1
(B2M) CURB AND GUTTER, CONC, DET B2, MODIFIED
(B2) CURB AND GUTTER, CONC, DET B2
(001) GUARDRAIL APPROACH TERMINAL, TYPE 3B, "C-A-T" NB US-41 STA 1260+40.15 TO STA 1260+72.22
(SGD1) SHOULDER GUTTER, CONC, DET 1
(SGD2) SHOULDER GUTTER, CONC, DET 2
(PS) PIPE SADDLE

NOTES:
1. SEE ROUNDABOUT GEOMETRY SHEET FOR DIMENSIONS AND RADII NOT SHOWN.
2. TRANSITION FROM ONE CURB AND GUTTER TYPE TO ANOTHER OVER 10'.

GROVE ST

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 80

FILE: 6553_US41_Con1250.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
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CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

CONSTRUCTION SHEET
US-41/M-28
STA 1250+00 TO STA 1260+40.04

DRAWING: US41 CON 003
SHEET: SECT 1 43

S 7TH ST

ALTAMONT ST

DRAINAGE SUMMARY

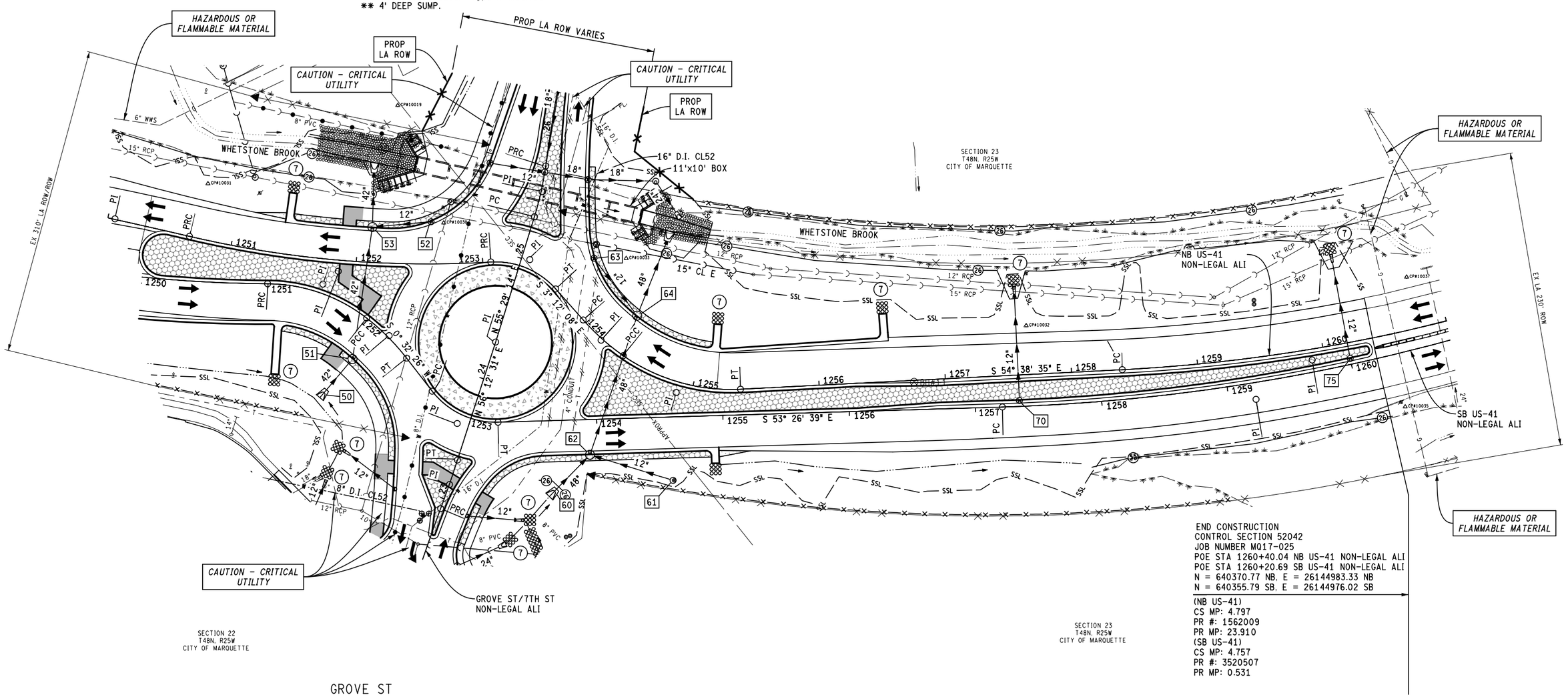
STRUCT NO.	ALIGNMENT	STATION	OFFSET	RIM ELEV	Dr Structure, __ inch dia				Dr Structure, Add Depth of __ inch dia, 8 foot to 15 foot			Dr Structure, Add Depth of __ inch dia, more than 15 foot			Dr Structure Cover, Type _					Sewer, Cl _, _ inch, Tr Det _												Culv End Sect, __ inch							Dr Marker Post	Outfall Label	Riprap, Plain (7)	Sewer, Cl E, 48 inch, Tr Det B
																				A	A	A	A	A	B	II	II	II	II	III	III											
																				12	18	36	42	48	48	24	30	12	18	24	15	18										
					24	48	60	72	48	60	72	48	60	72	B	C	G	J	K*	B	B	B	B	B	B	A	A	B	B	B	B	B	12	18	24	30	36	42	48				
			FT		Ea	Ea	Ea	Ea	Ft	Ft	Ft	Ft	Ft	Ft	Ea	Ea	Ea	Ea	Ea	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ea	Ea	Ea	Ea	Ea	Ea	Ea	Ea	Ea	Syd	Ft
50	SB US-41	1252+00.00	72.00 RT																				33														1		1			
51	SB US-41	1251+97.60	29.00 RT	698.42				1			3							1					106																			
52	NB US-41	1252+60.00	31.55 LT	698.84		1												1		47																						
53**	SB US-41	1252+11.15	25.00 LT	698.20				1			7			1				1					43															1		1	1		
60	SB US-41	1253+60.76	60.00 RT																																				1			39
61	SB US-41	1254+59.74	50.20 RT	693.16		1											1			69																						
62	SB US-41	1253+93.88	25.00 RT	698.02				1			7							1					117																			
63	NB US-41	1253+65.00	36.93 LT	699.37		1												1		57																						
64**	NB US-41	1254+28.43	29.00 LT	698.66				1			7			5				1							60														1	1	1		
70**	SB US-41	1257+35.00	2.67 LT	692.15		1										1				85															1				1	1	4		
75**	SB US-41	1260+00.00	2.67 LT	688.71		1			1							1				78															1				1	1	4		
JN MQ17-025 TOTAL						5		4	1		24			6		2	1	6		336			182	117	60									2				2	2	6	4	8	39

NOTE: STATIONS AND OFFSETS ARE MEASURED TO THE EDGE OF TRAVEL FOR TYPE C, J AND K COVERS AND TO THE CENTER OF CASTING FOR B AND G COVERS.
RIM ELEV IS AT THE GUTTER FLOWLINE OR DITCH FLOWLINE FOR CATCH BASINS AND AT THE CENTER OF COVER FOR MANHOLES.
QUANTITIES FOR PIPE LENGTH ARE FOR THE DOWNSTREAM PIPE LEAVING THE STRUCTURE.
* Dr Structure Cover, Type K, Modifed
** 4' DEEP SUMP.

SB US-41/ NB US-41/ EB M-28 WB M-28

SECTION 22 T48N, R25W CITY OF MARQUETTE

SECTION 23 T48N, R25W CITY OF MARQUETTE



END CONSTRUCTION
CONTROL SECTION 52042
JOB NUMBER MQ17-025
POE STA 1260+40.04 NB US-41 NON-LEGAL ALI
POE STA 1260+20.69 SB US-41 NON-LEGAL ALI
N = 640370.77 NB, E = 26144983.33 NB
N = 640355.79 SB, E = 26144976.02 SB

(NB US-41)
CS MP: 4.797
PR #: 1562009
PR MP: 23.910
(SB US-41)
CS MP: 4.757
PR #: 3520507
PR MP: 0.531

GROVE ST

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 80

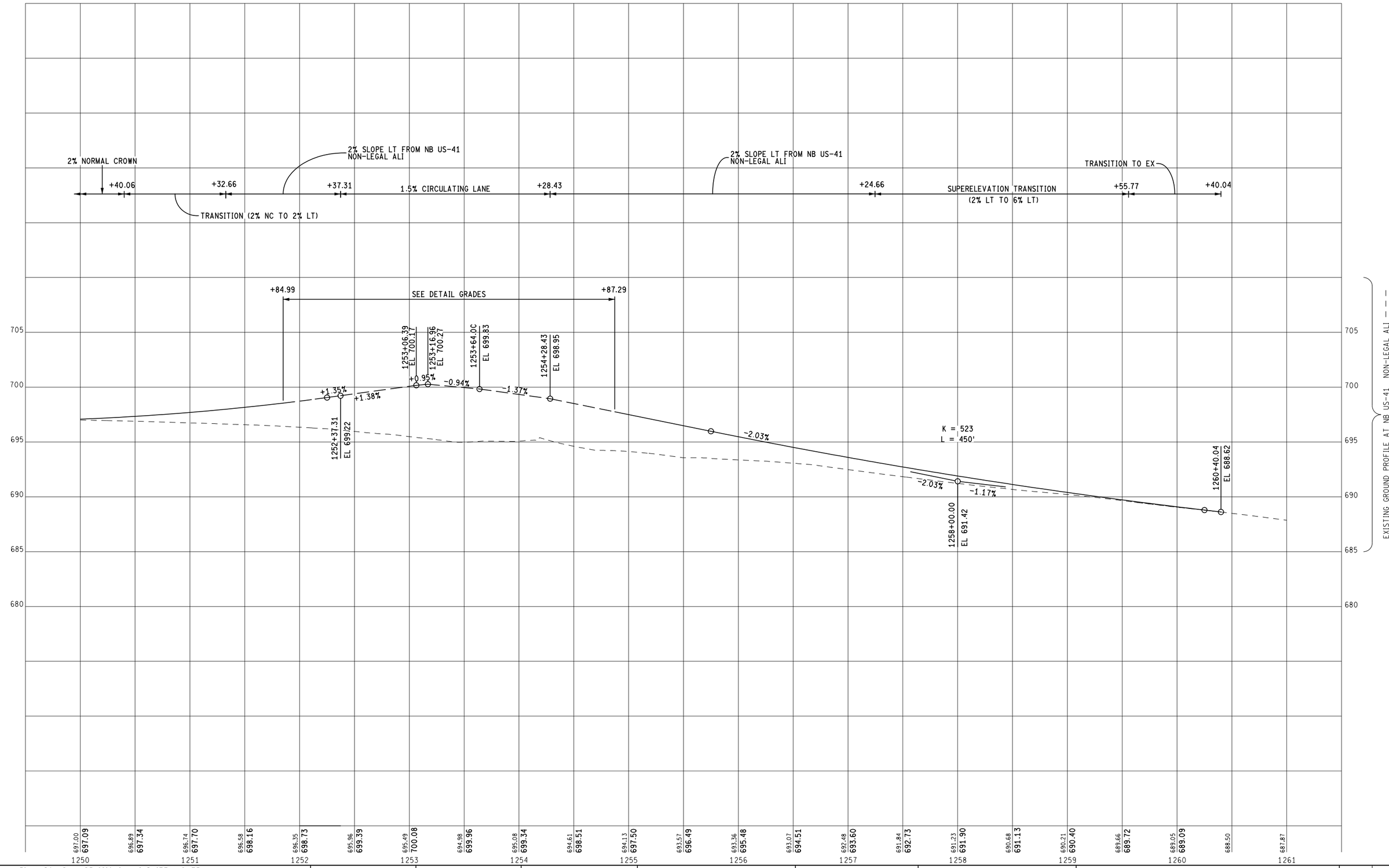
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DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

DRAINAGE SHEET
US-41/M-28
STA 1250+00 TO STA 1260+40.04

DRAWING: US41 DRAIN 003
SHEET: SECT 1 44



FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

VERT. (FT) 0 8
HORZ. (FT) 0 80

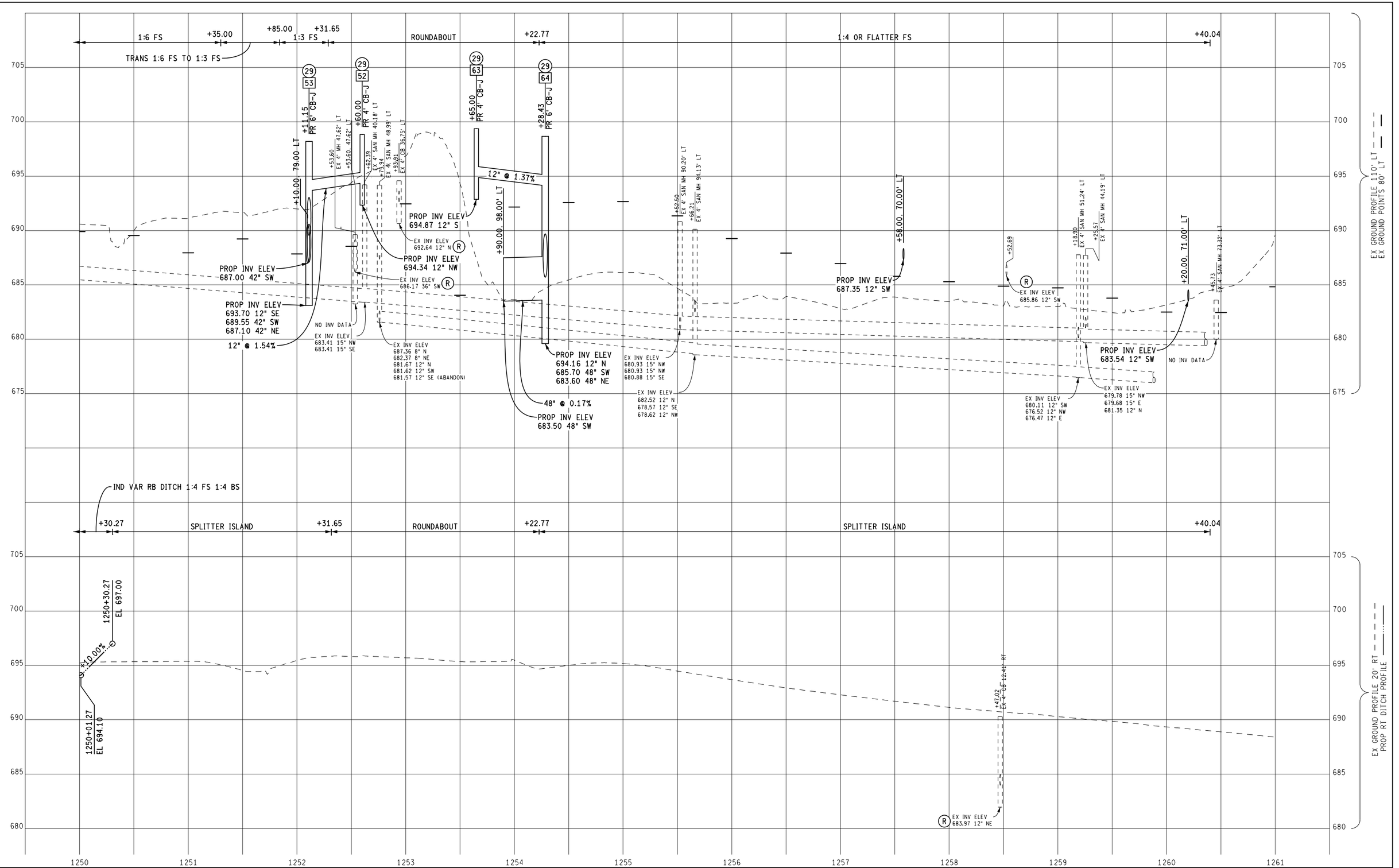
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DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

PROFILE SHEET
NB US-41/M-28
STA 1250+00 TO STA 1260+40.04

DRAWING: NBUS41 PROF 003
SHEET: SECT 1 45



FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
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DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

VERT. (FT) 0 — 8
HORZ. (FT) 0 — 80

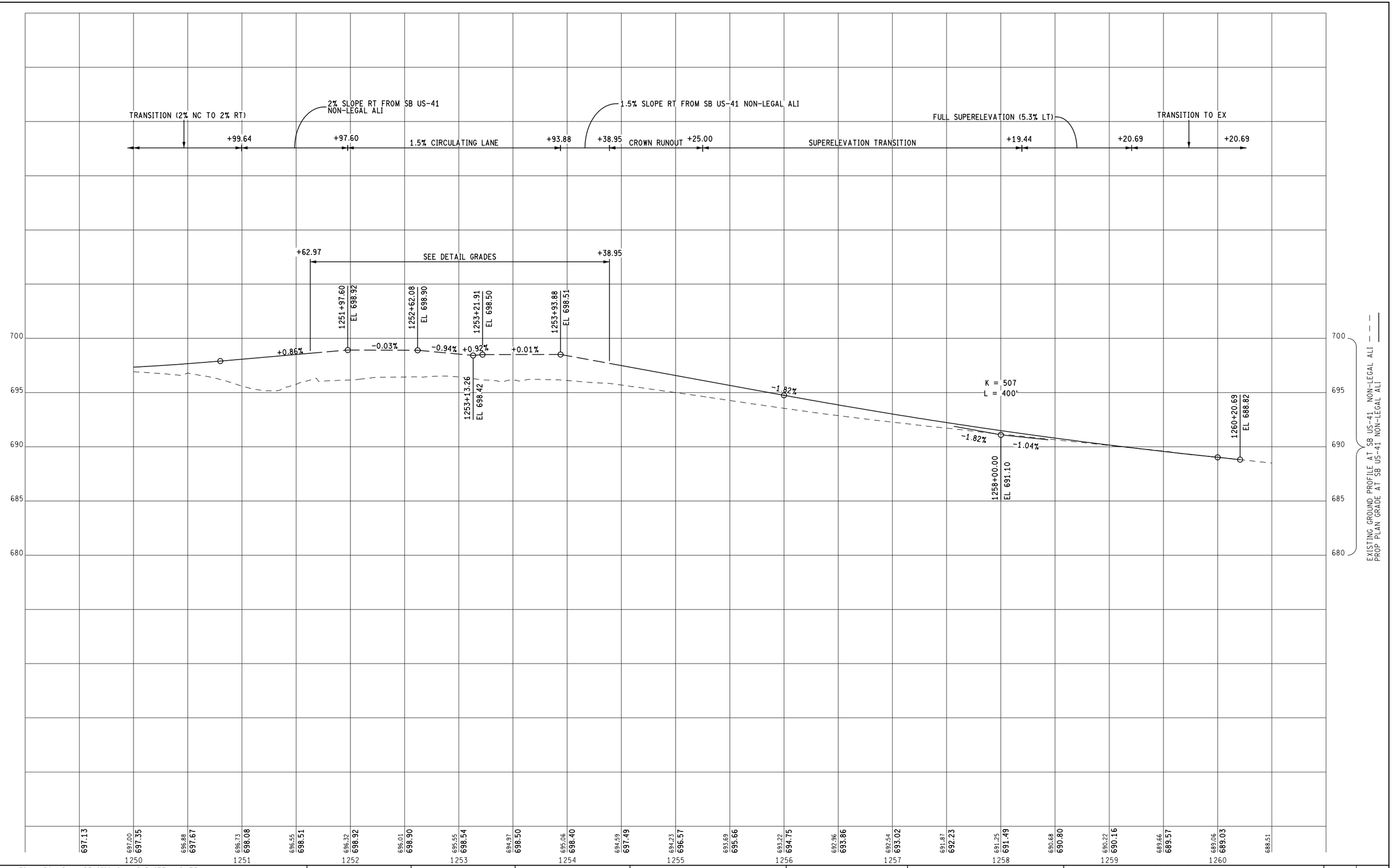
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DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

PROFILE SHEET
NB US-41/M-28
STA 1250+00 TO STA 1260+40.04

DRAWING: NBUS41 PROF 003a
SHEET: SECT 1 — 46



FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

VERT. (FT) 0 8
HORZ. (FT) 0 80

FILE: 6553_Prof_US41_SB003.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

PROFILE SHEET
SB US-41/M-28
STA 1250+00 TO STA 1260+20.69

DRAWING: SBUS41 PROF 003
SHEET: SECT 1 47

1:4 FS | +96.00 | SPLITTER ISLAND | +92.18 | ROUNDABOUT | +87.91 | SPLITTER ISLAND | +20.69

+39.21 EX 4' CB 8.70' LT

+94.53 EX 4' MH 21.16' LT

+97.05 EX 4' CB 31.38 LT

EX INV ELEV 690.80 12" E

EX INV ELEV 690.61 12" W
689.81 18" E
688.01 36" N
687.81 36" S

EX INV ELEV 691.85 18" W

29 70 PR 4' CB-C +35

PROP INV ELEV 688.65 12" NE

29 75 PR 4' CB-C +00

PROP INV ELEV 684.21 12" NE

EX GROUND PROFILE 20' LT

IND VAR WIDTH RB DITCH 1:4 FS 1:2 OR FLATTER BS

IND VAR WIDTH RB DITCH 1:6 FS 1:2 OR FLATTER BS

+00.00 | IND 6' RB DITCH 1:4 FS 1:3 BS | +61.73 | ROUNDABOUT | +24.75 | 1:4 FS | +00.00 | +30.00 | +80.00 | +75.00 | 1:6 FS | +20.69

TRANS IND VAR WIDTH RB DITCH 1:4 FS 1:2 OR FLATTER BS
TO IND VAR WIDTH RB DITCH 1:6 FS 1:2 OR FLATTER BS

29 51 PR 6" CB-J +97.60

+00.00, 72.00' RT

+41.98, 41.31' RT

1252+56.12 EL 691.44

20 37 | -0.27% | +1.94%

EX INV ELEV 689.98 36" N

PROP INV ELEV 690.00 42" NE

PROP INV ELEV 689.90 42" SW
689.80 42" NE

1252+00.00 EL 690.35

+60.76, 60.00' RT

29 62 PR 6" CB-J +93.88

PROP INV ELEV 692.10 48" NE

48" @ 0.23%

29 61 PR 4' CB-G +59.74

PROP INV ELEV 690.16 12" NW

12" @ 0.50%

PROP INV ELEV 692.00 48" SW
689.84 12" SE
686.00 48" NE

1255+00.00 EL 695.53

1255+50.00 EL 695.30

20 37 | -0.47% | -3.00% | -0.32%

1256+20.00 EL 693.20

1257+75.00 EL 692.70

EX GROUND PROFILE 30' RT
EX GROUND POINTS 90' RT
PROP RT DITCH PROFILE

700 695 690 685 680 715 710 705 700 695 690 685 680

1250 1251 1252 1253 1254 1255 1256 1257 1258 1259 1260

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
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DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

VERT. (FT) 0 8
HORZ. (FT) 0 80

FILE: 6553_Prof_US41_SB003a.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

PROFILE SHEET
SB US-41/M-28
STA 1250+00 TO STA 1260+20.69

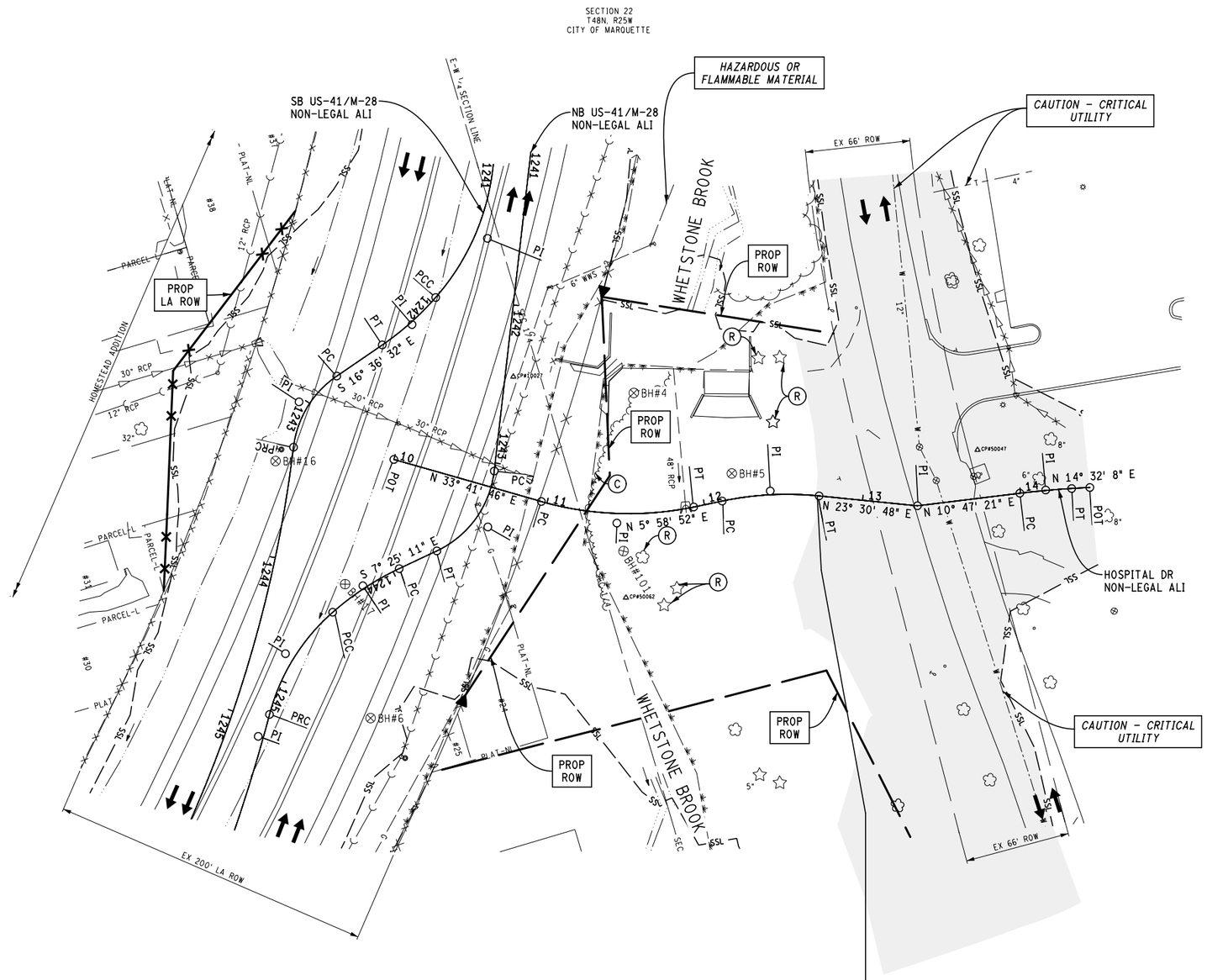
DRAWING	SHEET
SBUS41 PROF 003a	SECT 1 48

SB US-41/
EB M-28

NB US-41/
WB M-28

BARAGA AVE

HOSPITAL DR



NOTES:
1. SEE PERMANENT SIGNING PLANS FOR PERMANENT SIGNING REMOVALS.
2. SEE SANITARY AND WATERMAIN PLANS FOR SANITARY AND WATERMAIN REMOVALS.
3. SEE STRUCTURAL PLANS FOR FLOOD CONTROL STRUCTURES REMOVALS.

SECTION 22
T48N, R25W
CITY OF MARQUETTE

CS 52042
JN MQ17-025
STA 12+70.61 HOSPITAL DR
NON-LEGAL ALI

JN MQ15-020

CITY PROJECT

JN MQ17-025 REMOVAL QUANTITIES THIS SHEET

0.5 Acre	Clearing
3135 Cyd	Excavation, Earth
5143 Cyd	Excavation, Peat

SB US-41/
EB M-28

NB US-41/
WB M-28

BARAGA AVE

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 80

	DATE: 2/10/2017	CS: 52042	REMOVAL SHEET	DRAWING	SHEET
	DESIGN UNIT: FILPUS	JN: MQ17-025	HOSPITAL DR	US41 REM 004	SECT 1 49
FILE: 6553_HOSPITAL_DR_Rem010.dgn	TSC: ISHPEMING	MDOT PERMIT 043179-16	STA 10+00.00 TO STA 13+34.69		

SB US-41/
EB M-28

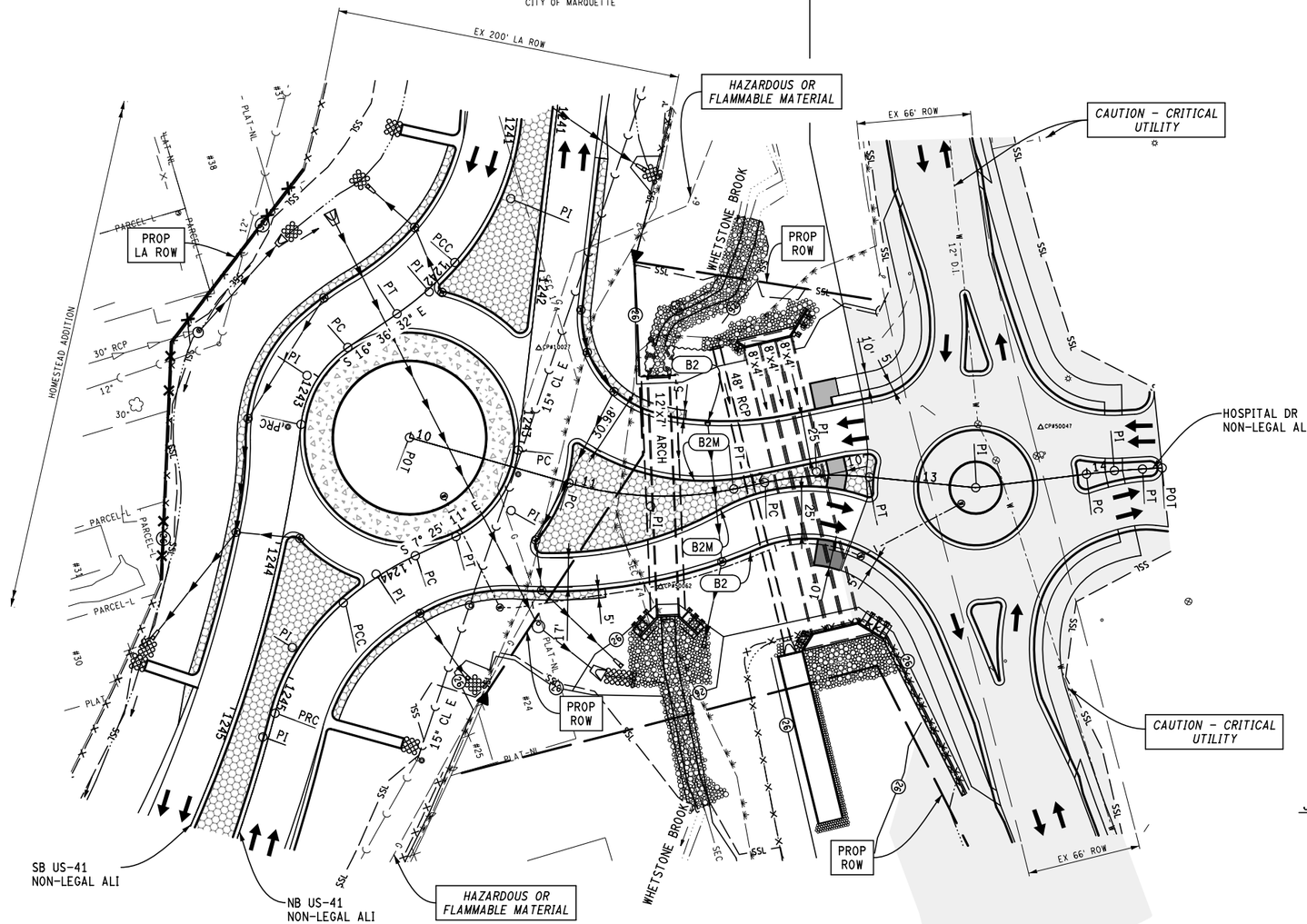
NB US-41/
WB M-28

BARAGA AVE

CS 52042
JN MQ17-025
STA 12+70.61 HOSPITAL DR
NON-LEGAL ALI

JN MQ15-020

SECTION 22
T48N, R25W
CITY OF MARQUETTE



SECTION 22
T48N, R25W
CITY OF MARQUETTE

B2 CURB AND GUTTER , CONC, DET B2

B2M CURB AND GUTTER, CONC, DET B2, MODIFIED

CITY PROJECT

JN MQ17-025	CONSTRUCTION QUANTITIES THIS SHEET
5143 Cyd	Backfill, Swamp
4719 Cyd	Embankment, CIP
18 Ft	Erosion Control, Check Dam, Stone (37)
2 Ea	Erosion Control, Inlet Protection, Fabric Drop (29)
1 Ea	Erosion Control, Sediment Trap (20)
608 Ft	Erosion Control, Silt Fence (26)
921 Cyd	Subbase, CIP
1198 Syd	Aggregate Base, 6 inch
780 Ft	Underdrain, Subbase, 6 inch
193 Ton	HMA, 3E3
129 Ton	HMA, 4E3, High Stress
97 Ton	HMA, 5E3, High Stress
475 Ft	Curb and Gutter, Conc, Det B2
385 Ft	Curb and Gutter, Conc, Det B2, Modified
40 Ft	Detectable Warning Surface
652 Sft	Sidewalk Ramp, Conc, 6 inch
129 Sft	Sidewalk, Conc, 4 inch
4971 Sft	Sidewalk, Conc, 4 inch, Decorative
801 Sft	Sidewalk, Conc, 9 inch, Decorative

NOTE:
SEE ROUNDABOUT GEOMETRY SHEET FOR DIMENSIONS AND RADII NOT SHOWN.

SB US-41/
EB M-28

NB US-41/
WB M-28

BARAGA AVE

HOSPITAL DR

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 80

FILE: 6553_HOSPITAL_DR_Con010.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

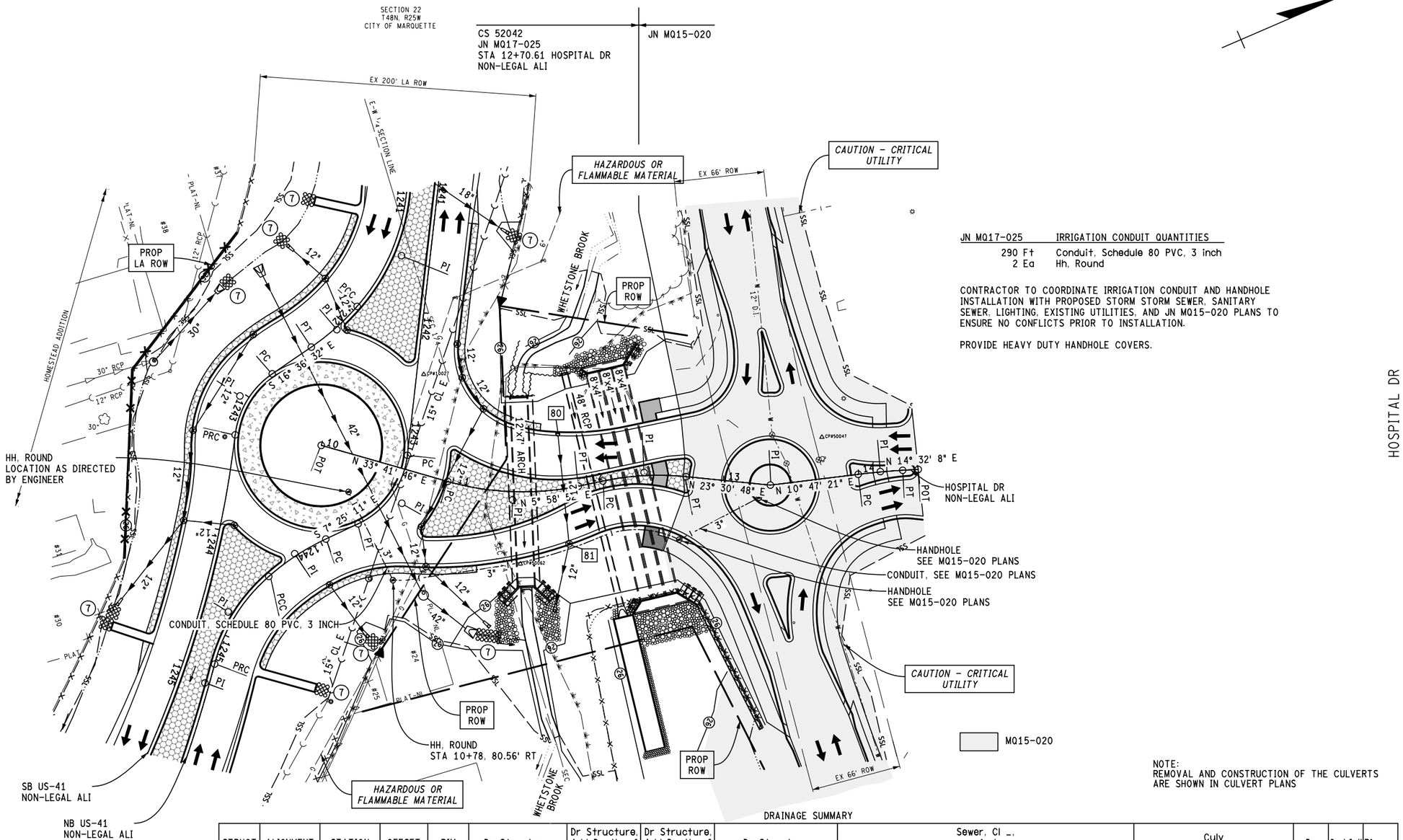
CONSTRUCTION SHEET
HOSPITAL DR
STA 10+00.00 TO STA 14+43.65

DRAWING	SHEET
US41 CON 004	SECT 1 50

SB US-41/
EB M-28

NB US-41/
WB M-28

BARAGA AVE



JN MQ17-025	IRRIGATION CONDUIT QUANTITIES
290 Ft	Conduit, Schedule 80 PVC, 3 inch
2 Ea	Hh, Round

CONTRACTOR TO COORDINATE IRRIGATION CONDUIT AND HANDHOLE INSTALLATION WITH PROPOSED STORM STORM SEWER, SANITARY SEWER, LIGHTING, EXISTING UTILITIES, AND JN MQ15-020 PLANS TO ENSURE NO CONFLICTS PRIOR TO INSTALLATION.

PROVIDE HEAVY DUTY HANDHOLE COVERS.

NOTE:
REMOVAL AND CONSTRUCTION OF THE CULVERTS ARE SHOWN IN CULVERT PLANS

SECTION 22
T48N, R25W
CITY OF MARQUETTE

DRAINAGE SUMMARY

STRUCT NO.	ALIGNMENT	STATION	OFFSET	RIM ELEV	Dr Structure, __ inch dia				Dr Structure, Add Depth of __ inch dia, 8 foot to 15 foot			Dr Structure, Add Depth of __ inch dia, more than 15 foot			Dr Structure Cover, Type _					Sewer, Cl _, _ inch, Tr Det _														Culv End Sect, __ inch							Dr Marker Post	Outfall Label	Riprap, Plain (7)
																				A 12	A 18	A 36	A 42	A 48	B 48	II 24	II 30	II 12	II 18	II 24	III 15	III 18										
			FT		24 Ea	48 Ea	60 Ea	72 Ea	48 Ft	60 Ft	72 Ft	48 Ft	60 Ft	72 Ft	B Ea	C Ea	G Ea	J Ea	K** Ea	B Ft	B Ft	B Ft	B Ft	B Ft	B Ft	A Ft	A Ft	B Ft	B Ft	B Ft	B Ft	B Ft	12 Ea	18 Ea	24 Ea	30 Ea	36 Ea	42 Ea	48 Ea	Ea	Ea	Syd
80	HOSPITAL	11+84.04	39.11 LT	702.54	1													1									82														
81**	HOSPITAL	11+80.00	38.41 RT	702.74		1			2									1									46					1									
JN MQ17-025 TOTAL					1	1			2									2									128					1									

NOTE: STATIONS AND OFFSETS ARE MEASURED TO THE EDGE OF TRAVEL FOR TYPE C, J AND K COVERS AND TO THE CENTER OF CASTING FOR B AND G COVERS.
RIM ELEV IS AT THE GUTTER FLOWLINE OR DITCH FLOWLINE FOR CATCH BASINS AND AT THE CENTER OF COVER FOR MANHOLES.
QUANTITIES FOR PIPE LENGTH ARE FOR THE DOWNSTREAM PIPE LEAVING THE STRUCTURE.
* Dr Structure Cover, Type K, Modifed
** 4' DEEP SUMP.

SB US-41/
EB M-28

NB US-41/
WB M-28

BARAGA AVE

HOSPITAL DR

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
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DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 80

FILE: 6553_HOSPITAL_DRAIN010.dgn

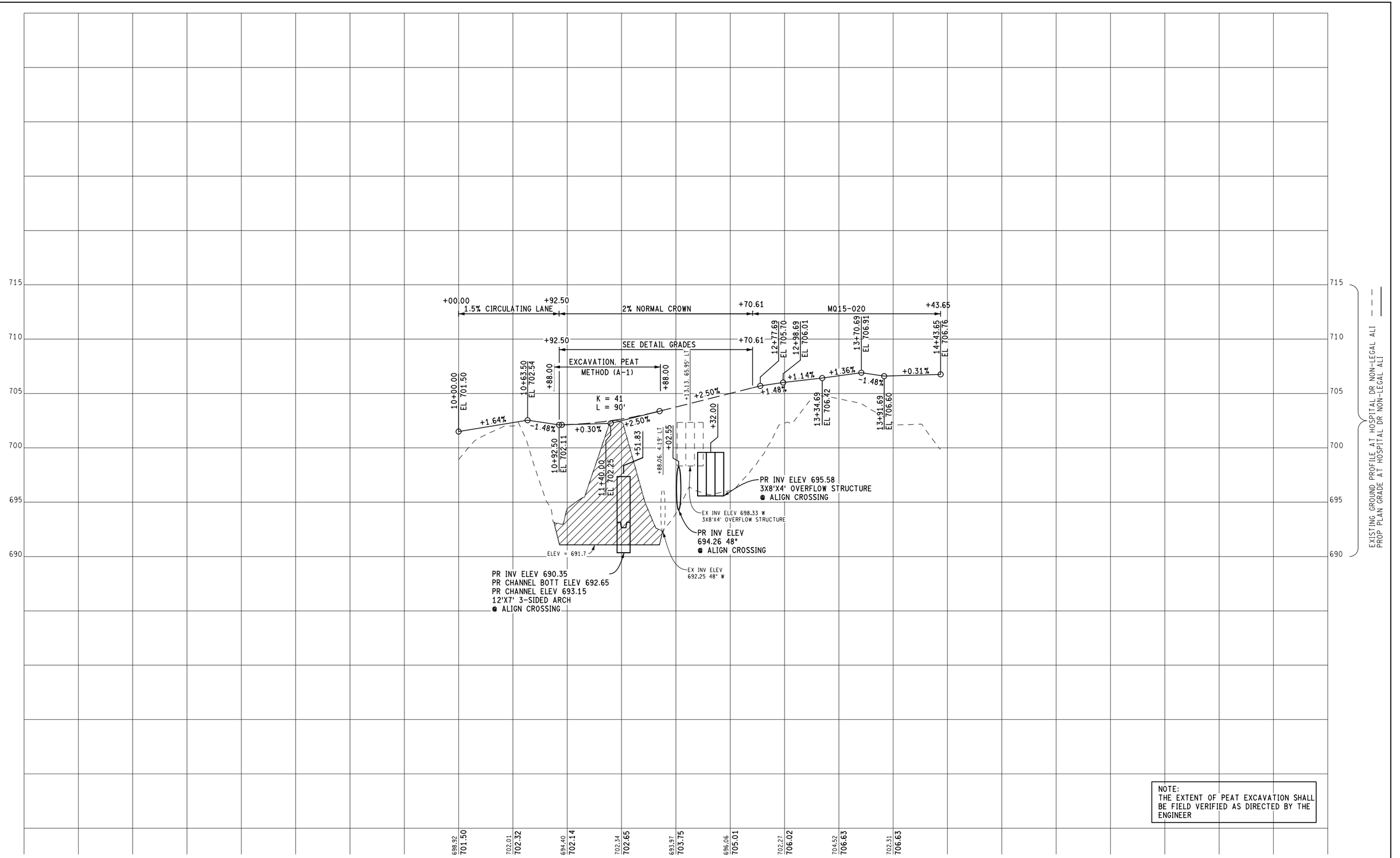
DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

DRAINAGE SHEET
HOSPITAL DR
STA 10+00.00 TO STA 14+43.65

DRAWING: US41 DRAIN 004

SHEET: SECT 1 — 51



NOTE:
THE EXTENT OF PEAT EXCAVATION SHALL BE FIELD VERIFIED AS DIRECTED BY THE ENGINEER

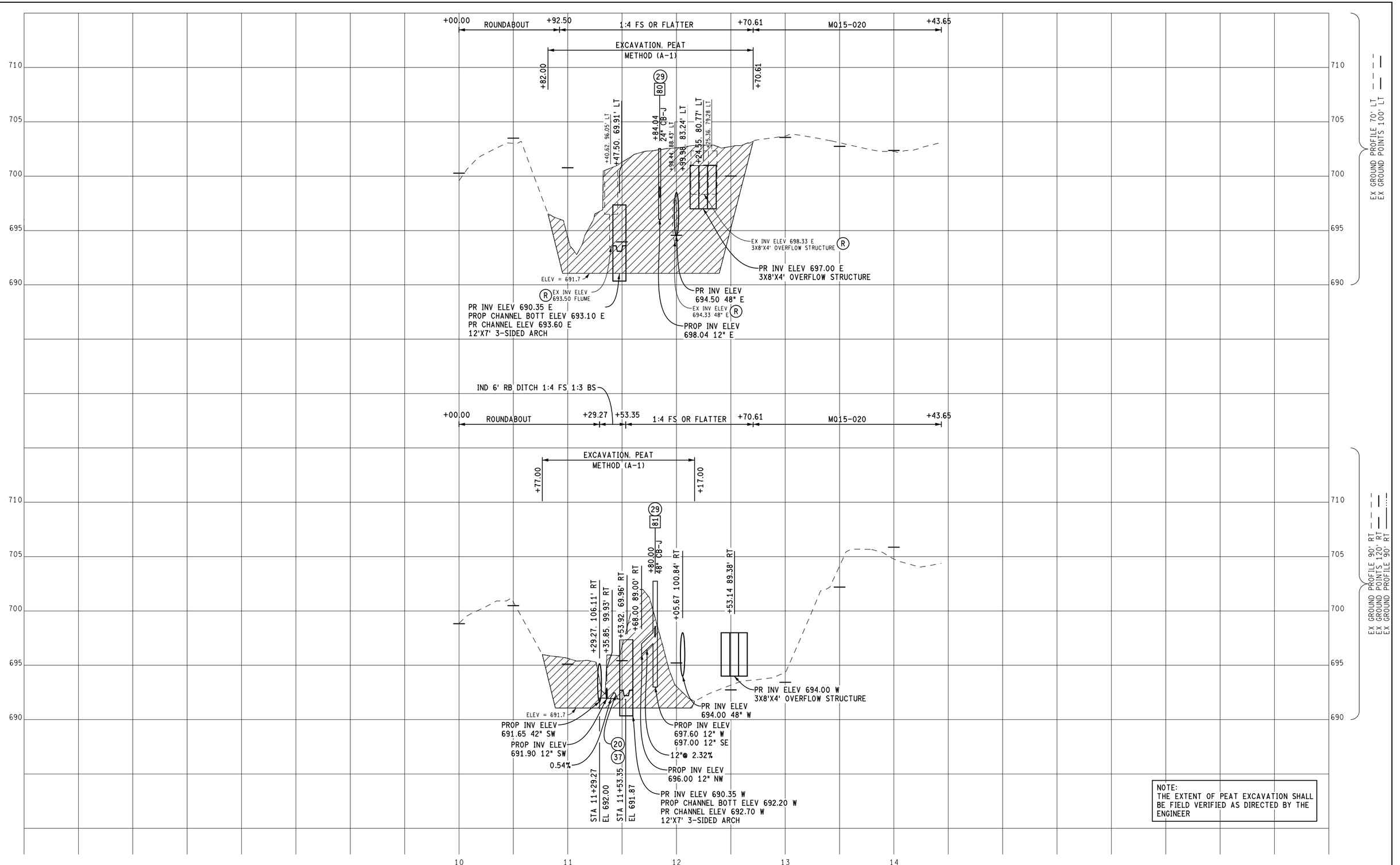
FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

VERT. (FT) 0 8
HORZ. (FT) 0 80

		DATE: 2/10/2017	CS: 52042	PROFILE SHEET	DRAWING / SHEET
		DESIGN UNIT: FILPUS	JN: MQ17-025	HOSPITAL DR	HSPTL PROF 001 / SECT 1
FILE: 6553_Prof_Hospital001.dgn		TSC: ISHPEMING	MDOT PERMIT 043179-16	STA 10+00 TO STA 12+70.61	52



NOTE:
THE EXTENT OF PEAT EXCAVATION SHALL BE FIELD VERIFIED AS DIRECTED BY THE ENGINEER

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

VERT. (FT) 0 — 8
HORZ. (FT) 0 — 80

FILE: 6553_Prof_Hospital001.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

PROFILE SHEET
HOSPITAL DR
STA 10+00 TO STA 12+70.61

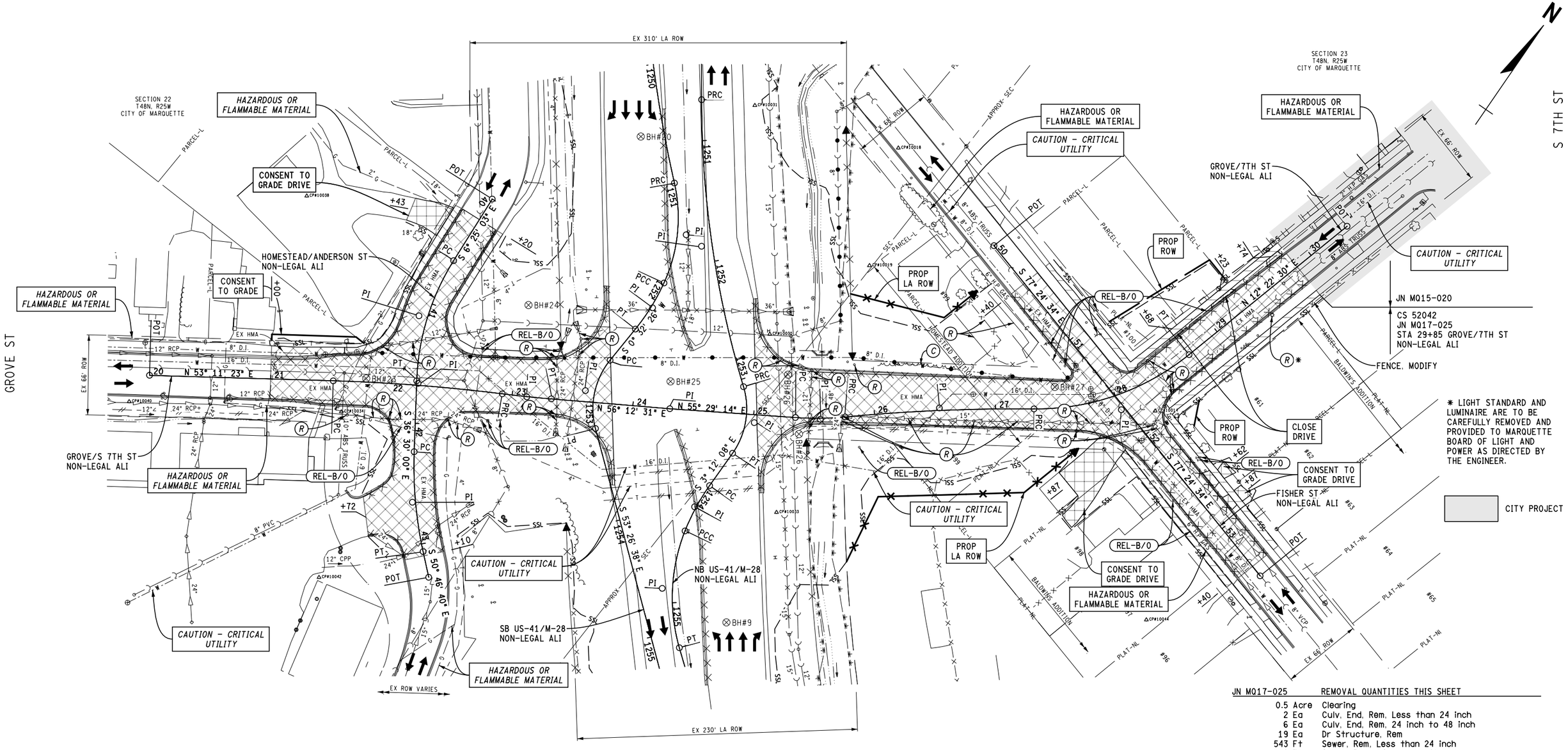
DRAWING: HSPTL PROF 001a
SHEET: SECT 1 53

HOMESTEAD ST

SB US-41/ EB M-28

NB US-41/ WB M-28

FISHER ST



ANDERSON ST

SB US-41/ EB M-28

NB US-41/ WB M-28

FISHER ST

JN MQ017-025 REMOVAL QUANTITIES THIS SHEET

0.5 Acre	Clearing
2 Ea	Culv, End, Rem, Less than 24 inch
6 Ea	Culv, End, Rem, 24 inch to 48 inch
19 Ea	Dr Structure, Rem
543 Ft	Sewer, Rem, Less than 24 inch
281 Ft	Sewer, Rem, 24 inch to 48 inch
2460 Ft	Curb and Gutter, Rem
106 Ft	Fence, Rem
39 Syd	Pavt, Rem
604 Syd	Sidewalk, Rem
24 Ft	Fence, Modify
1 LSUM	Building, Rem
2797 Cyd	Excavation, Earth
5911 Syd	HMA Surface, Rem
1 Ea	Light Std Fdn, Rem
1 Ea	Light Std Shaft, Rem and Salv
1 Ea	Luminaire, Rem and Salv
1 Ea	Wood Pole, Rem

NOTES:
1. SEE PERMANENT SIGNING PLANS FOR PERMANENT SIGNING REMOVALS.
2. SEE SANITARY AND WATERMAIN PLANS FOR SANITARY AND WATERMAIN REMOVALS.
3. SEE TRAFFIC SIGNAL PLANS FOR TRAFFIC SIGNAL REMOVALS.

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 80

FILE: 6553_GROVE_ST_Rem020.dgn

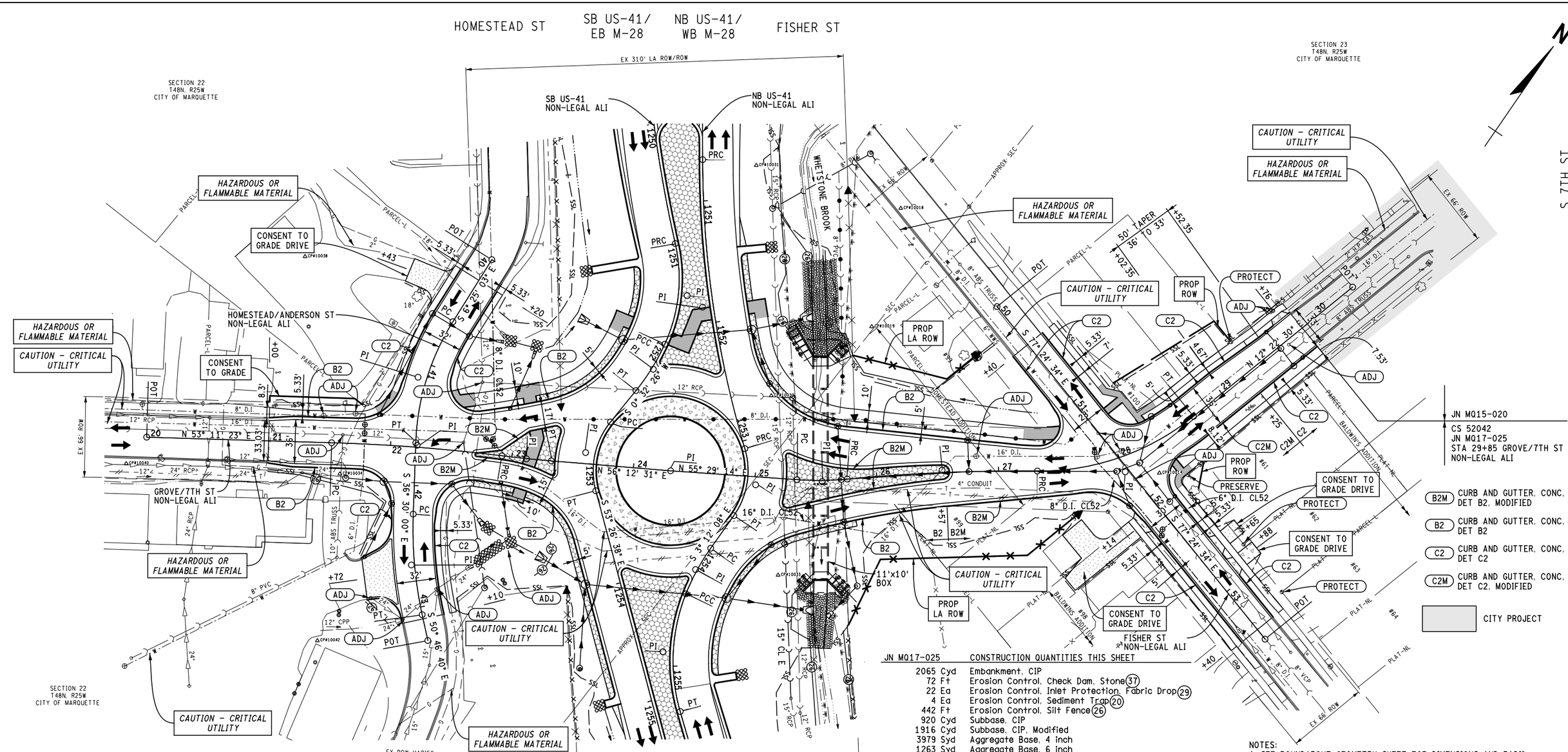
DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

REMOVAL SHEET
GROVE ST & S 7TH ST
STA 21+00 TO STA 29+85

DRAWING: US41 REM 005

SHEET: SECT 1 54



JN MQ15-020
CS 52042
JN MQ17-025
STA 29+85 GROVE/7TH ST
NON-LEGAL ALI

B2M CURB AND GUTTER, CONC, DET B2, MODIFIED
B2 CURB AND GUTTER, CONC, DET B2
C2 CURB AND GUTTER, CONC, DET C2
C2M CURB AND GUTTER, CONC, DET C2, MODIFIED
CITY PROJECT

JN MQ17-025 CONSTRUCTION QUANTITIES THIS SHEET

2065	Cyd	Embankment, CIP
72	Ft	Erosion Control, Check Dam, Stone (37)
22	Ea	Erosion Control, Inlet Protection, Fabric Drop (29)
4	Ea	Erosion Control, Sediment Trap (20)
442	Ft	Erosion Control, Silt Fence (26)
920	Cyd	Subbase, CIP
1916	Cyd	Subbase, CIP, Modified
3979	Syd	Aggregate Base, 4 inch
1263	Syd	Aggregate Base, 6 inch
8	Ea	Dr Structure Cover, Adj, Case 1
2	Ea	Dr Structure Cover, Adj, Case 2
2850	Ft	Underdrain, Subbase, 6 inch
193	Ton	HMA, 3E3
460	Ton	HMA, 4E1, High Stress
129	Ton	HMA, 4E3, High Stress
345	Ton	HMA, 5E1, High Stress
97	Ton	HMA, 5E3, High Stress
977	Ft	Curb and Gutter, Conc, Det B2
848	Ft	Curb and Gutter, Conc, Det C2
589	Ft	Curb and Gutter, Conc, Det B2, Modified
121	Ft	Curb and Gutter, Conc, Det C2, Modified
80	Ft	Detectable Warning Surface
1945	Sft	Sidewalk Ramp, Conc, 6 inch
7576	Sft	Sidewalk, Conc, 4 inch
3843	Sft	Sidewalk, Conc, 4 inch, Decorative
1385	Sft	Sidewalk, Conc, 9 inch, Decorative
40	Syd	Riprap, Plain (7)
1	Ea	Water Shutoff, Adj, Case 1
5	Ea	Gate Box, Adj, Case 1

NOTES:
1. SEE ROUNDABOUT GEOMETRY SHEET FOR DIMENSIONS AND RADII NOT SHOWN.
2. SEE US41_DRAIN_005A FOR DRIVEWAY TABLE.
3. TRANSITION FROM ONE CURB AND GUTTER TYPE TO ANOTHER OVER 10' CENTERED AT THE LOCATION INDICATED.
4. TRANSITION CURB AND GUTTER, CONC, DET B2 TO CURB AND GUTTER, CONC, DET C2 AT THE GROVE ST/HOMESTEAD ST/ANDERSON ST INTERSECTION OVER 10' ENDING THE B2 AT THE SPRING POINTS ON HOMESTEAD ST AND ANDERSON ST.
5. TRANSITION CURB AND GUTTER, CONC, DET B2 TO CURB AND GUTTER, CONC, DET C2 IN THE SW AND SE QUADRANTS OF THE 7TH ST/FISHER ST INTERSECTION OVER 10' ENDING THE B2 AT THE SPRING POINT ON FISHER ST.
6. TRANSITION CURB AND GUTTER, CONC, DET B2 OR C2, MODIFIED TO CURB AND GUTTER, CONC, DET B2 IN THE SE AND CURB AND GUTTER, CONC, DET C2 IN THE NE QUADRANTS OF THE 7TH ST/FISHER ST INTERSECTION OVER 10'. BEGIN THE B2 OR C2 5' WEST OF THE CENTER OF THE PROPOSED CATCH BASINS.
7. PAYMENT FOR SANITARY SEWER CLEANOUT ADJUSTMENT INCLUDED IN THE COST OF OTHER ITEMS.

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 80

FILE: 6553_GROVE_ST_Con020.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

CONSTRUCTION SHEET
GROVE ST & S 7TH ST
STA 21+00 TO STA 29+85

DRAWING: US41 CON 005
SHEET: SECT 1 55

HOMESTEAD ST

SB US-41/
EB M-28

NB US-41/
WB M-28

FISHER ST

GROVE ST

S 7TH ST

ANDERSON ST

SB US-41/
EB M-28

NB US-41/
WB M-28

FISHER ST

SECTION 22
T48N, R25W
CITY OF MARQUETTE

SECTION 23
T48N, R25W
CITY OF MARQUETTE

SECTION 23
T48N, R25W
CITY OF MARQUETTE

EX 310' LA ROW

SB US-41
NON-LEGAL ALI

NB US-41
NON-LEGAL ALI

HAZARDOUS OR FLAMMABLE MATERIAL

CONSENT TO GRADE DRIVE

HOMESTEAD ST/ANDERSON ST
NON-LEGAL ALI

CONSENT TO GRADE

CAUTION - CRITICAL UTILITY

GROVE ST/7TH ST
NON-LEGAL ALI

CAUTION - CRITICAL UTILITY

HAZARDOUS OR FLAMMABLE MATERIAL

CAUTION - CRITICAL UTILITY

HAZARDOUS OR FLAMMABLE MATERIAL

WHETSTONE BROOK

PROP LA ROW

HOMESTEAD ADDITION

CAUTION - CRITICAL UTILITY

CONSENT TO GRADE DRIVE

PROP LA ROW

11'x10' BOX

CAUTION - CRITICAL UTILITY

CONSENT TO GRADE DRIVE

FISHER ST
NON-LEGAL ALI

CAUTION - CRITICAL UTILITY

HAZARDOUS OR FLAMMABLE MATERIAL

CAUTION - CRITICAL UTILITY

HAZARDOUS OR FLAMMABLE MATERIAL

PROP ROW

PROP ROW

PROP ROW

EX 66' ROW

EX 99' ROW

EX 66' ROW

EX ROW VARIES

EX LA 230' ROW

BALDWINS ADDITION

PLAT-NL

JN MQ15-020
CS 52042
JN MQ17-025
STA 29+85 GROVE/7TH ST
NON LEGAL ALI

CITY PROJECT

NOTE:
SEE US41 DRAIN 005A FOR DRAINAGE TABLE.

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FILE: 6553_GROVE_DRAIN020.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

DRAINAGE SHEET
GROVE ST & S 7TH ST
STA 21+00 TO STA 29+85

DRAWING: US41 DRAIN 005

SHEET: SECT 1

DRIVEWAY SUMMARY

STATION	* INTERSECTING ANGLE (A)	* DRIVEWAY WIDTH (B)	* ENTERING RADIUS (C)	* EXITING RADIUS (D)	* CURB CUT (R)	* DRIVEWAY LENGTH (L)			* DRIVEWAY SLOPE (S)			DRIVEWAY APPROACHES					
						L1	L2	L3	S1	S2	S3	Aggregate Base, 6 inch	HMA Approach	Driveway Nonreinf Conc, 6 inch	Sidewalk, Conc, 6 inch	Curb and Gutter, Conc, Det C2	Driveway Opening, Conc, Det M
	DEGREE	FT	FT	FT	FT	FT	FT	FT	%	%	%	Syd	Ton	Syd	Sft	Ft	Ft
40+34 RT	80° 23' 44"	20.00	8.00	10.00	40.00	5.33	29.97		2.00	-6.40		94	12		214	40	
42+72 RT	88° 42' 10"	32.00	25.00	20.00	76.00	12.00	12.55		0.50	-2.30		109	18			75	76
52+14 RT	90° 0' 0"	16.00			21.00	4.92	5.33		10.00	1.50		200	30	10	107	21	
52+65 LT	90° 0' 0"	13.00			18.00	5.00	5.33	14.67	10.00	2.00	9.98	38	4	9	119	18	
52+88 LT	90° 0' 0"	12.00			17.00	5.00	5.33	14.67	10.00	2.00	11.95	35		28	124	17	
29+76 LT	90° 0' 0"	11.00			16.00	4.67	5.33	2.00	10.00	2.00	7.32	17		10	105	16	
JN MQ17-025 TOTAL												493	64	57	669	187	76

* FOR INFORMATION ONLY. SEE MISCELLANEOUS DETAILS FOR DRIVEWAY DETAILS.

DRAINAGE SUMMARY

STRUCT NO.	ALIGNMENT	STATION	OFFSET	RIM ELEV	Dr Structure, __ inch dia				Dr Structure, Add Depth of __ inch dia, 8 foot to 15 foot			Dr Structure, Add Depth of __ inch dia, more than 15 foot			Dr Structure Cover, Type _					Sewer, Cl _, _ inch, Tr Det _																Culv End Sect, __ inch							Dr Marker Post	Outfall Label	Riprap, Plain (7)
					24	48	60	72	48	60	72	48	60	72	B	C	G	J	K*	A 12	A 18	B 36	A 42	A 48	B 48	B 24	A 30	II 12	II 18	II 24	III 15	III 18	12	18	24	30	36	42	48			
			FT		Ea	Ea	Ea	Ea	Ft	Ft	Ft	Ft	Ft	Ft	Ea	Ea	Ea	Ea	Ea	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ea	Ea	Ea	Ea	Ea	Ea	Ea	Ea	Ea	Syd
90	GROVE	21+64.31	27.69 RT	701.73		1									1													32													
91A	HOMESTEAD	42+56.80	39.97 RT	700.60	1														1								49														
91	HOMESTEAD	42+15.52	16.00 RT	698.66		1												1									20														
92	GROVE	21+98.15	28.22 RT	699.10			1			1								1										56													
93	GROVE	22+51.86	25.94 RT	698.05		1												1										37				1								9
95	HOMESTEAD	41+46.91	31.22 RT	699.56	1													1								94														
96	HOMESTEAD	40+63.00	16.00 RT	695.78		1													1								36														
97	HOMESTEAD	40+63.00	16.00 LT	695.78		1													1								23				1								12
100	GROVE	22+93.61	20.73 RT	697.73	1													1								38				1								4
105	GROVE	22+94.22	38.13 LT	697.50	1													1								45				1								4
110	GROVE	29+60.00	15.00 LT	715.98		1													1								19														
111A	GROVE	29+70.00	18.00 RT	716.20	1														1								10														
111	GROVE	29+60.00	18.00 RT	716.05		1													1								18														
112	GROVE	29+60.00	2.00 RT	716.33		1									1												150														
113A	GROVE	28+60.00	18.00 LT	714.31	1														1								19														
113	GROVE	28+40.00	18.00 LT	713.66		1			4										1								40														
114	FISHER	52+12.45	15.00 LT	714.94	1														1								7														
115	FISHER	52+12.45	10.00 LT	715.11		1			2						1												41														
116	GROVE	28+13.00	10.00 RT	713.54		1			4						1														20												
117	FISHER	51+94.89	15.77 RT	713.88		1			3									1									31														
118	GROVE	27+94.00	10.00 RT	712.60		1			6						1															122										
119	GROVE	26+75.00	23.77 LT	703.91		1												1								26														
120	GROVE	26+75.00	0.00	704.51		1									1													105												
121	GROVE	25+70.69	41.89 LT	699.44		1												1								44														
122	GROVE	25+70.00	0.00	701.00		1									1													35												
123**	GROVE	25+70.00	32.72 RT	699.63		1			7			1						1										54														
124	GROVE	25+75.00	88.00 RT	693.00		1			2						1											30								1					1	1	
JN MQ17-025 TOTAL					7	19	1		28	1		1			8			10	9						30	710	194	125	20	122	3		2					1	1	29

NOTE: STATIONS AND OFFSETS ARE MEASURED TO THE EDGE OF TRAVEL FOR TYPE C, J AND K COVERS AND TO THE CENTER OF CASTING FOR B AND G COVERS.
RIM ELEV IS AT THE GUTTER FLOWLINE OR DITCH FLOWLINE FOR CATCH BASINS AND AT THE CENTER OF COVER FOR MANHOLES.
QUANTITIES FOR PIPE LENGTH ARE FOR THE DOWNSTREAM PIPE LEAVING THE STRUCTURE.
* Dr Structure Cover, Type K, Modifed
** 4' DEEP SUMP.

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 80

	DATE: 2/10/2017	CS: 52042	CONSTRUCTION AND DRAINAGE SHEET	DRAWING / SHEET
	DESIGN UNIT: FILPUS	JN: MQ17-025	GROVE ST & S 7TH ST	US41 DRAIN 005a / SECT 1
FILE: 6553_GROVE_DRAIN020a.dgn	TSC: ISHPEMING	MDOT PERMIT 043179-16	STA 21+00 TO STA 29+85	57

+00.00 2% NORMAL CROWN +38.09 1.5% CIRCULATING LANE +23.09 +80.54 +56.60 +69.33 +42.87 +24.69 +79.24 +85.00

2% NORMAL CROWN — CROWN RUNOUT — SUPERELEVATION TRANSITION — FULL SUPERELEVATION (3% LT) — SUPERELEVATION TRANSITION — CROWN RUNOUT — 2% NORMAL CROWN

+71.09 SEE DETAIL GRADES +62.27

720 715 710 705 700 695

21+00.00 EL 705.27

+60.65 EX 4" SAN MH 6.78' LT

K = 27 L = 180'

-7.07% -7.07% -0.31% -0.31% +1.48% +1.28% -1.48% +0.35% +6.76% +6.78% +1.49%

+59.35 EX 4" SAN MH 7.41' LT

21+95.00 EL 698.55

23+38.09 EL 698.11

23+67.09 EL 698.54

24+94.09 EL 700.16

25+23.09 EL 699.73

+53.80

26+10.00 EL 700.03

+75.00 PR 4" MH — 120

+70.00 PR 4" MH — 122

+73.36 EX 4" MH 0.97' LT

K = 26 L = 170'

+94.00 PR 4" MH — 118

+13.00 PR 4" MH — 116

28+20.00 EL 714.27

+49.50 K = 21 L = 110'

12" @ 1.90%

+60.00 PR 4" MH — 112

+67.78 EX 4" SAN MH 3.59' RT

29+85.00 EL 716.73

NO INV DATA

PROP INV ELEV
711.90 12" W
711.90 12" E
711.80 12" S

18" @ 1.88%

PROP INV ELEV
709.04 12" N
703.50 12" NW
703.50 12" N
702.10 15" S

15" @ 5.02%

PROP INV ELEV
704.70 12" E
701.30 15" N
700.95 18" SW

18" @ 4.60%

PROP INV ELEV
699.15 12" NW
698.75 18" NE
698.65 18" SW

PROP INV ELEV
694.55 12" NW
694.00 18" NE
693.50 18" SE

EX INV ELEV
695.88 4" NW
694.23 8" SE
692.98 12" E (ABANDON)
691.33 12" NE
691.23 12" SW

EX INV ELEV
687.68 8" SE
687.53 10" NW
NO INVERT DATA

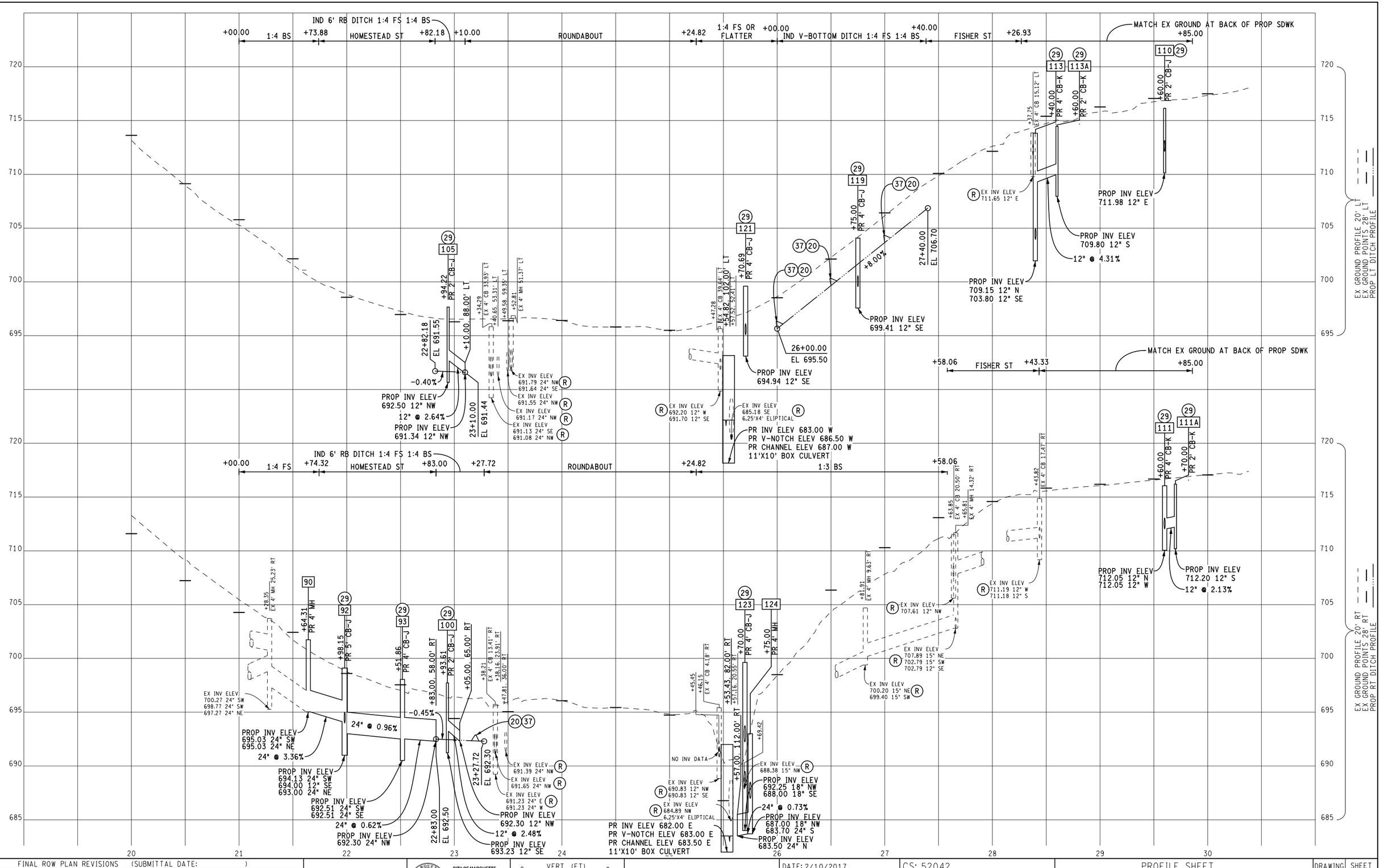
EX INV ELEV
692.70 15" NE (R)
689.10 24" SE

EX INV ELEV 684.97 (R)
6.25'X4' ELIPTICAL
@ ALIGN CROSSING

PR INV ELEV 682.45
11'X10' BOX CULVERT
@ ALIGN CROSSING

EXISTING GROUND PROFILE AT GROVE ST/7TH ST NON-LEGAL ALI
PROP PLAN GRADE AT GROVE ST/7TH ST NON-LEGAL ALI

| | | |



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CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

VERT. (FT) 0 — 8
HORZ. (FT) 0 — 80

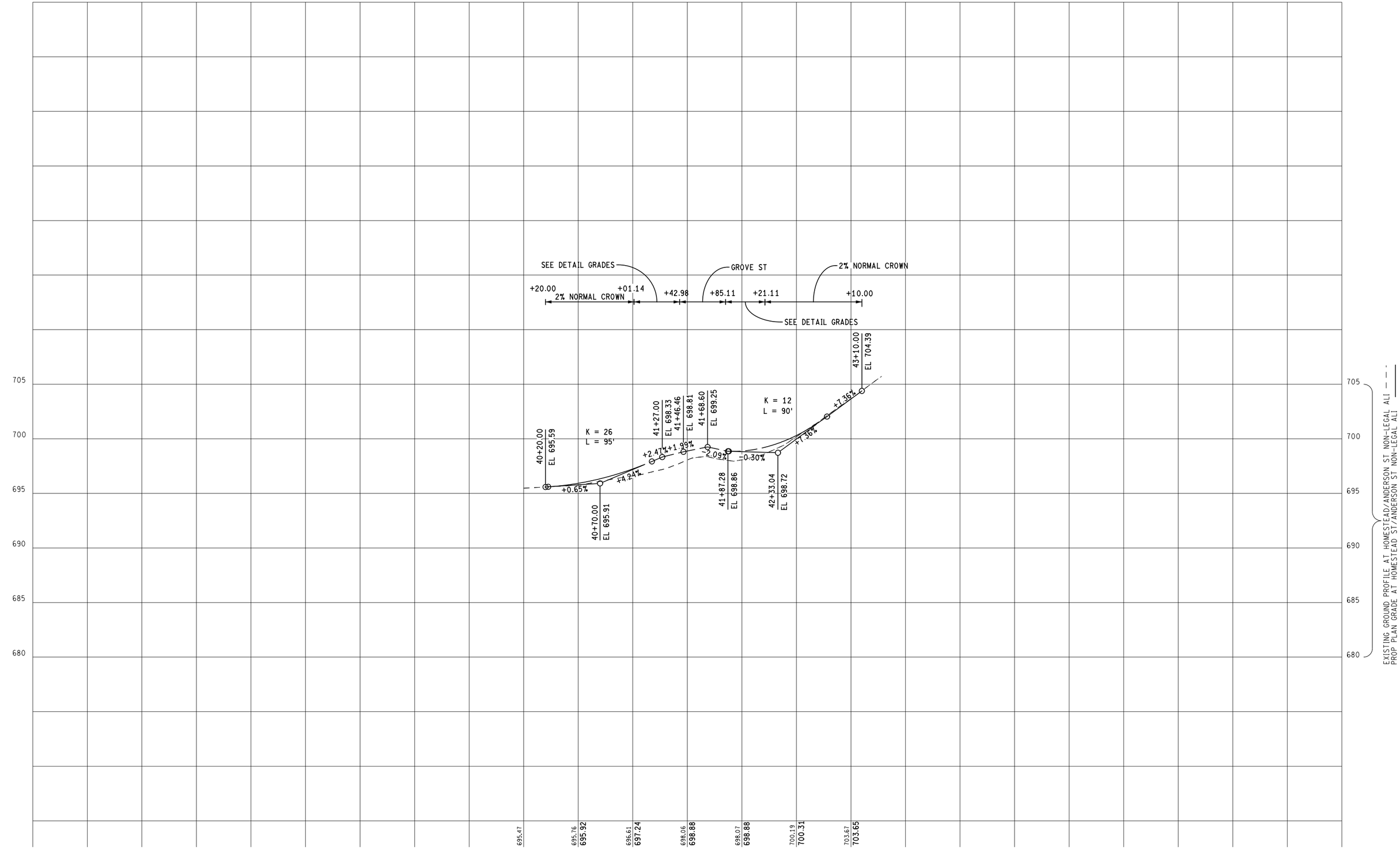
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DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

PROFILE SHEET
GROVE ST/7TH ST
STA 21+00 TO STA 29+85

DRAWING: GROVE PROF 001a
SHEET: SECT 1 — 59



FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
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CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
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PH. (906)228-0440

VERT. (FT) 0 — 8
HORZ. (FT) 0 — 80

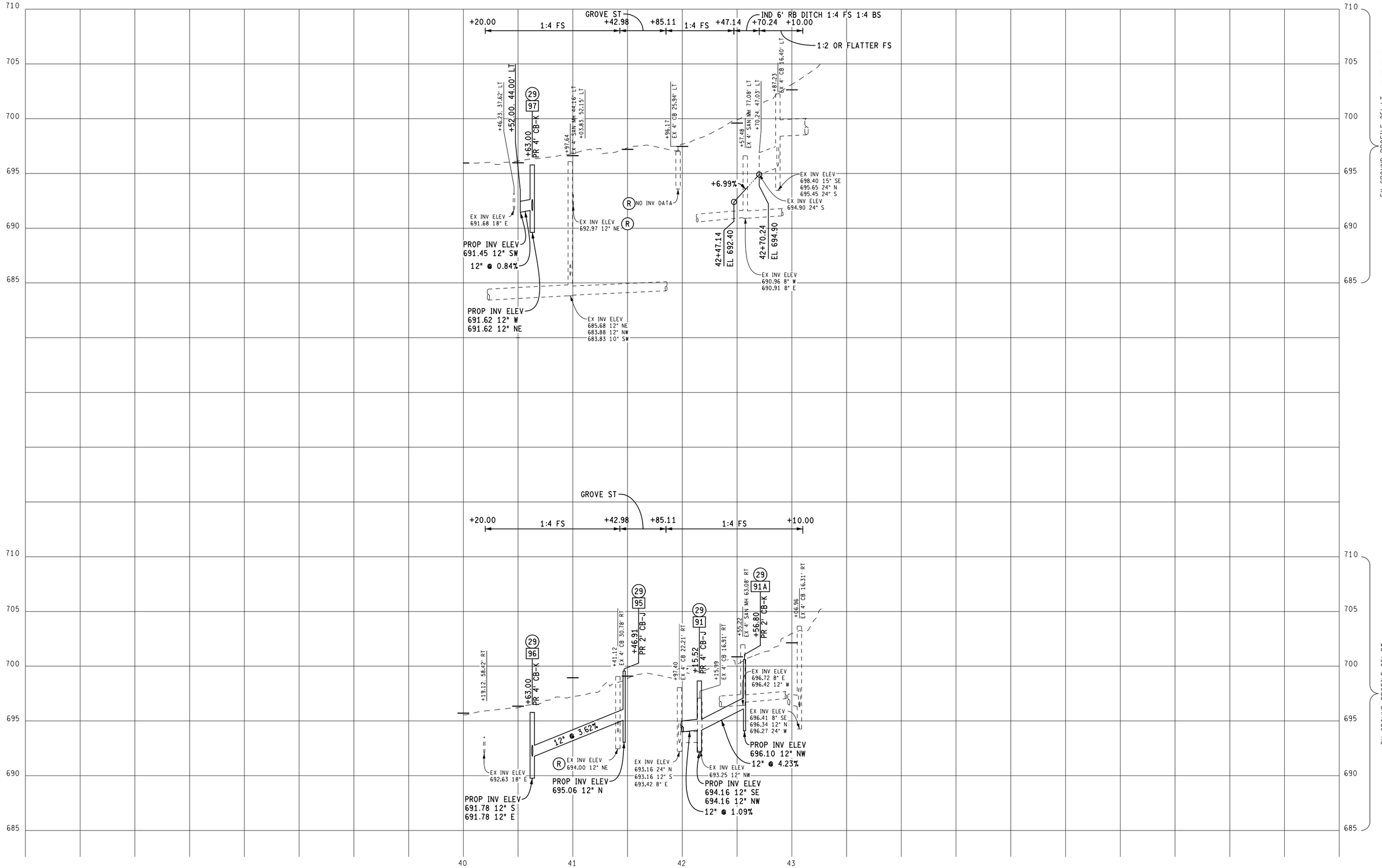
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DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

PROFILE SHEET
HOMESTEAD ST/ANDERSON ST
STA 40+20 TO STA 43+10

DRAWING	SHEET
HOME PROF 001	SECT 1 60



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MARQUETTE, MI 49855
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VERT. (FT) 0 — 8
HORZ. (FT) 0 — 80

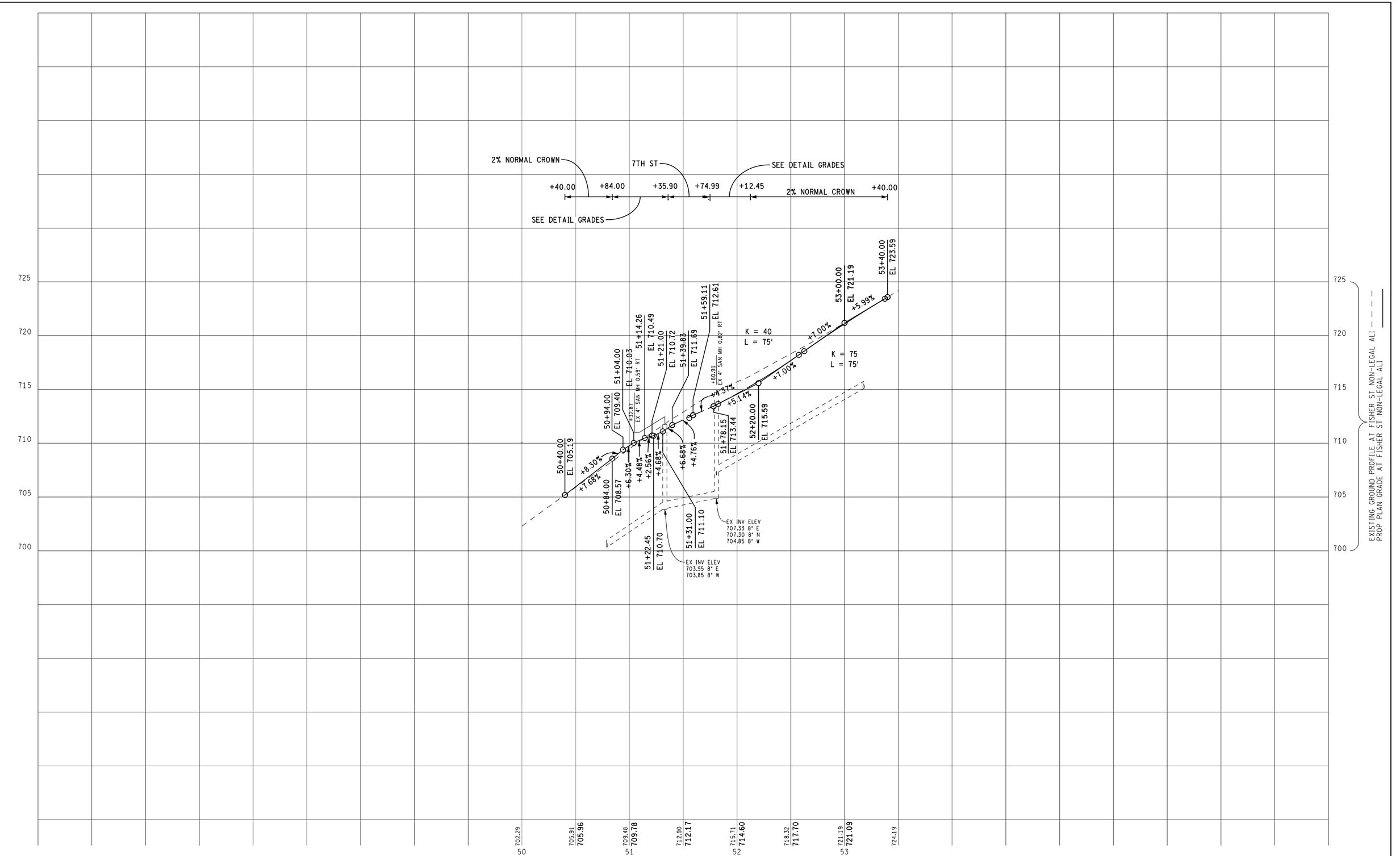
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DATE: 2/10/2017
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CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

PROFILE SHEET
HOMESTEAD ST/ANDERSON ST
STA 40+20 TO STA 43+10

DRAWING: HOME PROF 001a
SHEET: SECT 1 — 61



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VERT. (FT) 0 — 8
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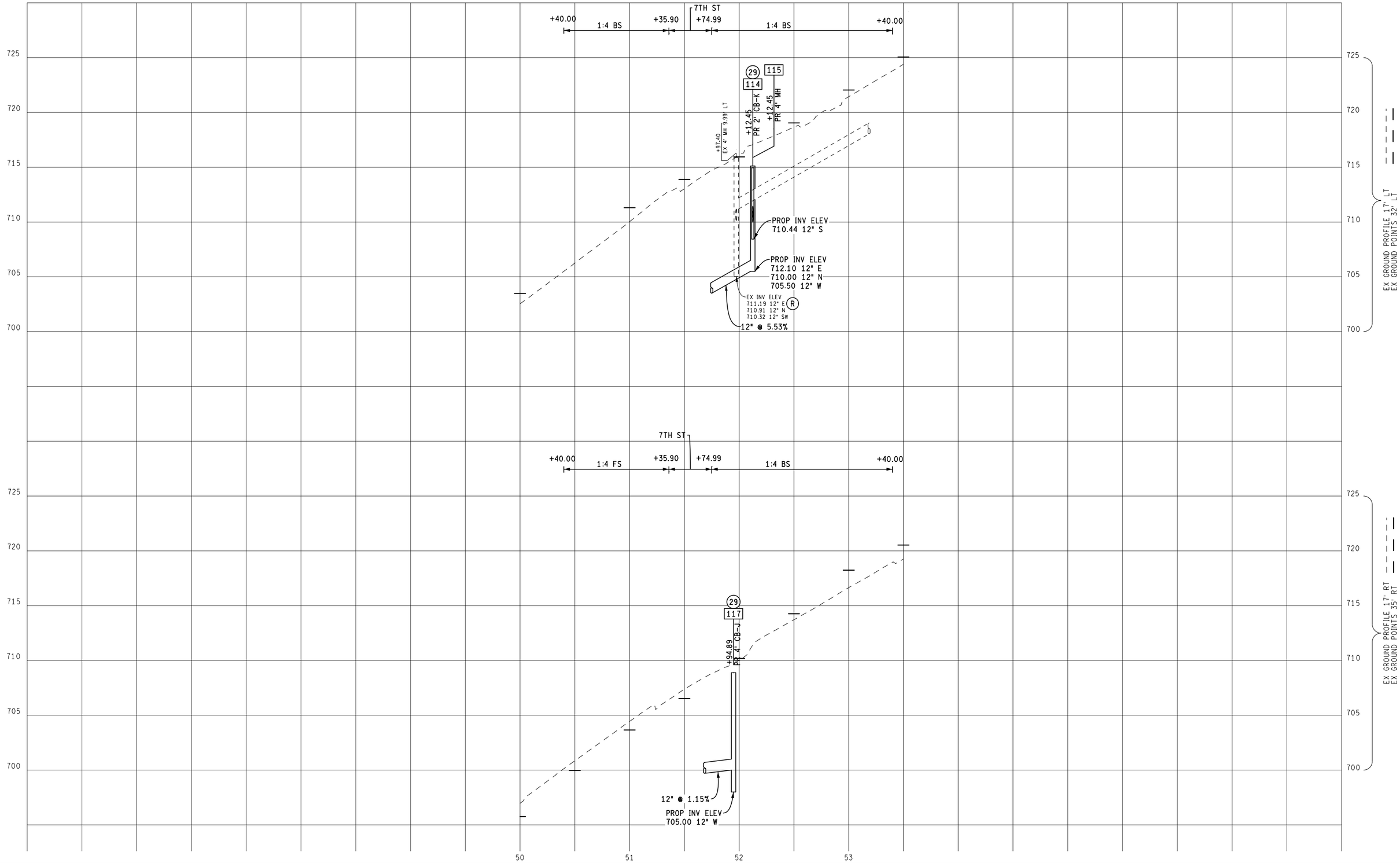
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DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

PROFILE SHEET
FISHER ST
STA 50+40 TO STA 53+40

DRAWING	SHEET
FISHER PROF 001	SECT 1 62



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FILE: 6553_Prof_Fisher001a.dgn

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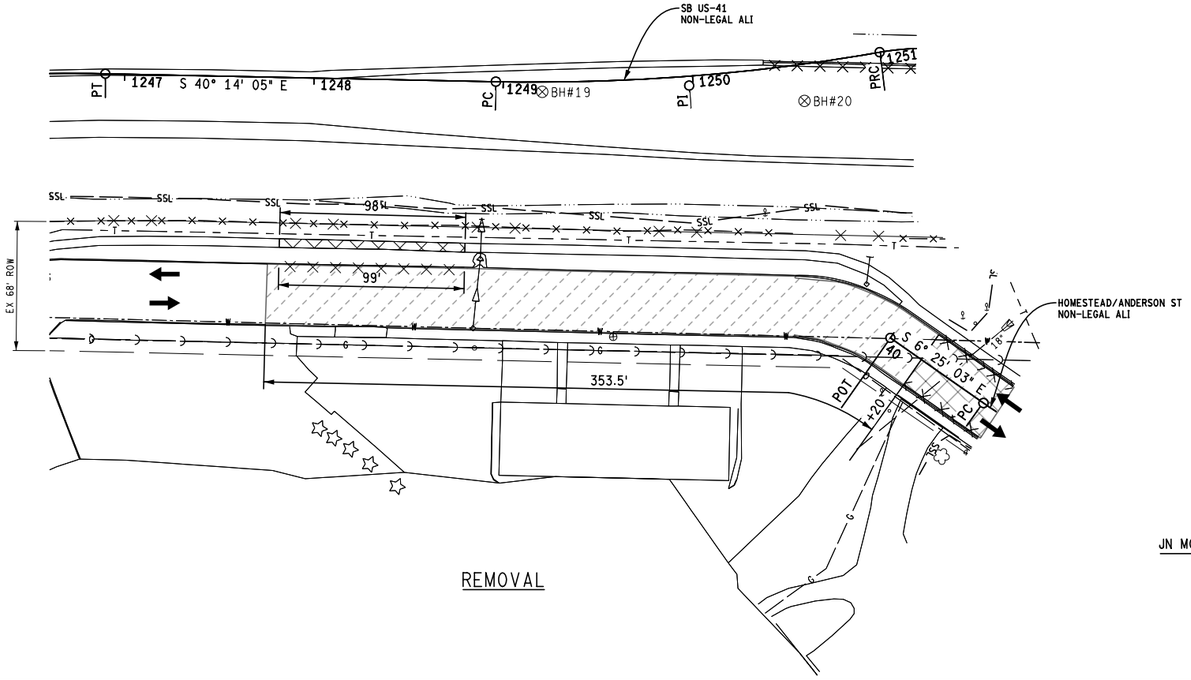
CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

PROFILE SHEET
FISHER ST
STA 50+40 TO STA 53+40

DRAWING: FISHER PROF 001a
SHEET: SECT 1 — 63

SB US-41/
EB M-28

HOMESTEAD ST



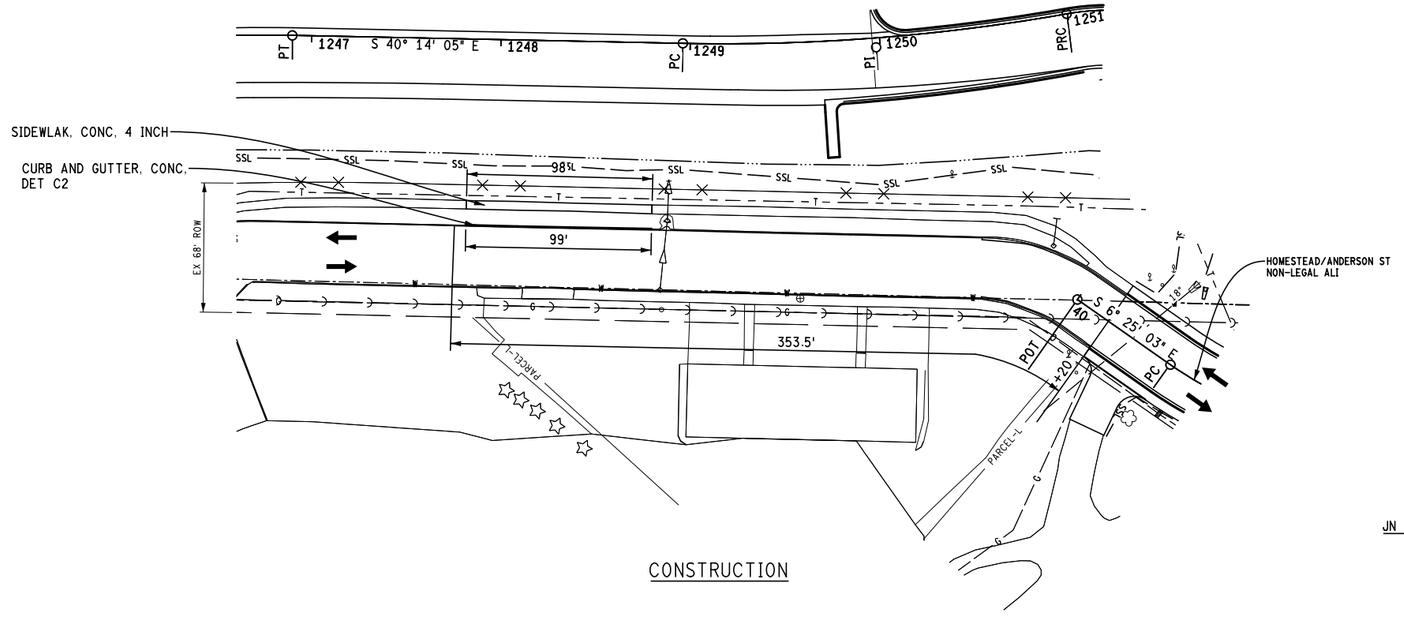
REMOVAL

JN MQ17-025	REMOVAL QUANTITIES THIS SHEET
99 Ft	Curb and Gutter, Rem
49 Syd	Sidewalk, Rem
1250 Syd	Cold Milling HMA Surface

HOMESTEAD ST

SB US-41/
EB M-28

HOMESTEAD ST



CONSTRUCTION

JN MQ17-025	CONSTRUCTION QUANTITIES THIS SHEET
9 Ton	HMA, 5E1, High Stress
99 Ft	Curb and Gutter, Conc, Det C2
441 Sft	Sidewalk, Conc, 4 inch

HOMESTEAD ST

SB US-41/
EB M-28

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0 HORZ. (FT) 80

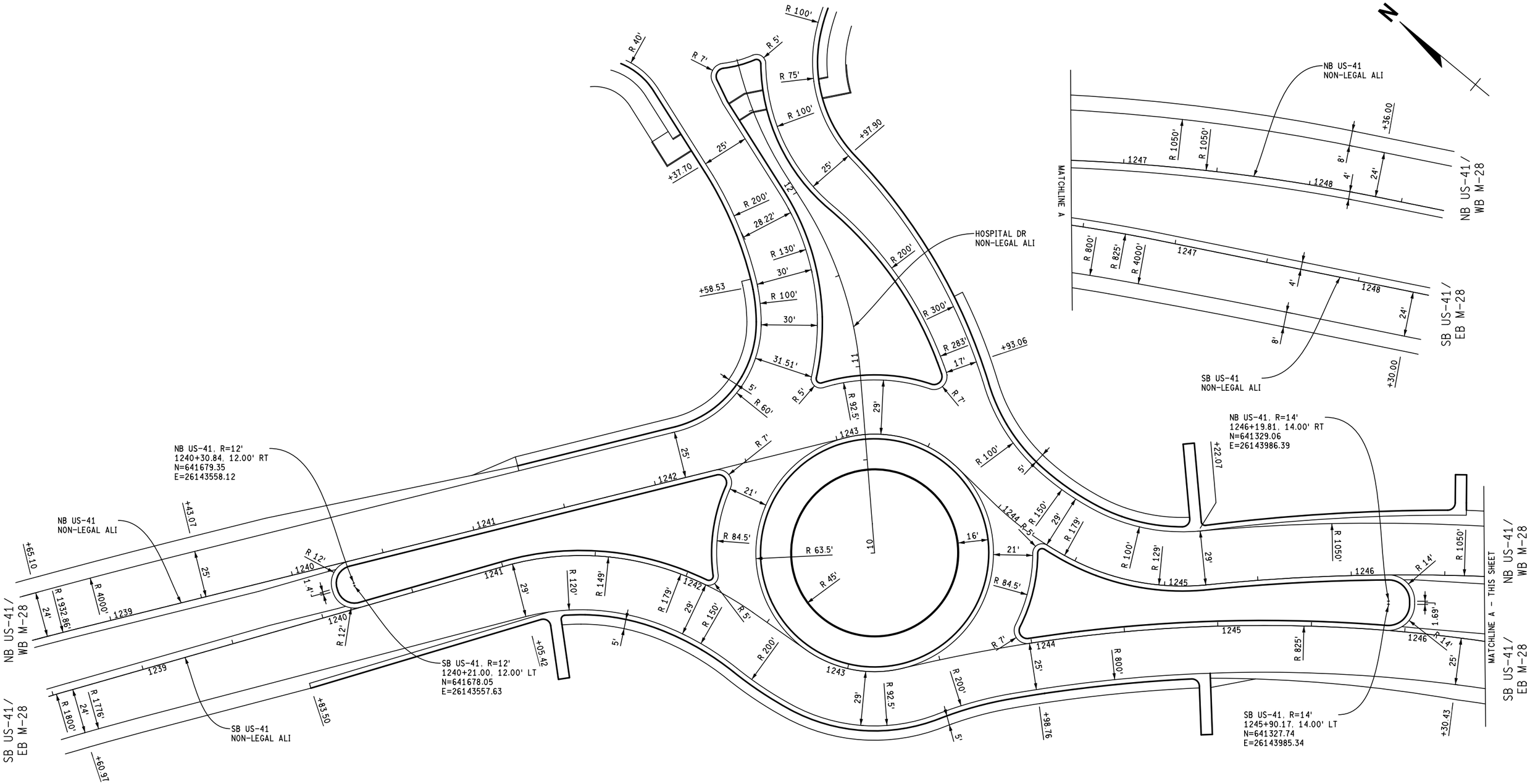
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DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

REMOVAL AND CONSTRUCTION SHEET
HOMESTEAD ST

DRAWING	SHEET
HOME CON 001	SECT 1 64



NOTES:
1. SEE CONSTRUCTION SHEETS FOR QUANTITY INFORMATION.
2. SEE CURB ALIGNMENT SHEETS FOR ROUNDABOUT LANE TAPER INFORMATION.
3. ALL LANE WIDTHS ARE EDGE OF PAVEMENT TO EDGE OF PAVEMENT, ADD 3' FOR FACE OF CURB TO FACE OF CURB WIDTH.

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0 HORZ. (FT) 50

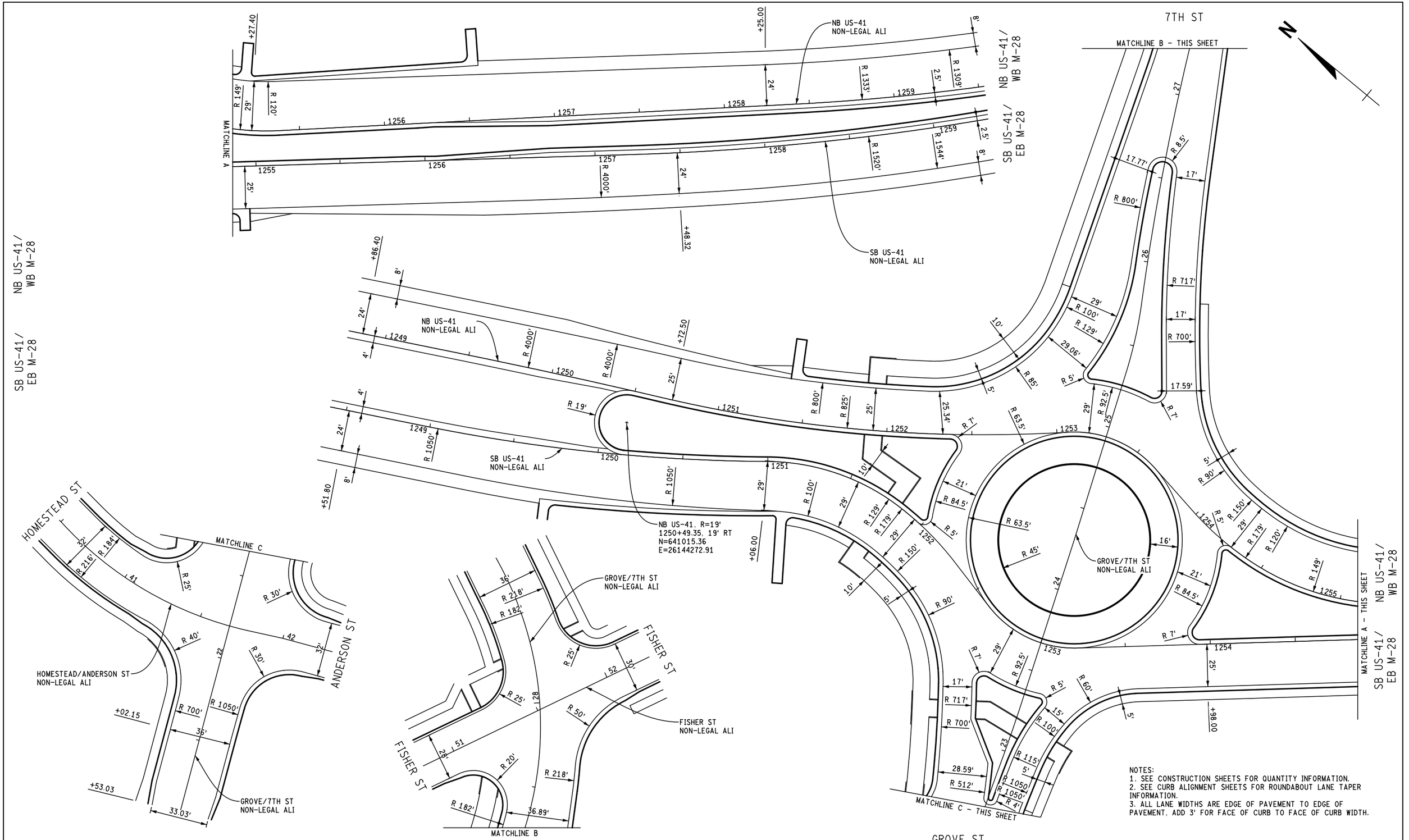
FILE: 6553_RABDET_E0P001.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: M017-025
MDOT PERMIT 043179-16

ROUNDABOUT DETAIL
GEOMETRIC DETAIL
US-41/HOSPITAL DR

DRAWING: US41 RABDET 001
SHEET: SECT 1 — 65



NOTES:
1. SEE CONSTRUCTION SHEETS FOR QUANTITY INFORMATION.
2. SEE CURB ALIGNMENT SHEETS FOR ROUNDABOUT LANE TAPER INFORMATION.
3. ALL LANE WIDTHS ARE EDGE OF PAVEMENT TO EDGE OF PAVEMENT. ADD 3' FOR FACE OF CURB TO FACE OF CURB WIDTH.

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

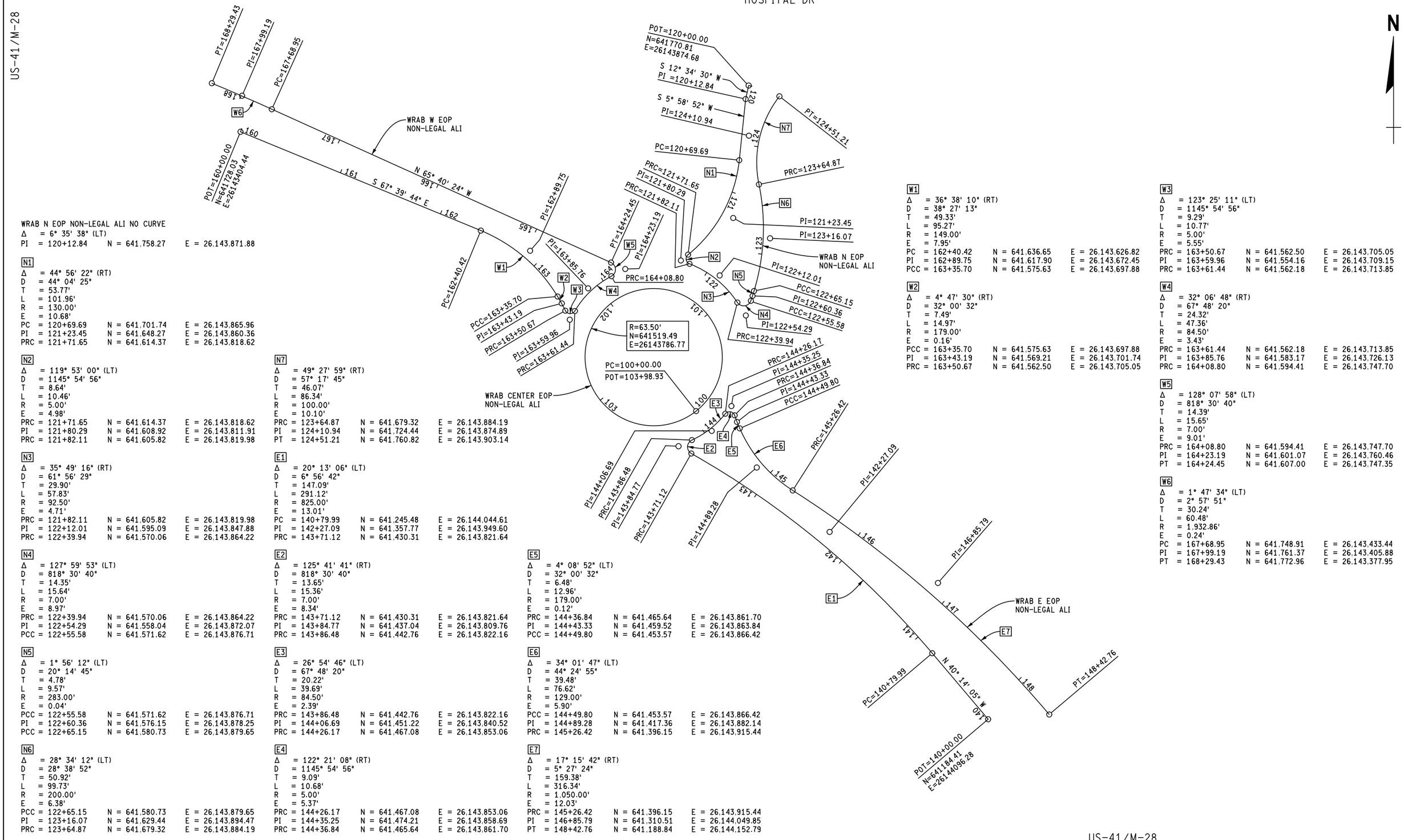
DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 50

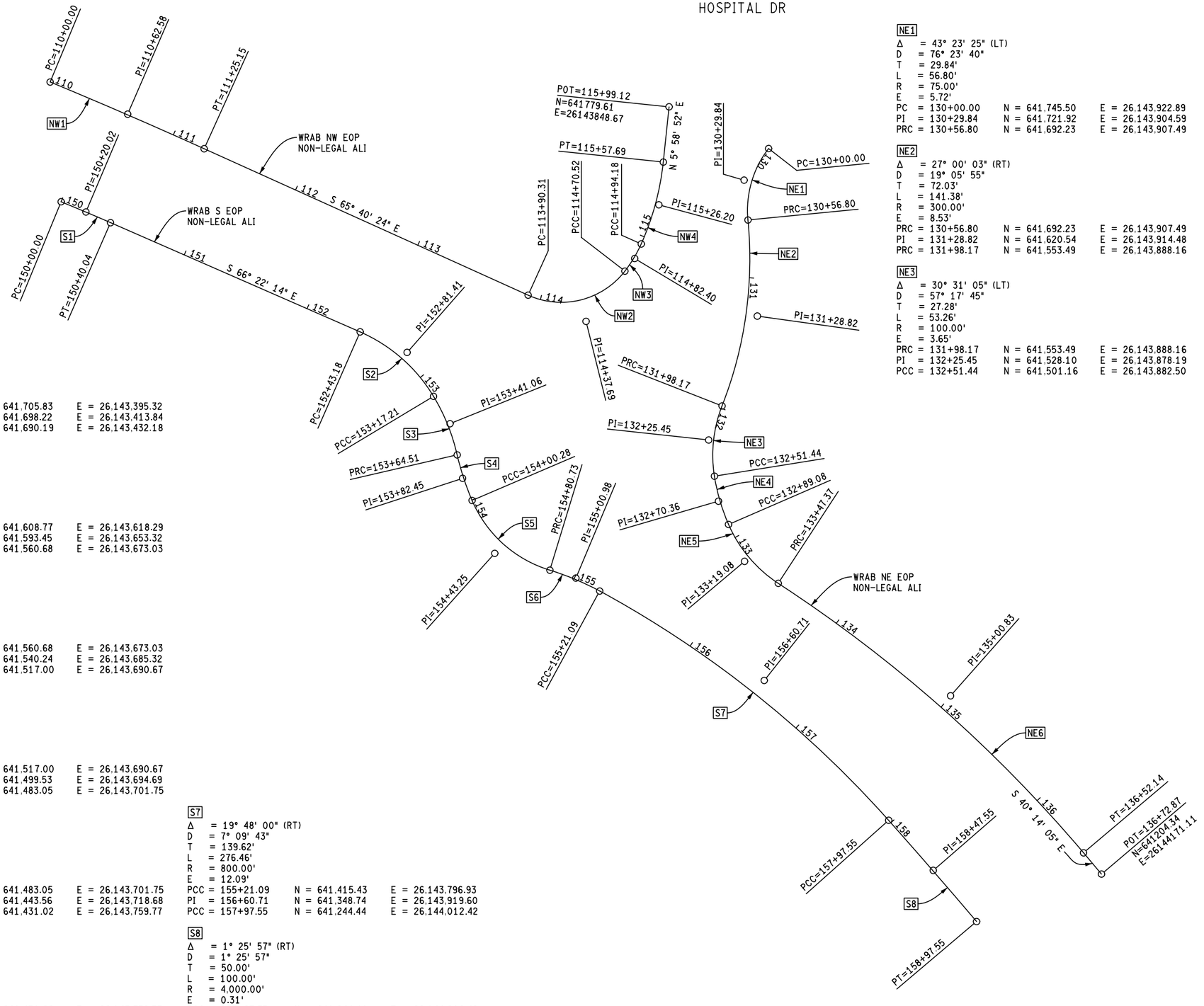
	DATE: 2/10/2017	CS: 52042	ROUNDABOUT DETAIL
	DESIGN UNIT: FILPUS	JN: M017-025	GEOMETRIC DETAIL
FILE: 6553_RABDET_E0P002.dgn	TSC: ISHPEMING	MDOT PERMIT 043179-16	US-41/GROVE ST/7TH ST

DRAWING	SHEET
US41 RABDET 002	SECT 1 66


US-41/M-28
HOSPITAL DR
N
PT=168+29.43
PI=167+99.19
PC=167+68.95
W6
WRAB W EOP
NON-LEGAL ALI
POT=160+00.00
N=641728.03
E=26143404.44
N 65° 40' 24" W
S 67° 39' 44" E
PI=162+89.75
PI=163+85.76
PC=162+40.42
W1
W2
W3
W4
W5
PC=163+35.70
PI=163+43.19
PRC=163+50.67
PI=163+59.96
PRC=163+61.44
PRC=164+08.80
PT=164+24.45
PI=164+23.19
PRC=121+82.11
PI=121+80.29
PRC=121+71.65
POT=120+00.00
N=641770.81
E=26143874.68
S 12° 34' 30" W
PI =120+12.84
S 5° 58' 52" W
PI=124+10.94
PC=120+69.69
N1
N2
N3
N4
N5
N6
N7
PT=124+51.21
PRC=123+64.87
PI=121+23.45
PI=123+16.07
WRAB N EOP
NON-LEGAL ALI
PI=122+12.01
PCC=122+65.15
PI=122+60.36
PCC=122+55.58
PI=122+54.29
PRC=122+39.94
R=63.50'
N=641519.49
E=26143786.77
PC=100+00.00
POT=103+98.93
WRAB CENTER EOP
NON-LEGAL ALI
E1
E2
E3
E4
E5
E6
E7
PRC=144+26.17
PI=144+35.25
PRC=144+36.84
PI=144+43.33
PCC=144+49.80
PRC=145+26.42
PI=144+06.69
PRC=143+86.48
PI=143+84.77
PRC=143+71.12
PI=144+89.28
PI=142+27.09
PI=146+85.79
WRAB E EOP
NON-LEGAL ALI
PC=140+79.99
N 40° 14' 05" W
PT=148+42.76
POT=140+00.00
N=641184.41
E=26144096.28
100
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US-41/M-28

HOSPITAL DR



S1
Δ = 1° 17' 30" (RT)
D = 3° 13' 34"
T = 20.02'
L = 40.04'
R = 1,776.00'
E = 0.11'
PC = 150+00.00 N = 641,705.83 E = 26,143,395.32
PI = 150+20.02 N = 641,698.22 E = 26,143,413.84
PT = 150+40.04 N = 641,690.19 E = 26,143,432.18

S2
Δ = 35° 20' 40" (RT)
D = 47° 44' 47"
T = 38.23'
L = 74.03'
R = 120.00'
E = 5.94'
PC = 152+43.18 N = 641,608.77 E = 26,143,618.29
PI = 152+81.41 N = 641,593.45 E = 26,143,653.32
PCC = 153+17.21 N = 641,560.68 E = 26,143,673.03

S3
Δ = 18° 04' 12" (RT)
D = 38° 11' 50"
T = 23.85'
L = 47.31'
R = 150.00'
E = 1.88'
PCC = 153+17.21 N = 641,560.68 E = 26,143,673.03
PI = 153+41.06 N = 641,540.24 E = 26,143,685.32
PRC = 153+64.51 N = 641,517.00 E = 26,143,690.67

S4
Δ = 10° 14' 45" (LT)
D = 28° 38' 52"
T = 17.93'
L = 35.76'
R = 200.00'
E = 0.80'
PRC = 153+64.51 N = 641,517.00 E = 26,143,690.67
PI = 153+82.44 N = 641,499.53 E = 26,143,694.69
PCC = 154+00.28 N = 641,483.05 E = 26,143,701.75

S5
Δ = 49° 49' 44" (LT)
D = 61° 56' 29"
T = 42.97'
L = 80.45'
R = 92.50'
E = 9.49'
PCC = 154+00.28 N = 641,483.05 E = 26,143,701.75
PI = 154+43.24 N = 641,443.56 E = 26,143,718.68
PRC = 154+80.73 N = 641,431.02 E = 26,143,759.77

S6
Δ = 11° 33' 48" (RT)
D = 28° 38' 52"
T = 20.25'
L = 40.36'
R = 200.00'
E = 1.02'
PRC = 154+80.72 N = 641,431.02 E = 26,143,759.77
PI = 155+00.98 N = 641,425.11 E = 26,143,779.14
PCC = 155+21.09 N = 641,415.43 E = 26,143,796.93

S7
Δ = 19° 48' 00" (RT)
D = 7° 09' 43"
T = 139.62'
L = 276.46'
R = 800.00'
E = 12.09'
PCC = 155+21.09 N = 641,415.43 E = 26,143,796.93
PI = 156+60.71 N = 641,348.74 E = 26,143,919.60
PCC = 157+97.55 N = 641,244.44 E = 26,144,012.42

S8
Δ = 1° 25' 57" (RT)
D = 1° 25' 57"
T = 50.00'
L = 100.00'
R = 4,000.00'
E = 0.31'
PCC = 157+97.55 N = 641,244.44 E = 26,144,012.42
PI = 158+47.55 N = 641,207.09 E = 26,144,045.66
PT = 158+97.55 N = 641,168.91 E = 26,144,077.96

NE1
Δ = 43° 23' 25" (LT)
D = 76° 23' 40"
T = 29.84'
L = 56.80'
R = 75.00'
E = 5.72'
PC = 130+00.00 N = 641,745.50 E = 26,143,922.89
PI = 130+29.84 N = 641,721.92 E = 26,143,904.59
PRC = 130+56.80 N = 641,692.23 E = 26,143,907.49

NE2
Δ = 27° 00' 03" (RT)
D = 19° 05' 55"
T = 72.03'
L = 141.38'
R = 300.00'
E = 8.53'
PRC = 130+56.80 N = 641,692.23 E = 26,143,907.49
PI = 131+28.82 N = 641,620.54 E = 26,143,914.48
PRC = 131+98.17 N = 641,553.49 E = 26,143,888.16

NE3
Δ = 30° 31' 05" (LT)
D = 57° 17' 45"
T = 27.28'
L = 53.26'
R = 100.00'
E = 3.65'
PRC = 131+98.17 N = 641,553.49 E = 26,143,888.16
PI = 132+25.45 N = 641,528.10 E = 26,143,878.19
PCC = 132+51.44 N = 641,501.16 E = 26,143,882.50

NE4
Δ = 14° 22' 44" (LT)
D = 38° 11' 50"
T = 18.92'
L = 37.64'
R = 150.00'
E = 1.19'
PCC = 132+51.44 N = 641,501.16 E = 26,143,882.50
PI = 132+70.36 N = 641,482.48 E = 26,143,885.49
PCC = 132+89.08 N = 641,465.12 E = 26,143,893.03

NE5
Δ = 33° 23' 54" (LT)
D = 57° 17' 45"
T = 30.00'
L = 58.29'
R = 100.00'
E = 4.40'
PCC = 132+89.08 N = 641,465.12 E = 26,143,893.03
PI = 133+19.08 N = 641,437.60 E = 26,143,904.97
PRC = 133+47.37 N = 641,421.21 E = 26,143,930.09

NE6
Δ = 16° 37' 49" (RT)
D = 5° 27' 24"
T = 153.46'
L = 304.77'
R = 1,050.00'
E = 11.16'
PRC = 133+47.37 N = 641,421.21 E = 26,143,930.09
PI = 135+00.83 N = 641,337.32 E = 26,144,058.60
PT = 136+52.14 N = 641,220.17 E = 26,144,157.72

NW1
Δ = 1° 47' 34" (RT)
D = 1° 25' 57"
T = 62.58'
L = 125.15'
R = 4,000.00'
E = 0.49'
PC = 110+00.00 N = 641,795.12 E = 26,143,387.15
PI = 110+62.58 N = 641,771.14 E = 26,143,444.95
PT = 111+25.15 N = 641,745.36 E = 26,143,501.97

NW2
Δ = 76° 35' 39" (LT)
D = 95° 29' 35"
T = 47.38'
L = 80.21'
R = 60.00'
E = 16.45'
PC = 113+90.31 N = 641,636.13 E = 26,143,743.59
PI = 114+37.69 N = 641,616.62 E = 26,143,786.76
PCC = 114+70.52 N = 641,654.09 E = 26,143,815.75

NW3
Δ = 13° 33' 24" (LT)
D = 57° 17' 45"
T = 11.89'
L = 23.66'
R = 100.00'
E = 0.70'
PCC = 114+70.52 N = 641,654.09 E = 26,143,815.75
PI = 114+82.40 N = 641,663.49 E = 26,143,823.03
PCC = 114+94.18 N = 641,674.33 E = 26,143,827.90

NW4
Δ = 18° 11' 42" (LT)
D = 28° 38' 52"
T = 32.03'
L = 63.51'
R = 200.00'
E = 2.55'
PCC = 114+94.18 N = 641,674.33 E = 26,143,827.90
PI = 115+26.20 N = 641,703.55 E = 26,143,841.01
PT = 115+57.69 N = 641,735.40 E = 26,143,844.35

US-41/M-28

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

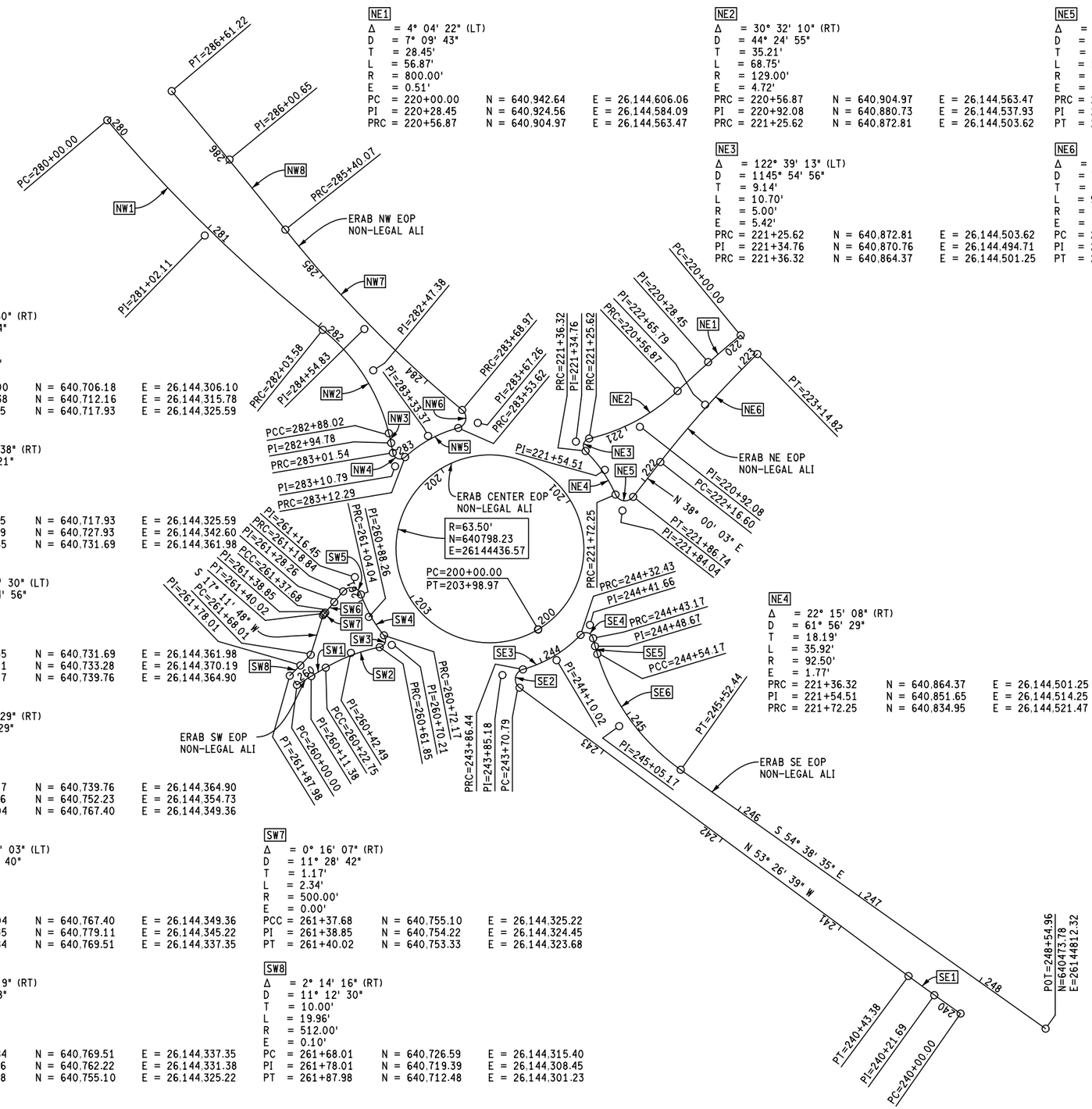
0 HORZ. (FT) 80

	DATE: 2/10/2017	CS: 52042	ROUNDABOUT DETAIL	DRAWING	SHEET
	DESIGN UNIT: FILPUS	JN: MQ17-025	EDGE OF PAVEMENT ALIGNMENTS	US41 RABDET 004	SECT 1 68
FILE: 6553_RABDET_EOP004.dgn	TSC: ISHPEMING	MDOT PERMIT 043179-16	US-41/HOSPITAL DR		

US-41/M-28

S 7TH ST

GROVE ST



NW1
Δ = 11° 06' 31" (LT)
D = 5° 27' 24"
T = 102.11'
L = 203.58'
R = 1,050.00'
E = 4.95'
PC = 280+00.00 N = 641,088.02 E = 26,144,177.84
PI = 281+02.11 N = 641,010.07 E = 26,144,243.79
PRC = 282+03.58 N = 640,946.29 E = 26,144,323.53

NW2
Δ = 37° 30' 29" (RT)
D = 44° 24' 55"
T = 43.80'
L = 84.45'
R = 129.00'
E = 7.23'
PRC = 282+03.58 N = 640,946.29 E = 26,144,323.53
PI = 282+47.38 N = 640,918.93 E = 26,144,357.73
PCC = 282+88.02 N = 640,876.40 E = 26,144,368.20

NW3
Δ = 4° 19' 32" (RT)
D = 32° 00' 32"
T = 6.76'
L = 13.51'
R = 179.00'
E = 0.13'
PCC = 282+88.02 N = 640,876.40 E = 26,144,368.20
PI = 282+94.78 N = 640,869.84 E = 26,144,369.82
PRC = 283+01.54 N = 640,863.17 E = 26,144,370.94

NW4
Δ = 123° 11' 58" (LT)
D = 1145° 54' 56"
T = 9.25'
L = 10.75'
R = 5.00'
E = 5.51'
PRC = 283+01.54 N = 640,863.17 E = 26,144,370.94
PI = 283+10.79 N = 640,854.05 E = 26,144,372.46
PRC = 283+12.29 N = 640,860.32 E = 26,144,379.26

NW5
Δ = 28° 01' 20" (RT)
D = 67° 48' 20"
T = 21.09'
L = 41.33'
R = 84.50'
E = 2.59'
PRC = 283+12.29 N = 640,860.32 E = 26,144,379.26
PI = 283+33.37 N = 640,874.63 E = 26,144,394.75
PRC = 283+53.62 N = 640,879.97 E = 26,144,415.15

NW6
Δ = 125° 41' 41" (LT)
D = 818° 30' 40"
T = 13.65'
L = 15.36'
R = 7.00'
E = 8.34'
PRC = 283+53.62 N = 640,879.97 E = 26,144,415.15
PI = 283+67.26 N = 640,883.43 E = 26,144,428.35
PRC = 283+68.97 N = 640,892.14 E = 26,144,417.84

NW7
Δ = 11° 52' 57" (RT)
D = 6° 56' 42"
T = 85.86'
L = 171.10'
R = 825.00'
E = 4.46'
PRC = 283+68.97 N = 640,892.14 E = 26,144,417.84
PI = 284+54.83 N = 640,946.88 E = 26,144,351.70
PRC = 285+40.07 N = 641,014.08 E = 26,144,298.26

NW8
Δ = 1° 44' 07" (LT)
D = 1° 25' 57"
T = 60.58'
L = 121.15'
R = 4,000.00'
E = 0.46'
PRC = 285+40.07 N = 641,014.08 E = 26,144,298.26
PI = 286+00.65 N = 641,061.49 E = 26,144,260.54
PT = 286+61.22 N = 641,107.74 E = 26,144,221.41

SW1
Δ = 1° 14' 30" (RT)
D = 5° 27' 24"
T = 11.38'
L = 22.75'
R = 1,050.00'
E = 0.06'
PC = 260+00.00 N = 640,706.18 E = 26,144,306.10
PI = 260+11.38 N = 640,712.16 E = 26,144,315.78
PCC = 260+22.75 N = 640,717.93 E = 26,144,325.59

SW2
Δ = 19° 28' 38" (RT)
D = 49° 49' 21"
T = 19.74'
L = 39.09'
R = 115.00'
E = 1.68'
PCC = 260+22.75 N = 640,717.93 E = 26,144,325.59
PI = 260+42.49 N = 640,727.93 E = 26,144,342.60
PRC = 260+61.85 N = 640,731.69 E = 26,144,361.98

SW3
Δ = 118° 14' 30" (LT)
D = 1145° 54' 56"
T = 8.36'
L = 10.32'
R = 5.00'
E = 4.74'
PRC = 260+61.85 N = 640,731.69 E = 26,144,361.98
PI = 260+70.21 N = 640,733.28 E = 26,144,370.19
PRC = 260+72.17 N = 640,739.76 E = 26,144,364.90

SW4
Δ = 19° 44' 29" (RT)
D = 61° 56' 29"
T = 16.10'
L = 31.87'
R = 92.50'
E = 1.39'
PRC = 260+72.17 N = 640,739.76 E = 26,144,364.90
PI = 260+88.26 N = 640,752.23 E = 26,144,354.73
PRC = 261+04.04 N = 640,767.40 E = 26,144,349.36

SW5
Δ = 121° 10' 03" (LT)
D = 818° 30' 40"
T = 12.41'
L = 14.80'
R = 7.00'
E = 7.25'
PRC = 261+04.04 N = 640,767.40 E = 26,144,349.36
PI = 261+16.45 N = 640,779.11 E = 26,144,345.22
PRC = 261+18.84 N = 640,769.51 E = 26,144,337.35

SW6
Δ = 1° 30' 19" (RT)
D = 7° 59' 28"
T = 9.42'
L = 18.84'
R = 717.00'
E = 0.06'
PRC = 261+18.84 N = 640,769.51 E = 26,144,337.35
PI = 261+28.26 N = 640,762.22 E = 26,144,331.38
PCC = 261+37.68 N = 640,755.10 E = 26,144,325.22

SW7
Δ = 0° 16' 07" (RT)
D = 11° 28' 42"
T = 1.17'
L = 2.34'
R = 500.00'
E = 0.00'
PCC = 261+37.68 N = 640,755.10 E = 26,144,325.22
PI = 261+38.85 N = 640,754.22 E = 26,144,324.45
PT = 261+40.02 N = 640,753.33 E = 26,144,323.68

SW8
Δ = 2° 14' 16" (RT)
D = 11° 12' 30"
T = 10.00'
L = 19.96'
R = 512.00'
E = 0.10'
PC = 261+68.01 N = 640,726.59 E = 26,144,315.40
PI = 261+78.01 N = 640,719.39 E = 26,144,308.45
PT = 261+87.98 N = 640,712.48 E = 26,144,301.23

NE1
Δ = 4° 04' 22" (LT)
D = 7° 09' 43"
T = 28.45'
L = 56.87'
R = 800.00'
E = 0.51'
PC = 220+00.00 N = 640,942.64 E = 26,144,606.06
PI = 220+28.45 N = 640,924.56 E = 26,144,584.09
PRC = 220+56.87 N = 640,904.97 E = 26,144,563.47

NE2
Δ = 30° 32' 10" (RT)
D = 44° 24' 55"
T = 35.21'
L = 68.75'
R = 129.00'
E = 4.72'
PRC = 220+56.87 N = 640,904.97 E = 26,144,563.47
PI = 220+92.08 N = 640,880.73 E = 26,144,537.93
PRC = 221+25.62 N = 640,872.81 E = 26,144,503.62

NE3
Δ = 122° 39' 13" (LT)
D = 1145° 54' 56"
T = 9.14'
L = 10.70'
R = 5.00'
E = 5.42'
PRC = 221+25.62 N = 640,872.81 E = 26,144,503.62
PI = 221+34.76 N = 640,870.76 E = 26,144,494.71
PRC = 221+36.32 N = 640,864.37 E = 26,144,501.25

NE4
Δ = 22° 15' 08" (RT)
D = 61° 56' 29"
T = 18.19'
L = 35.92'
R = 92.50'
E = 1.77'
PRC = 221+36.32 N = 640,864.37 E = 26,144,501.25
PI = 221+54.51 N = 640,851.65 E = 26,144,514.25
PRC = 221+72.25 N = 640,834.95 E = 26,144,521.47

NE5
Δ = 118° 36' 46" (LT)
D = 818° 30' 40"
T = 11.79'
L = 14.49'
R = 7.00'
E = 6.71'
PRC = 221+72.25 N = 640,834.95 E = 26,144,521.47
PI = 221+84.04 N = 640,824.13 E = 26,144,526.15
PT = 221+86.74 N = 640,833.42 E = 26,144,533.41

NE6
Δ = 7° 50' 58" (RT)
D = 7° 59' 28"
T = 49.19'
L = 98.23'
R = 717.00'
E = 1.69'
PC = 222+16.60 N = 640,856.95 E = 26,144,551.80
PI = 222+65.79 N = 640,895.71 E = 26,144,582.08
PT = 223+14.82 N = 640,929.97 E = 26,144,617.38

SE1
Δ = 1° 38' 06" (RT)
D = 3° 46' 10"
T = 21.69'
L = 43.38'
R = 1,520.00'
E = 0.15'
PC = 240+00.00 N = 640,484.02 E = 26,144,754.77
PI = 240+21.69 N = 640,496.43 E = 26,144,736.99
PT = 240+43.38 N = 640,509.35 E = 26,144,719.57

SE2
Δ = 128° 07' 58" (RT)
D = 818° 30' 40"
T = 14.39'
L = 15.65'
R = 7.00'
E = 9.01'
PC = 243+70.79 N = 640,704.36 E = 26,144,456.57
PI = 243+85.18 N = 640,712.93 E = 26,144,445.00
PRC = 243+86.44 N = 640,716.73 E = 26,144,458.89

SE3
Δ = 31° 10' 52" (LT)
D = 67° 48' 20"
T = 23.58'
L = 45.99'
R = 84.50'
E = 3.23'
PRC = 243+86.44 N = 640,716.73 E = 26,144,458.89
PI = 244+10.02 N = 640,722.96 E = 26,144,481.63
PRC = 244+32.43 N = 640,740.06 E = 26,144,497.86

SE4
Δ = 123° 09' 28" (RT)
D = 1145° 54' 56"
T = 9.24'
L = 10.75'
R = 5.00'
E = 5.51'
PRC = 244+32.43 N = 640,740.06 E = 26,144,497.86
PI = 244+41.66 N = 640,746.76 E = 26,144,504.22
PRC = 244+43.17 N = 640,737.77 E = 26,144,506.35

SE5
Δ = 3° 31' 12" (LT)
D = 32° 00' 32"
T = 5.50'
L = 11.00'
R = 179.00'
E = 0.08'
PRC = 244+43.17 N = 640,737.77 E = 26,144,506.35
PI = 244+48.67 N = 640,732.42 E = 26,144,507.62
PCC = 244+54.17 N = 640,727.15 E = 26,144,509.21

SE6
Δ = 37° 47' 17" (LT)
D = 38° 27' 13"
T = 51.00'
L = 98.27'
R = 149.00'
E = 8.49'
PCC = 244+54.17 N = 640,727.15 E = 26,144,509.21
PI = 245+05.17 N = 640,678.35 E = 26,144,524.00
PT = 245+52.44 N = 640,648.84 E = 26,144,565.59

US-41/M-28

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 80

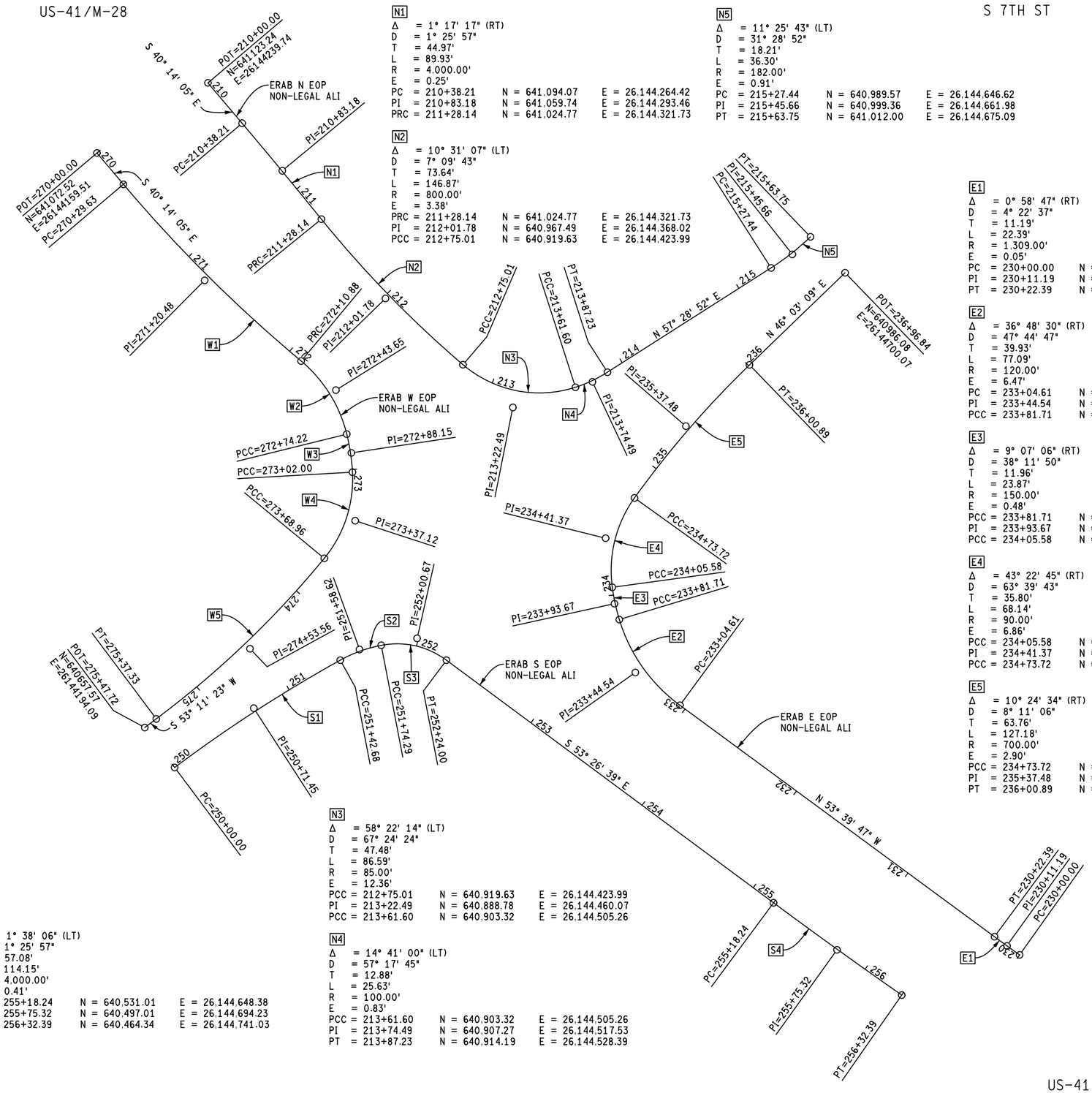
FILE: 6553_RABDET_EOP005.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

ROUNDABOUT DETAIL
EDGE OF PAVEMENT ALIGNMENTS
US-41/GROVE ST/7TH ST

DRAWING	SHEET
US41 RABDET 005	SECT 1 69



W1
Δ = 9° 53' 24" (LT)
D = 5° 27' 24"
T = 90.85'
L = 181.25'
R = 1,050.00'
E = 3.92'
PC = 270+29.63 N = 641,049.90 E = 26,144,178.66
PI = 271+20.48 N = 640,980.54 E = 26,144,237.34
PRC = 272+10.88 N = 640,922.30 E = 26,144,307.06

W2
Δ = 36° 17' 22" (RT)
D = 57° 17' 45"
T = 32.77'
L = 63.34'
R = 100.00'
E = 5.23'
PRC = 272+10.88 N = 640,922.30 E = 26,144,307.06
PI = 272+43.65 N = 640,901.29 E = 26,144,332.21
PCC = 272+74.22 N = 640,869.47 E = 26,144,340.04

W3
Δ = 10° 36' 37" (RT)
D = 38° 11' 50"
T = 13.93'
L = 27.78'
R = 150.00'
E = 0.65'
PCC = 272+74.22 N = 640,869.47 E = 26,144,340.04
PI = 272+88.15 N = 640,855.94 E = 26,144,343.37
PCC = 273+02.00 N = 640,842.04 E = 26,144,344.16

W4
Δ = 42° 38' 02" (RT)
D = 63° 39' 43"
T = 35.12'
L = 66.97'
R = 90.00'
E = 6.61'
PCC = 273+02.00 N = 640,842.04 E = 26,144,344.16
PI = 273+37.12 N = 640,806.97 E = 26,144,346.13
PCC = 273+68.96 N = 640,779.84 E = 26,144,323.84

W5
Δ = 13° 46' 51" (RT)
D = 8° 11' 06"
T = 84.59'
L = 168.37'
R = 700.00'
E = 5.09'
PCC = 273+68.96 N = 640,779.84 E = 26,144,323.84
PI = 274+53.56 N = 640,714.48 E = 26,144,270.14
PT = 275+37.33 N = 640,663.80 E = 26,144,202.41

S1
Δ = 7° 47' 09" (RT)
D = 5° 27' 24"
T = 71.45'
L = 142.68'
R = 1,050.00'
E = 2.43'
PC = 250+00.00 N = 640,628.75 E = 26,144,215.66
PI = 250+71.45 N = 640,671.56 E = 26,144,272.87
PCC = 251+42.68 N = 640,706.23 E = 26,144,335.35

S2
Δ = 18° 06' 23" (RT)
D = 57° 17' 45"
T = 15.93'
L = 31.60'
R = 100.00'
E = 1.26'
PCC = 251+42.68 N = 640,706.23 E = 26,144,335.35
PI = 251+58.62 N = 640,713.96 E = 26,144,349.28
PCC = 251+74.29 N = 640,716.98 E = 26,144,364.93

S3
Δ = 47° 28' 25" (RT)
D = 95° 29' 35"
T = 26.38'
L = 49.71'
R = 60.00'
E = 5.54'
PCC = 251+74.29 N = 640,716.98 E = 26,144,364.93
PI = 252+00.67 N = 640,721.97 E = 26,144,390.83
PT = 252+24.00 N = 640,706.26 E = 26,144,412.03

S4
Δ = 1° 38' 06" (LT)
D = 1° 25' 57"
T = 57.08'
L = 114.15'
R = 4,000.00'
E = 0.41'
PC = 255+18.24 N = 640,531.01 E = 26,144,648.38
PI = 255+75.32 N = 640,497.01 E = 26,144,694.23
PT = 256+32.39 N = 640,464.34 E = 26,144,741.03

N1
Δ = 1° 17' 17" (RT)
D = 1° 25' 57"
T = 44.97'
L = 89.93'
R = 4,000.00'
E = 0.25'
PC = 210+38.21 N = 641,094.07 E = 26,144,264.42
PI = 210+83.18 N = 641,059.74 E = 26,144,293.46
PRC = 211+28.14 N = 641,024.77 E = 26,144,321.73

N2
Δ = 10° 31' 07" (LT)
D = 7° 09' 43"
T = 73.64'
L = 146.87'
R = 800.00'
E = 3.38'
PRC = 211+28.14 N = 641,024.77 E = 26,144,321.73
PI = 212+01.78 N = 640,967.49 E = 26,144,368.02
PCC = 212+75.01 N = 640,919.63 E = 26,144,423.99

N3
Δ = 58° 22' 14" (LT)
D = 67° 24' 24"
T = 47.48'
L = 86.59'
R = 85.00'
E = 12.36'
PCC = 212+75.01 N = 640,919.63 E = 26,144,423.99
PI = 213+22.49 N = 640,888.78 E = 26,144,460.07
PCC = 213+61.60 N = 640,903.32 E = 26,144,505.26

N4
Δ = 14° 41' 00" (LT)
D = 57° 17' 45"
T = 12.88'
L = 25.63'
R = 100.00'
E = 0.83'
PCC = 213+61.60 N = 640,903.32 E = 26,144,505.26
PI = 213+74.49 N = 640,907.27 E = 26,144,517.53
PT = 213+87.23 N = 640,914.19 E = 26,144,528.39

N5
Δ = 11° 25' 43" (LT)
D = 31° 28' 52"
T = 18.21'
L = 36.30'
R = 182.00'
E = 0.91'
PC = 215+27.44 N = 640,989.57 E = 26,144,646.62
PI = 215+45.66 N = 640,999.36 E = 26,144,661.98
PT = 215+63.75 N = 641,012.00 E = 26,144,675.09

E1
Δ = 0° 58' 47" (RT)
D = 4° 22' 37"
T = 11.19'
L = 22.39'
R = 1,309.00'
E = 0.05'
PC = 230+00.00 N = 640,493.35 E = 26,144,826.20
PI = 230+11.19 N = 640,499.83 E = 26,144,817.08
PT = 230+22.39 N = 640,506.46 E = 26,144,808.06

E2
Δ = 36° 48' 30" (RT)
D = 47° 44' 47"
T = 39.93'
L = 77.09'
R = 120.00'
E = 6.47'
PC = 233+04.61 N = 640,673.69 E = 26,144,580.71
PI = 233+44.54 N = 640,697.35 E = 26,144,548.55
PCC = 233+81.71 N = 640,735.56 E = 26,144,536.97

E3
Δ = 9° 07' 06" (RT)
D = 38° 11' 50"
T = 11.96'
L = 23.87'
R = 150.00'
E = 0.48'
PCC = 233+81.71 N = 640,735.56 E = 26,144,536.97
PI = 233+93.67 N = 640,747.01 E = 26,144,533.50
PCC = 234+05.58 N = 640,758.86 E = 26,144,531.89

E4
Δ = 43° 22' 45" (RT)
D = 63° 39' 43"
T = 35.80'
L = 68.14'
R = 90.00'
E = 6.86'
PCC = 234+05.58 N = 640,758.86 E = 26,144,531.89
PI = 234+41.37 N = 640,794.33 E = 26,144,527.07
PCC = 234+73.72 N = 640,823.42 E = 26,144,547.93

E5
Δ = 10° 24' 34" (RT)
D = 8° 11' 06"
T = 63.76'
L = 127.18'
R = 700.00'
E = 2.90'
PCC = 234+73.72 N = 640,823.42 E = 26,144,547.93
PI = 235+37.48 N = 640,875.24 E = 26,144,585.09
PT = 236+00.89 N = 640,919.49 E = 26,144,631.00

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
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DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 80

FILE: 6553_RABDET_EOP006.dgn

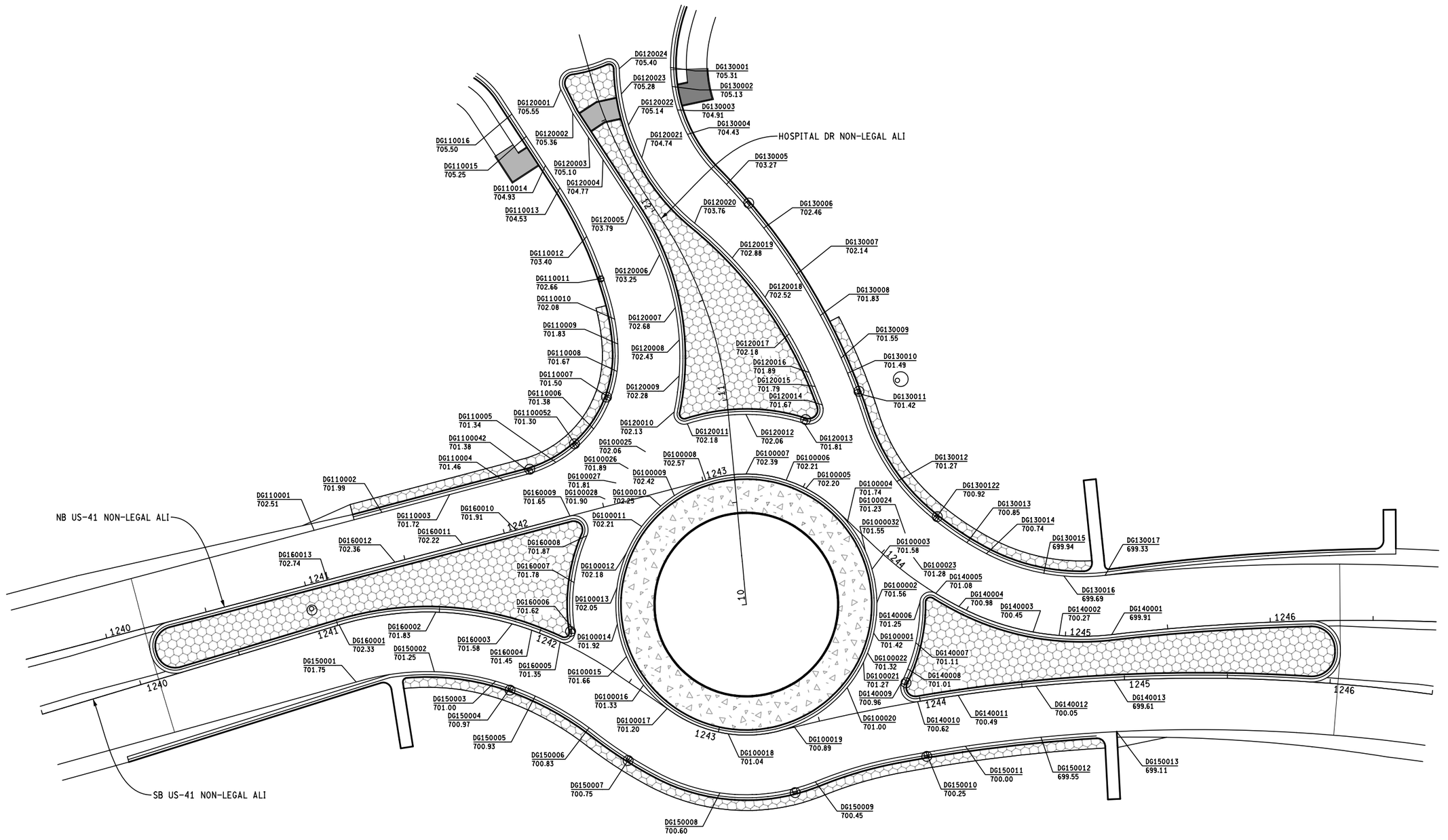
DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

ROUNDABOUT DETAIL
EDGE OF PAVEMENT ALIGNMENTS
US-41/GROVE ST/7TH ST

DRAWING: US41 RABDET 006
SHEET: SECT 1 70

HOSPITAL DR



SB US-41/M-28 NB US-41/M-28

SB US-41/M-28 NB US-41/M-28

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
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CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

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	DATE: 2/10/2017	CS: 52042	ROUNDABOUT DETAIL	DRAWING	SHEET
	DESIGN UNIT: FILPUS	JN: MQ17-025	DETAIL GRADES	US41 RABDET 007	SECT 1 71
FILE: 6553_RABDET_EOP007.dgn	TSC: ISHPEMING	MDOT PERMIT 043179-16	US-41/HOSPITAL DR		

WRAB CENTER NON-LEGAL ALI				
POINT	STATION	ELEVATION	NORTHING	EASTING
DG100001	100+00.00	701.42	641469.60	26143826.05
DG100002	100+14.91	701.56	641480.11	26143836.58
DG100003	100+31.46	701.58	641494.27	26143845.05
DG1000032	100+40.91	701.55	641503.19	26143848.14
DG100004	100+57.59	701.74	641519.68	26143850.27
DG100005	100+83.71	702.20	641545.06	26143844.90
DG100006	100+94.12	702.21	641554.20	26143839.94
DG100007	101+13.97	702.39	641568.87	26143826.69
DG100008	101+33.82	702.57	641578.76	26143809.57
DG100009	101+50.87	702.42	641582.68	26143793.02
DG100010	101+59.27	702.25	641582.95	26143784.64
DG100011	101+72.83	702.21	641581.06	26143771.23
DG100012	101+87.66	702.18	641575.79	26143757.41
DG100013	102+05.46	702.05	641565.48	26143742.98
DG100014	102+23.25	701.92	641551.57	26143731.97
DG100015	102+39.54	701.66	641536.62	26143725.63
DG100016	102+55.76	701.33	641520.61	26143723.28
DG100017	102+71.99	701.20	641504.52	26143725.06
DG100018	103+04.45	701.04	641476.25	26143740.27
DG100019	103+36.90	700.89	641459.03	26143767.36
DG100020	103+69.36	701.00	641457.26	26143799.41
DG100021	103+84.07	701.27	641461.83	26143813.36
DG100022	103+88.95	701.32	641464.04	26143817.72
DG100023	100+31.46	701.28	641485.94	26143864.32
DG100024	100+40.91	701.23	641497.74	26143868.67
DG100025	101+50.87	702.06	641608.15	26143795.55
DG100026	101+59.27	701.89	641607.13	26143783.83
DG100027	101+65.91	701.81	641605.39	26143774.83
DG100028	101+72.83	701.90	641602.73	26143765.77

WRAB NW EOP NON-LEGAL ALI				
POINT	STATION	ELEVATION	NORTHING	EASTING
DG110001	112+83.61	702.51	641680.09	26143646.36
DG110002	113+17.67	701.99	641666.06	26143677.40
DG110003	113+51.74	701.72	641652.02	26143708.44
DG110004	113+78.73	701.46	641640.90	26143733.04
DG1100042	113+92.70	701.38	641635.19	26143745.79
DG110005	114+05.91	701.34	641631.62	26143758.48
DG1100052	114+18.77	701.30	641630.88	26143771.29
DG110006	114+30.61	701.38	641632.63	26143782.98
DG110007	114+47.54	701.50	641639.02	26143798.60
DG110008	114+61.14	701.67	641647.15	26143809.46
DG110009	114+74.54	701.83	641657.32	26143818.15
DG110010	114+86.72	702.08	641667.65	26143824.59
DG110011	115+07.46	702.66	641686.62	26143832.93
DG110012	115+29.24	703.40	641707.41	26143839.39
DG110013	115+56.32	704.53	641734.04	26143844.20
DG110014	115+69.26	704.93	641746.91	26143845.55
DG110015	115+86.19	705.25	641763.75	26143847.32
DG110016	115+99.12	705.50	641776.61	26143848.67

WRAB NE EOP NON-LEGAL ALI				
POINT	STATION	ELEVATION	NORTHING	EASTING
DG130001	130+00.00	705.31	641745.50	26143922.89
DG130002	130+09.27	705.13	641737.84	26143917.67
DG130003	130+20.97	704.91	641727.36	26143912.50
DG130004	130+33.85	704.43	641715.05	26143908.76
DG130005	130+64.79	703.27	641684.26	26143908.16
DG130006	130+92.75	702.46	641656.32	26143908.83
DG130007	131+20.27	702.14	641628.87	26143906.94
DG130008	131+43.47	701.83	641605.95	26143903.41
DG130009	131+66.55	701.55	641583.49	26143898.14
DG130010	131+74.58	701.49	641575.78	26143895.91
DG130011	131+84.72	701.42	641566.13	26143892.80
DG130012	132+32.76	701.27	641519.78	26143881.29
DG1300122	132+59.03	700.92	641493.70	26143883.89
DG130013	132+78.22	700.85	641475.23	26143889.07
DG130014	132+89.08	700.74	641465.12	26143893.03
DG130015	133+18.78	699.94	641440.02	26143908.69
DG130016	133+28.65	699.69	641432.84	26143915.46
DG130017	133+48.65	699.33	641420.50	26143931.17

WRAB E EOP NON-LEGAL ALI				
POINT	STATION	ELEVATION	NORTHING	EASTING
DG140001	145+26.59	699.91	641396.06	26143915.58
DG140002	145+00.85	700.27	641411.93	26143895.37
DG140003	144+88.11	700.45	641421.20	26143886.63
DG140004	144+49.80	700.98	641453.57	26143866.42
DG140005	144+36.84	701.08	641465.64	26143861.70
DG140006	144+26.17	701.25	641467.08	26143853.06
DG140007	144+06.32	701.11	641453.10	26143839.04
DG140008	143+92.97	701.01	641445.70	26143827.95
DG140009	143+86.48	700.96	641442.76	26143822.16
DG140010	143+71.12	700.62	641430.31	26143821.64
DG140011	143+51.12	700.49	641420.24	26143838.92
DG140012	143+13.00	700.05	641399.89	26143871.15
DG140013	142+74.88	699.61	641378.08	26143902.41

WRAB N EOP NON-LEGAL ALI				
POINT	STATION	ELEVATION	NORTHING	EASTING
DG120001	120+00.00	705.55	641770.81	26143874.68
DG120002	120+12.84	705.36	641758.27	26143871.88
DG120003	120+26.89	705.10	641744.31	26143870.42
DG120004	120+39.83	704.77	641731.44	26143869.07
DG120005	120+66.81	703.79	641704.60	26143866.26
DG120006	120+93.74	703.25	641678.19	26143861.26
DG120007	121+20.67	702.68	641653.35	26143850.97
DG120008	121+36.50	702.43	641639.93	26143842.60
DG120009	121+53.92	702.28	641626.45	26143831.58
DG120010	121+71.65	702.13	641614.37	26143818.62
DG120011	121+82.11	702.18	641605.82	26143819.98
DG120012	122+11.03	702.06	641591.43	26143844.92
DG120013	122+39.94	701.81	641570.06	26143864.22
DG120014	122+55.58	701.67	641571.62	26143876.71
DG120015	122+65.15	701.79	641580.73	26143879.65
DG120016	122+72.54	701.89	641587.84	26143881.67
DG120017	122+93.78	702.18	641608.62	26143886.00
DG120018	123+15.01	702.52	641629.74	26143888.10
DG120019	123+39.94	702.88	641654.65	26143887.69
DG120020	123+64.87	703.76	641679.32	26143884.19
DG120021	124+06.08	704.74	641720.23	26143884.30
DG120022	124+23.26	705.14	641736.65	26143889.29
DG120023	124+38.85	705.28	641750.62	26143896.18
DG120024	124+51.21	705.40	641760.82	26143903.14

WRAB S EOP NON-LEGAL ALI				
POINT	STATION	ELEVATION	NORTHING	EASTING
DG150001	152+40.38	701.75	641609.89	26143615.73
DG150002	152+78.84	701.25	641589.87	26143648.37
DG150003	153+09.13	701.00	641567.46	26143668.63
DG150004	153+17.21	700.97	641560.68	26143673.03
DG150005	153+29.75	700.93	641549.68	26143679.03
DG150006	153+60.19	700.83	641521.20	26143689.64
DG150007	153+84.77	700.75	641497.52	26143696.20
DG150008	154+32.11	700.60	641456.50	26143719.03
DG150009	154+79.39	700.45	641431.42	26143758.49
DG150010	155+35.25	700.25	641408.56	26143809.31
DG150011	155+54.64	700.00	641398.79	26143826.06
DG150012	155+91.61	699.55	641379.06	26143857.32
DG150013	156+28.57	699.11	641357.91	26143887.63

WRAB W EOP NON-LEGAL ALI				
POINT	STATION	ELEVATION	NORTHING	EASTING
DG160001	162+40.33	702.33	641636.69	26143626.74
DG160002	162+88.06	701.83	641611.87	26143667.27
DG160003	163+25.67	701.58	641584.04	26143692.42
DG160004	163+35.69	701.45	641575.63	26143697.88
DG160005	163+50.67	701.35	641562.50	26143705.05
DG160006	163+61.44	701.62	641562.18	26143713.85
DG160007	163+85.12	701.78	641580.68	26143728.50
DG160008	164+08.80	701.87	641594.41	26143747.70
DG160009	164+24.45	701.65	641607.00	26143747.35
DG160010	164+51.45	701.91	641618.12	26143722.74
DG160011	164+78.45	702.22	641629.24	26143698.14
DG160012	165+12.52	702.36	641643.28	26143667.10
DG160013	165+46.58	702.74	641657.31	26143636.06

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
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DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

NO SCALE

FILE: 6553_RABDET_EOP008.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

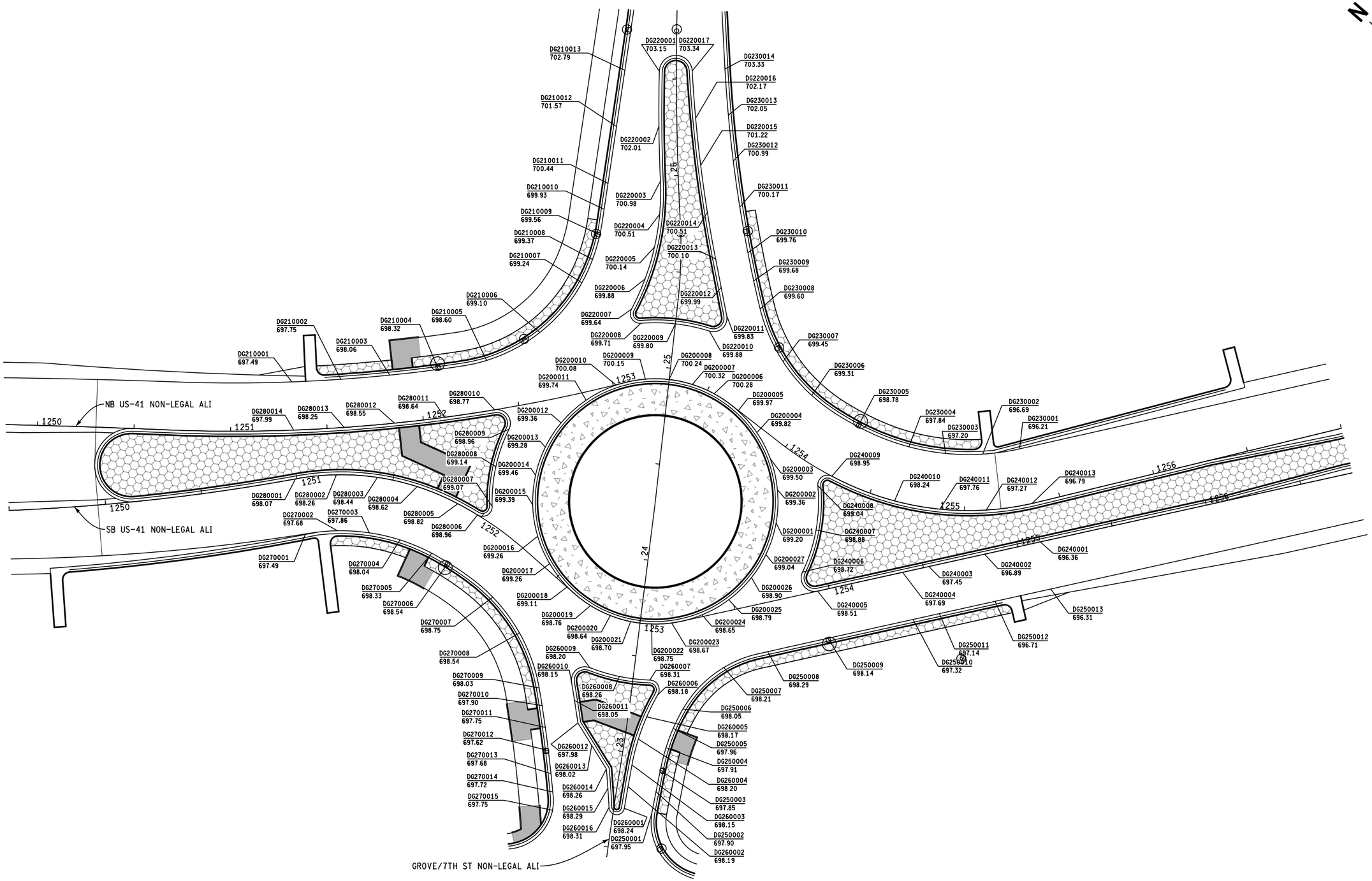
ROUNDABOUT DETAIL
DETAIL GRADES
US-41/HOSPITAL DR

DRAWING: US41 RABDET 008
SHEET: SECT 1 72

S 7TH ST

NB US-41/M-28

SB US-41/M-28



NB US-41/M-28

SB US-41/M-28

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 50

FILE: 6553_RABDET_EOP009.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: M017-025
MDOT PERMIT 043179-16

ROUNDABOUT DETAIL
DETAIL GRADES
US-41/GROVE ST/7TH ST

DRAWING: US41 RABDET 009
SHEET: SECT 1 73

ERAB CENTER NON-LEGAL ALI				
POINT	STATION	ELEVATION	NORTHING	EASTING
DG200001	200+00.00	699.20	640743.75	26144469.18
DG200002	200+17.28	699.36	640754.52	26144482.63
DG200003	200+33.63	699.50	640767.69	26144492.24
DG200004	200+48.98	699.82	640781.90	26144497.94
DG200005	200+63.89	699.97	640796.62	26144500.05
DG200006	200+79.23	700.28	640811.86	26144498.59
DG200007	200+91.42	700.32	640823.44	26144494.86
DG200008	201+03.75	700.24	640834.21	26144488.90
DG200009	201+16.08	700.15	640843.63	26144480.97
DG200010	201+31.48	700.08	640852.97	26144468.76
DG200011	201+48.99	699.74	640859.66	26144452.65
DG200012	201+66.49	699.36	640861.72	26144435.32
DG200013	201+81.52	699.28	640859.66	26144420.47
DG200014	201+97.05	699.46	640853.93	26144406.08
DG200015	202+12.58	699.39	640844.89	26144393.50
DG200016	202+28.92	699.26	640832.40	26144383.05
DG200017	202+44.44	699.26	640818.42	26144376.37
DG200018	202+59.52	699.11	640803.70	26144373.31
DG200019	202+75.04	698.76	640788.22	26144373.87
DG200020	202+86.57	698.64	640777.07	26144376.70
DG200021	202+97.51	698.70	640767.12	26144381.22
DG200022	203+08.45	698.75	640758.09	26144387.37
DG200023	203+18.85	698.67	640750.60	26144394.58
DG200024	203+35.26	698.65	640741.45	26144408.15
DG200025	203+51.14	698.79	640736.18	26144423.08
DG200026	203+67.58	698.90	640734.80	26144439.41
DG200027	203+81.70	699.04	640736.99	26144453.34

ERAB N EOP NON-LEGAL ALI				
POINT	STATION	ELEVATION	NORTHING	EASTING
DG210001	211+86.33	697.49	640980.88	26144359.91
DG210002	212+11.70	697.75	640962.64	26144377.54
DG210003	212+37.07	698.06	640944.97	26144395.74
DG210004	212+62.44	698.32	640927.88	26144414.50
DG210005	212+87.84	698.60	640912.06	26144434.33
DG210006	213+19.22	699.10	640900.72	26144463.40
DG210007	213+53.14	699.24	640901.13	26144497.09
DG210008	213+66.46	699.37	640904.92	26144509.85
DG210009	213+79.79	699.56	640910.43	26144521.97
DG210010	213+93.12	699.93	640917.36	26144533.35
DG210011	214+06.67	700.44	640924.64	26144544.79
DG210012	214+36.43	701.57	640940.64	26144569.87
DG210013	214+65.85	702.79	640956.46	26144594.68

ERAB NE EOP NON-LEGAL ALI				
POINT	STATION	ELEVATION	NORTHING	EASTING
DG220001	220+00.00	703.15	640942.64	26144606.06
DG220002	220+28.43	702.01	640924.18	26144584.43
DG220003	220+56.87	700.98	640904.97	26144563.47
DG220004	220+74.05	700.51	640894.00	26144550.25
DG220005	220+91.24	700.14	640884.88	26144535.70
DG220006	221+08.43	699.88	640877.78	26144520.06
DG220007	221+25.62	699.64	640872.81	26144503.62
DG220008	221+36.32	699.71	640864.37	26144501.25
DG220009	221+54.28	699.80	640850.64	26144512.79
DG220010	221+72.25	699.88	640834.95	26144521.47
DG220011	221+86.74	699.83	640833.42	26144533.41
DG220012	222+01.67	699.99	640845.18	26144542.61
DG220013	222+16.60	700.10	640856.95	26144551.80
DG220014	222+41.15	700.51	640876.04	26144567.25
DG220015	222+65.71	701.22	640894.58	26144583.34
DG220016	222+90.27	702.17	640912.57	26144600.06
DG220017	223+14.82	703.34	640929.97	26144617.38

ERAB E EOP NON-LEGAL ALI				
POINT	STATION	ELEVATION	NORTHING	EASTING
DG230001	233+04.61	696.21	640673.69	26144580.71
DG230002	233+23.89	696.69	640686.31	26144566.17
DG230003	233+43.16	697.20	640701.08	26144553.83
DG230004	233+62.43	697.84	640717.64	26144544.01
DG230005	233+90.92	698.78	640744.46	26144534.57
DG230006	234+19.83	699.31	640773.08	26144531.10
DG230007	234+42.82	699.45	640795.75	26144534.55
DG230008	234+72.65	699.60	640822.56	26144547.32
DG230009	234+87.59	699.68	640834.62	26144556.13
DG230010	235+02.52	699.76	640846.48	26144565.19
DG230011	235+26.50	700.17	640865.12	26144580.28
DG230012	235+50.47	700.99	640883.23	26144595.99
DG230013	235+74.45	702.05	640900.78	26144612.31
DG230014	235+98.42	703.33	640917.78	26144629.22

ERAB SE EOP NON-LEGAL ALI				
POINT	STATION	ELEVATION	NORTHING	EASTING
DG240001	242+52.69	696.36	640634.02	26144551.43
DG240002	242+82.21	696.89	640651.60	26144527.72
DG240003	243+11.74	697.45	640669.19	26144504.00
DG240004	243+25.71	697.69	640677.51	26144492.77
DG240005	243+70.79	698.51	640704.36	26144456.57
DG240006	243+86.44	698.72	640716.73	26144458.89
DG240007	244+09.43	698.88	640725.73	26144479.97
DG240008	244+32.43	699.04	640740.06	26144497.86
DG240009	244+43.17	698.95	640737.77	26144506.35
DG240010	244+78.10	698.24	640704.91	26144517.96
DG240011	245+02.03	697.76	640684.34	26144530.15
DG240012	245+25.96	697.27	640665.99	26144545.47
DG240013	245+49.89	696.79	640650.33	26144563.53

ERAB S EOP NON-LEGAL ALI				
POINT	STATION	ELEVATION	NORTHING	EASTING
DG250001	251+17.76	697.95	640693.87	26144313.70
DG250002	251+28.98	697.90	640699.50	26144323.41
DG250003	251+40.20	697.85	640705.02	26144333.18
DG250004	251+52.25	697.91	640710.46	26144343.92
DG250005	251+62.91	697.96	640714.19	26144353.91
DG250006	251+74.19	698.05	640716.96	26144364.84
DG250007	252+04.69	698.21	640715.09	26144394.95
DG250008	252+28.88	698.29	640703.35	26144415.95
DG250009	252+60.91	698.14	640684.28	26144441.68
DG250010	253+05.98	697.32	640657.43	26144477.88
DG250011	253+19.96	697.14	640649.11	26144489.11
DG250012	253+49.48	696.71	640631.52	26144512.83
DG250013	253+79.01	696.31	640613.94	26144536.54

ERAB SW EOP NON-LEGAL ALI				
POINT	STATION	ELEVATION	NORTHING	EASTING
DG260001	260+00.00	698.24	640706.18	26144306.10
DG260002	260+11.38	698.19	640712.11	26144315.81
DG260003	260+22.75	698.15	640717.93	26144325.59
DG260004	260+36.61	698.20	640724.21	26144337.93
DG260005	260+48.88	698.17	640728.50	26144349.41
DG260006	260+61.85	698.18	640731.69	26144361.98
DG260007	260+72.17	698.31	640739.76	26144364.90
DG260008	260+88.10	698.26	640752.91	26144355.94
DG260009	261+04.04	698.20	640767.40	26144349.36
DG260010	261+18.84	698.15	640769.51	26144337.35
DG260011	261+28.26	698.05	640762.26	26144331.33
DG260012	261+40.02	697.98	640753.33	26144323.68
DG260013	261+53.62	698.02	640740.34	26144319.66
DG260014	261+68.01	698.26	640726.59	26144315.40
DG260015	261+78.00	698.29	640719.46	26144308.39
DG260016	261+87.98	698.31	640712.48	26144301.23

ERAB W EOP NON-LEGAL ALI				
POINT	STATION	ELEVATION	NORTHING	EASTING
DG270001	272+08.36	697.49	640923.92	26144305.12
DG270002	272+24.97	697.68	640912.54	26144317.20
DG270003	272+41.49	697.86	640899.42	26144327.20
DG270004	272+57.85	698.04	640884.97	26144334.85
DG270005	272+75.72	698.33	640868.01	26144340.40
DG270006	272+85.54	698.54	640858.38	26144342.33
DG270007	273+14.76	698.75	640829.29	26144343.97
DG270008	273+37.98	698.54	640806.66	26144339.04
DG270009	273+68.38	698.03	640780.29	26144324.21
DG270010	273+77.58	697.90	640773.22	26144318.33
DG270011	273+89.04	697.75	640764.51	26144310.88
DG270012	274+01.11	697.62	640755.48	26144302.87
DG270013	274+13.19	697.68	640746.58	26144294.70
DG270014	274+22.63	697.72	640739.72	26144288.21
DG270015	274+32.05	697.75	640733.64	26144280.97

ERAB NW EOP NON-LEGAL ALI				
POINT	STATION	ELEVATION	NORTHING	EASTING
DG280001	282+03.19	698.07	640946.53	26144323.22
DG280002	282+24.50	698.26	640931.96	26144338.73
DG280003	282+45.80	698.44	640915.04	26144351.63
DG280004	282+66.91	698.62	640896.40	26144361.50
DG280005	282+89.81	698.82	640874.66	26144368.62
DG280006	283+01.54	698.96	640863.17	26144370.94
DG280007	283+12.29	699.07	640860.32	26144379.26
DG280008	283+32.95	699.14	640872.35	26144396.00
DG280009	283+53.62	698.96	640879.97	26144415.15
DG280010	283+68.97	698.77	640892.14	26144417.84
DG280011	283+95.14	698.64	640909.14	26144397.95
DG280012	284+21.30	698.55	640926.76	26144378.61
DG280013	284+47.46	698.25	640944.99	26144359.85
DG280014	284+73.63	697.99	640963.80	26144341.66

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

NO SCALE

FILE: 6553_RABDET_E0P010.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

ROUNDABOUT DETAIL
DETAIL GRADES
US-41/GROVE ST/7TH ST

DRAWING: US41 RABDET 010
SHEET: SECT 1 74

CONSTRUCT SANITARY SEWER

STA. 4+00 TO STA. 8+50 (THIS SHEET)

STA 4+06.28 – NO OFFSET (PSMH#1)
1 Ea – Sanitary Manhole, 48 inch dia
2.9 Ft – Sanitary Manhole, Add Depth of 48 inch dia, 8 foot to 15 foot
1 Ea – Dr Structure Cover, Type Q
1 Ea – Connect to Existing Sanitary Sewer Main
5 Ft – Sewer, San., 15 Inch, Cl E, TDB

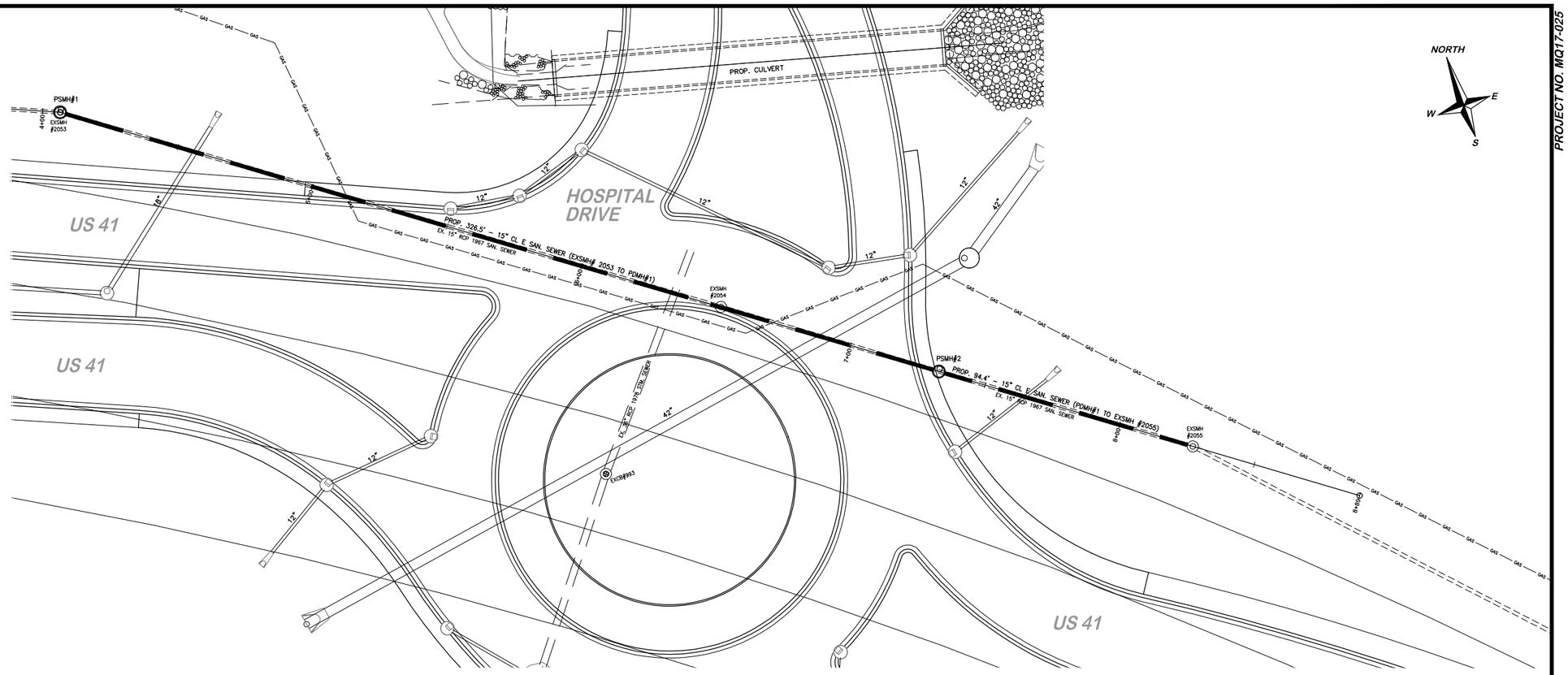
PSMH#1 TO PSMH#2
326.5 Ft – Sewer, San., 15 Inch, Cl E, TDB

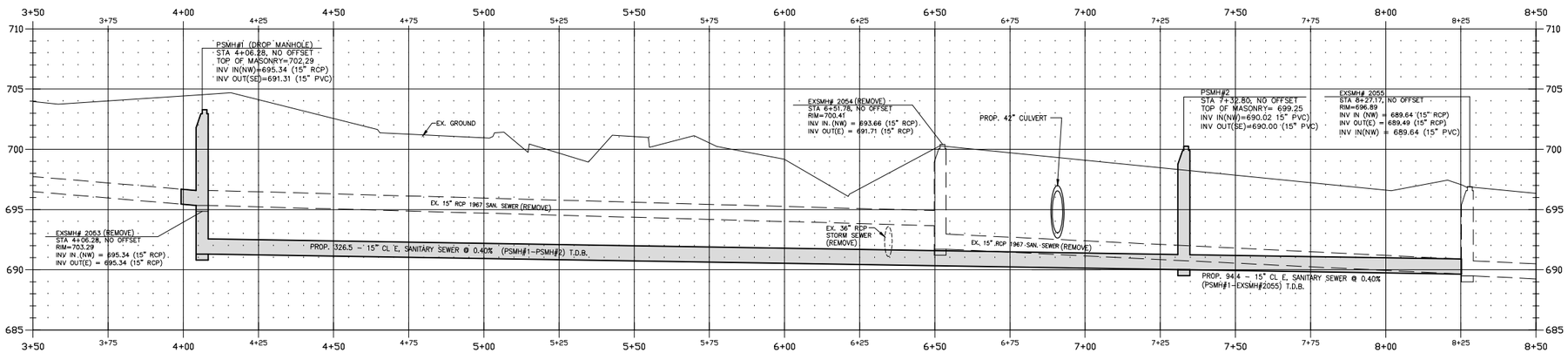
STA 7+32.80 – NO OFFSET (PSMH#2)
1 Ea – Sanitary Manhole, 48 inch dia
1.5 Ft – Sanitary Manhole, Add Depth of 48 inch dia, 8 foot to 15 foot
1 Ea – Dr Structure Cover, Type Q

PSMH#2 TO EXSMH#2055
94.4 Ft – Sewer, San., 15 Inch, Cl E, TDB

STA 8+27.17 – NO OFFSET (EXSMH#2055)
1 Ea – Dr Structure Tap, 15 Inch

430 Ft – Dewatering System, Trench





Michigan's One-Call Utility Notification Organization

Three full days before you dig call the Miss Dig system 1-(800)-482-7171

US41

CITY ENGINEER'S OFFICE MARQUETTE, MICHIGAN 300 WEST BARAGA AVE., MARQUETTE, MI 49855 PHONE (906)228-0440	REVISIONS:		DESIGN BY: MHK DRAWN BY: MHK DATE: February 10, 2017 FILE NAME: 15-020 SEVENTH SPRING BARAGA BASE.dwg	HOR. SCALE: 1" = 20' VERT. SCALE: 1" = 5'	US41 CORRIDOR UTILITY RELOCATION	PROJECT MQ17-025 75
	PRE-LIM REVIEW	10.4.16				
	REVIEW	11.18.16				
	MDOT REVIEW	1.13.17				
	BID SET	2.10.17				

PROJECT NO. MQ17-025

CONSTRUCT SANITARY SEWER

STA 1+00 TO STA. 5+00 (THIS SHEET)

STA 1+00.38 – 55.74 L (PSMH#3)
1 Ea – Sanitary Manhole, 48 inch dia
1 Ea – Dr Structure Cover, Type Q
1 Ea – Connect to Existing Sanitary Sewer Main
8 Ft – Sewer, San., 8 Inch, PVC, SDR26 TDB
1 Ea – Wye, San., 8 Inch x 4 Inch
10 Ft – Lateral, Sanitary, 4 Inch
1 Ea – Connect to Ex. San. Lateral

PSMH#3 TO PSMH#4
91.1 Ft – Sewer, 8 Inch, PVC, SDR26 TDB

STA 1+33.78 – 29.8 R (PSMH#4)
1 Ea – Sanitary Manhole, 48 Inch dia
1.33 Ft – Sanitary Manhole, Add Depth of 48 inch dia, 8 foot to 15 foot
1 Ea – Dr Structure Cover, Type Q
2 Ea – Connect to Existing Sanitary Sewer Main
10 Ft – Sewer, San., 15 Inch, Cl E, TDB

STA 2+80.86 – 18.15 L (EXSMH#396)
1 Ea – Sanitary Sewer Structure, Rem
4 Cyd – Flowable Fill, Non-Structural

STA 2+93.53 – 22.79 R (PSMH#5)
1 Ea – Sanitary Manhole, 48 Inch dia
3.6 Ft – Sanitary Manhole, Add Depth of 48 inch dia, 8 foot to 15 foot
1 Ea – Dr Structure Cover, Type Q
2 Ea – Connect to Existing Sanitary Sewer Main
16 Ft – Sewer, San., 12 Inch, Cl. E, TDB

STA 4+13.39 – 29.42 R (PSMH#6)
1 Ea – Sanitary Manhole, 48 Inch dia
2.88 Ft – Sanitary Manhole, Add Depth of 48 inch dia, 8 foot to 15 foot
1 Ea – Dr Structure Cover, Type Q
1 Ea – Connect to Existing Sanitary Sewer Main
8 Ft – Sewer, San., 15 Inch, Cl E, TDB

PSMH#5 TO EXSMH#2058
126.5 Ft – Sewer, San., 15 Inch, Cl E, TDB

EXSMH#2058
1 Ea – Dr Structure, Tap, 15 Inch

275 Ft – Dewatering System, Trench

1 LS – Whetstone Brook Maintenance System

NOTE: BULKHEAD ENDS OF EXISTING WATERMAIN WHENEVER REMOVED. INCLUDED IN WATERMAIN, REMOVE. THE PAY ITEM SIDEWALK, REM. INCLUDES SAW CUTTING AND CONC. DRIVEWAY REMOVAL.

EXISTING PIPING AND STRUCTURES WITHIN THE PROPOSED TRENCH INFLUENCE AREA SHALL BE REMOVED. WORK WILL BE INCLUDED IN OTHER PAY ITEMS OF WORK.

ALL STRUCTURES AND PIPING 8" DIA AND GREATER THAT ARE BEING REPLACED AND ARE OUTSIDE THE PROPOSED TRENCH INFLUENCE AREA WILL BE REMOVED AND PAID FOR AS A SEPARATE PAY ITEM OF WORK.

ALL OTHER PIPING BEING REPLACED, NOT MEETING THE ABOVE DESCRIPTIONS WILL BE ABANDONED AND BULKHEADED. WORK WILL BE INCLUDED IN OTHER PAY ITEMS OF WORK.

CONSTRUCT PAVEMENT STRUCTURE

PSMH#3 CONNECTION POINT

15 Cyd – Excavation, Earth
4 Ton – HMA, 5E1
4 Ton – HMA, 4E1
45 Syd – Aggregate Base, 6 Inch
20 Ft – Curb, Conc, Det E1
300 Syd – Slope Restoration, Type D

CONSTRUCT WATER MAIN

STA 4+01.20 25.04 L
1 Ea – Connect to Ex Water Main
(Includes pipe and fittings within 10 ft of connection point)

STA 3+99.00 12.23 L
1 Ea – Bend, 16 Inch, 45 Deg. (M.J.)

STA 3+97.43 14.14 R
1 Ea – Bend, 16 Inch, 45 Deg. (M.J.)

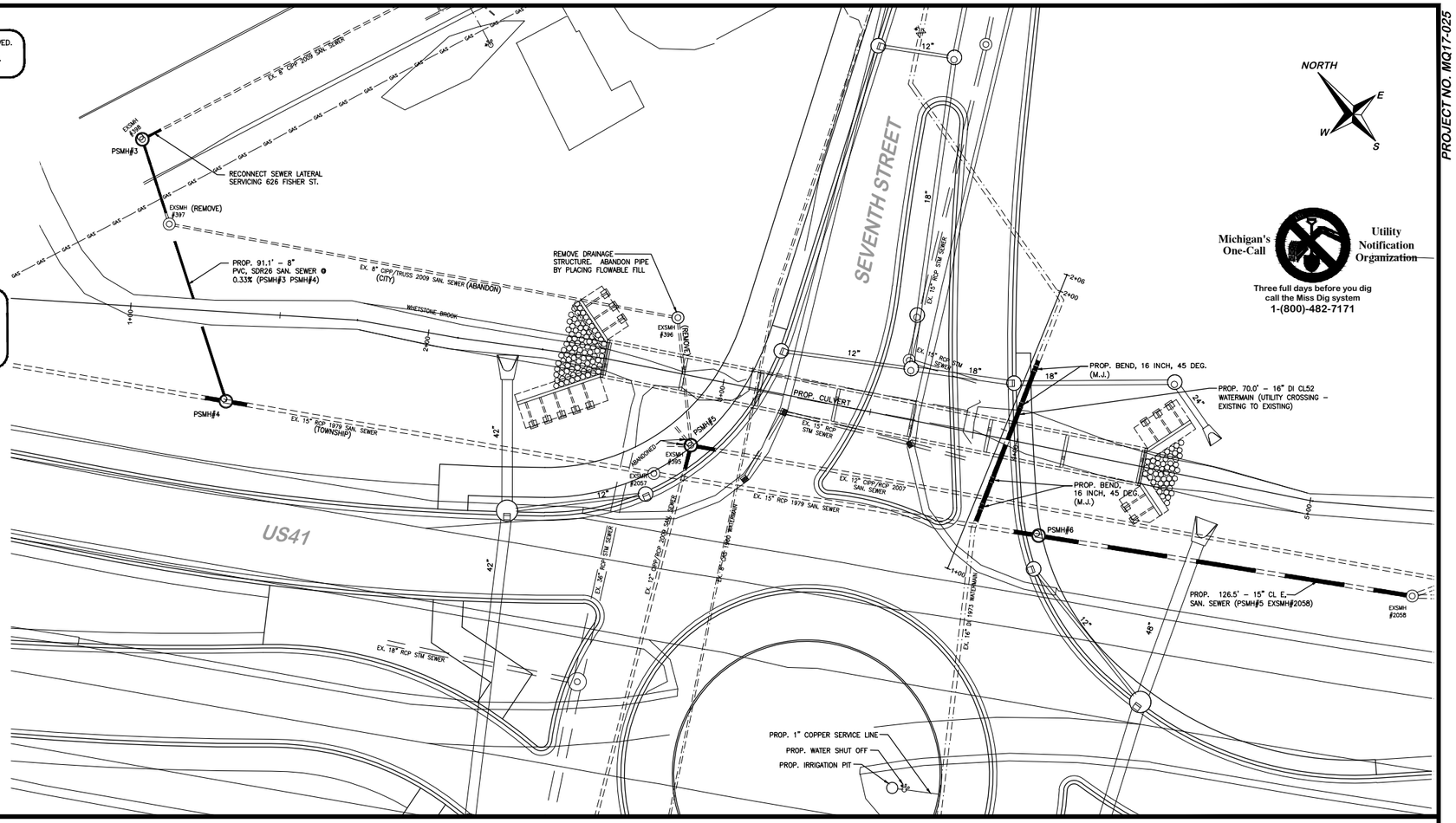
STA 3+92.79 23.52 R
1 Ea – Connect to Ex Water Main
(Includes pipe and fittings within 10 ft of connection point)

70 Ft – Water Main, DI, 16 Inch, Tr Det G, Modified
(Existing to Existing)

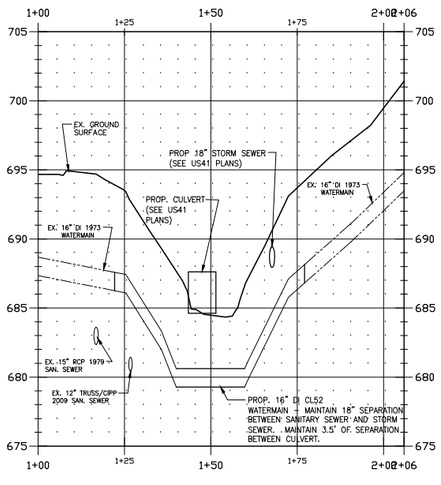
STA 3+82.11 121.76 R
1 Ea – Service Tap, 1 Inch
1 Ea – Curb Stop and Box, 1 Inch
20 Ft – Water Service, 1 Inch Copper, Type K
1 Ea – Irrigation Pit

RETAINER GLANDS ON ALL MECHANICAL JOINTS. DEWATERING FOR WATERMAIN INSTALLATION WILL NOT BE PAID FOR SEPARATELY.

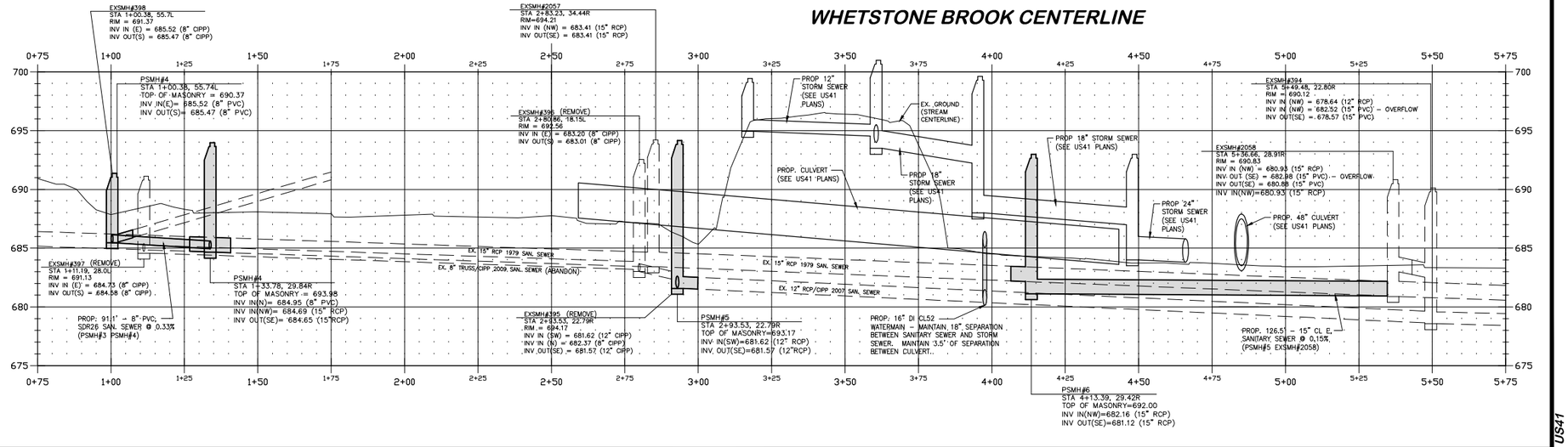
NITRILE GASKETS WILL BE USED FOR THE PROPOSED WATERMAIN. GASKETS WILL NOT BE PAID FOR SEPARATELY AND CONSIDERED INCIDENTAL TO THE WATERMAIN.



WHETSTONE BROOK CROSSING



WHETSTONE BROOK CENTERLINE



US41

CITY ENGINEER'S OFFICE
MARQUETTE, MICHIGAN
300 WEST BARAGA AVE., MARQUETTE, MI 49855
PHONE (906)228-0440

REVISIONS:

PRE-LIM REVIEW	10.4.16
REVIEW	11.18.16
MDOT REVIEW	1.13.17
BID SET	2.10.17

DESIGN BY: MHK
DRAWN BY: MHK
DATE: February 10, 2017
FILE NAME: 15-020 SEVENTH SPRING BARAGA BASE.dwg

HOR. SCALE: 1" = 20'
VERT. SCALE: 1" = 5'

US41 CORRIDOR
UTILITY RELOCATION

PROJECT MQ17-025
76

PROJECT NO. MQ17-025

CONSTRUCT WATER MAIN

STA 40+20.00 12.44 L
1 Ea – Connect to Ex. Water Main
(Includes pipe and fittings within 10 ft of connection point)

107.5 Ft – Water Main, DI, 8 Inch, Tr Det G, Modified
(Existing to Bend)

STA 40+55.58 35.96 L
4 Ea – Bend, 8 Inch, 45 Deg. (M.J.)
(Utility Crossing)

STA 41+53.52 64.70 L
1 Ea – Bend, 8 Inch, 45 Deg. (M.J.)

STA 41+61.47 61.09 L
2 Ea – Connect to Ex. Water Main
(Includes pipe and fittings within 10 ft of connection point)
2 Ea – Butterfly Valve (M.J.) and Box, 16 Inch
2 Ea – R.S. Gate Valve (M.J.) and Box, 8 Inch

STA 41+47.25 48.75 R
1 Ea – Connect to Ex. Water Main
(Includes pipe and fittings within 10 ft of connection point)

STA 41+46.79 43.16 R
1 Ea – Bend, 8 Inch, 90 Deg. (M.J.)
(Included in Connect to Existing Water Main Pay Item)
7 Ft – Water Main, DI, 8 Inch, Tr Det G, Modified
(Existing to Bend)
14.4 Ft – Water Main, DI, 8 Inch, Tr Det G, Modified
(Bend to Cross)

STA 41+56.86 42.35 R
2 Ea – Connect to Ex. Water Main
(Includes pipe and fittings within 10 ft of connection point)
1 Ea – Cross, 16 Inch x 8 Inch (M.J.)
(Included in Connect to Existing Water Main Pay Item)
2 Ea – R.S. Gate Valve (M.J.) and Box, 8 Inch
32.9 Ft – Water Main, DI, 8 Inch, Tr Det G, Modified
(Cross to Existing)

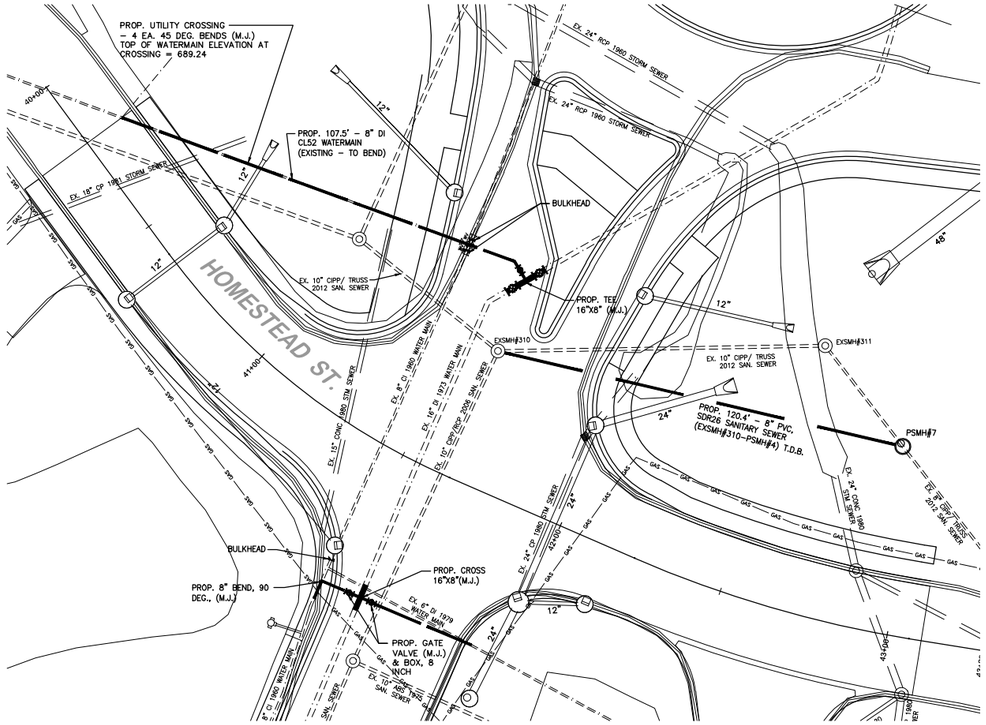
STA 41+90.12 41.95 L
1 Ea – Connect to Ex. Water Main
(Includes pipe and fittings within 10 ft of connection point)

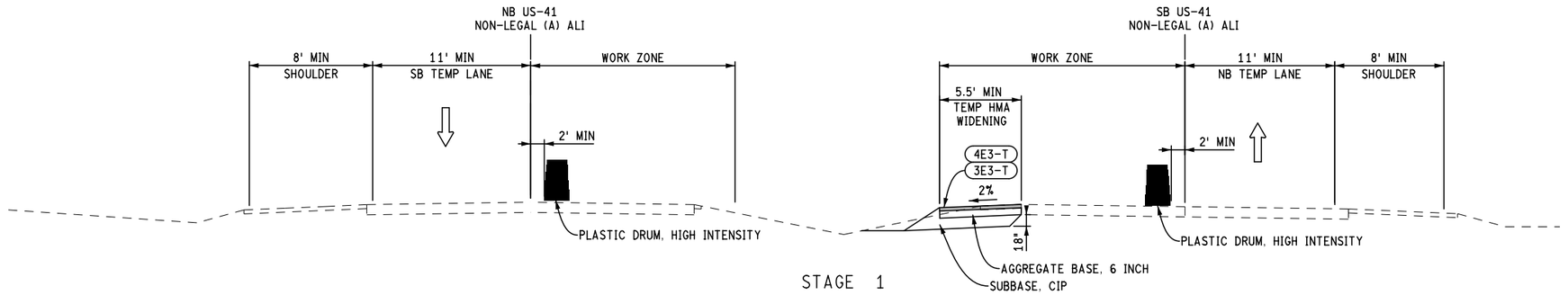
EXISTING PIPING AND STRUCTURES WITHIN THE PROPOSED TRENCH INFLUENCE AREA SHALL BE REMOVED. WORK WILL BE INCLUDED IN OTHER PAY ITEMS OF WORK.

ALL STRUCTURES AND PIPING 8" DIA AND GREATER THAT ARE BEING REPLACED AND ARE OUTSIDE THE PROPOSED TRENCH INFLUENCE AREA WILL BE REMOVED AND PAID FOR AS A SEPARATE PAY ITEM OF WORK.

ALL OTHER PIPING BEING REPLACED, NOT MEETING THE ABOVE DESCRIPTIONS WILL BE ABANDONED AND BULKHEADED. WORK WILL BE INCLUDED IN OTHER PAY ITEMS OF WORK.

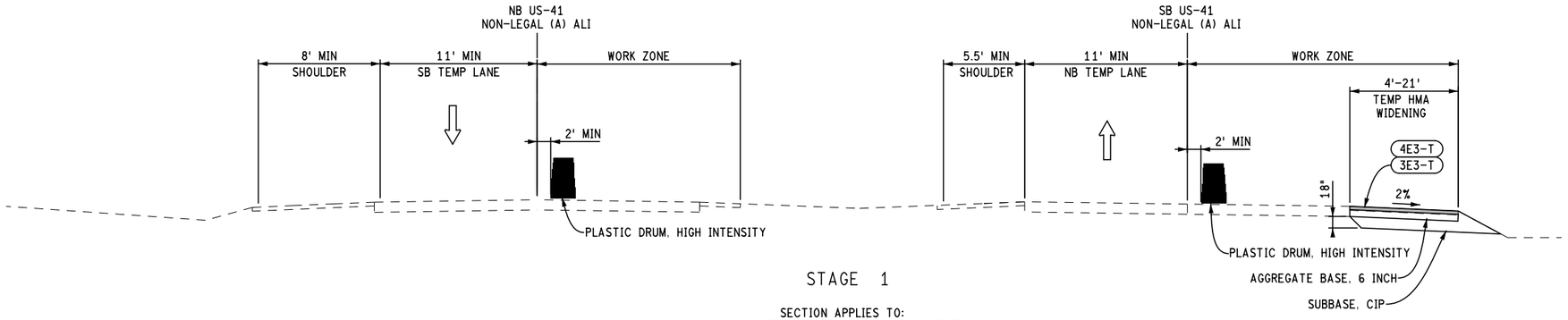
NOTE: BULKHEAD ENDS OF EXISTING WATERMAIN WHENEVER REMOVED. INCLUDED IN WATERMAIN, REMOVE.
THE PAY ITEM SIDEWALK, REM. INCLUDES SAW CUTTING AND CONC. DRIVEWAY REMOVAL.


PROP. UTILITY CROSSING – 4 EA. 45 DEG. BENDS (M.J.) TOP OF WATERMAIN ELEVATION AT CROSSING = 689.24
PROP. 107.5' – 8" DI CL52 WATERMAIN (EXISTING – TO BEND)
EX. 24" RCP 1960 STORM SEWER
EX. 18" CIP 1980 STORM SEWER
HOMESTEAD ST.
BULKHEAD
EX. 10" CIPP/ TRUSS 2012 SAN. SEWER
PROP. TEE 16"X8" (M.J.)
EXSMH#310
EXSMH#311
PROP. 120.4' – 8" PVC, SDR26 SANITARY SEWER (EXSMH#310–PSMH#7) T.D.B.
PSMH#7
EX. 8" CIPP 2009 SAN. SEWER
EX. 8" CIP 1960 SAN. SEWER
EX. 8" CI 1960 WATER MAIN
EX. 8" DI 1973 WATER MAIN
EX. 10" CIPP 2009 SAN. SEWER
EX. 15" CIPP 1980 STM. SEWER
EX. 24" CIPP 1980 STM. SEWER
EX. 12" CIPP 2009 SAN. SEWER
PROP. 8" BEND, 90 DEG., (M.J.)
PROP. CROSS 16"X8"(M.J.)
EX. 8" DI 1979 WATER MAIN
PROP. GATE VALVE (M.J.) & BOX, 8 INCH
EX. 10" CIPP 1980 SAN. SEWER
EX. 8" CIPP 2009 SAN. SEWER
EX. 12" RCP 1980 STORM SEWER
EX. 8" TRUSS 1980 SAN. SEWER
EX. 8" CIPP 2009 SAN. SEWER
EX. 8" DI 1980 WATER MAIN
EX. 15" RCP 1980 STORM SEWER
EX. 24" CIPP 1980 STM. SEWER
EX. 12" CIPP 2009 SAN. SEWER
EX. 8" CIPP 2009 SAN. SEWER
EX. 15" CIPP 1980 STM. SEWER
EX. 10" CIPP 1980 SAN. SEWER
EX. 8" CIPP 2009 SAN. SEWER
EX. 8" CIPP 2009 SAN. SEWER
EX. 8" CIPP 2009



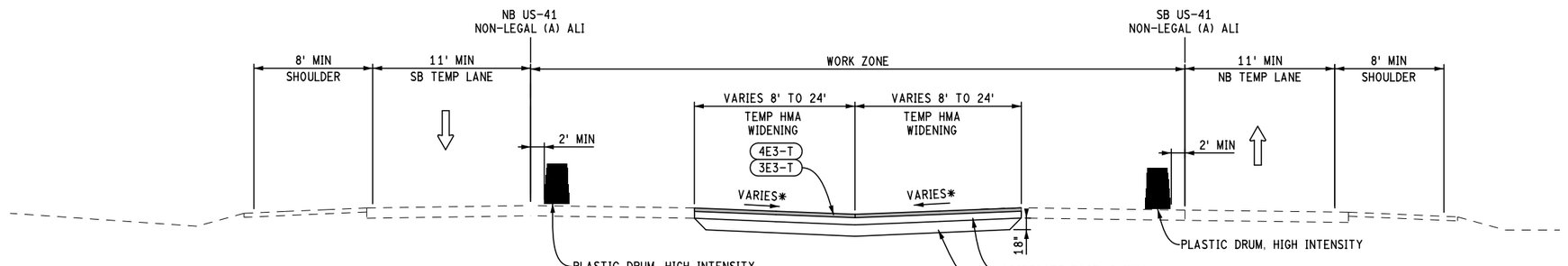
STAGE 1

SECTION APPLIES TO:
US-41 FROM MCCLELLAN AVE TO GROVE ST
& ALTAMONT ST TO FIRST ST



STAGE 1

SECTION APPLIES TO:
US-41 FROM GROVE ST TO ALTAMONT ST



STAGE 1

*SEE TEMPORARY CROSS-OVER
DETAIL SHEETS

SECTION APPLIES TO:
WEST CROSS-OVER
EAST CROSS-OVER

NOTE: SEE DETAIL SHEETS
FOR CROSS-OVER LAYOUT

STAGE 1:

MAINTAIN ONE LANE OF TRAFFIC IN EACH DIRECTION ALONG US-41 AT ALL TIMES UTILIZING LANE CLOSURES.

PERFORM TRENCHING AND CONSTRUCT TEMPORARY WIDENING THAT IS NEEDED FOR FUTURE STAGES.

PLACE TEMPORARY SIGNAL AT GROVE ST TO MAINTAIN TRAFFIC FOR STAGE 2 MAKING SURE TEMPORARY HEADS LINE UP WITH THRU/TURN LANES AND ONCE COMPLETED, SHIFT TRAFFIC TO THE OUTSIDE LANES OF US-41 USING STANDARD LANE SHIFTS AND/OR TRAFFIC REGULATORS AS DETAILED IN THE PLANS OR AS DIRECTED BY THE ENGINEER.

CONSTRUCT CROSSOVERS AT EACH END OF THE PROJECT WHILE TRAFFIC IS SHIFTED TO THE OUTSIDE LANES.

CONSTRUCT THE SOUTHWEST PORTION OF THE TEMPORARY ACCESS ROAD, CONNECTING SOUTHBOUND US-41 TO HOMESTEAD STREET.

MILL AND OVERLAY HOMESTEAD STREET FROM THE NEW TEMPORARY ACCESS ROAD TO GROVE STREET UTILIZING TRAFFIC REGULATORS.

MAINTAIN ACCESS TO GROVE STREET AND MCCLELLAN AVENUE IN WORK AREA AT ALL TIMES.

THE CONTRACTOR MUST MAINTAIN ACCESS FOR EMERGENCY VEHICLES THROUGH THE CONSTRUCTION ZONE AT ALL TIMES.

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
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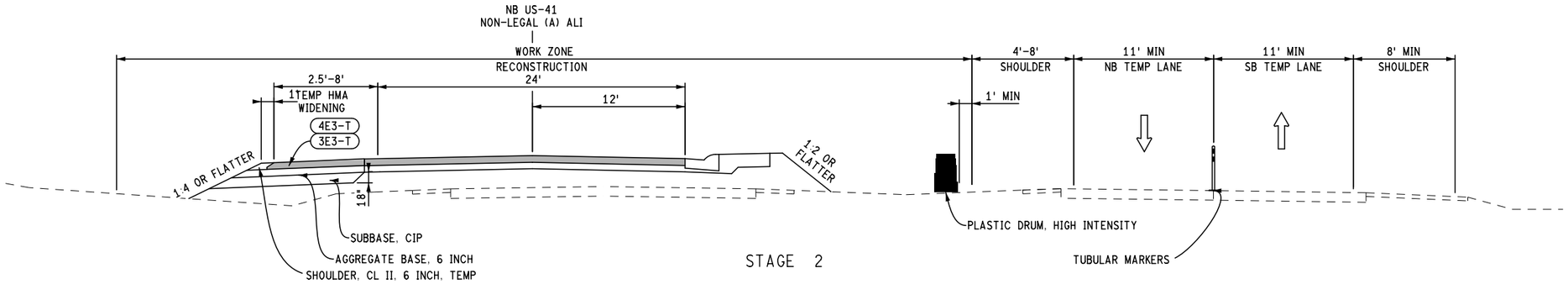
FILE: 6553_US41_MOT-TYP001.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

PROPOSED TYPICAL MOT CROSS SECTIONS
US-41
STAGE 1

DRAWING: US41 MOTTYP 001
SHEET: SECT 1



STAGE 2

SECTION APPLIES TO:
US-41 NEAR ROUNDABOUTS

STAGE 2:

DETOUR 7" STREET TRAFFIC USING WASHINGTON STREET WEST TO US-41 OR USING WASHINGTON STREET EAST TO FRONT STREET, AND THEN TO US-41.

DETOUR SB MCCLELLAN AVE TO SB US-41 LEFT TURN USING WASHINGTON ST WEST TO US-41 FOR TRUCKS OR WASHINGTON EAST TO FRONT ST, AND THEN TO US-41 FOR CARS.

SHIFT NORTHBOUND US-41 TRAFFIC TO THE INSIDE SOUTHBOUND US-41 TRAVEL LANE UTILIZING LANE CLOSURES AND CROSS-OVER'S.

MAINTAIN ONE LANE OF NORTHBOUND AND SOUTHBOUND US-41 TRAFFIC ALONG SOUTHBOUND US-41 AT ALL TIMES AND PLACE TUBULAR DEVICES BETWEEN OPPOSING TRAFFIC ALONG SOUTHBOUND US-41.

ALLOW UTILITY RELOCATIONS WHICH ARE NOT PART OF THE CONTRACT DURING THE FIRST TWO WEEKS OF STAGE 2 OR AS DIRECTED BY THE ENGINEER.

RECONSTRUCT NORTHBOUND LANES OF US-41 AND THE NORTHERN PORTIONS OF THE ROUNDABOUTS AT 7" STREET AND THE HOSPITAL ACCESS DRIVE.

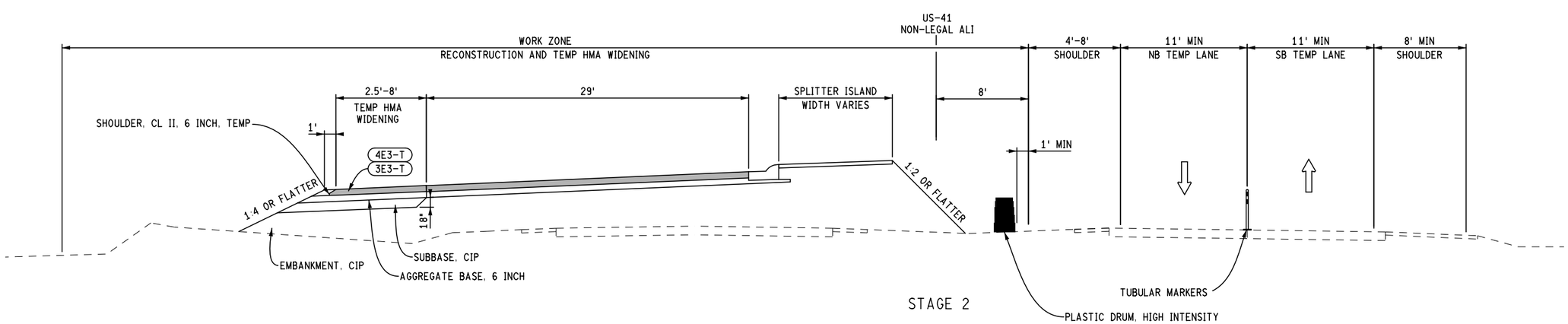
CONSTRUCT THE TEMPORARY ACCESS ROAD AND TEMPORARY DRAINAGE TO BE USED IN ALL FUTURE STAGES ALONG WITH PLACING ALL DRAINAGE LINES AND STRUCTURES ON NORTHBOUND US-41.

UTILIZE BYPASS PUMPING AS NEEDED TO MAINTAIN FLOW DURING STORM SEWER CONSTRUCTION AS DIRECTED BY THE ENGINEER.

TEMPORARILY PLATE STRUCTURES IN THE AREA OF THE TEMPORARY PAVING AND PLACE TEMPORARY HMA AS REQUIRED AT THE ROUNDABOUTS TO MAINTAIN TRAFFIC FOR STAGE 3.

PLACE TEMPORARY SIGNAL AT THE TEMPORARY ACCESS ROAD TO MAINTAIN TRAFFIC FOR ALL FUTURE STAGES.

THE CONTRACTOR MUST MAINTAIN ACCESS FOR EMERGENCY VEHICLES THROUGH THE CONSTRUCTION ZONE AT ALL TIMES.



STAGE 2

SECTION APPLIES TO:
US-41 AT GROVE ST AND HOSPITAL DR

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JN: MQ17-025
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PROPOSED TYPICAL MOT CROSS SECTIONS
US-41
STAGE 2

DRAWING: US41 MOTTYP 002
SHEET: SECT 1 79

STAGE 3:

DETOUR 7TH STREET TRAFFIC USING WASHINGTON STREET WEST TO US-41 OR USING WASHINGTON STREET EAST TO FRONT STREET, AND THEN TO US-41.

DETOUR SB MCCLELLAN AVE TO SB US-41 LEFT TURN USING WASHINGTON ST WEST TO US-41 FOR TRUCKS OR WASHINGTON EAST TO FRONT ST, AND THEN TO US-41 FOR CARS.

SHIFT SOUTHBOUND US-41 TRAFFIC TO NORTHBOUND US-41 TRAVEL LANE UTILIZING LANE CLOSURES AND CROSS-OVER'S.

CLOSE THE INTERSECTION AT GROVE STREET, REMOVE SIGNAL AT GROVE STREET AND USE THE TEMPORARY ACCESS ROAD AND SIGNAL THAT WAS CONSTRUCTED IN STAGE 2, USE HOMESTEAD STREET TO ACCESS GROVE STREET.

MAINTAIN ONE LANE OF NORTHBOUND AND SOUTHBOUND US-41 TRAFFIC ALONG NORTHBOUND US-41 AT ALL TIMES. PLACE TUBULAR DEVICES BETWEEN OPPOSING TRAFFIC ALONG NORTHBOUND US-41.

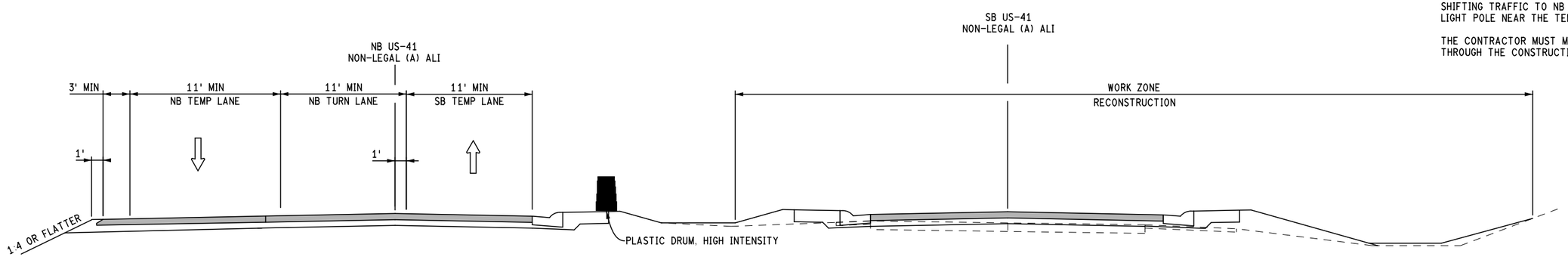
CONSTRUCT SOUTHBOUND US-41 AND THE ROUNDABOUT AT GROVE STREET.

UTILIZE BYPASS PUMPING AS NEEDED TO MAINTAIN FLOW DURING STORM SEWER CONSTRUCTION AS DIRECTED BY THE ENGINEER.

GAP OUT THE CONSTRUCTION OF SOUTHBOUND US-41 AROUND THE TEMPORARY ACCESS ROAD.

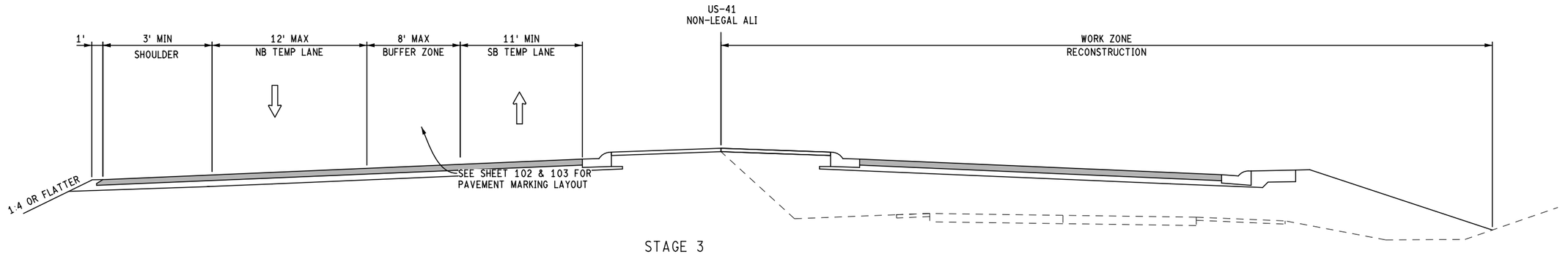
PROPOSED LIGHTING ALONG NB US-41 NEEDS TO BE ACTIVE PRIOR TO SHIFTING TRAFFIC TO NB FOR STAGE 3, WITH THE EXCEPTION OF THE LIGHT POLE NEAR THE TEMP SIGNAL.

THE CONTRACTOR MUST MAINTAIN ACCESS FOR EMERGENCY VEHICLES THROUGH THE CONSTRUCTION ZONE AT ALL TIMES.



STAGE 3

SECTION APPLIES TO:
US-41 NEAR TEMPORARY ACCESS ROAD



STAGE 3

SECTION APPLIES TO:
US-41 AT GROVE ST AND HOSPITAL DR

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FILE: 6553_US41_MOT-TYP003.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

PROPOSED TYPICAL MOT CROSS SECTIONS
US-41
STAGE 3

DRAWING: US41 MOTTYP 003
SHEET: SECT 1 80

STAGE 5:

REMOVE THE TEMPORARY SIGNAL AT THE TEMPORARY ACCESS ROAD AND US-41.

ONCE SOUTHBOUND US-41 IS OPEN TO TRAFFIC, MAINTAIN ONE LANE OF TRAFFIC IN EACH DIRECTION ALONG US-41 THROUGH THE NEWLY CONSTRUCTED ROUNDABOUT INTERSECTIONS.

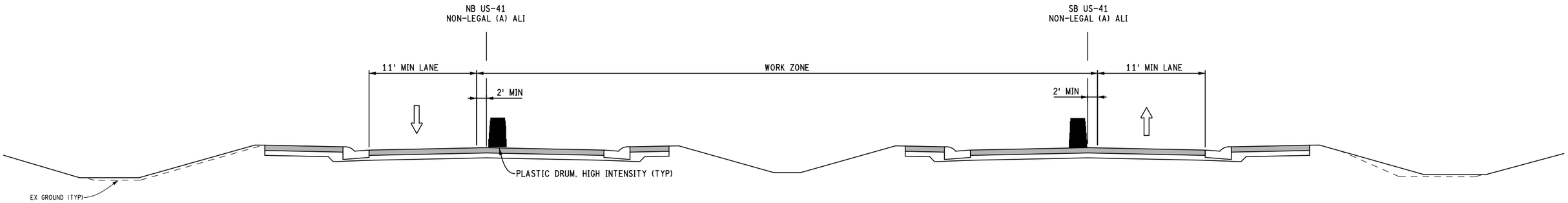
UTILIZE STANDARD LANE DROPS AND LANE SHIFTS ALONG US-41 AND COMPLETE THE CONSTRUCTION WHERE TEMPORARY HMA WAS PLACED.

COMPLETE CONSTRUCTION OF THE CURB AND GUTTER AT 7TH STREET AND THE HOSPITAL ENTRANCE DRIVE.

ALL PERMANENT SIGNS REQUIRED FOR ROUNDABOUTS AND ALL PROPOSED LIGHTING WILL BE IN PLACE AND OPERATIONAL PRIOR TO OPENING ROUNDABOUTS.

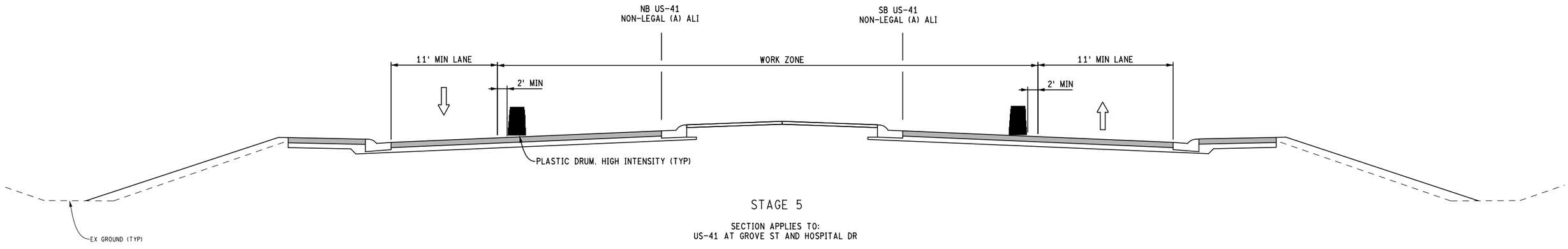
PLACE REMAINING PERMANENT SIGNING AND PAVEMENT MARKINGS AND PERFORM LANDSCAPING OF THE ROUNDABOUT CENTRAL ISLAND, AND COMPLETE ALL SLOPE RESTORATION WORK.

CONSTRUCTION OPERATIONS WILL BE ALLOWED TO ONE SIDE OF TRAFFIC AT ANY TIME UNLESS AS DIRECTED BY THE ENGINEER.



STAGE 5

SECTION APPLIES TO:
US-41 NEAR SPLITTER ISLANDS



STAGE 5

SECTION APPLIES TO:
US-41 AT GROVE ST AND HOSPITAL DR

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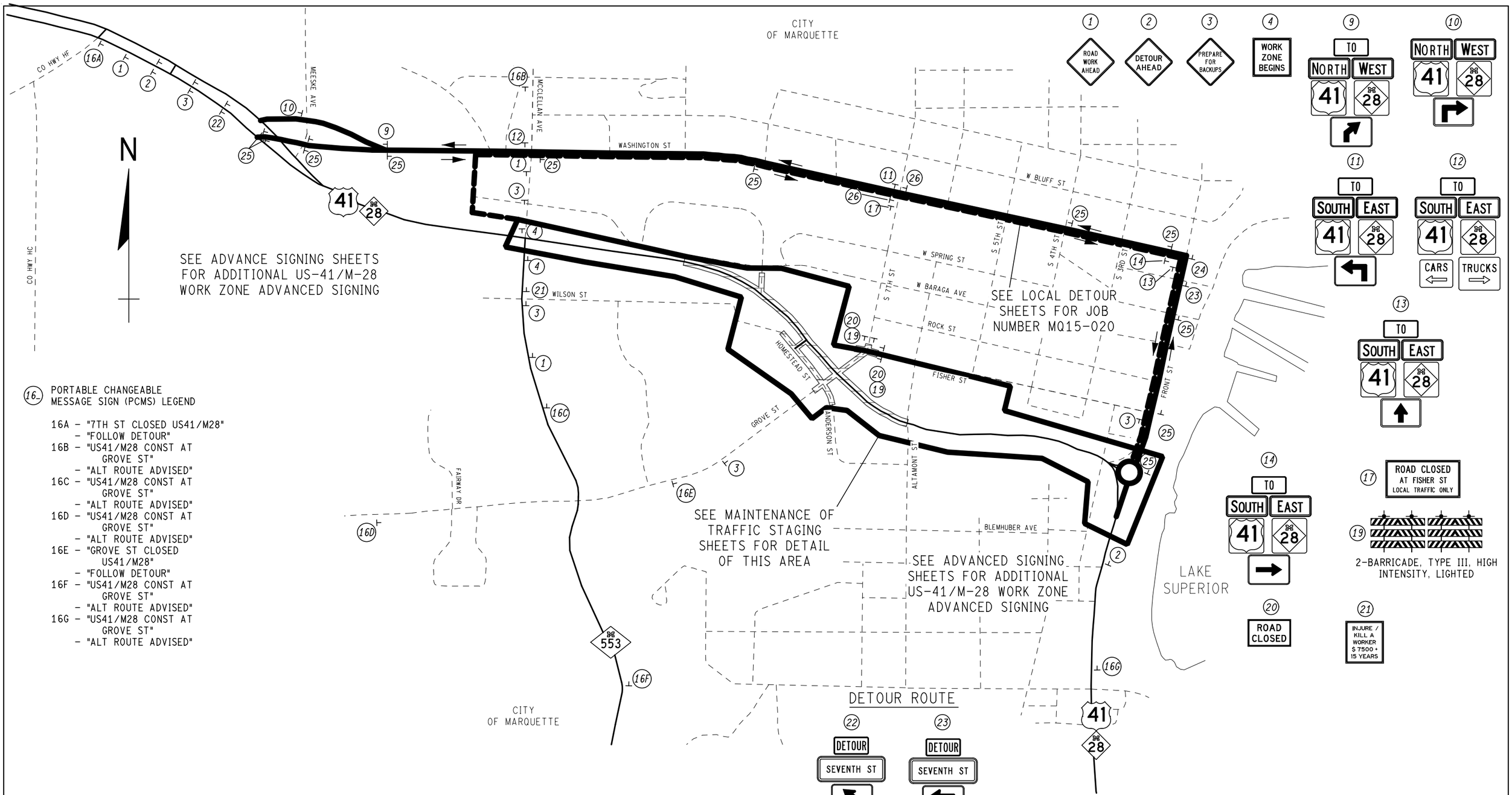
FILE: 6553_US41_MOT-TYP004.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

PROPOSED TYPICAL MOT CROSS SECTIONS
US-41

DRAWING: US41 MOTTYP 004
SHEET: SECT 1 81



16_ PORTABLE CHANGEABLE MESSAGE SIGN (PCMS) LEGEND

- 16A – "7TH ST CLOSED US41/M28" – "FOLLOW DETOUR"
- 16B – "US41/M28 CONST AT GROVE ST" – "ALT ROUTE ADVISED"
- 16C – "US41/M28 CONST AT GROVE ST" – "ALT ROUTE ADVISED"
- 16D – "US41/M28 CONST AT GROVE ST" – "ALT ROUTE ADVISED"
- 16E – "GROVE ST CLOSED US41/M28" – "FOLLOW DETOUR"
- 16F – "US41/M28 CONST AT GROVE ST" – "ALT ROUTE ADVISED"
- 16G – "US41/M28 CONST AT GROVE ST" – "ALT ROUTE ADVISED"

LEGEND

- TEMPORARY SIGN
- DETOUR TRAFFIC FLOW DIRECTION
- DETOUR ROUTE
- TRUNKLINE
- CITY/COUNTY ROAD
- WORK ZONE

NOTES:
SEE THE MAINTAINING TRAFFIC DETAIL SHEET FOR DETOUR SIGN TABLE AND SPECIAL SIGN DETAILS.

SEE CITY PLANS FOR LOCAL DETOUR OF SEVENTH STREET

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0 HORZ. (FT) 1000

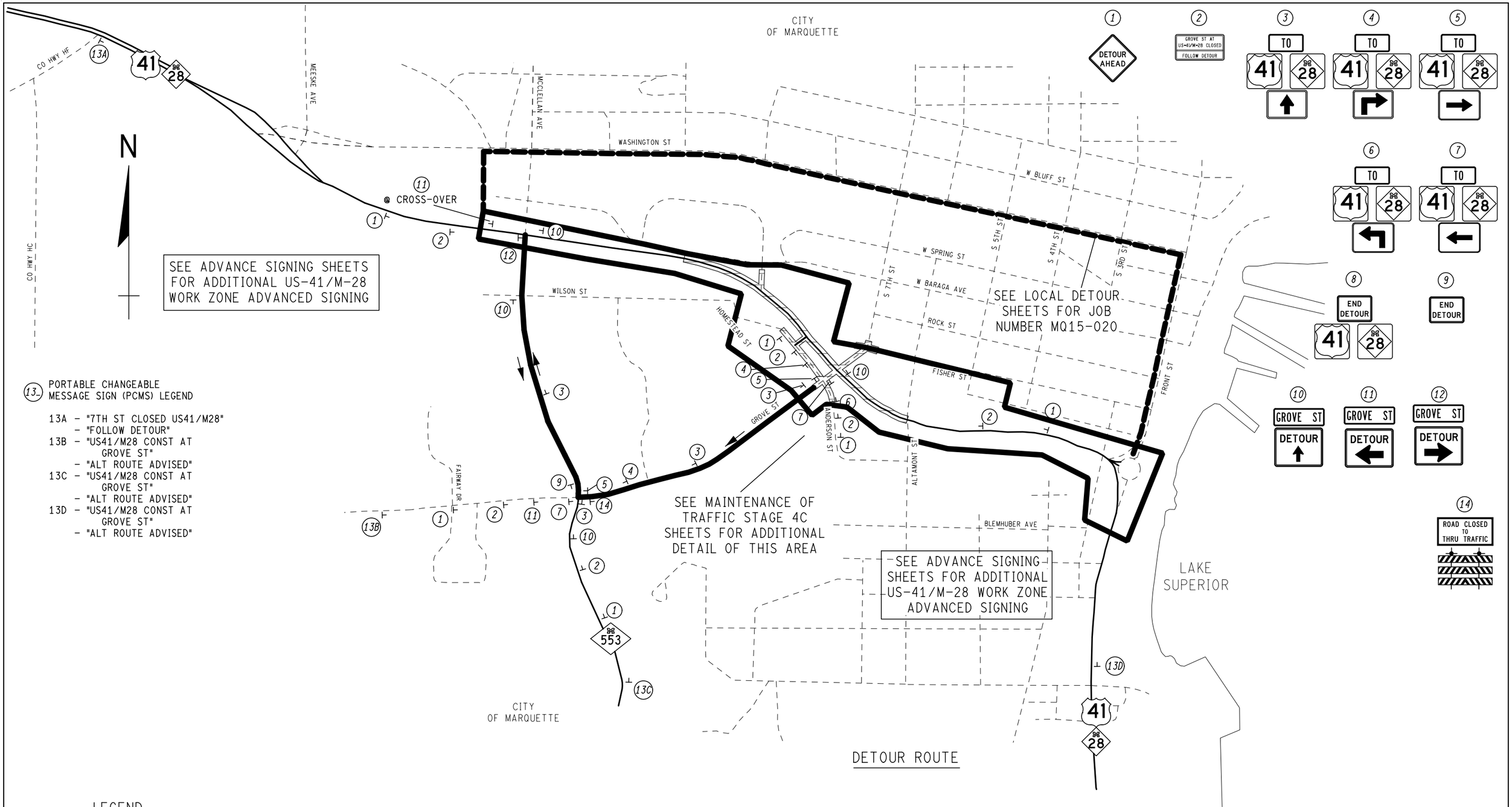
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DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

DETOUR/ADVANCED SIGNING SHEET
US-41/M-28
MAINTENANCE OF TRAFFIC STAGES 2 THRU 4

DRAWING: US41 MTDETR 001
SHEET: SECT 1 82



13 PORTABLE CHANGEABLE MESSAGE SIGN (PCMS) LEGEND

- 13A – "7TH ST CLOSED US41/M28" – "FOLLOW DETOUR"
- 13B – "US41/M28 CONST AT GROVE ST" – "ALT ROUTE ADVISED"
- 13C – "US41/M28 CONST AT GROVE ST" – "ALT ROUTE ADVISED"
- 13D – "US41/M28 CONST AT GROVE ST" – "ALT ROUTE ADVISED"

LEGEND

- TEMPORARY SIGN
- DETOUR TRAFFIC FLOW DIRECTION
- DETOUR ROUTE
- TRUNKLINE
- CITY/COUNTY ROAD
- WORK ZONE

NOTES:
SEE THE MAINTAINING TRAFFIC DETAIL SHEET FOR DETOUR SIGN TABLE AND SPECIAL SIGN DETAILS.

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JN: MQ17-025
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DETOUR/ADVANCED SIGNING SHEET
GROVE STREET
MAINTENANCE OF TRAFFIC STAGE 5

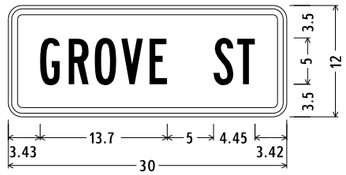
DRAWING	SHEET
US41 MTDETR 002	SECT 1 83

DETOUR SIGNING QUANTITIES

(FOR INFORMATION ONLY)

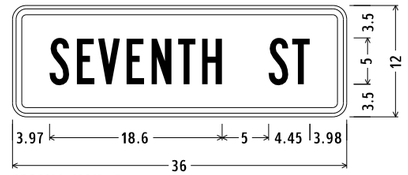
SIGN	QTY	AREA		JN XXXXXX
ROAD WORK AHEAD W20-1	9	(36" X 36")	9 Sft	81 Sft
DETOUR AHEAD W20-2	9	(36" X 36")	9 Sft	81 Sft
PREPARE FOR BACKUPS W20-15a	6	(36" X 36")	9 Sft	45 Sft
WORK ZONE BEGINS R5-18c	10	(36" X 36")	9 Sft	45 Sft
41 M1-4	24	(24" X 24")	4 Sft	100 Sft
BM 28 M1-6	24	(24" X 24")	4 Sft	100 Sft
TO M4-5	45	(24" X 12")	2 Sft	90 Sft
DETOUR M4-8	2	(24" X 12")	2 Sft	4 Sft
DETOUR M4-9L	4	(30" X 24")	5 Sft	20 Sft
DETOUR M4-9R	1	(30" X 24")	5 Sft	5 Sft
DETOUR M4-9T	12	(30" X 24")	5 Sft	60 Sft
NORTH M3-1	7	(21" X 15")	2 Sft	14 Sft
EAST M3-2	8	(24" X 12")	2 Sft	16 Sft
SOUTH M3-3	8	(24" X 12")	2 Sft	16 Sft

SIGN	QTY	AREA		JN XXXXXX
WEST M3-4	7	(24" X 12")	2 Sft	14 Sft
M5-1L	6	(21" X 15")	2.2 Sft	13.2 Sft
M5-1R	5	(21" X 15")	2.2 Sft	11 Sft
M5-2R	1	(21" X 15")	2.2 Sft	2.2 Sft
M5-2L	1	(21" X 15")	2.2 Sft	2.2 Sft
M6-1L	3	(21" X 15")	2.2 Sft	6.6 Sft
M6-1R	4	(21" X 15")	2.2 Sft	8.8 Sft
M6-3	8	(21" X 15")	2.2 Sft	17.6 Sft
END DETOUR M4-8a	5	(24" X 18")	3 Sft	15 Sft
ROAD CLOSED R11-2	1	(48" X 30")	10 Sft	10 Sft
ROAD CLOSED AHEAD LOCAL TRAFFIC ONLY R11-3	1	(30" X 60")	12.5 Sft	12.5 Sft
GROVE ST SPECIAL "A"	5	(30" X 12")	2.5 Sft	13 Sft
SEVENTH ST SPECIAL "B"	8	(36" X 12")	3 Sft	24 Sft
AT CROSSOVER SPECIAL "C"	5	(42" X 12")	3.5 Sft	18 Sft



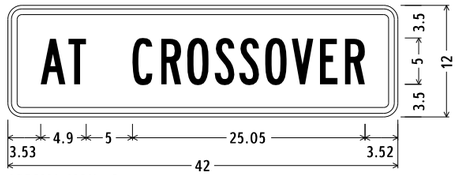
SPECIAL SIGN "A";
1.50" Radius, 0.63" Border, 0.38" Indent, Black on Orange;
[GROVE ST] B 2K;
Table of letter and object lefts.

G 3.43	R 6.53	O 9.33	V 12.18	E 15.23		
S 22.13	T 24.68					



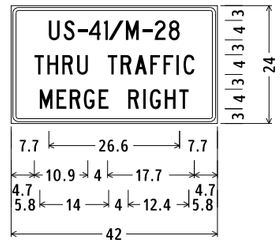
SPECIAL SIGN "B";
1.50" Radius, 0.63" Border, 0.38" Indent, Black on Orange;
[SEVENTH ST] B 2K;
Table of letter and object lefts.

S 3.97	E 6.92	V 9.22	E 12.27	N 14.97	T 17.82	H 20.42
S 27.57	T 30.12					



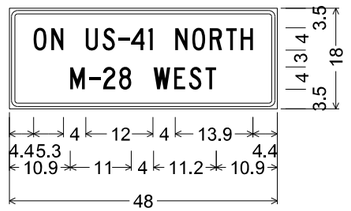
SPECIAL SIGN "C";
1.50" Radius, 0.63" Border, 0.38" Indent, Black on Orange;
[AT CROSSOVER] B 2K;
Table of letter and object lefts.

A 3.53	T 6.53								
C 13.43	R 16.53	O 19.33	S 22.28	S 24.93	O 27.73	V 30.58	E 33.63	R 36.33	



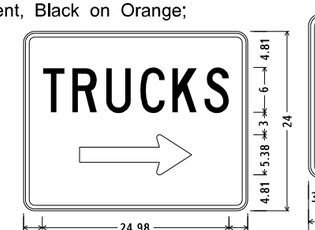
SPECIAL SIGN "D";
1.5" Radius, 0.6" Border, 0.4" Indent, Black on Orange;
[US-41/M-28] C;
[THRU TRAFFIC] C;
[MERGE RIGHT] C;
Table of letter and object lefts.

U 7.7	S 10.7	- 13.6	4 15.8	I 18.9	/ 20.0	M 23.4	- 26.8	2 29.3	8 32.1
T 4.7	H 7.4	R 10.4	U 13.4						
T 19.6	R 22.3	A 25.2	F 28.3	F 31.0	I 33.7	C 35.1			
M 5.8	E 9.3	R 11.9	G 14.8	E 17.8					
R 23.8	I 26.9	G 28.3	H 31.3	T 34.2					



SPECIAL SIGN "E";
1.5" Radius, 0.6" Border, 0.4" Indent, Black on Orange;
[ON US-41 NORTH] C;
[M-28 WEST] C;
Table of letter and object lefts.

O 4.4	N 7.5								
U 13.7	S 16.7	- 19.6	4 21.8	I 24.9					
N 29.7	O 32.8	R 35.9	T 38.8	H 41.5					
M 10.9	- 14.4	2 16.8	8 19.7						
W 25.9	E 29.5	S 32.2	T 35.1						



SPECIAL SIGN F;
1.50" Radius, 0.50" Border, 0.25" Indent,
Black on Orange;
[TRUCKS] C;
Standard Arrow Custom 15.00" X 5.38" 0[;
Table of letter and object lefts.

T 2.51	R 6.53	U 11.07	C 15.62	K 19.91	S 24.21
⇔ 7.50					



Special G;
1.50" Radius, 0.50" Border, 0.25" Indent,
Black on Orange;
[CARS] C;
Standard Arrow Custom 15.00" X 5.38" 180{;
Table of letter and object lefts.

C 3.85	A 7.81	R 12.57	S 16.87	
⇐ 4.50				

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 80

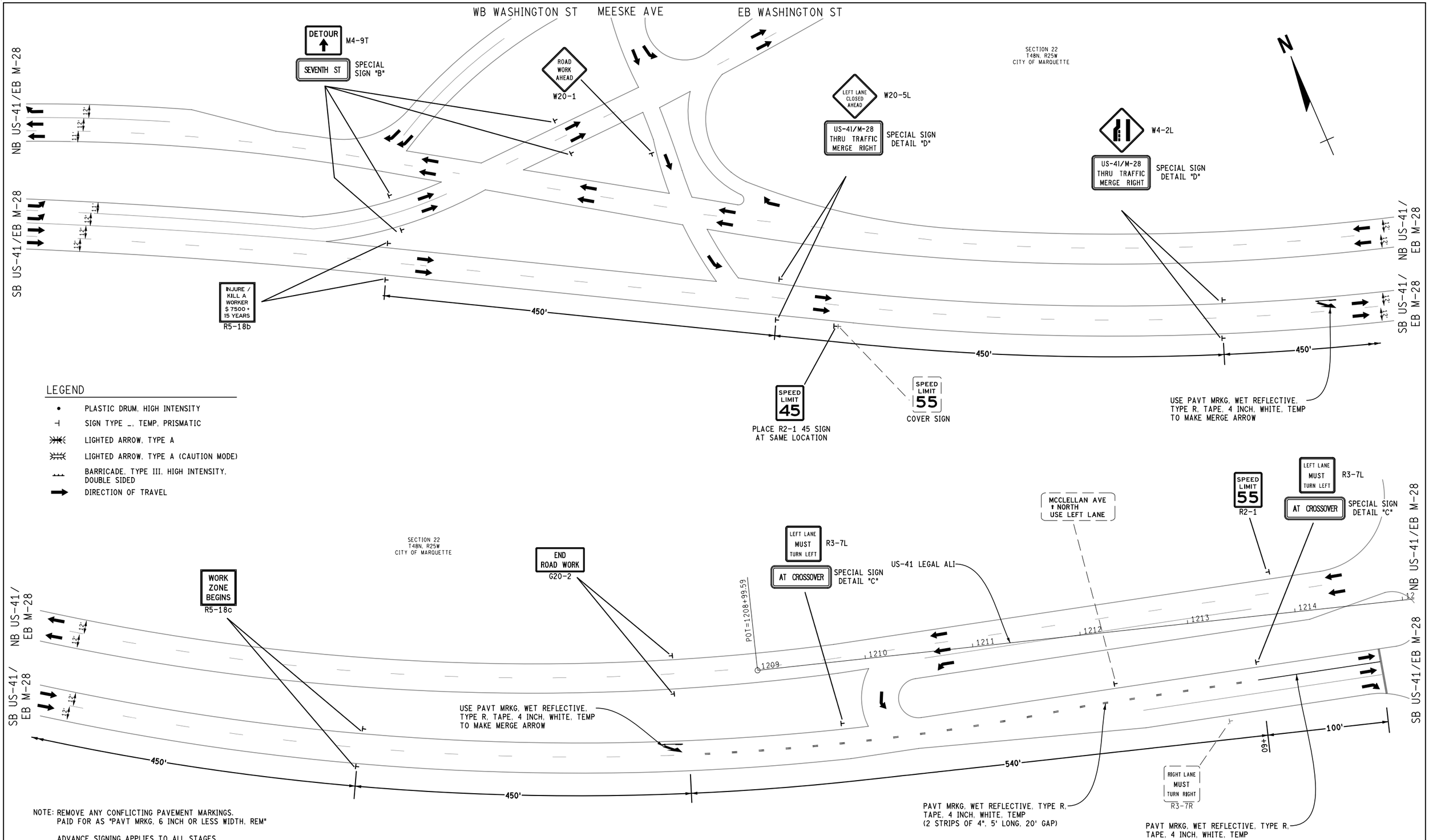
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DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

DETOUR/ADVANCED DETAIL SHEET
US-41/M-28

DRAWING: US41 MTDETR 002
SHEET: SECT 1 84



NOTE: REMOVE ANY CONFLICTING PAVEMENT MARKINGS.
PAID FOR AS "PAVT MRKG, 6 INCH OR LESS WIDTH, REM"

ADVANCE SIGNING APPLIES TO ALL STAGES

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

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CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 80

FILE: 6553_US41_AdvSign_001.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: M017-025
MDOT PERMIT 043179-16

ADVANCED SIGNING SHEET
US-41/M-28
NORTH END

DRAWING: US41 ADVSIG 001
SHEET: SECT 1 85

NB US-41 /
WB M-28

SB US-41 /
EB M-28

SECTION 22
T48N, R25W
CITY OF MARQUETTE

FRONT ST

ROAD WORK AHEAD
W20-1

ON US-41 NORTH
WEST M-28
SPECIAL SIGN
DETAIL "E"

INJURE / KILL A WORKER $ 7500 + 15 YEARS
R5-18b

250'

250'

250'

W1-4R

SPEED LIMIT 45
R2-1

11' MIN

25'
(TYP)

YIELD
R1-2

W3-2

WORK ZONE BEGINS
R5-18c

12'

12'

END ROAD WORK
G20-2

DETOUR
M4-9T

SEVENTH ST
SPECIAL SIGN
DETAIL "B"

WORK ZONE BEGINS
R5-18c

INJURE / KILL A WORKER $ 7500 + 15 YEARS
R5-18b

250'

250'

ROAD WORK AHEAD
W20-1

ON US-41 NORTH
WEST M-28
SPECIAL SIGN
DETAIL "E"

SECTION 23
T48N, R25W
CITY OF MARQUETTE

US-41/M-28
(FRONT ST)

N

LEGEND

- PLASTIC DRUM, HIGH INTENSITY
- SIGN TYPE _, TEMP, PRISMATIC
- LIGHTED ARROW, TYPE A
- LIGHTED ARROW, TYPE A (CAUTION MODE)
- BARRICADE, TYPE III, HIGH INTENSITY, DOUBLE SIDED
- DIRECTION OF TRAVEL
- WORK AREA
- TEMPORARY, HMA PAVEMENT

NOTE: REMOVE ANY CONFLICTING PAVEMENT MARKINGS.
PAID FOR AS "PAVT MRKG, 6 INCH OR LESS WIDTH, REM"

ADVANCE SIGNING APPLIES TO ALL STAGES

TEMPORARY SIGN LOCATIONS TO BE ADJUSTED IN THE FIELD AS DIRECTED BY THE ENGINEER TO OPERATE IN CONJUNCTION WITH EXISTING SIGNING TO REMAIN

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
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CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 80

	DATE: 2/10/2017	CS: 52042	ADVANCED SIGNING SHEET	DRAWING	SHEET
	DESIGN UNIT: FILPUS	JN: MQ17-025	US-41/M-28	US41 ADVSIG 002	SECT 1
FILE: 6553_US41_AdvSign_002.dgn	TSC: ISHPEMING	MDOT PERMIT 043179-16	SOUTH END		86

STAGE 1:

MAINTAIN ONE LANE OF TRAFFIC IN EACH DIRECTION ALONG US-41 AT ALL TIMES UTILIZING LANE CLOSURES.

PERFORM TRENCHING AND CONSTRUCT TEMPORARY WIDENING THAT IS NEEDED FOR FUTURE STAGES.

PLACE TEMPORARY SIGNAL AT GROVE ST TO MAINTAIN TRAFFIC FOR STAGE 2 MAKING SURE TEMPORARY HEADS LINE UP WITH THRU/TURN LANES AND ONCE COMPLETED, SHIFT TRAFFIC TO THE OUTSIDE LANES OF US-41 USING STANDARD LANE SHIFTS AND/OR TRAFFIC REGULATORS AS DETAILED IN THE PLANS OR AS DIRECTED BY THE ENGINEER.

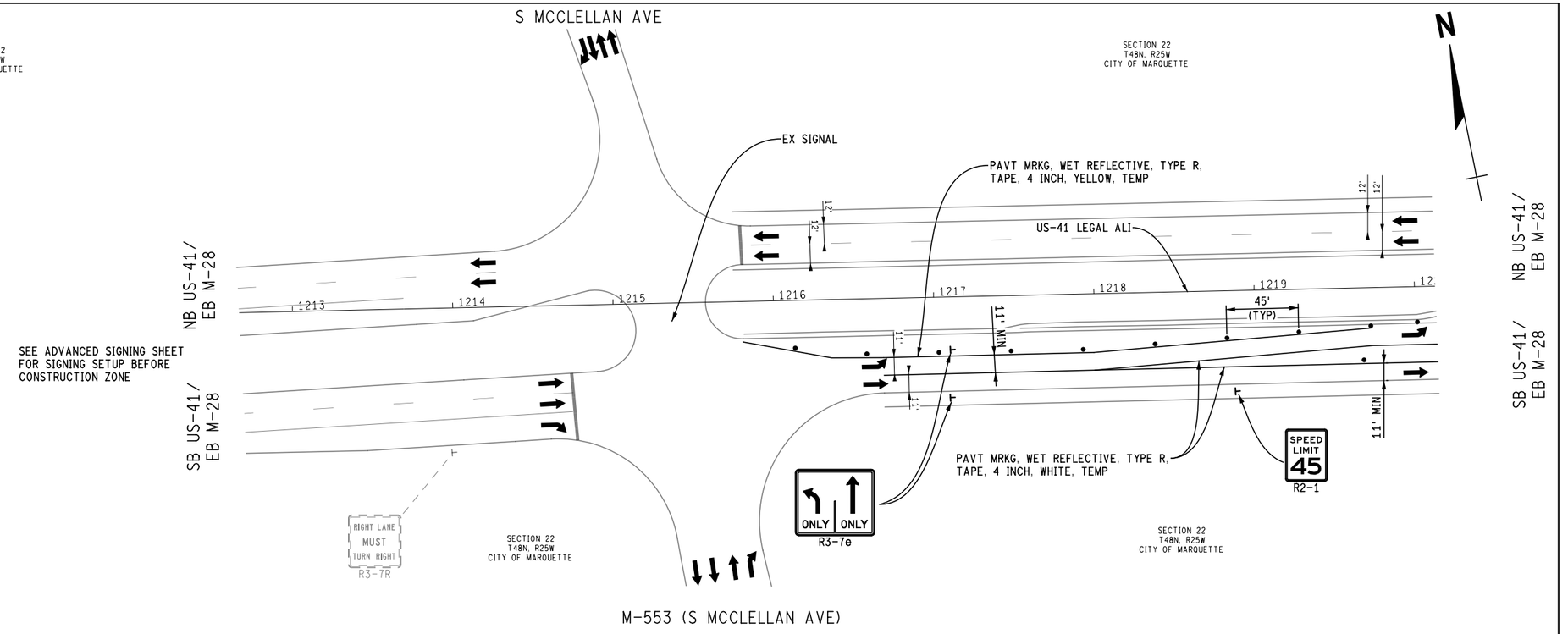
CONSTRUCT CROSSOVERS AT EACH END OF THE PROJECT WHILE TRAFFIC IS SHIFTED TO THE OUTSIDE LANES.

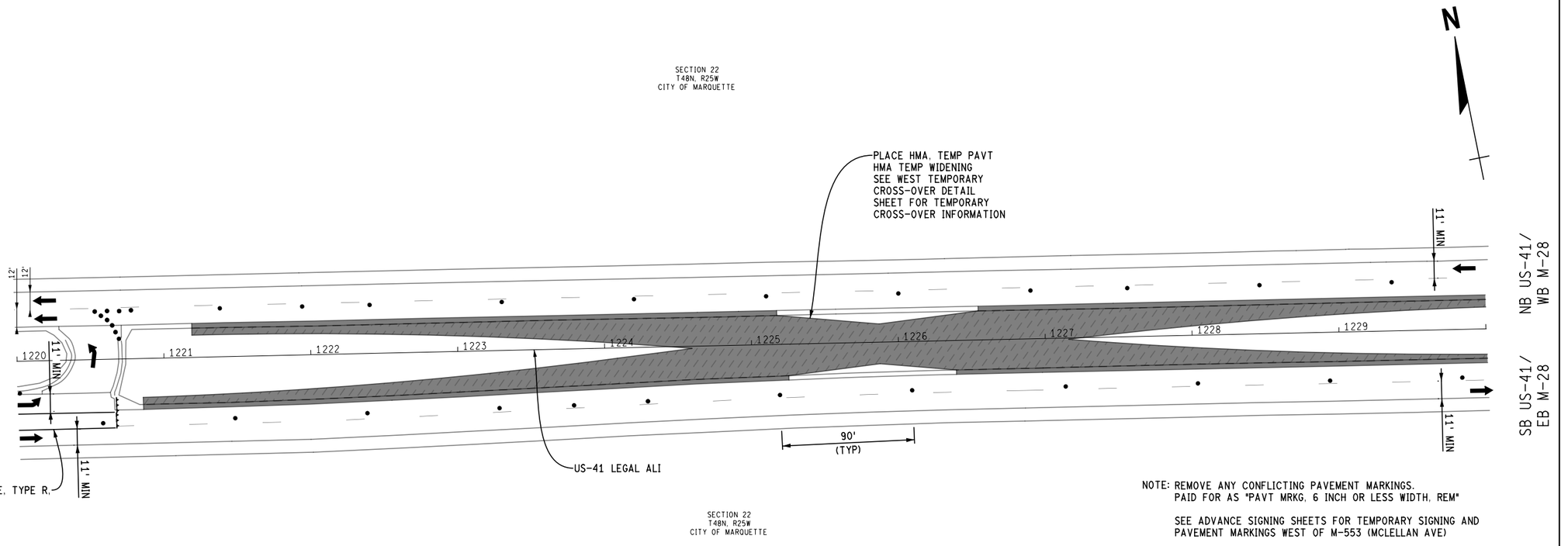
CONSTRUCT THE SOUTHWEST PORTION OF THE TEMPORARY ACCESS ROAD, CONNECTING SOUTHBOUND US-41 TO HOMESTEAD STREET.

MILL AND OVERLAY HOMESTEAD STREET FROM THE NEW TEMPORARY ACCESS ROAD TO GROVE STREET UTILIZING TRAFFIC REGULATORS.

MAINTAIN ACCESS TO GROVE STREET AND MCCLELLAN AVENUE IN WORK AREA AT ALL TIMES.

THE CONTRACTOR MUST MAINTAIN ACCESS FOR EMERGENCY VEHICLES THROUGH THE CONSTRUCTION ZONE AT ALL TIMES.





LEGEND

- PLASTIC DRUM, HIGH INTENSITY
- SIGN TYPE _, TEMP, PRISMATIC
- LIGHTED ARROW, TYPE A
- LIGHTED ARROW, TYPE A (CAUTION MODE)
- BARRICADE, TYPE III, HIGH INTENSITY, DOUBLE SIDED
- DIRECTION OF TRAVEL
- WORK AREA
- TEMPORARY, HMA PAVEMENT

NOTE: REMOVE ANY CONFLICTING PAVEMENT MARKINGS.
PAID FOR AS "PAVT MRKG, 6 INCH OR LESS WIDTH, REM"

SEE ADVANCE SIGNING SHEETS FOR TEMPORARY SIGNING AND PAVEMENT MARKINGS WEST OF M-553 (MCLELLAN AVE)

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
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DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 80

FILE: 6553_US41_MTSTG1_001.dgn

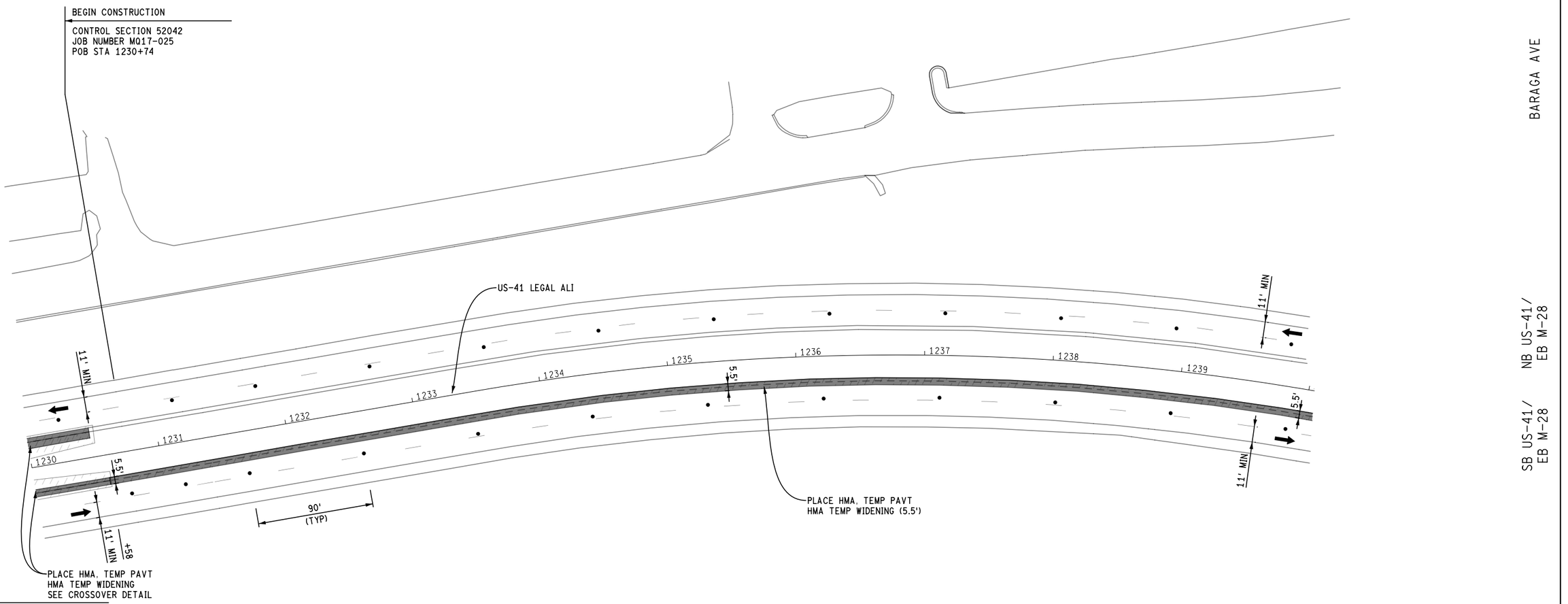
DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

MAINTENANCE OF TRAFFIC STAGE 1
US-41/M-28
M-553 (MCLELLAN AVE) TO STA 1230+00

DRAWING	SHEET
US41 MTSTG1 001	SECT 1 87

SECTION 22
T48N, R25W
CITY OF MARQUETTE



LEGEND

- PLASTIC DRUM, HIGH INTENSITY
- SIGN TYPE _, TEMP, PRISMATIC
- LIGHTED ARROW, TYPE A
- LIGHTED ARROW, TYPE A (CAUTION MODE)
- BARRICADE, TYPE III, HIGH INTENSITY, DOUBLE SIDED
- DIRECTION OF TRAVEL
- WORK AREA
- TEMPORARY, HMA PAVEMENT

NOTE: REMOVE ANY CONFLICTING PAVEMENT MARKINGS.
PAID FOR AS "PAVT MRKG, 6 INCH OR LESS WIDTH, REM"

SECTION 22
T48N, R25W
CITY OF MARQUETTE

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
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300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 80

FILE: 6553_US41_MTSTG1_002.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

MAINTENANCE OF TRAFFIC STAGE 1
US-41/M-28
STA 1230+00 TO STA 1240+00

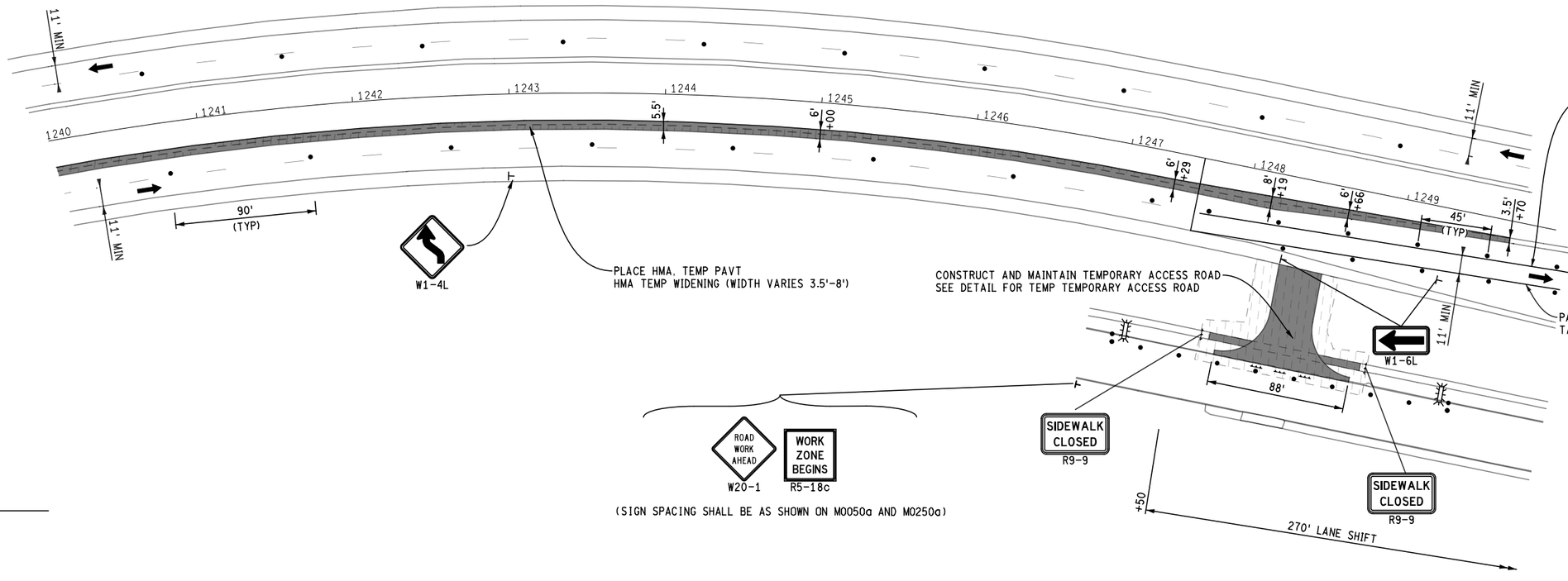
DRAWING: US41 MTSTG1 002
SHEET: SECT 1 88

HOSPITAL DR

SECTION 22
T48N, R25W
CITY OF MARQUETTE

NB US-41/
WB M-28

SB US-41/
EB M-28



(SIGN SPACING SHALL BE AS SHOWN ON M0050a AND M0250a)

NB US-41/
WB M-28

SB US-41/
EB M-28

HOMESTEAD ST

SECTION 22
T48N, R25W
CITY OF MARQUETTE

LEGEND

- PLASTIC DRUM, HIGH INTENSITY
- SIGN TYPE _, TEMP, PRISMATIC
- LIGHTED ARROW, TYPE A
- LIGHTED ARROW, TYPE A (CAUTION MODE)
- BARRICADE, TYPE III, HIGH INTENSITY, DOUBLE SIDED
- DIRECTION OF TRAVEL
- WORK AREA
- TEMPORARY, HMA PAVEMENT

NOTE: REMOVE ANY CONFLICTING PAVEMENT MARKINGS.
PAID FOR AS "PAVT MRKG, 6 INCH OR LESS WIDTH, REM"

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
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CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 80

FILE: 6553_US41_MTSTG1_003.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

MAINTENANCE OF TRAFFIC STAGE 1
US-41/M-28
STA 1240+00 TO STA 1250+00

DRAWING: US41 MTSTG1 003
SHEET: SECT 1 89

S 7TH ST

(SIGN SPACING SHALL BE AS SHOWN ON M0050a AND M0250a)

ROAD WORK AHEAD W20-1

WORK ZONE BEGINS R5-18c

SECTION 23
T48N, R25W
CITY OF MARQUETTE

ALTAMONT ST

SPEED LIMIT 45 R2-1

NB US-41/ WB M-28

SB US-41/ EB M-28

HOMESTEAD ST

11' MIN

PAVT MRKG, WET REFLECTIVE, TYPE R, TAPE, 4 INCH, WHITE, TEMP

90' (TYP)

EX SIGNAL

1250 +50 50' TAPER 1251 +00

1252

1253

1254

1255

1256

1257

1258

1259

1260

US-41 LEGAL ALI

END CONSTRUCTION

CONTROL SECTION 52042
JOB NUMBER MQ17-025
POE STA 1260+40

PAVT MRKG, WET REFLECTIVE, TYPE R, TAPE, 4 INCH, YELLOW, TEMP

270' LANE SHIFT +50

4' +55

15.5' +06

21' +11

9' +36

W1-4R

PLACE HMA, TEMP PAVT
HMA TEMP WIDENING (WIDTH VARIES 4'-21')

SPEED LIMIT 45 R2-1

W1-6R

300' LANE SHIFT +54

+30

ONLY ONLY ONLY R3-8b

SIDEWALK CLOSED AHEAD
CROSS HERE
R9-11L

(SIGN SPACING SHALL BE AS SHOWN ON M0050a AND M0250a)

ROAD WORK AHEAD W20-1

WORK ZONE BEGINS R5-18c

SECTION 23
T48N, R25W
CITY OF MARQUETTE

LEGEND

- PLASTIC DRUM, HIGH INTENSITY
- SIGN TYPE _, TEMP, PRISMATIC
- LIGHTED ARROW, TYPE A
- LIGHTED ARROW, TYPE A (CAUTION MODE)
- BARRICADE, TYPE III, HIGH INTENSITY, DOUBLE SIDED
- DIRECTION OF TRAVEL
- WORK AREA
- TEMPORARY, HMA PAVEMENT

ROAD WORK AHEAD W20-1

WORK ZONE BEGINS R5-18c

(SIGN SPACING SHALL BE AS SHOWN ON M0050a AND M0250a)
(SEE DETOUR/ADVANCED SIGNING SHEET)

GROVE ST

ANDERSON ST

NOTE: REMOVE ANY CONFLICTING PAVEMENT MARKINGS.
PAID FOR AS "PAVT MRKG, 6 INCH OR LESS WIDTH, REM"

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

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CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 80

FILE: 6553_US41_MTSTG1_004.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

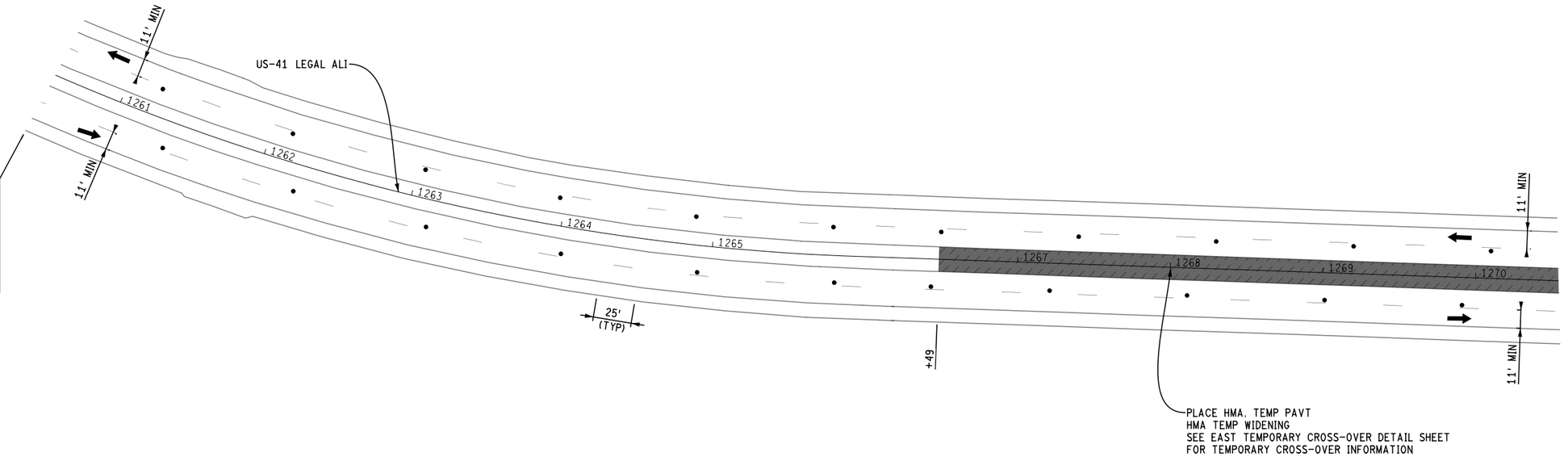
MAINTENANCE OF TRAFFIC STAGE 1
US-41/M-28
STA 1250+00 TO STA 1261+00

DRAWING	SHEET
US41 MTSTG1 004	SECT 1 90

SB US-41 / NB US-41 /
EB M-28 WB M-28

ALTAMONT ST

SECTION 22
T48N, R25W
CITY OF MARQUETTE



SECTION 23
T48N, R25W
CITY OF MARQUETTE

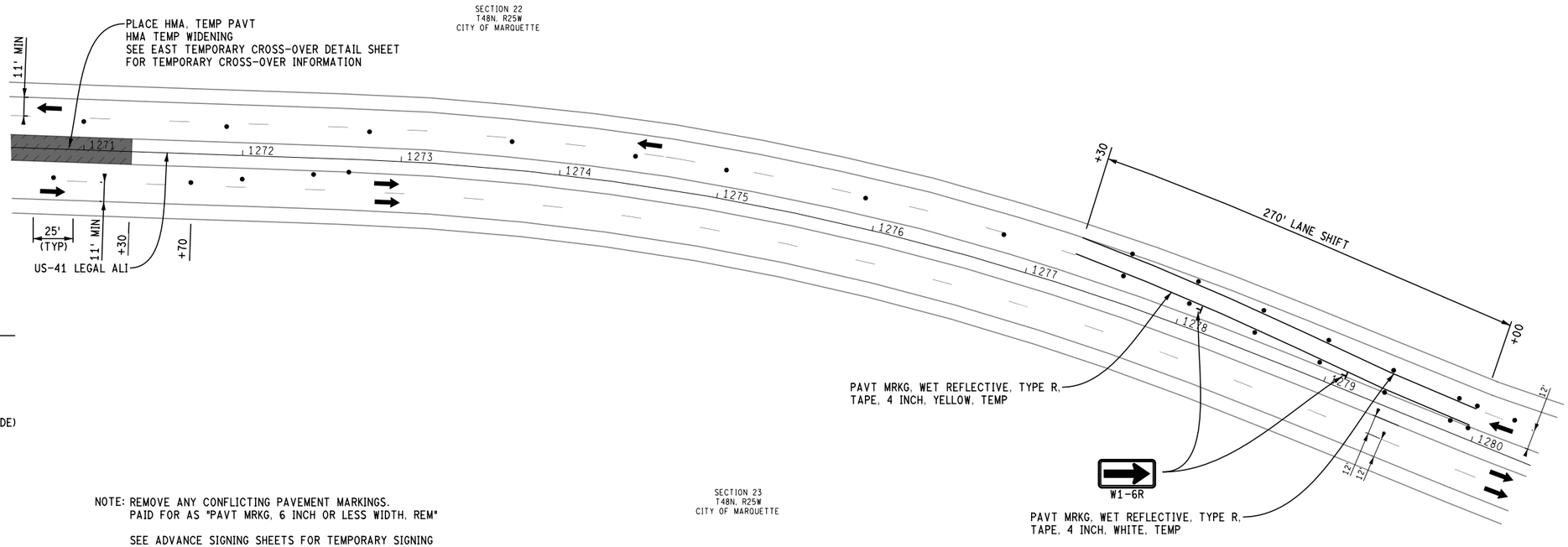
ALTAMONT ST

N

SB US-41 / NB US-41 /
EB M-28 WB M-28

SB US-41 / NB US-41 /
EB M-28 WB M-28

SECTION 22
T48N, R25W
CITY OF MARQUETTE



N

SB US-41 / NB US-41 /
EB M-28 WB M-28

LEGEND

- PLASTIC DRUM, HIGH INTENSITY
- SIGN TYPE _, TEMP, PRISMATIC
- LIGHTED ARROW, TYPE A
- LIGHTED ARROW, TYPE A (CAUTION MODE)
- BARRICADE, TYPE III, HIGH INTENSITY, DOUBLE SIDED
- DIRECTION OF TRAVEL
- WORK AREA
- TEMPORARY, HMA PAVEMENT

NOTE: REMOVE ANY CONFLICTING PAVEMENT MARKINGS.
PAID FOR AS "PAVT MRKG, 6 INCH OR LESS WIDTH, REM"

SEE ADVANCE SIGNING SHEETS FOR TEMPORARY SIGNING AND PAVEMENT MARKINGS AT FRONT ST.

SECTION 23
T48N, R25W
CITY OF MARQUETTE

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
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CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

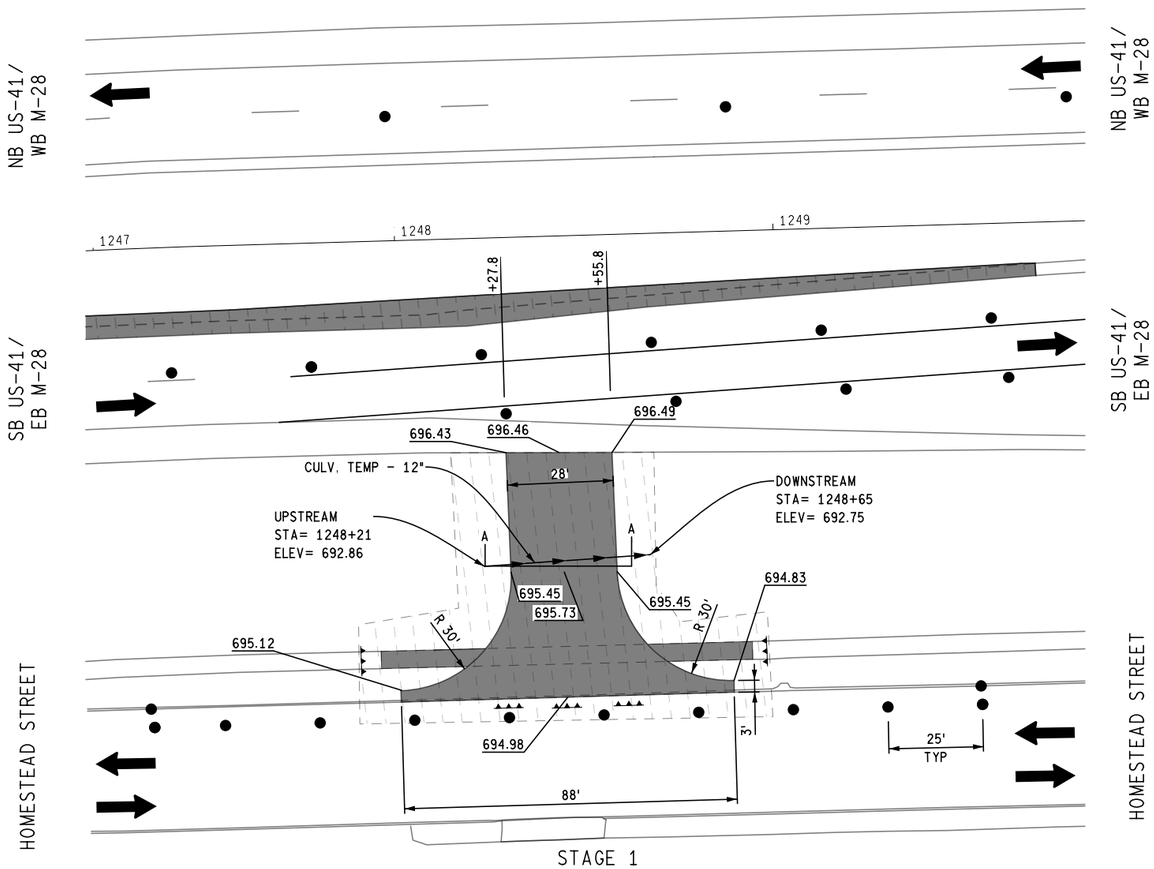
0 HORZ. (FT) 80

	DATE: 2/10/2017	CS: 52042	MAINTENANCE OF TRAFFIC STAGE 1	DRAWING	SHEET
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FILE: 6553_US41_MTSTG1_005.dgn	TSC: ISHPEMING	MDOT PERMIT 043179-16	1260+40 TO EAST CROSS-OVER		

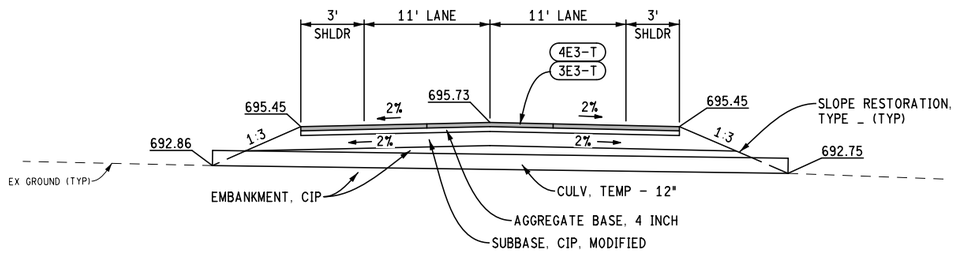
LEGEND

- PLASTIC DRUM, HIGH INTENSITY
- PLASTIC DRUM, HIGH INTENSITY
- BARRICADE, TYPE III, HIGH INTENSITY, DOUBLE SIDED
- DIRECTION OF TRAVEL
- WORK AREA
- TEMPORARY, HMA PAVEMENT

SECTION 22
T48N, R25W
CITY OF MARQUETTE

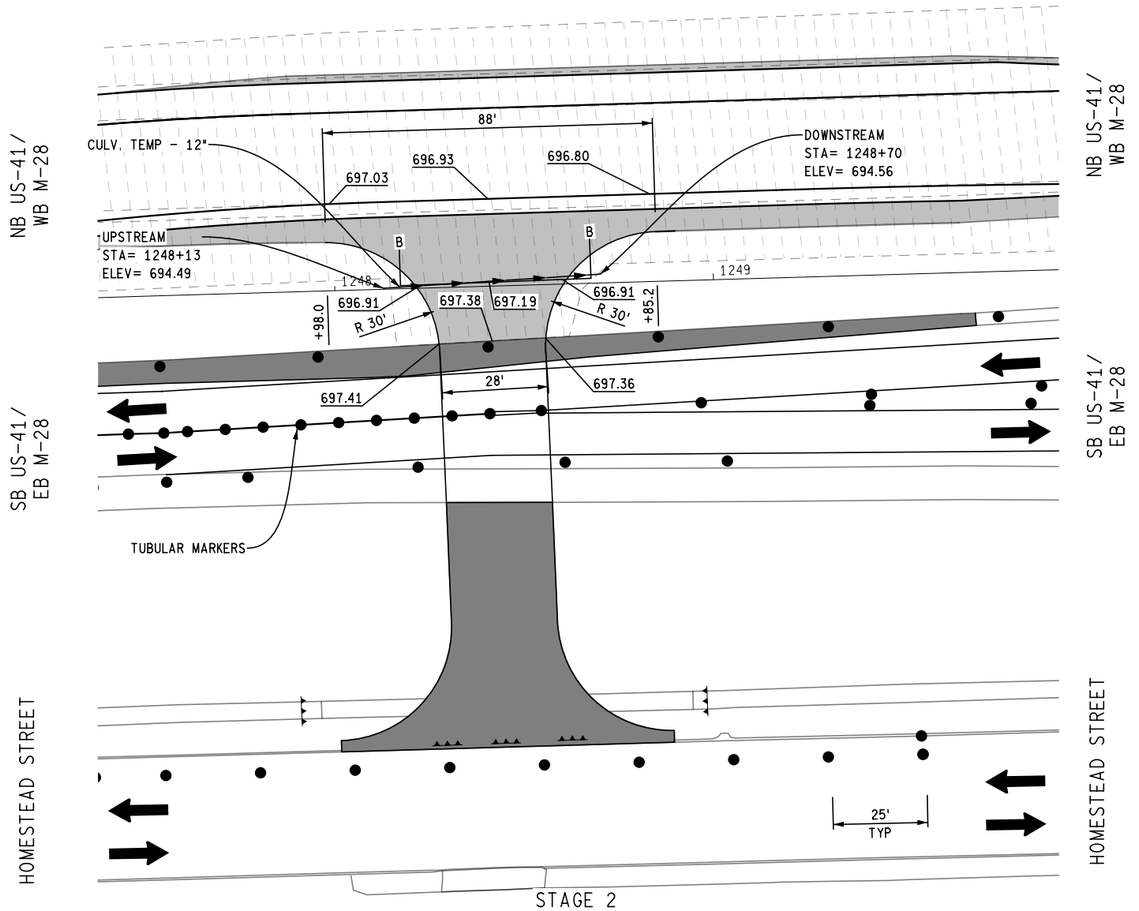


STAGE 1

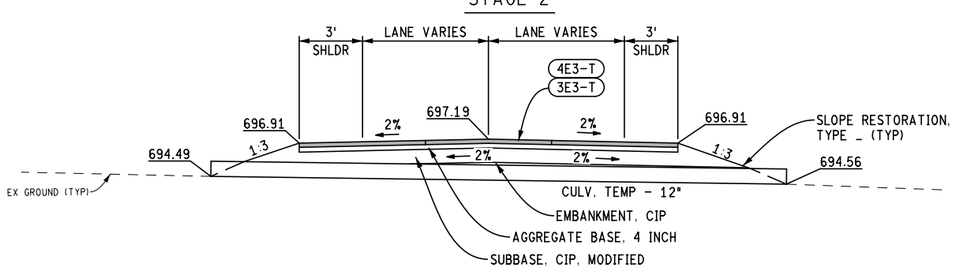


TEMPORARY ACCESS DRIVE
SECTION A-A

SECTION 22
T48N, R25W
CITY OF MARQUETTE



STAGE 2



TEMPORARY ACCESS DRIVE
SECTION B-B

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

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CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 40

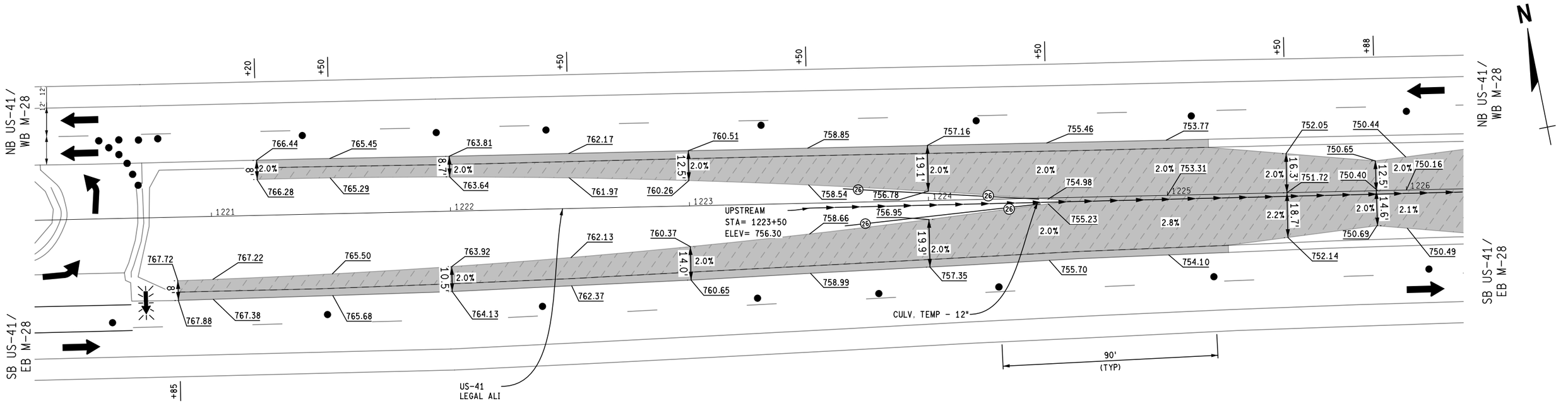
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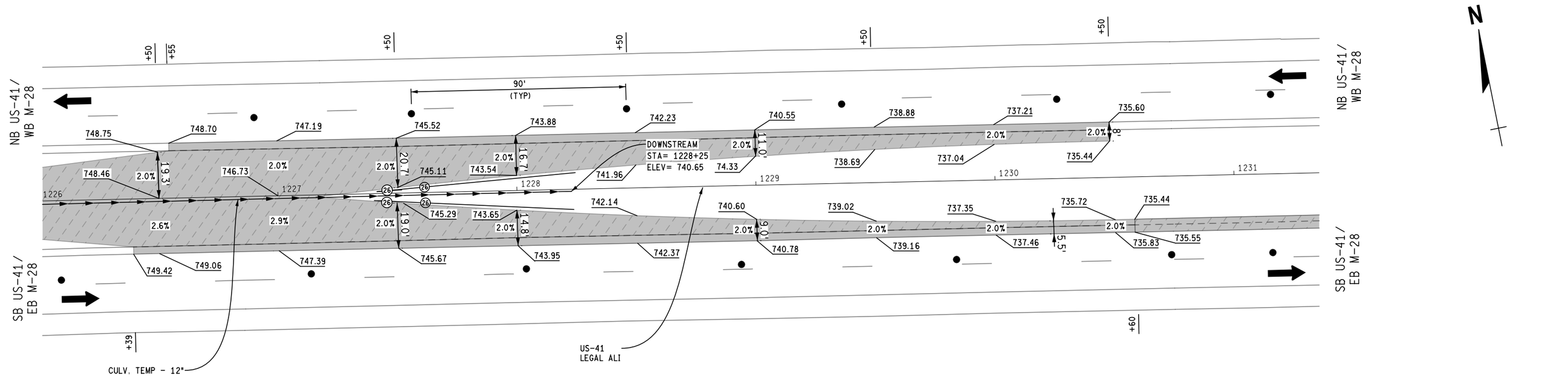
DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: M017-025
MDOT PERMIT 043179-16

MAINTENANCE OF TRAFFIC STAGE 1 AND 2
US-41/M-28
TEMPORARY ACCESS ROAD DETAIL

DRAWING	SHEET
US41 MTSTG1 AR001	SECT 1 92





NOTE: SEE MOT TYPICALS FOR STAGE 1 FOR CROSS-OVER TYPICAL

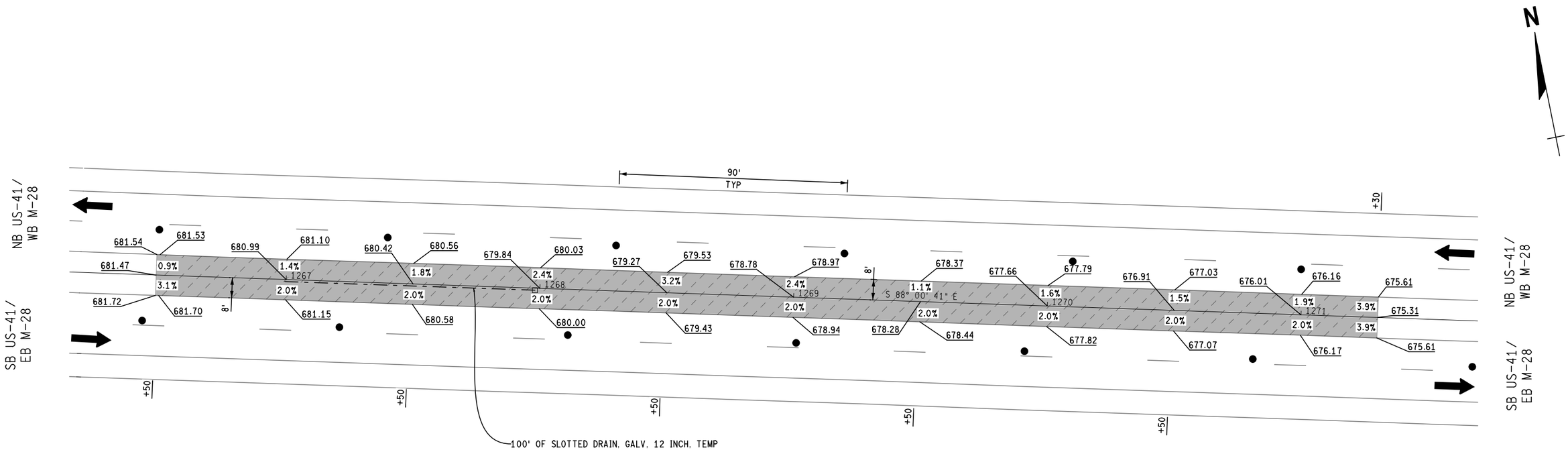
FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
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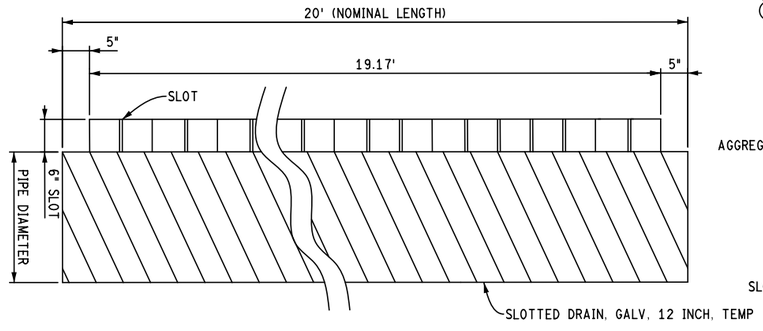
DLZ

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MARQUETTE, MI 49855
PH. (906)228-0440

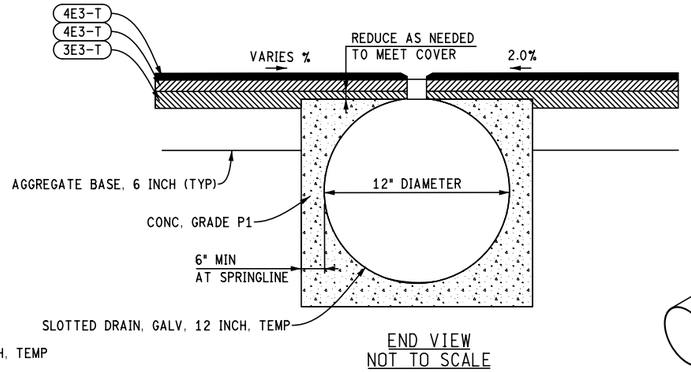
0 HORZ. (FT) 40

	DATE: 2/10/2017	CS: 52042	MAINTENANCE OF TRAFFIC STAGE 1	DRAWING / SHEET
	DESIGN UNIT: FILPUS	JN: MQ17-025	US-41/M-28	US41 MTSTG1 C0001 / SECT 1
FILE: 6553_US41_MTSTG1_C0001.dgn	TSC: ISHPEMING	MDOT PERMIT 043179-16	WEST TEMPORARY CROSS-OVER DETAIL	93

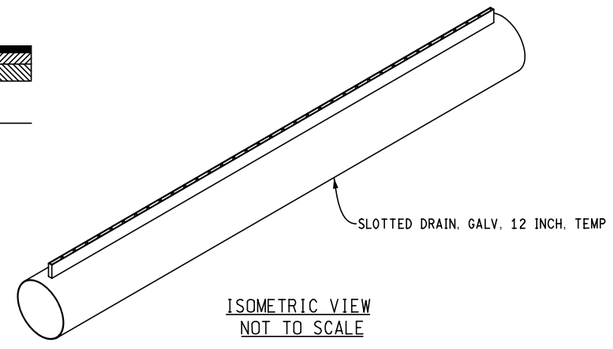




ELEVATION VIEW
NOT TO SCALE



END VIEW
NOT TO SCALE



ISOMETRIC VIEW
NOT TO SCALE

SLOTTED DRAIN DETAIL

NOTE: SEE MOT TYPICALS FOR STAGE 1 FOR CROSS-OVER TYPICAL

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

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CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
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0 HORZ. (FT) 40

FILE: 6553_US41_MTSTG1_C0002.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

MAINTENANCE OF TRAFFIC STAGE 1
US-41/M-28
EAST TEMPORARY CROSS-OVER DETAIL

DRAWING: US41 MTSTG1 C0001
SHEET: SECT 1 94

STAGE 2:

DETOUR 7" STREET TRAFFIC USING WASHINGTON STREET WEST TO US-41 OR USING WASHINGTON STREET EAST TO FRONT STREET, AND THEN TO US-41.

DETOUR SB MCCLELLAN AVE TO SB US-41 LEFT TURN USING WASHINGTON ST WEST TO US-41 FOR TRUCKS OR WASHINGTON EAST TO FRONT ST, AND THEN TO US-41 FOR CARS.

SHIFT NORTHBOUND US-41 TRAFFIC TO THE INSIDE SOUTHBOUND US-41 TRAVEL LANE UTILIZING LANE CLOSURES AND CROSS-OVER'S.

MAINTAIN ONE LANE OF NORTHBOUND AND SOUTHBOUND US-41 TRAFFIC ALONG SOUTHBOUND US-41 AT ALL TIMES AND PLACE TUBULAR DEVICES BETWEEN OPPOSING TRAFFIC ALONG SOUTHBOUND US-41.

ALLOW UTILITY RELOCATIONS WHICH ARE NOT PART OF THE CONTRACT DURING THE FIRST TWO WEEKS OF STAGE 2 OR AS DIRECTED BY THE ENGINEER.

RECONSTRUCT NORTHBOUND LANES OF US-41 AND THE NORTHERN PORTIONS OF THE ROUNDABOUTS AT 7" STREET AND THE HOSPITAL ACCESS DRIVE.

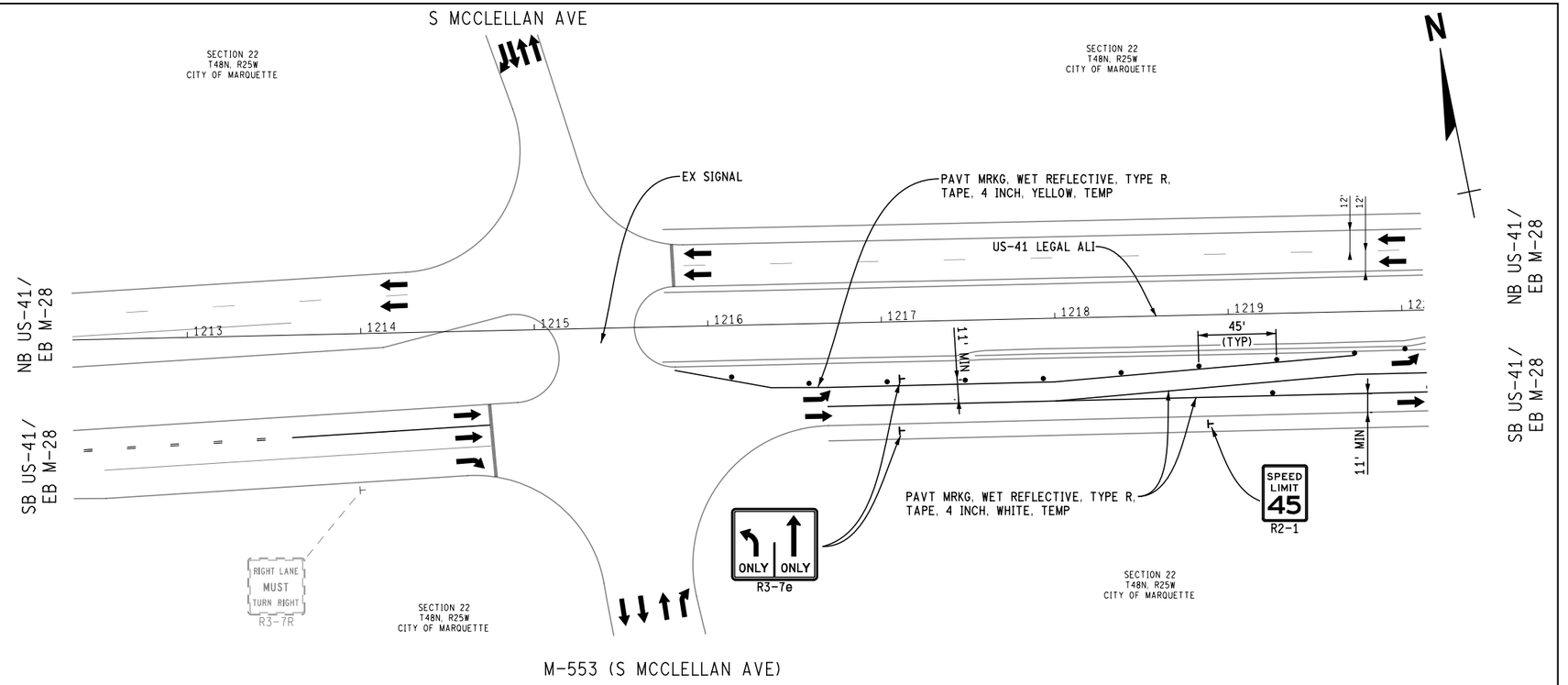
CONSTRUCT THE TEMPORARY ACCESS ROAD AND TEMPORARY DRAINAGE TO BE USED IN ALL FUTURE STAGES ALONG WITH PLACING ALL DRAINAGE LINES AND STRUCTURES ON NORTHBOUND US-41.

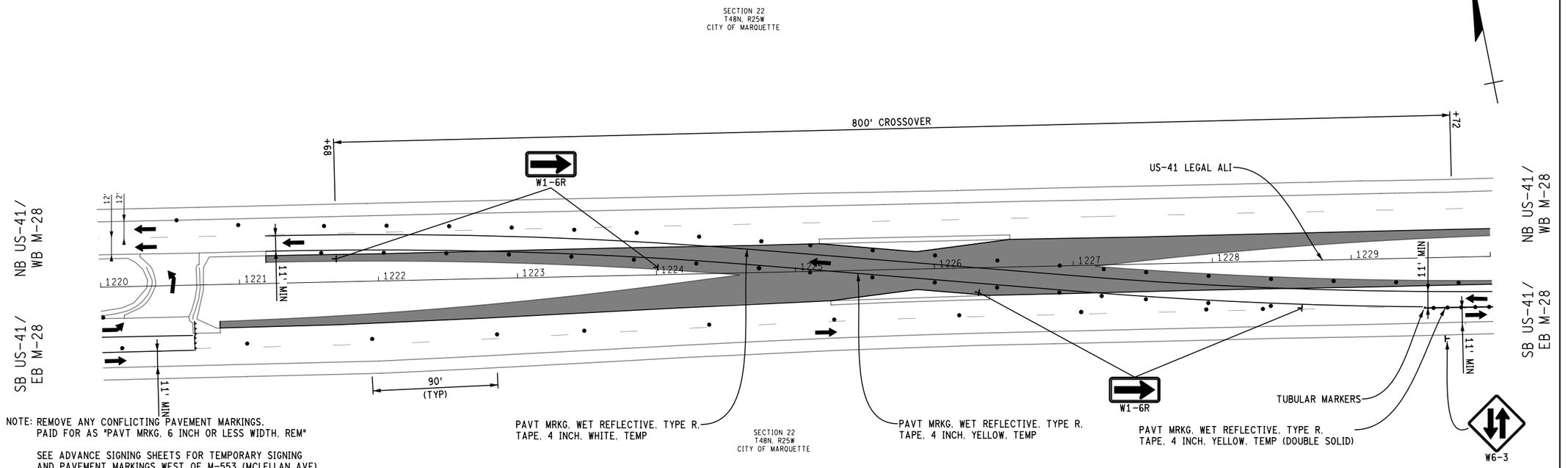
UTILIZE BYPASS PUMPING AS NEEDED TO MAINTAIN FLOW DURING STORM SEWER CONSTRUCTION AS DIRECTED BY THE ENGINEER.

TEMPORARILY PLATE STRUCTURES IN THE AREA OF THE TEMPORARY PAVING AND PLACE TEMPORARY HMA AS REQUIRED AT THE ROUNDABOUTS TO MAINTAIN TRAFFIC FOR STAGE 3.

PLACE TEMPORARY SIGNAL AT THE TEMPORARY ACCESS ROAD TO MAINTAIN TRAFFIC FOR ALL FUTURE STAGES.

THE CONTRACTOR MUST MAINTAIN ACCESS FOR EMERGENCY VEHICLES THROUGH THE CONSTRUCTION ZONE AT ALL TIMES.





LEGEND

- TUBULAR MARKER
- PLASTIC DRUM, HIGH INTENSITY
- SIGN TYPE _, TEMP, PRISMATIC
- LIGHTED ARROW, TYPE A
- LIGHTED ARROW, TYPE A (CAUTION MODE)
- BARRICADE, TYPE III, HIGH INTENSITY, DOUBLE SIDED
- DIRECTION OF TRAVEL
- WORK AREA
- TEMPORARY, HMA PAVEMENT

NOTE: REMOVE ANY CONFLICTING PAVEMENT MARKINGS. PAID FOR AS "PAVT MRKG, 6 INCH OR LESS WIDTH, REM"

SEE ADVANCE SIGNING SHEETS FOR TEMPORARY SIGNING AND PAVEMENT MARKINGS WEST OF M-553 (MCLELLAN AVE)

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
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0 HORZ. (FT) 80

FILE: 6553_US41_MTSTG2_001.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

MAINTENANCE OF TRAFFIC STAGE 2
US-41/M-28
M-553 (MCLELLAN AVE) TO STA 1231+00

DRAWING: US41 MTSTG2 001
SHEET: SECT 1 95

SECTION 22
T48N, R25W
CITY OF MARQUETTE

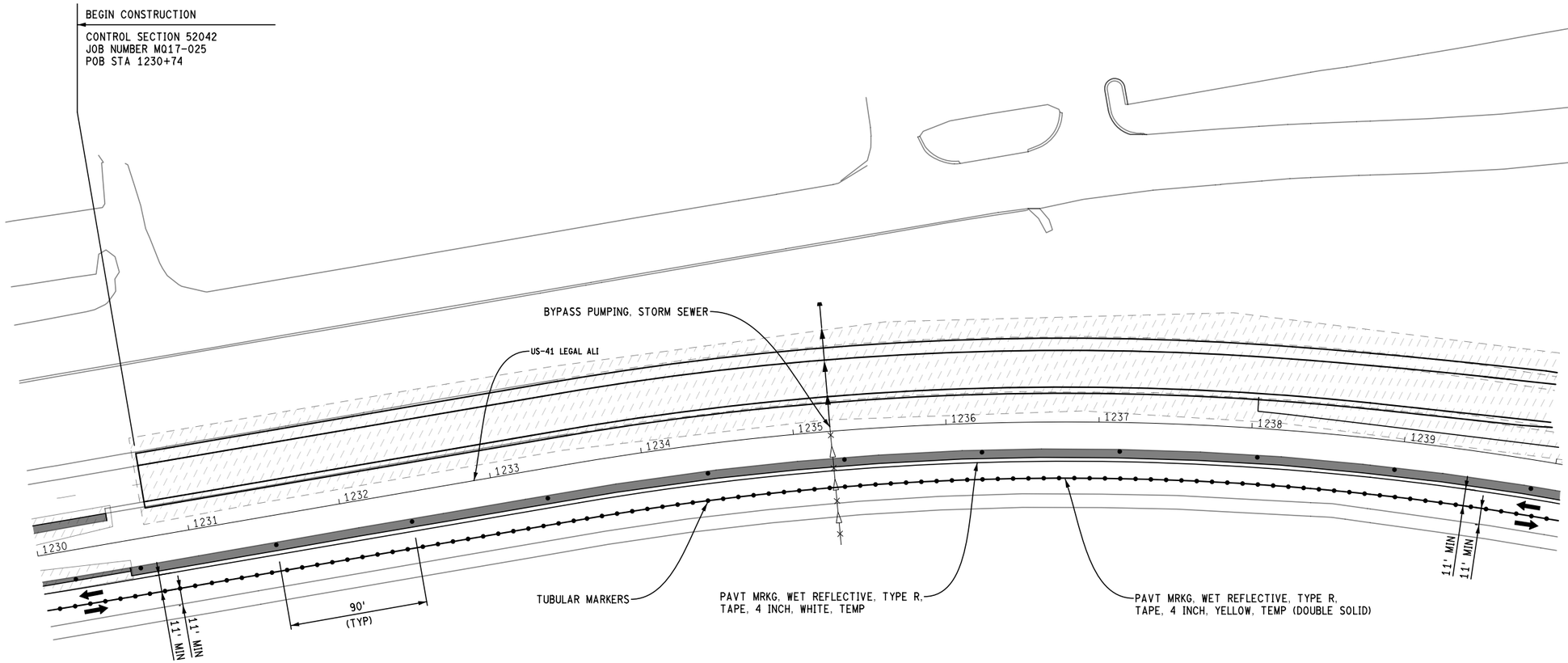
BEGIN CONSTRUCTION

CONTROL SECTION 52042
JOB NUMBER MQ17-025
POB STA 1230+74

BARAGA AVE

NB US-41/
WB M-28

SB US-41/
EB M-28



N

BARAGA AVE

NB US-41/
EB M-28

SB US-41/
EB M-28

LEGEND

- TUBULAR MARKER
- PLASTIC DRUM, HIGH INTENSITY
- SIGN TYPE _, TEMP, PRISMATIC
- LIGHTED ARROW, TYPE A
- LIGHTED ARROW, TYPE A (CAUTION MODE)
- BARRICADE, TYPE III, HIGH INTENSITY, DOUBLE SIDED
- DIRECTION OF TRAVEL
- WORK AREA
- TEMPORARY, HMA PAVEMENT

SECTION 22
T48N, R25W
CITY OF MARQUETTE

NOTE: REMOVE ANY CONFLICTING PAVEMENT MARKINGS.
PAID FOR AS "PAVT MRKG, 6 INCH OR LESS WIDTH, REM"

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
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FILE: 6553_US41_MTSTG2_002.dgn

DATE: 2/10/2017
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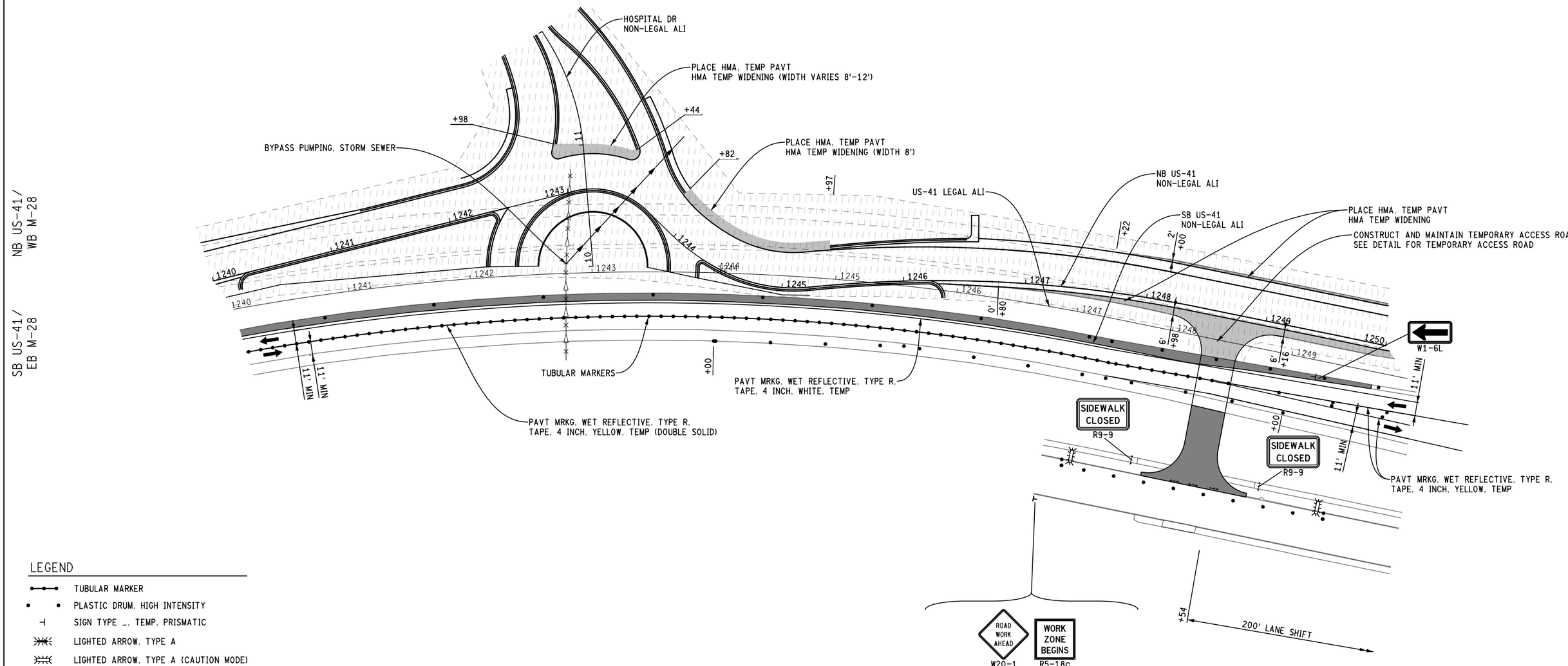
CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

MAINTENANCE OF TRAFFIC STAGE 2
US-41/M-28
STA 1231+00 TO STA 1240+00

DRAWING: US41 MTSTG2 002
SHEET: SECT 1 96

HOSPITAL DR

SECTION 22
T48N, R25W
CITY OF MARQUETTE



(SIGN SPACING SHALL BE AS SHOWN ON M0050a AND M0250a)
INSTALLED DURING STAGE 1

LEGEND

- TUBULAR MARKER
- PLASTIC DRUM, HIGH INTENSITY
- SIGN TYPE _, TEMP, PRISMATIC
- LIGHTED ARROW, TYPE A
- LIGHTED ARROW, TYPE A (CAUTION MODE)
- BARRICADE, TYPE III, HIGH INTENSITY, DOUBLE SIDED
- DIRECTION OF TRAVEL
- WORK AREA
- TEMPORARY, HMA PAVEMENT

NOTE: REMOVE ANY CONFLICTING PAVEMENT MARKINGS.
PAID FOR AS "PAVT MRKG, 6 INCH OR LESS WIDTH, REM"

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
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FILE: 6553_US41_MTSTG2_003.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

MAINTENANCE OF TRAFFIC STAGE 2
US-41/M-28
STA 1240+00 TO STA 1250+00

DRAWING: US41 MTSTG2 003
SHEET: SECT 1 97

S 7TH ST

SECTION 23
T48N, R25W
CITY OF MARQUETTE

ALTAMONT ST

GROVE ST/7TH ST
NON-LEGAL ALI

PLACE HMA, TEMP PAVT
HMA TEMP WIDENING
(WIDTH VARIES 4'-10')

BYPASS PUMPING, STORM SEWER

BYPASS PUMPING, STORM SEWER

PLACE HMA, TEMP PAVT
HMA TEMP WIDENING (WIDTH VARIES 2.5'-5')

PLACE HMA, TEMP PAVT
HMA TEMP WIDENING (WIDTH 8')

END CONSTRUCTION

CONTROL SECTION 52042
JOB NUMBER MQ17-025
POE STA 1260+40

NB US-41/
WB M-28

SB US-41/
EB M-28

NB US-41
NON-LEGAL ALI

HOMESTEAD ST

PAVT MRKG, WET REFLECTIVE, TYPE R,
TAPE, 4 INCH, WHITE, TEMP

PAVT MRKG, WET REFLECTIVE, TYPE R,
TAPE, 4 INCH, YELLOW, TEMP

200' LANE SHIFT

TEMP SIGNAL

PAVT MRKG, WET REFLECTIVE, TYPE R,
TAPE, 4 INCH, WHITE, TEMP

ONLY | ONLY
R3-7e

PAVT MRKG, WET REFLECTIVE, TYPE R,
TAPE, 4 INCH, WHITE, TEMP

TUBULAR MARKERS

PAVT MRKG, WET REFLECTIVE, TYPE R,
TAPE, 4 INCH, YELLOW, TEMP (DOUBLE SOLID)

(SIGN SPACING SHALL BE AS SHOWN ON M0050a AND M0250a)
INSTALLED DURING STAGE 1

ROAD WORK AHEAD W20-1

WORK ZONE BEGINS R5-18c

SECTION 22
T48N, R25W
CITY OF MARQUETTE

SECTION 23
T48N, R25W
CITY OF MARQUETTE

(SIGN SPACING SHALL BE AS SHOWN ON M0050a AND M0250a)
(SEE DETOUR/ADVANCED SIGNING SHEET)
INSTALLED DURING STAGE 1

ROAD WORK AHEAD W20-1

WORK ZONE BEGINS R5-18c

GROVE ST

ANDERSON ST

NOTE: REMOVE ANY CONFLICTING PAVEMENT MARKINGS.
PAID FOR AS "PAVT MRKG, 6 INCH OR LESS WIDTH, REM"

LEGEND

- TUBULAR MARKER
- PLASTIC DRUM, HIGH INTENSITY
- SIGN TYPE _, TEMP, PRISMATIC
- LIGHTED ARROW, TYPE A
- LIGHTED ARROW, TYPE A (CAUTION MODE)
- BARRICADE, TYPE III, HIGH INTENSITY, DOUBLE SIDED
- DIRECTION OF TRAVEL
- WORK AREA
- TEMPORARY, HMA PAVEMENT

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

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CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
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FILE: 6553_US41_MTSTG2_004.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

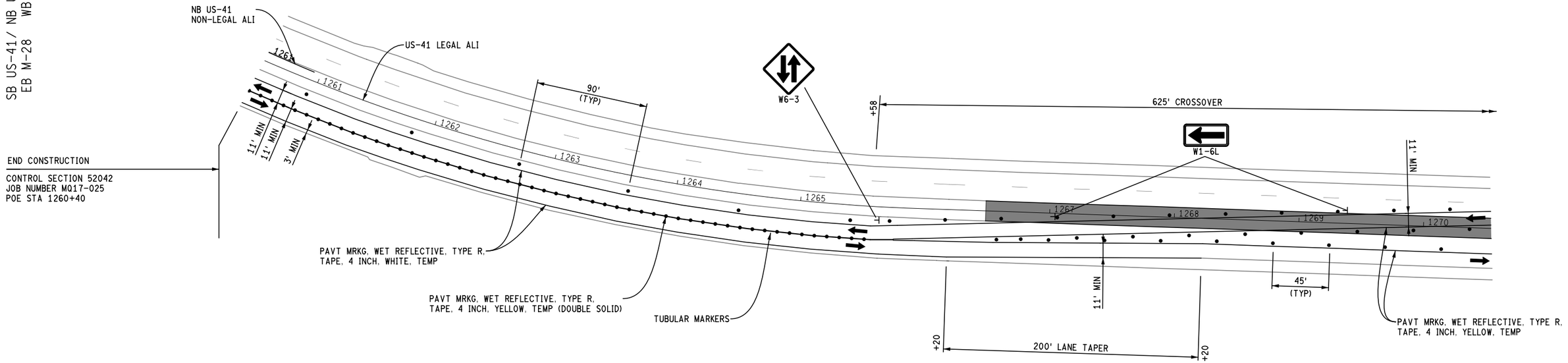
MAINTENANCE OF TRAFFIC STAGE 2
US-41/M-28
STA 1250+00 TO STA 1261+00

DRAWING: US41 MTSTG2 004
SHEET: SECT 1 98

SB US-41 / NB US-41 / EB M-28 WB M-28

ALTAMONT ST

SECTION 22
T48N, R25W
CITY OF MARQUETTE

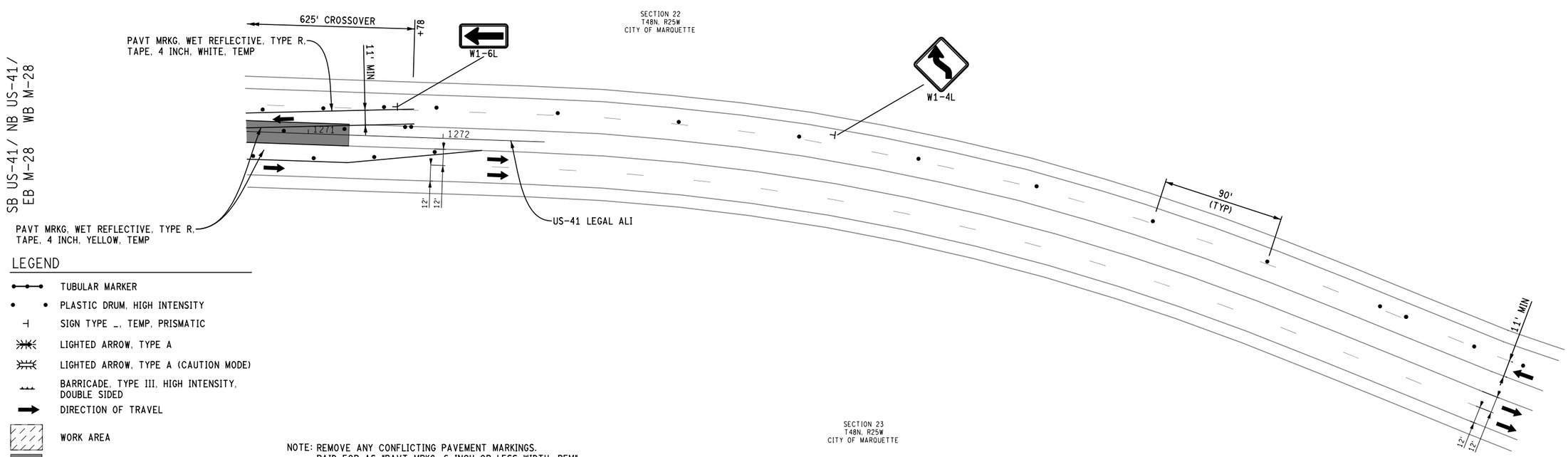


SECTION 23
T48N, R25W
CITY OF MARQUETTE

ALTAMONT ST

N

SB US-41 / NB US-41 / EB M-28 WB M-28



SECTION 22
T48N, R25W
CITY OF MARQUETTE

SECTION 23
T48N, R25W
CITY OF MARQUETTE

LEGEND

- TUBULAR MARKER
- PLASTIC DRUM, HIGH INTENSITY
- SIGN TYPE _, TEMP, PRISMATIC
- LIGHTED ARROW, TYPE A
- LIGHTED ARROW, TYPE A (CAUTION MODE)
- BARRICADE, TYPE III, HIGH INTENSITY, DOUBLE SIDED
- DIRECTION OF TRAVEL
- WORK AREA
- TEMPORARY, HMA PAVEMENT

NOTE: REMOVE ANY CONFLICTING PAVEMENT MARKINGS.
PAID FOR AS "PAVT MRKG, 6 INCH OR LESS WIDTH, REM"

SEE ADVANCE SIGNING SHEETS FOR TEMPORARY SIGNING AND PAVEMENT MARKINGS AT FRONT ST.

N

SB US-41 / NB US-41 / EB M-28 WB M-28

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

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CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 80

	DATE: 2/10/2017	CS: 52042	MAINTENANCE OF TRAFFIC STAGE 2	DRAWING	SHEET
	DESIGN UNIT: FILPUS	JN: MQ17-025	US-41/M-28	US41 MTSTG2 005	SECT 1 99
FILE: 6553_US41_MTSTG2_005.dgn	TSC: ISHPEMING	MDOT PERMIT 043179-16	1261+00 TO EAST CROSS-OVER		

SECTION 22
T48N, R25W
CITY OF MARQUETTE

STAGE 3:

DETOUR 7* STREET TRAFFIC USING WASHINGTON STREET WEST TO US-41 OR USING WASHINGTON STREET EAST TO FRONT STREET, AND THEN TO US-41.

DETOUR SB MCCLELLAN AVE TO SB US-41 LEFT TURN USING WASHINGTON ST WEST TO US-41 FOR TRUCKS OR WASHINGTON EAST TO FRONT ST, AND THEN TO US-41 FOR CARS.

SHIFT SOUTHBOUND US-41 TRAFFIC TO NORTHBOUND US-41 TRAVEL LANE UTILIZING LANE CLOSURES AND CROSS-OVER'S.

CLOSE THE INTERSECTION AT GROVE STREET, REMOVE SIGNAL AT GROVE STREET AND USE THE TEMPORARY ACCESS ROAD AND SIGNAL THAT WAS CONSTRUCTED IN STAGE 2, USE HOMESTEAD STREET TO ACCESS GROVE STREET.

MAINTAIN ONE LANE OF NORTHBOUND AND SOUTHBOUND US-41 TRAFFIC ALONG NORTHBOUND US-41 AT ALL TIMES. PLACE TUBULAR DEVICES BETWEEN OPPOSING TRAFFIC ALONG NORTHBOUND US-41.

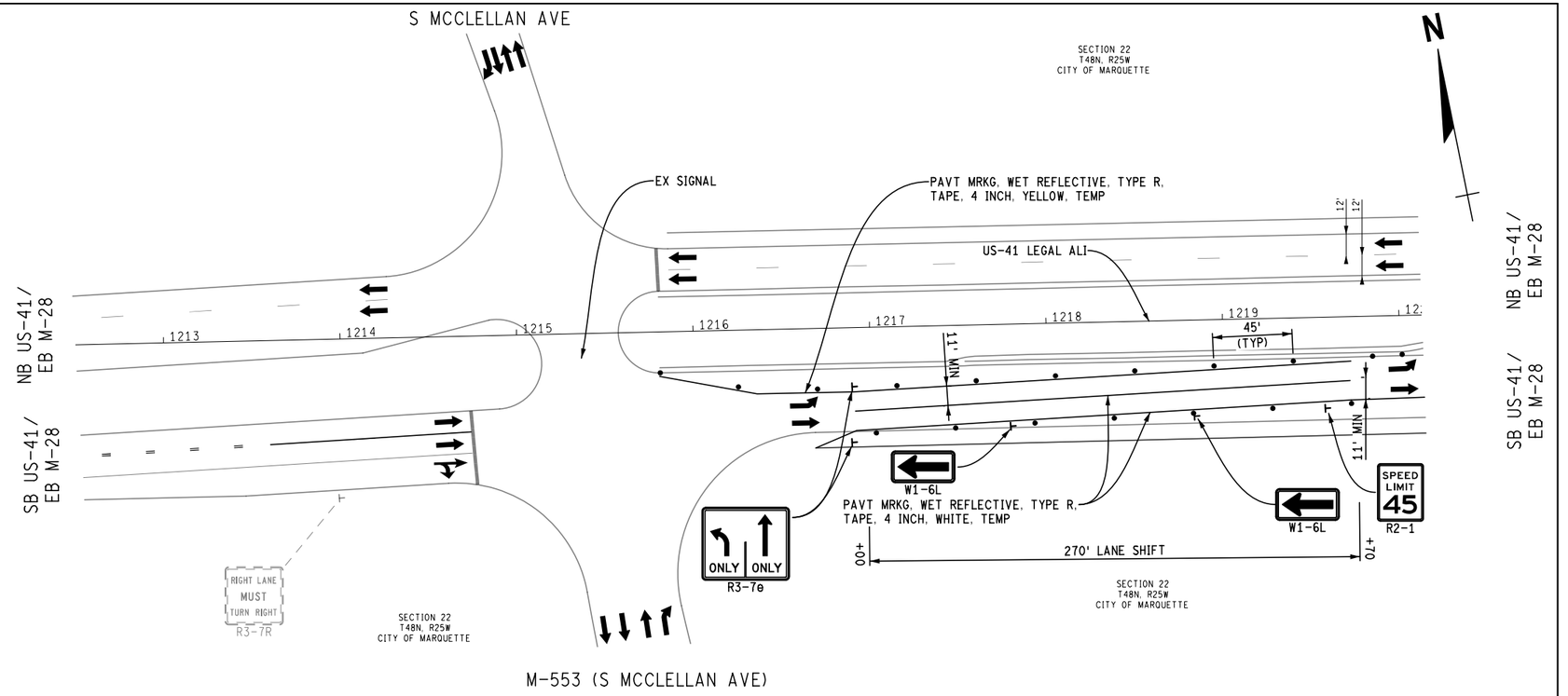
CONSTRUCT SOUTHBOUND US-41 AND THE ROUNDABOUT AT GROVE STREET.

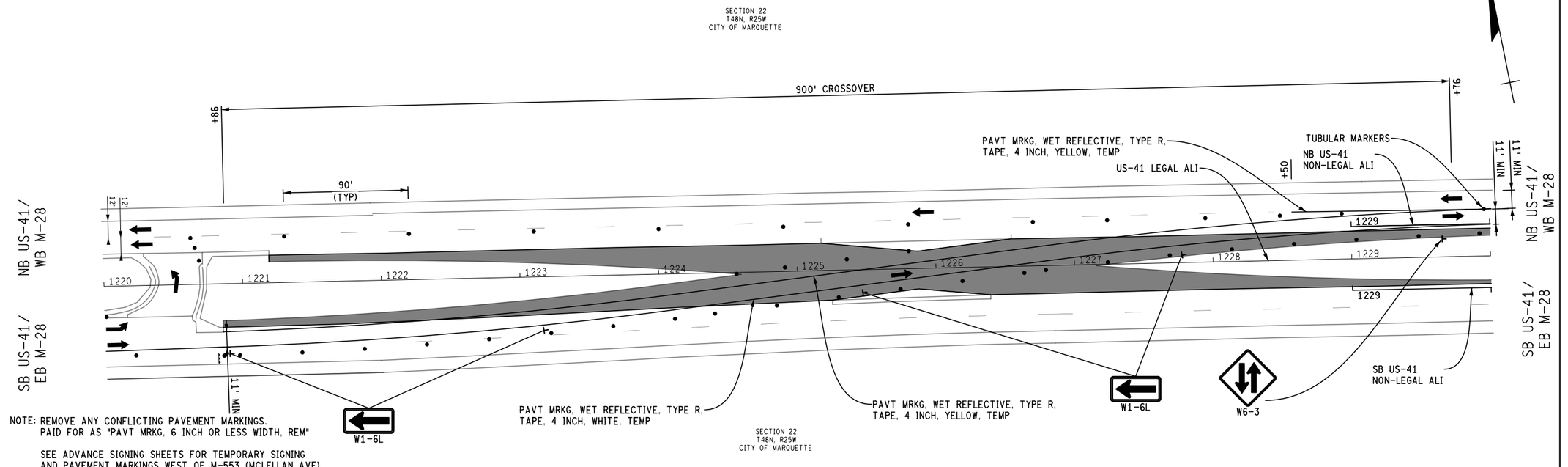
UTILIZE BYPASS PUMPING AS NEEDED TO MAINTAIN FLOW DURING STORM SEWER CONSTRUCTION AS DIRECTED BY THE ENGINEER.

GAP OUT THE CONSTRUCTION OF SOUTHBOUND US-41 AROUND THE TEMPORARY ACCESS ROAD.

PROPOSED LIGHTING ALONG NB US-41 NEEDS TO BE ACTIVE PRIOR TO SHIFTING TRAFFIC TO NB FOR STAGE 3, WITH THE EXCEPTION OF THE LIGHT POLE NEAR THE TEMP SIGNAL.

THE CONTRACTOR MUST MAINTAIN ACCESS FOR EMERGENCY VEHICLES THROUGH THE CONSTRUCTION ZONE AT ALL TIMES.





LEGEND

- TUBULAR MARKER
- PLASTIC DRUM, HIGH INTENSITY
- SIGN TYPE _, TEMP, PRISMATIC
- LIGHTED ARROW, TYPE A
- LIGHTED ARROW, TYPE A (CAUTION MODE)
- BARRICADE, TYPE III, HIGH INTENSITY, DOUBLE SIDED
- DIRECTION OF TRAVEL
- WORK AREA
- TEMPORARY, HMA PAVEMENT

NOTE: REMOVE ANY CONFLICTING PAVEMENT MARKINGS. PAID FOR AS "PAVT MRKG, 6 INCH OR LESS WIDTH, REM"

SEE ADVANCE SIGNING SHEETS FOR TEMPORARY SIGNING AND PAVEMENT MARKINGS WEST OF M-553 (MCLELLAN AVE)

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
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CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
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DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

MAINTENANCE OF TRAFFIC STAGE 3
US-41/M-28
M-553 (MCLELLAN AVE) TO STA 1231+00

DRAWING	SHEET
US41 MTSTG3 001	SECT 1 100

SECTION 22
T48N, R25W
CITY OF MARQUETTE

N

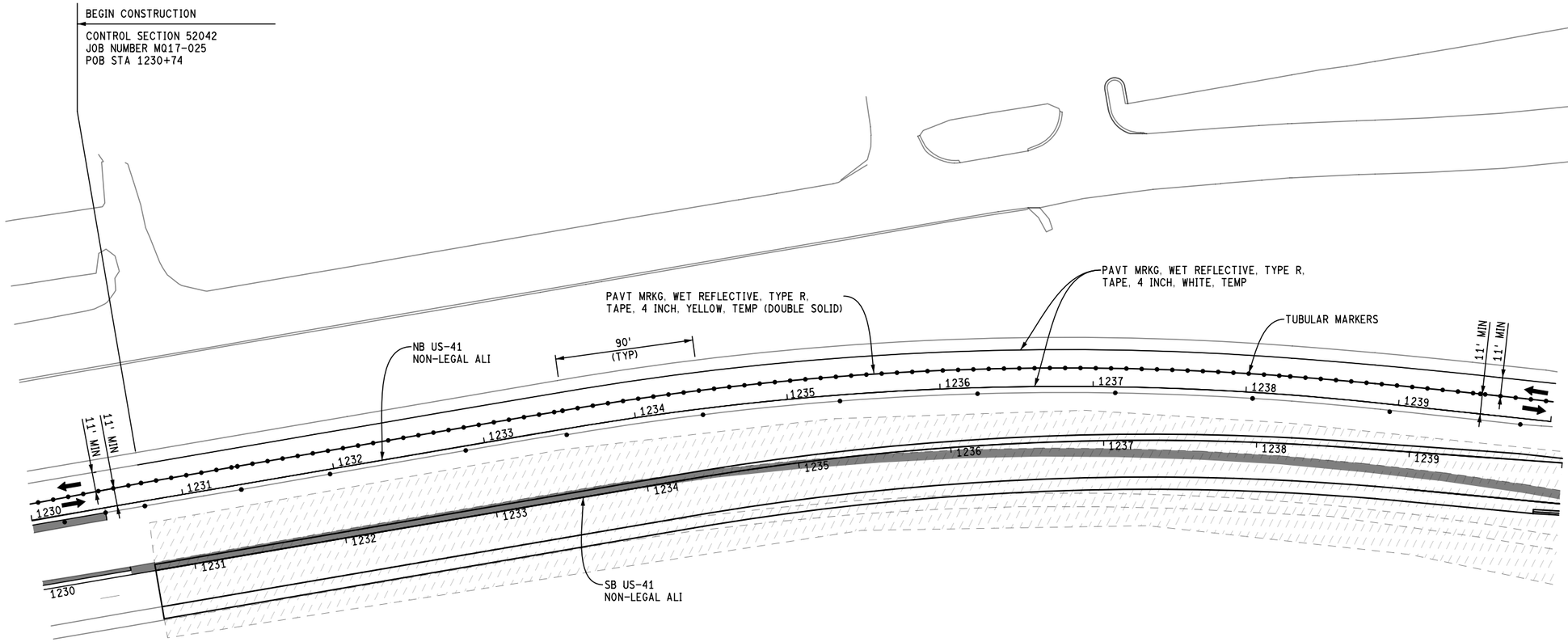
BEGIN CONSTRUCTION

CONTROL SECTION 52042
JOB NUMBER MQ17-025
POB STA 1230+74

BARAGA AVE

NB US-41/
WB M-28

SB US-41/
EB M-28



BARAGA AVE

NB US-41/
EB M-28

SB US-41/
EB M-28

LEGEND

- TUBULAR MARKER
- PLASTIC DRUM, HIGH INTENSITY
- SIGN TYPE _, TEMP, PRISMATIC
- LIGHTED ARROW, TYPE A
- LIGHTED ARROW, TYPE A (CAUTION MODE)
- BARRICADE, TYPE III, HIGH INTENSITY, DOUBLE SIDED
- DIRECTION OF TRAVEL
- WORK AREA
- TEMPORARY, HMA PAVEMENT

SECTION 22
T48N, R25W
CITY OF MARQUETTE

NOTE: REMOVE ANY CONFLICTING PAVEMENT MARKINGS.
PAID FOR AS "PAVT MRKG, 6 INCH OR LESS WIDTH, REM"

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
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CITY ENGINEER'S OFFICE
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PH. (906)228-0440

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DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

MAINTENANCE OF TRAFFIC STAGE 3
US-41/M-28
STA 1231+00 TO STA 1240+00

DRAWING	SHEET
US41 MTSTG3 002	SECT 1 101

HOSPITAL DR

NB US-41 NON-LEGAL ALI		
STATION	OFFSET	
	RT	LT
1242+75	14.25'	14.41'
1243+00	14.39'	17.85'
1243+25	11.06'	18.00'
1243+50	11.00'	18.00'
1243+75	13.11'	17.82'
1244+00	13.06'	15.85'
1244+25	13.53'	13.64'

SEE PAVEMENT MARKING BUFFER DETAIL

SECTION 22
T48N, R25W
CITY OF MARQUETTE

NB US-41 / WB M-28

SB US-41 / EB M-28

HOSPITAL DR
NON-LEGAL ALI

SEE PAVEMENT MARKING BUFFER DETAIL

PAVT MRKG, WET REFLECTIVE, TYPE NR, PAINT, 4 INCH, YELLOW, TEMP

PAVT MRKG, TYPE NR, PAINT, 4 INCH, CROSS HATCHING YELLOW, TEMP (SOLID), 10' SPACING, 45°

ROAD CLOSED R11-2

ROAD CLOSED R11-2

PAVT MRKG, WET REFLECTIVE, TYPE R, TAPE, 4 INCH, YELLOW, TEMP (DOUBLE SOLID)

PAVT MRKG, WET REFLECTIVE, TYPE R, TAPE, 4 INCH, WHITE, TEMP

SPEED LIMIT 45 R2-1

W1-3R

15 M.P.H. W13-1P

185' TAPER

+90

+75

PAVT MRKG, WET REFLECTIVE, TYPE R, TAPE, 4 INCH, YELLOW, TEMP

PAVT MRKG, WET REFLECTIVE, TYPE R, TAPE, 4 INCH, WHITE, TEMP

TUBULAR MARKERS

24" STOP BAR PAID FOR AS PAVT MRKG, TYPE R, 4 INCH, WHITE TEMP (SOLID)

M4-10L DETOUR GROVE ST SPECIAL #4

LT ARROW PAID FOR AS PAVT MRKG, TYPE R, 4 INCH, WHITE TEMP (SOLID)

PAVT MRKG, WET REFLECTIVE, TYPE R, TAPE, 4 INCH, WHITE, TEMP

PAVT MRKG, WET REFLECTIVE, TYPE R, TAPE, 4 INCH, YELLOW, TEMP (DOUBLE SOLID)

TEMP SIGNAL

11' MIN

12'

25' (TYP)

1240 1241 1242 1243 1244 1245 1246 1247 1248 1249 1250

10

W1-3R

15 M.P.H. W13-1P

TUBULAR MARKERS

TUBULAR MARKERS

NB US-41 NON-LEGAL ALI

SB US-41 NON-LEGAL ALI

W3-3

GROVE ST SPECIAL #4

GROVE ST SPECIAL #4 DETOUR M4-9R

GROVE ST SPECIAL #4 DETOUR M4-9L

11'

11'

PAVT MRKG, WET REFLECTIVE, TYPE NR, PAINT, 4 INCH, WHITE, TEMP

PAVT MRKG, WET REFLECTIVE, TYPE NR, PAINT, 4 INCH, YELLOW, TEMP (DOUBLE SOLID)

HOMESTEAD ST

HOMESTEAD ST

ROAD WORK AHEAD W20-1

WORK ZONE BEGINS R5-18c

(SIGN SPACING SHALL BE AS SHOWN ON M0050a AND M0250a) INSTALLED DURING STAGE 1

TO 41 28 M4-5a M1-4 M1-6 M6-1bL

24" STOP BAR PAID FOR AS PAVT MRKG, TYPE R, 4 INCH, WHITE TEMP (SOLID)

STOP R1-1

24" STOP BAR PAID FOR AS PAVT MRKG, TYPE R, 4 INCH, WHITE TEMP (SOLID)

STOP R1-1

TO 41 28 M4-5a M1-4 M1-6 M6-1bR

LEGEND

- TUBULAR MARKER
- PLASTIC DRUM, HIGH INTENSITY
- SIGN TYPE _, TEMP, PRISMATIC
- LIGHTED ARROW, TYPE A
- LIGHTED ARROW, TYPE A (CAUTION MODE)
- BARRICADE, TYPE III, HIGH INTENSITY, DOUBLE SIDED
- DIRECTION OF TRAVEL
- WORK AREA
- TEMPORARY, HMA PAVEMENT

NOTE: REMOVE ANY CONFLICTING PAVEMENT MARKINGS. PAID FOR AS "PAVT MRKG, 6 INCH OR LESS WIDTH, REM"

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 80

FILE: 6553_US41_MTSTG3_003.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: M017-025
MDOT PERMIT 043179-16

MAINTENANCE OF TRAFFIC STAGE 3
US-41/M-28
STA 1240+00 TO STA 1250+00

DRAWING: US41 MTSTG3 003
SHEET: SECT 1 102

S 7TH ST

ALTAMONT ST

HOMESTEAD ST

GROVE ST

ANDERSON ST

SECTION 23
T48N, R25W
CITY OF MARQUETTE

SECTION 22
T48N, R25W
CITY OF MARQUETTE

SECTION 23
T48N, R25W
CITY OF MARQUETTE

NB US-41 NON-LEGAL ALI		
STATION	OFFSET	
	RT	LT
1252+50	12.00'	12.45'
1252+75	12.00'	15.64'
1253+00	12.00'	20.41'
1253+25	12.00'	20.67'
1253+50	11.44'	19.89'
1253+75	11.58'	17.72'
1254+00	11.96'	15.51'
1254+25	11.23'	11.70'

PAVT MRKG, TYPE NR, PAINT, 4 INCH, YELLOW, TEMP (SOLID)

GROVE ST/7TH ST NON-LEGAL ALI

PAVT MRKG, TYPE NR, PAINT, 4 INCH, CROSS HATCHING YELLOW, TEMP (SOLID), 10' SPACING, 45°

SEE PAVEMENT MARKING BUFFER DETAIL

SEE PAVEMENT MARKING BUFFER DETAIL

END CONSTRUCTION

CONTROL SECTION 52042
JOB NUMBER MQ17-025
POE STA 1260+40

NB US-41 / WB M-28

SB US-41 / EB M-28

125' TAPER

+25 +20 +00

11' MIN 11' MIN

ONLY ONLY R3-7e

ROAD CLOSED R11-2

ROAD CLOSED R11-2

W1-3R

15 M.P.H. W13-1P

W3-3 GROVE ST SPECIAL #4

W1-3R

15 M.P.H. W13-1P

PAVT MRKG, WET REFLECTIVE, TYPE R, TAPE, 4 INCH, WHITE, TEMP

PAVT MRKG, WET REFLECTIVE, TYPE R, TAPE, 4 INCH, YELLOW, TEMP (DOUBLE SOLID)

PAVT MRKG, WET REFLECTIVE, TYPE R, TAPE, 4 INCH, WHITE, TEMP

PAVT MRKG, WET REFLECTIVE, TYPE R, TAPE, 4 INCH, YELLOW, TEMP (DOUBLE SOLID)

NB US-41 NON-LEGAL ALI

SB US-41 NON-LEGAL ALI

TUBULAR MARKERS

TUBULAR MARKERS

SPEED LIMIT 45 R2-1

STOP MAINTAIN EXISTING R1-1 SIGN DURING STAGE 3

TO M4-5a

M1-4 41 M1-6 28

M4-9T

(SIGN SPACING SHALL BE AS SHOWN ON M0050a AND M0250a) INSTALLED DURING STAGE 1

ROAD WORK AHEAD W20-1

WORK ZONE BEGINS R5-18c

END DETOUR M4-8a

DETOUR M4-10L

STOP MAINTAIN EXISTING R1-1 SIGN DURING STAGE 3

ROAD CLOSED R11-2

TO M4-5a

M1-4 41 M1-6 28

M6-1bL

ROAD CLOSED AHEAD W20-3

ROAD WORK AHEAD W20-1

DETOUR AHEAD W20-2

WORK ZONE BEGINS R5-18c

(SIGN SPACING SHALL BE AS SHOWN ON M0050a AND M0250a)
(SEE DETOUR/ADVANCED SIGNING SHEET)
INSTALLED DURING STAGE 1

LEGEND

- TUBULAR MARKER
- PLASTIC DRUM, HIGH INTENSITY
- SIGN TYPE _, TEMP, PRISMATIC
- LIGHTED ARROW, TYPE A
- LIGHTED ARROW, TYPE A (CAUTION MODE)
- BARRICADE, TYPE III, HIGH INTENSITY, DOUBLE SIDED
- DIRECTION OF TRAVEL
- WORK AREA
- TEMPORARY, HMA PAVEMENT

NOTE: REMOVE ANY CONFLICTING PAVEMENT MARKINGS. PAID FOR AS "PAVT MRKG, 6 INCH OR LESS WIDTH, REM"

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
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CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
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PH. (906)228-0440

0 HORZ. (FT) 80

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DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

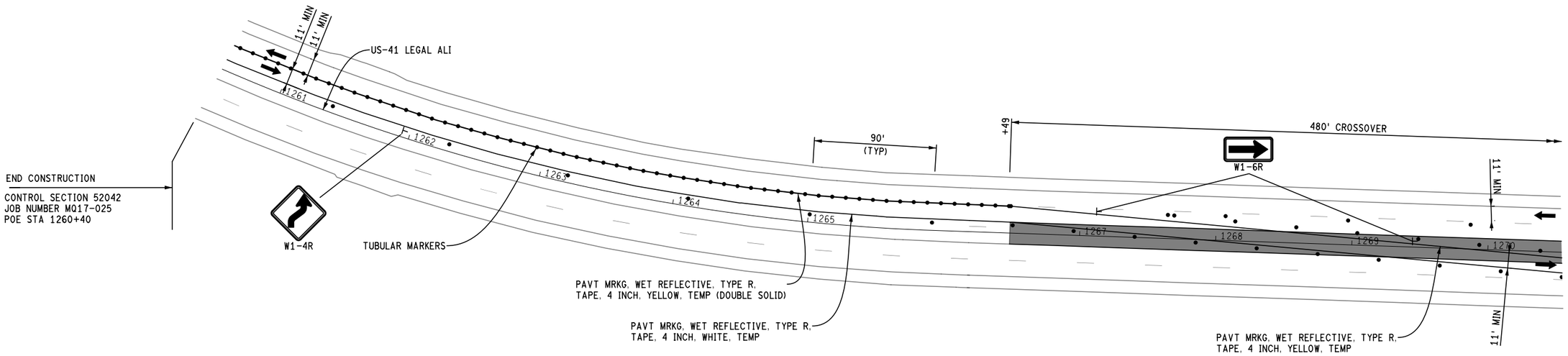
MAINTENANCE OF TRAFFIC STAGE 3
US-41/M-28
STA 1250+00 TO STA 1260+41

DRAWING: US41 MTSTG3 004
SHEET: SECT 1 103

SB US-41/ NB US-41/
EB M-28 WB M-28

ALTAMONT ST

SECTION 22
T48N, R25W
CITY OF MARQUETTE



SECTION 23
T48N, R25W
CITY OF MARQUETTE

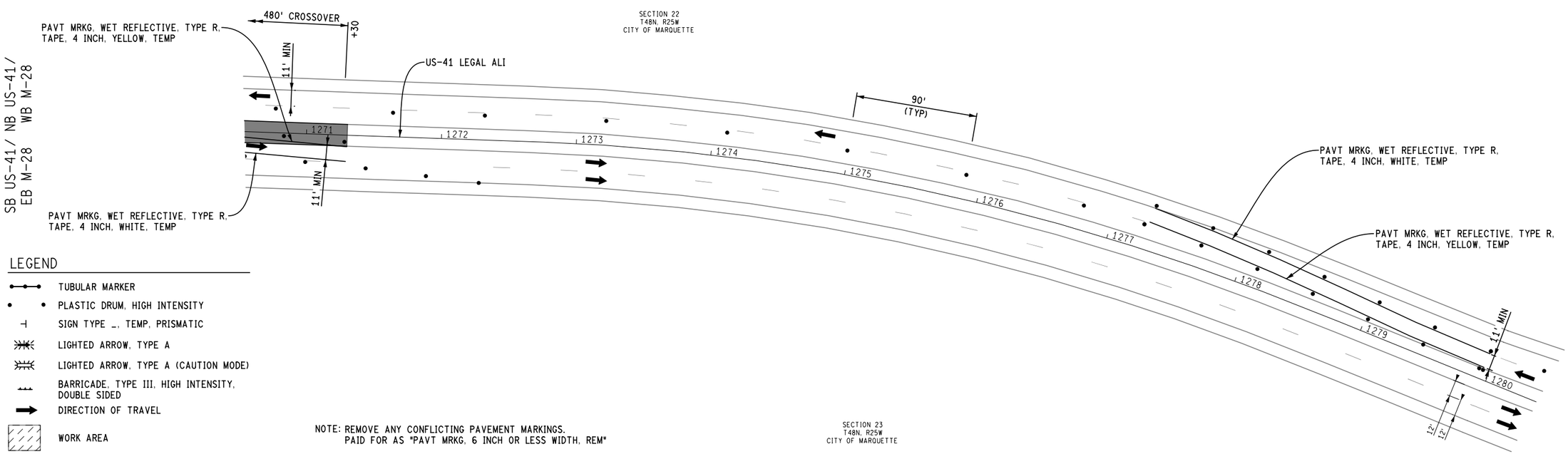
ALTAMONT ST

N

SB US-41/ NB US-41/
EB M-28 WB M-28

SB US-41/ NB US-41/
EB M-28 WB M-28

SECTION 22
T48N, R25W
CITY OF MARQUETTE



N

SB US-41/ NB US-41/
EB M-28 WB M-28

LEGEND

- TUBULAR MARKER
- PLASTIC DRUM, HIGH INTENSITY
- SIGN TYPE _, TEMP, PRISMATIC
- LIGHTED ARROW, TYPE A
- LIGHTED ARROW, TYPE A (CAUTION MODE)
- BARRICADE, TYPE III, HIGH INTENSITY, DOUBLE SIDED
- DIRECTION OF TRAVEL
- WORK AREA
- TEMPORARY, HMA PAVEMENT

NOTE: REMOVE ANY CONFLICTING PAVEMENT MARKINGS.
PAID FOR AS "PAVT MRKG, 6 INCH OR LESS WIDTH, REM"

SEE ADVANCE SIGNING SHEETS FOR TEMPORARY SIGNING AND PAVEMENT MARKINGS AT FRONT ST.

SECTION 23
T48N, R25W
CITY OF MARQUETTE

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CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 80

	DATE: 2/10/2017	CS: 52042	MAINTENANCE OF TRAFFIC STAGE 3	DRAWING	SHEET
	DESIGN UNIT: FILPUS	JN: MQ17-025	US-41/M-28	US41 MTSTG3 005	SECT 1 104
FILE: 6553_US41_MTSTG3_005.dgn	TSC: ISHPEMING	MDOT PERMIT 043179-16	1260+41 TO EAST CROSS-OVER		

STAGE 4A:

DETOUR 7" STREET TRAFFIC USING WASHINGTON STREET WEST TO US-41 OR USING WASHINGTON STREET EAST TO FRONT STREET, AND THEN TO US-41.

DETOUR SB MCCLELLAN AVE TO SB US-41 LEFT TURN USING WASHINGTON ST WEST TO US-41 FOR TRUCKS OR WASHINGTON EAST TO FRONT ST, AND THEN TO US-41 FOR CARS.

CONSTRUCT THE NORTHERN PORTION OF THE GROVE STREET AND HOMESTEAD STREET INTERSECTION AND CONSTRUCT THE EAST PORTION OF THE FIRST DRIVE ON ANDERSON STREET UTILIZING TRAFFIC REGULATORS, TRAFFIC SHIFTS AND MAINTENANCE GRAVEL AS NECESSARY.

MAINTAIN ACCESS TO GROVE STREET THROUGH THE TEMPORARY ACCESS ON HOMESTEAD STREET.

CONSTRUCT ALL HOMESTEAD/ANDERSON ST STORM SEWER ROAD CROSSINGS USING TRAFFIC REGULATORS AND BYPASS PUMPING AS NEEDED AS DIRECTED BY THE ENGINEER.

THE CONTRACTOR MUST MAINTAIN ACCESS FOR EMERGENCY VEHICLES THROUGH THE CONSTRUCTION ZONE AT ALL TIMES.

STAGE 4B:

DETOUR 7" STREET TRAFFIC USING WASHINGTON STREET WEST TO US-41 OR USING WASHINGTON STREET EAST TO FRONT STREET, AND THEN TO US-41.

DETOUR SB MCCLELLAN AVE TO SB US-41 LEFT TURN USING WASHINGTON ST WEST TO US-41 FOR TRUCKS OR WASHINGTON EAST TO FRONT ST, AND THEN TO US-41 FOR CARS.

CONSTRUCT THE SOUTHERN PORTION OF THE GROVE STREET AND HOMESTEAD STREET INTERSECTION AND CONSTRUCT THE WEST PORTION OF THE FIRST DRIVE ON ANDERSON STREET UTILIZING TRAFFIC REGULATORS, TRAFFIC SHIFTS AND MAINTENANCE GRAVEL AS NECESSARY.

MAINTAIN ACCESS TO GROVE STREET THROUGH THE TEMPORARY ACCESS ON HOMESTEAD STREET.

CONSTRUCT THE PROPOSED WATERMAIN CROSSING PRIOR TO WORK ON THE ROADWAY USING TRAFFIC REGULATORS AND MAINTENANCE GRAVEL.

PLACE PERMANENT SIGNING AND PAVEMENT MARKINGS AS SHOWN IN THE PLANS AND AS DIRECTED BY THE ENGINEER.

THE CONTRACTOR MUST MAINTAIN ACCESS FOR EMERGENCY VEHICLES THROUGH THE CONSTRUCTION ZONE AT ALL TIMES.

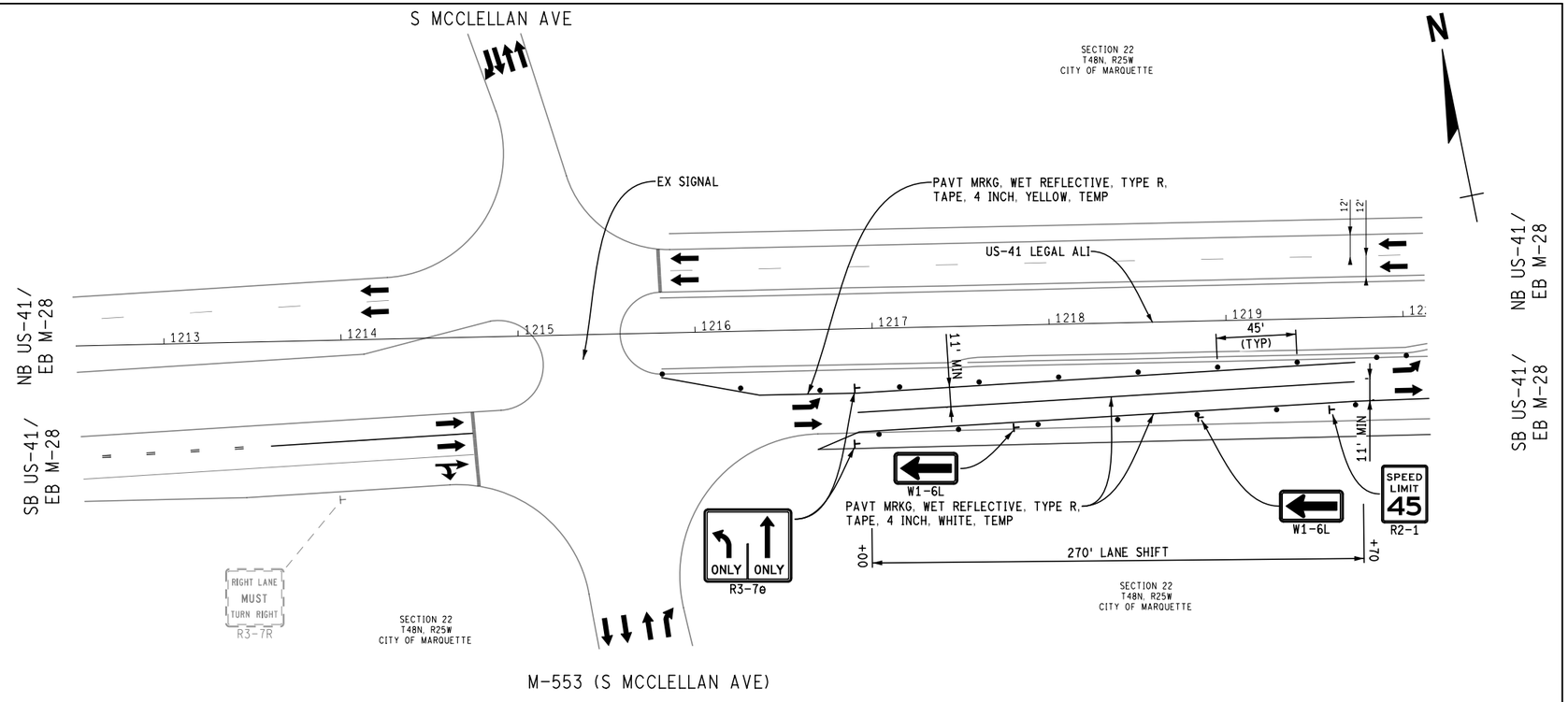
STAGE 4C:

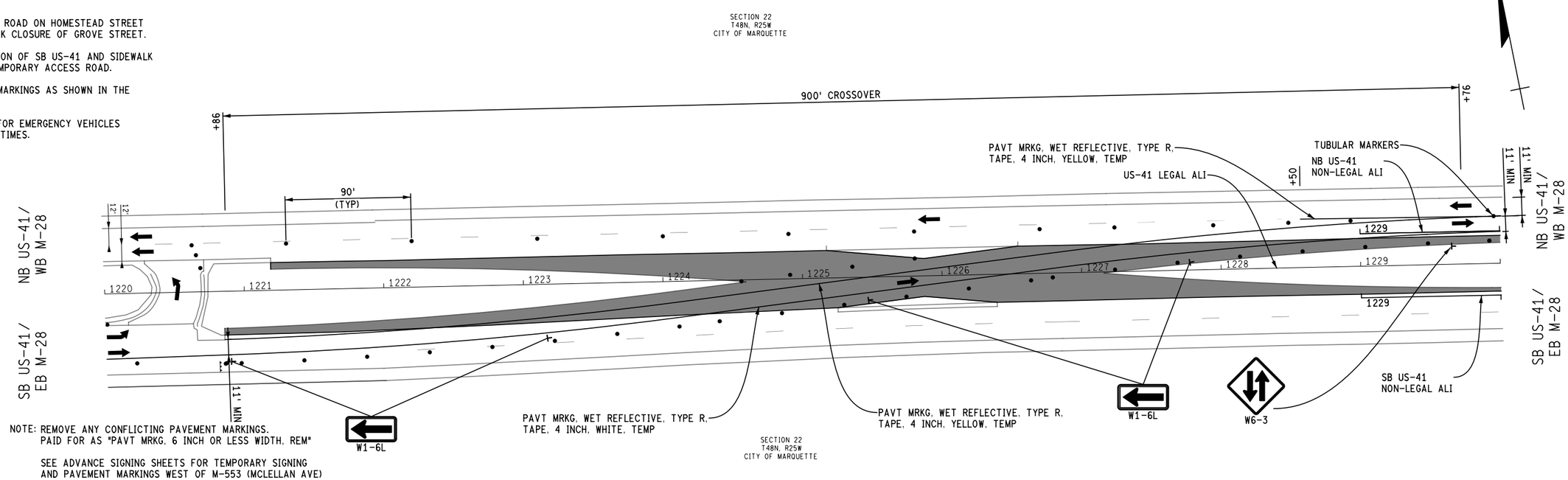
CLOSE ACCESS TO THE TEMPORARY ACCESS ROAD ON HOMESTEAD STREET AND SET UP DETOUR ROUTE FOR THE 2 WEEK CLOSURE OF GROVE STREET.

IN TWO WEEKS TIME, CONSTRUCT THE PORTION OF SB US-41 AND SIDEWALK ROUTE THAT WAS GAPPED OUT FOR THE TEMPORARY ACCESS ROAD.

PLACE PERMANENT SIGNING AND PAVEMENT MARKINGS AS SHOWN IN THE PLANS AND AS DIRECTED BY THE ENGINEER.

THE CONTRACTOR MUST MAINTAIN ACCESS FOR EMERGENCY VEHICLES THROUGH THE CONSTRUCTION ZONE AT ALL TIMES.





LEGEND

- TUBULAR MARKER
- PLASTIC DRUM, HIGH INTENSITY
- SIGN TYPE _, TEMP, PRISMATIC
- LIGHTED ARROW, TYPE A
- LIGHTED ARROW, TYPE A (CAUTION MODE)
- BARRICADE, TYPE III, HIGH INTENSITY, DOUBLE SIDED
- DIRECTION OF TRAVEL
- WORK AREA
- TEMPORARY, HMA PAVEMENT

NOTE: REMOVE ANY CONFLICTING PAVEMENT MARKINGS. PAID FOR AS "PAVT MRKG, 6 INCH OR LESS WIDTH, REM"

SEE ADVANCE SIGNING SHEETS FOR TEMPORARY SIGNING AND PAVEMENT MARKINGS WEST OF M-553 (MCLELLAN AVE)

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

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CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 80

FILE: 6553_US41_MTSTG4A_001.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

MAINTENANCE OF TRAFFIC STAGE 4A, 4B & 4C
US-41/M-28
M-553 (MCLELLAN AVE) TO STA 1231+00

DRAWING: US41 MTSTG3 001
SHEET: SECT 1 105

SECTION 22
T48N, R25W
CITY OF MARQUETTE

N

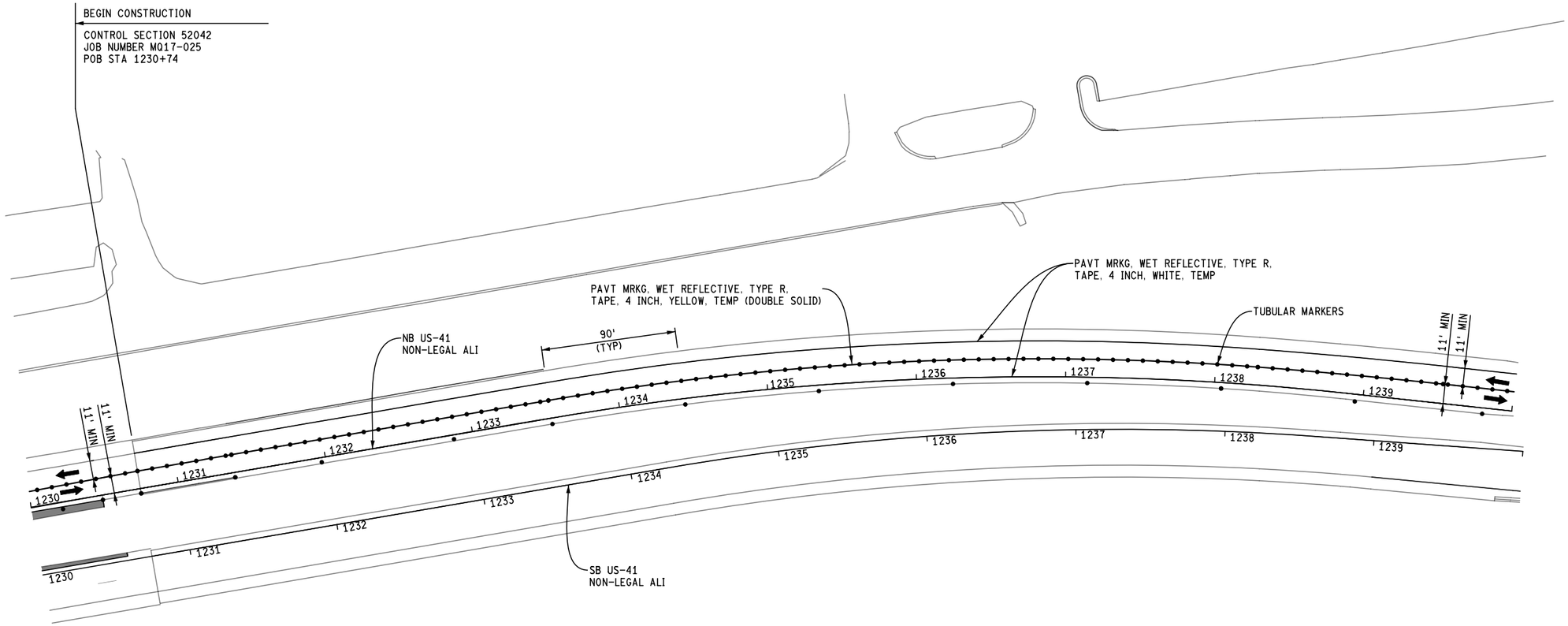
BARAGA AVE

NB US-41/
WB M-28

SB US-41/
EB M-28

BEGIN CONSTRUCTION

CONTROL SECTION 52042
JOB NUMBER MQ17-025
POB STA 1230+74



NB US-41/
EB M-28

SB US-41/
EB M-28

LEGEND

- TUBULAR MARKER
- PLASTIC DRUM, HIGH INTENSITY
- SIGN TYPE _, TEMP, PRISMATIC
- LIGHTED ARROW, TYPE A
- LIGHTED ARROW, TYPE A (CAUTION MODE)
- BARRICADE, TYPE III, HIGH INTENSITY, DOUBLE SIDED
- DIRECTION OF TRAVEL
- WORK AREA
- TEMPORARY, HMA PAVEMENT

NOTE: REMOVE ANY CONFLICTING PAVEMENT MARKINGS.
PAID FOR AS "PAVT MRKG, 6 INCH OR LESS WIDTH, REM"

SECTION 22
T48N, R25W
CITY OF MARQUETTE

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CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 80

FILE: 6553_US41_MTSTG4A_002.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

MAINTENANCE OF TRAFFIC STAGE 4A, 4B & 4C
US-41/M-28
STA 1231+00 TO STA 1240+00

DRAWING	SHEET
US41 MTSTG4A 002	SECT 1 106

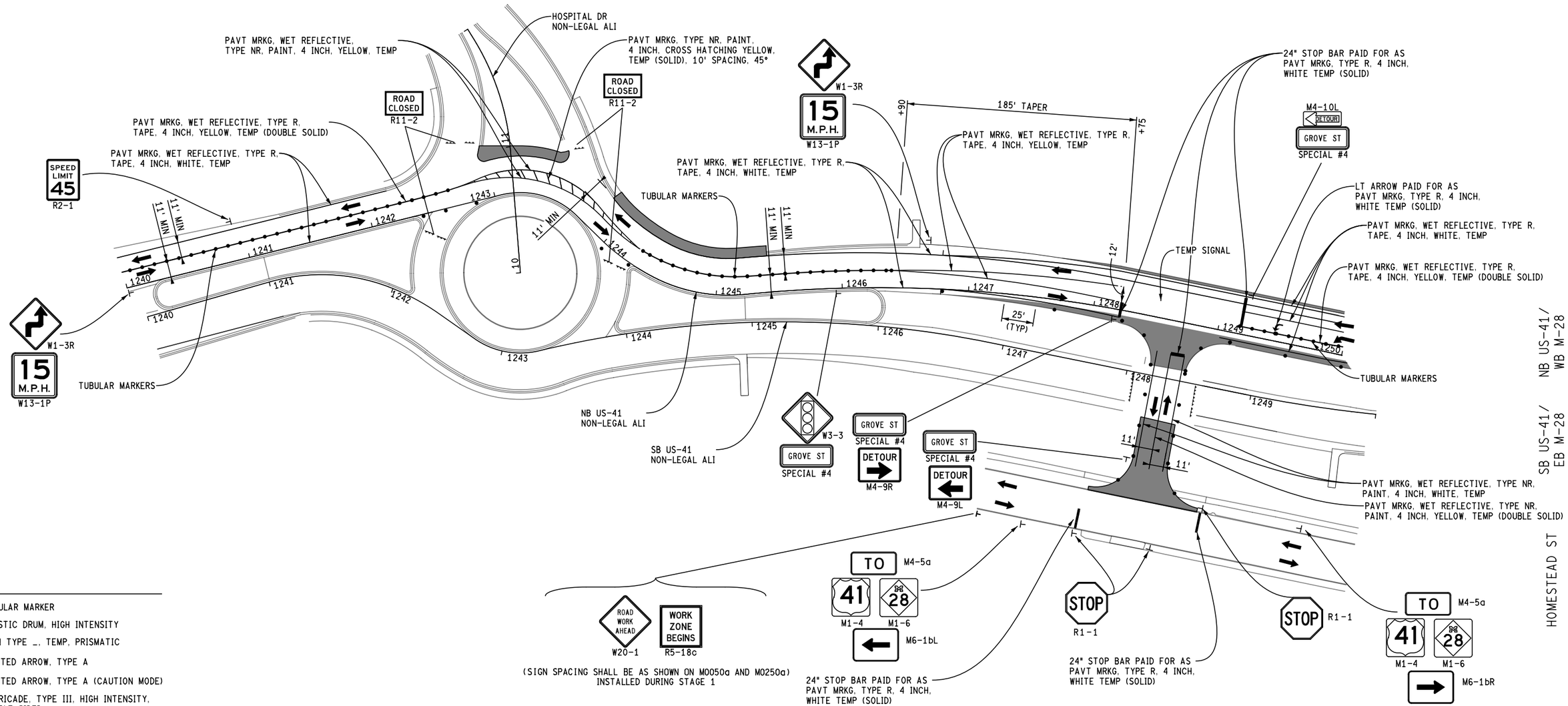
HOSPITAL DR

SECTION 22
T48N, R25W
CITY OF MARQUETTE

NB US-41 / WB M-28

SB US-41 / EB M-28

HOMESTEAD ST



(SIGN SPACING SHALL BE AS SHOWN ON M0050a AND M0250a) INSTALLED DURING STAGE 1

24" STOP BAR PAID FOR AS PAVT MRKG, TYPE R, 4 INCH, WHITE TEMP (SOLID)

24" STOP BAR PAID FOR AS PAVT MRKG, TYPE R, 4 INCH, WHITE TEMP (SOLID)

LEGEND

- TUBULAR MARKER
- PLASTIC DRUM, HIGH INTENSITY
- SIGN TYPE _, TEMP, PRISMATIC
- LIGHTED ARROW, TYPE A
- LIGHTED ARROW, TYPE A (CAUTION MODE)
- BARRICADE, TYPE III, HIGH INTENSITY, DOUBLE SIDED
- DIRECTION OF TRAVEL
- WORK AREA
- TEMPORARY, HMA PAVEMENT

NOTE: REMOVE ANY CONFLICTING PAVEMENT MARKINGS. PAID FOR AS "PAVT MRKG, 6 INCH OR LESS WIDTH, REM"

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)

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CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
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FILE: 6553_US41_MTSTG4A_003.dgn

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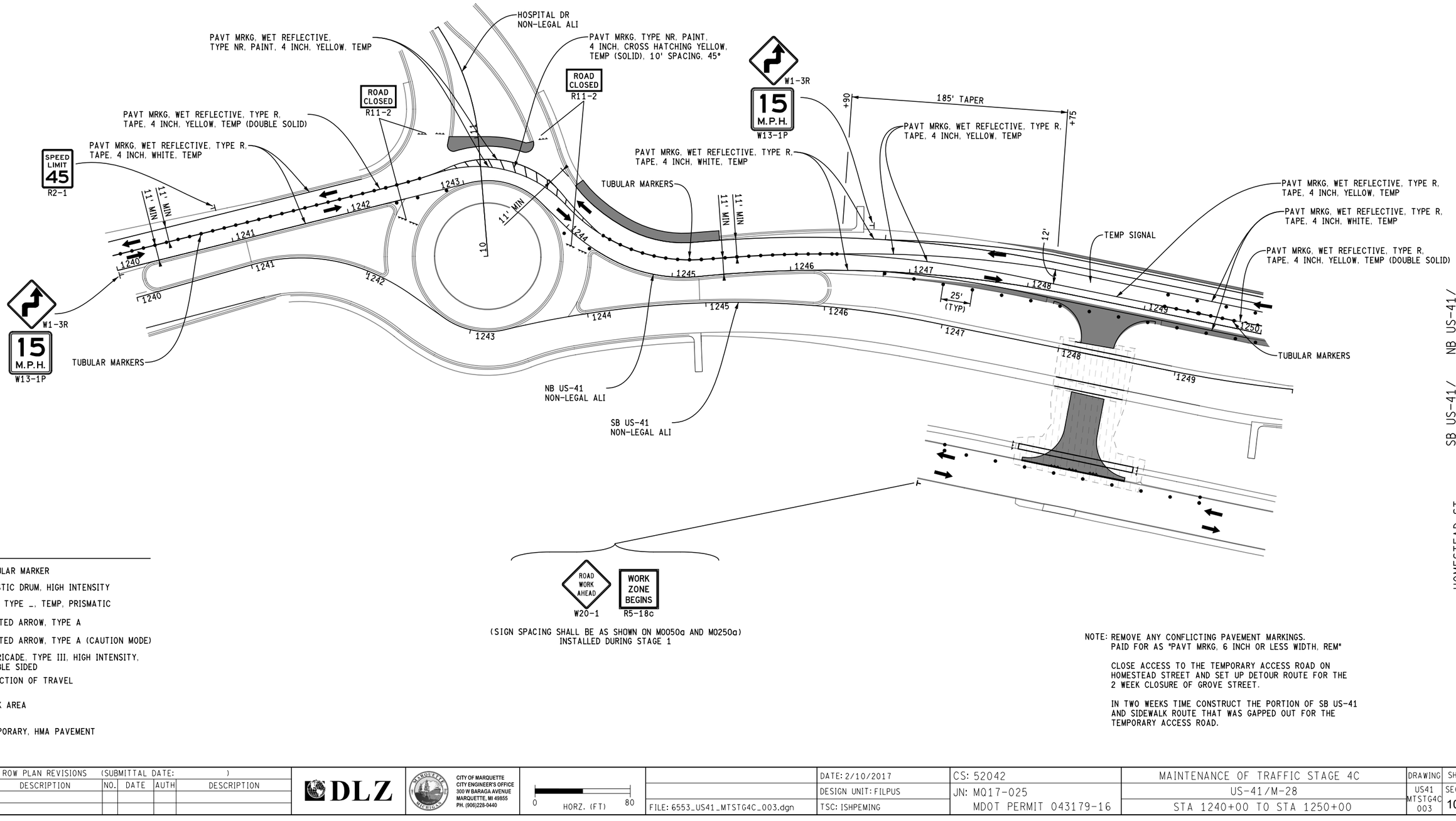
CS: 52042
JN: M017-025
MDOT PERMIT 043179-16

MAINTENANCE OF TRAFFIC STAGE 4A & 4B
US-41/M-28
STA 1240+00 TO STA 1250+00

DRAWING	SHEET
US41 MTSTG4A 003	SECT 1 107

HOSPITAL DR

SECTION 22
T48N, R25W
CITY OF MARQUETTE



LEGEND

- TUBULAR MARKER
- PLASTIC DRUM, HIGH INTENSITY
- SIGN TYPE _, TEMP, PRISMATIC
- LIGHTED ARROW, TYPE A
- LIGHTED ARROW, TYPE A (CAUTION MODE)
- BARRICADE, TYPE III, HIGH INTENSITY, DOUBLE SIDED
- DIRECTION OF TRAVEL
- WORK AREA
- TEMPORARY, HMA PAVEMENT

ROAD WORK AHEAD W20-1

WORK ZONE BEGINS R5-18c

(SIGN SPACING SHALL BE AS SHOWN ON M0050a AND M0250a)
INSTALLED DURING STAGE 1

NOTE: REMOVE ANY CONFLICTING PAVEMENT MARKINGS.
PAID FOR AS "PAVT MRKG, 6 INCH OR LESS WIDTH, REM"

CLOSE ACCESS TO THE TEMPORARY ACCESS ROAD ON HOMESTEAD STREET AND SET UP DETOUR ROUTE FOR THE 2 WEEK CLOSURE OF GROVE STREET.

IN TWO WEEKS TIME CONSTRUCT THE PORTION OF SB US-41 AND SIDEWALK ROUTE THAT WAS GAPPED OUT FOR THE TEMPORARY ACCESS ROAD.

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PH. (906)228-0440

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MAINTENANCE OF TRAFFIC STAGE 4C
US-41/M-28
STA 1240+00 TO STA 1250+00

DRAWING: US41 MTSTG4C 003
SHEET: SECT 1 108

S 7TH ST

ALTAMONT ST

SECTION 23
T48N, R25W
CITY OF MARQUETTE

NB US-41 / WB M-28

SB US-41 / EB M-28

HOMESTEAD ST

PAVT MRKG, TYPE NR, PAINT, 4 INCH, YELLOW, TEMP (SOLID)

GROVE ST/7TH ST NON-LEGAL ALI

PAVT MRKG, TYPE NR, PAINT, 4 INCH, CROSS HATCHING YELLOW, TEMP (SOLID), 10' SPACING, 45°

ONLY ONLY
R3-7e

ROAD CLOSED
R11-2

ROAD CLOSED
R11-2

+25
+20
125' TAPER
+00

11' MIN
11' MIN

26

W1-3R
15 M.P.H.
W13-1P

PAVT MRKG, WET REFLECTIVE, TYPE R, TAPE, 4 INCH, WHITE, TEMP

PAVT MRKG, WET REFLECTIVE, TYPE R, TAPE, 4 INCH, YELLOW, TEMP (DOUBLE SOLID)

TUBULAR MARKERS

1250 1251 1252 1253 1254 1255 1256 1257 1258 1259 1260

24

W3-3
GROVE ST
SPECIAL #4

W1-3R
15 M.P.H.
W13-1P

END CONSTRUCTION

CONTROL SECTION 52042
JOB NUMBER MQ17-025
POE STA 1260+40

PAVT MRKG, WET REFLECTIVE, TYPE R, TAPE, 4 INCH, WHITE, TEMP

PAVT MRKG, WET REFLECTIVE, TYPE R, TAPE, 4 INCH, YELLOW, TEMP (DOUBLE SOLID)

NB US-41 NON-LEGAL ALI

11' MIN
11' MIN

SB US-41 NON-LEGAL ALI

TUBULAR MARKERS

SPEED LIMIT 45
R2-1

TO M4-5a
M1-4 41 M1-6 US 28
M4-9T

STOP
MAINTAIN EXISTING R1-1 SIGN DURING STAGE 3

(SIGN SPACING SHALL BE AS SHOWN ON M0050a AND M0250a)
INSTALLED DURING STAGE 1

ROAD WORK AHEAD W20-1
ONE LANE ROAD AHEAD W20-4
W20-7a
BE PREPARED TO STOP W3-4
WORK ZONE BEGINS R5-18c

ONE LANE ROAD AHEAD W20-4
W20-7a
BE PREPARED TO STOP W3-4

END DETOUR
M4-8a

DETOUR
M4-10L

STOP
MAINTAIN EXISTING R1-1 SIGN DURING STAGE 3

ROAD CLOSED
R11-2

SECTION 22
T48N, R25W
CITY OF MARQUETTE

SECTION 23
T48N, R25W
CITY OF MARQUETTE

BYPASS PUMPING, STORM SEWER

TO M4-5a
M1-4 41 M1-6 US 28
M6-1bL

ROAD CLOSED AHEAD W20-3
ROAD WORK AHEAD W20-1
DETOUR AHEAD W20-2
W20-7a
BE PREPARED TO STOP W3-4
WORK ZONE BEGINS R5-18c

(SIGN SPACING SHALL BE AS SHOWN ON M0050a AND M0250a)
(SEE DETOUR/ADVANCED SIGNING SHEET)
INSTALLED DURING STAGE 1

GROVE ST

ANDERSON ST

LEGEND

- TUBULAR MARKER
- PLASTIC DRUM, HIGH INTENSITY
- SIGN TYPE _, TEMP, PRISMATIC
- LIGHTED ARROW, TYPE A
- LIGHTED ARROW, TYPE A (CAUTION MODE)
- BARRICADE, TYPE III, HIGH INTENSITY, DOUBLE SIDED
- DIRECTION OF TRAVEL
- WORK AREA
- TEMPORARY, HMA PAVEMENT

NOTE: REMOVE ANY CONFLICTING PAVEMENT MARKINGS.
PAID FOR AS "PAVT MRKG, 6 INCH OR LESS WIDTH, REM"

CONSTRUCT THE NORTHERN PORTION OF THE GROVE STREET AND HOMESTEAD STREET INTERSECTION AND CONSTRUCT THE EAST PORTION OF THE FIRST DRIVE ON ANDERSON STREET UTILIZING FLAG CONTROL, TRAFFIC SHIFTS AND MAINTENANCE GRAVEL AS NECESSARY.

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

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CITY ENGINEER'S OFFICE
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MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 80

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JN: MQ17-025
MDOT PERMIT 043179-16

MAINTENANCE OF TRAFFIC STAGE 4A & 4C
US-41/M-28
STA 1250+00 TO STA 1260+41

DRAWING: US41 MTSTG4A 004
SHEET: SECT 1 109

S 7TH ST

ALTAMONT ST

SECTION 23
T48N, R25W
CITY OF MARQUETTE

NB US-41 / WB M-28

SB US-41 / EB M-28

HOMESTEAD ST

PAVT MRKG, TYPE NR, PAINT,
4 INCH, YELLOW, TEMP (SOLID)

GROVE ST/7TH ST
NON-LEGAL ALI

PAVT MRKG, TYPE NR, PAINT,
4 INCH, CROSS HATCHING YELLOW,
TEMP (SOLID), 10' SPACING, 45°

ONLY ONLY
R3-7e

ROAD CLOSED
R11-2

ROAD CLOSED
R11-2

+25
+20
125' TAPER
+00

11' MIN
11' MIN

26

W1-3R
15 M.P.H.
W13-1P

1250
1251
1252
1253

PAVT MRKG, WET REFLECTIVE, TYPE R,
TAPE, 4 INCH, WHITE, TEMP

PAVT MRKG, WET REFLECTIVE, TYPE R,
TAPE, 4 INCH, YELLOW, TEMP (DOUBLE SOLID)

TUBULAR MARKERS

25

W3-3
GROVE ST
SPECIAL #4

W1-3R
15 M.P.H.
W13-1P

1254
1255
1256
1257
1258
1259
1260

END CONSTRUCTION

CONTROL SECTION 52042
JOB NUMBER MQ17-025
POE STA 1260+40

PAVT MRKG, WET REFLECTIVE, TYPE R,
TAPE, 4 INCH, WHITE, TEMP

PAVT MRKG, WET REFLECTIVE, TYPE R,
TAPE, 4 INCH, YELLOW, TEMP (DOUBLE SOLID)

NB US-41
NON-LEGAL ALI

11' MIN
11' MIN

SB US-41
NON-LEGAL ALI

24

1253
1254
1255
1256
1257
1258
1259
1260

TUBULAR MARKERS

SPEED LIMIT 45
R2-1

TO M4-5a
M1-4 41 M1-6 US 28
M4-9T

STOP
MAINTAIN EXISTING
R1-1 SIGN DURING
STAGE 3

(SIGN SPACING SHALL BE AS SHOWN ON M0050a AND M0250a)
INSTALLED DURING STAGE 1

ROAD WORK AHEAD W20-1
ONE LANE ROAD AHEAD W20-4
W20-7a
BE PREPARED TO STOP W3-4
WORK ZONE BEGINS R5-18c

ONE LANE ROAD AHEAD W20-4
W20-7a
BE PREPARED TO STOP W3-4

END DETOUR
M4-8a

DETOUR
M4-10L

40
41
42
43
123
22
21
20

STOP
MAINTAIN EXISTING
R1-1 SIGN DURING
STAGE 3

ROAD CLOSED
R11-2

SECTION 22
T48N, R25W
CITY OF MARQUETTE

SECTION 23
T48N, R25W
CITY OF MARQUETTE

BYPASS PUMPING, STORM SEWER

TO M4-5a
M1-4 41 M1-6 US 28
M6-1bL

ROAD CLOSED AHEAD W20-3
ROAD WORK AHEAD W20-1
DETOUR AHEAD W20-2
W20-7a
BE PREPARED TO STOP W3-4
WORK ZONE BEGINS R5-18c

(SIGN SPACING SHALL BE AS SHOWN ON M0050a AND M0250a)
(SEE DETOUR/ADVANCED SIGNING SHEET)
INSTALLED DURING STAGE 1

GROVE ST

ANDERSON ST

LEGEND

- TUBULAR MARKER
- PLASTIC DRUM, HIGH INTENSITY
- SIGN TYPE _, TEMP, PRISMATIC
- LIGHTED ARROW, TYPE A
- LIGHTED ARROW, TYPE A (CAUTION MODE)
- BARRICADE, TYPE III, HIGH INTENSITY, DOUBLE SIDED
- DIRECTION OF TRAVEL
- WORK AREA
- TEMPORARY, HMA PAVEMENT

NOTE: REMOVE ANY CONFLICTING PAVEMENT MARKINGS.
PAID FOR AS "PAVT MRKG, 6 INCH OR LESS WIDTH, REM"

CONSTRUCT THE SOUTHERN PORTION OF THE GROVE STREET AND HOMESTEAD STREET INTERSECTION AND CONSTRUCT THE WEST PORTION OF THE FIRST DRIVE ON ANDERSON STREET UTILIZING FLAG CONTROL, TRAFFIC SHIFTS AND MAINTENANCE GRAVEL AS NECESSARY.

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 80

FILE: 6553_US41_MTSTG4B_004.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

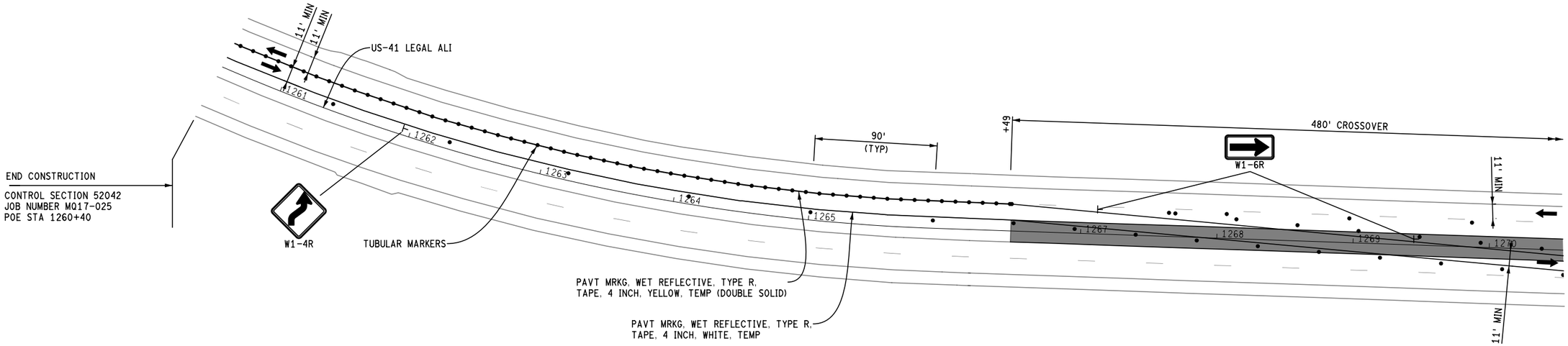
MAINTENANCE OF TRAFFIC STAGE 4B
US-41/M-28
STA 1250+00 TO STA 1260+41

DRAWING: US41 MTSTG4B 004
SHEET: SECT 1 110

SB US-41/ NB US-41/
EB M-28 WB M-28

ALTAMONT ST

SECTION 22
T48N, R25W
CITY OF MARQUETTE



SECTION 23
T48N, R25W
CITY OF MARQUETTE

ALTAMONT ST

N

SB US-41/ NB US-41/
EB M-28 WB M-28

SB US-41/ NB US-41/
EB M-28 WB M-28



SECTION 22
T48N, R25W
CITY OF MARQUETTE

SECTION 23
T48N, R25W
CITY OF MARQUETTE

N

SB US-41/ NB US-41/
EB M-28 WB M-28

LEGEND

- TUBULAR MARKER
- PLASTIC DRUM, HIGH INTENSITY
- SIGN TYPE _, TEMP, PRISMATIC
- LIGHTED ARROW, TYPE A
- LIGHTED ARROW, TYPE A (CAUTION MODE)
- BARRICADE, TYPE III, HIGH INTENSITY, DOUBLE SIDED
- DIRECTION OF TRAVEL
- WORK AREA
- TEMPORARY, HMA PAVEMENT

NOTE: REMOVE ANY CONFLICTING PAVEMENT MARKINGS.
PAID FOR AS "PAVT MRKG, 6 INCH OR LESS WIDTH, REM"

SEE ADVANCE SIGNING SHEETS FOR TEMPORARY SIGNING AND PAVEMENT MARKINGS AT FRONT ST.

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 80

FILE: 6553_US41_MTSTG4A_005.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

MAINTENANCE OF TRAFFIC STAGE 4A, 4B & 4C
US-41/M-28
1260+41 TO EAST CROSS-OVER

DRAWING: US41 MTSTG4A 005
SHEET: SECT 1 111

STAGE 5:

REMOVE THE TEMPORARY SIGNAL AT THE TEMPORARY ACCESS ROAD AND US-41.

ONCE SOUTHBOUND US-41 IS OPEN TO TRAFFIC, MAINTAIN ONE LANE OF TRAFFIC IN EACH DIRECTION ALONG US-41 THROUGH THE NEWLY CONSTRUCTED ROUNDABOUT INTERSECTIONS.

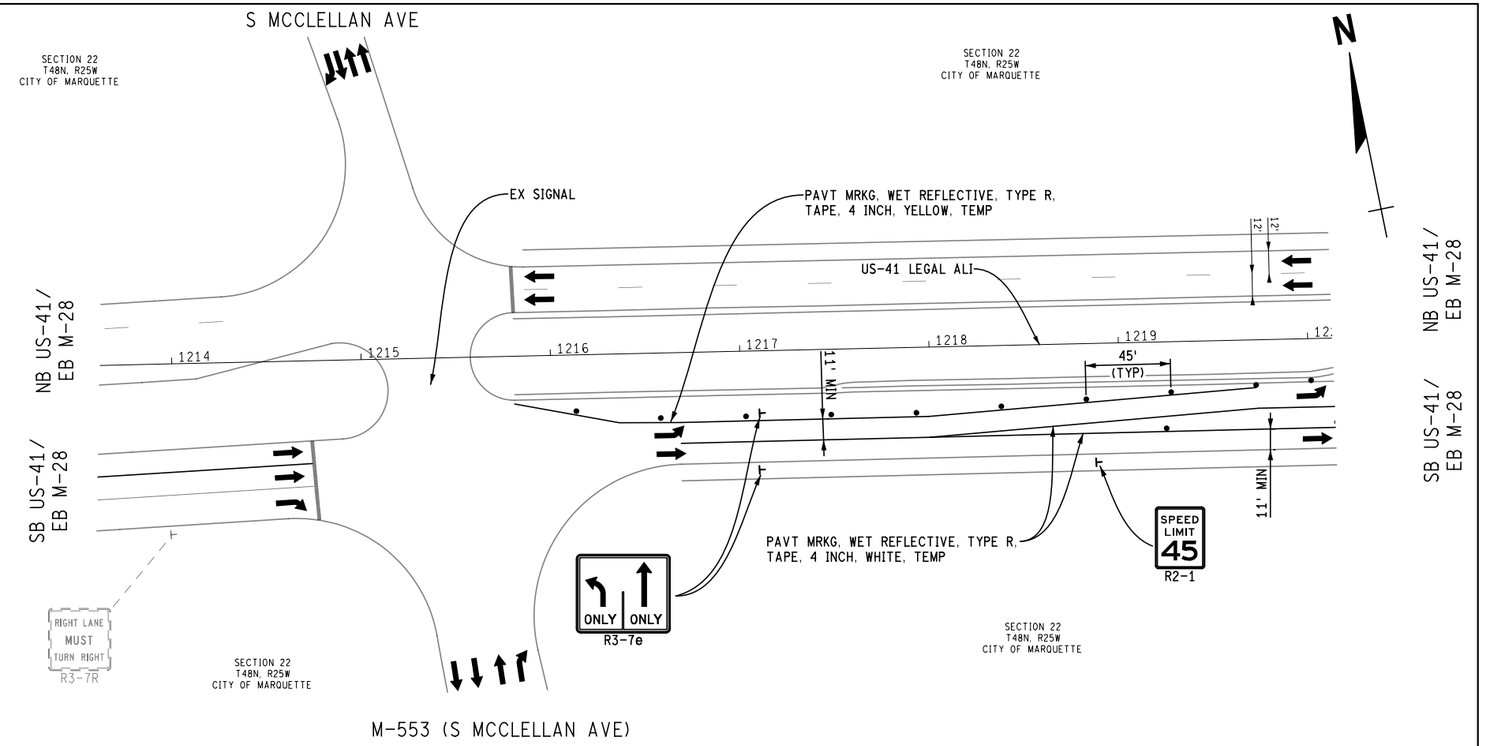
UTILIZE STANDARD LANE DROPS AND LANE SHIFTS ALONG US-41 AND COMPLETE THE CONSTRUCTION WHERE TEMPORARY HMA WAS PLACED.

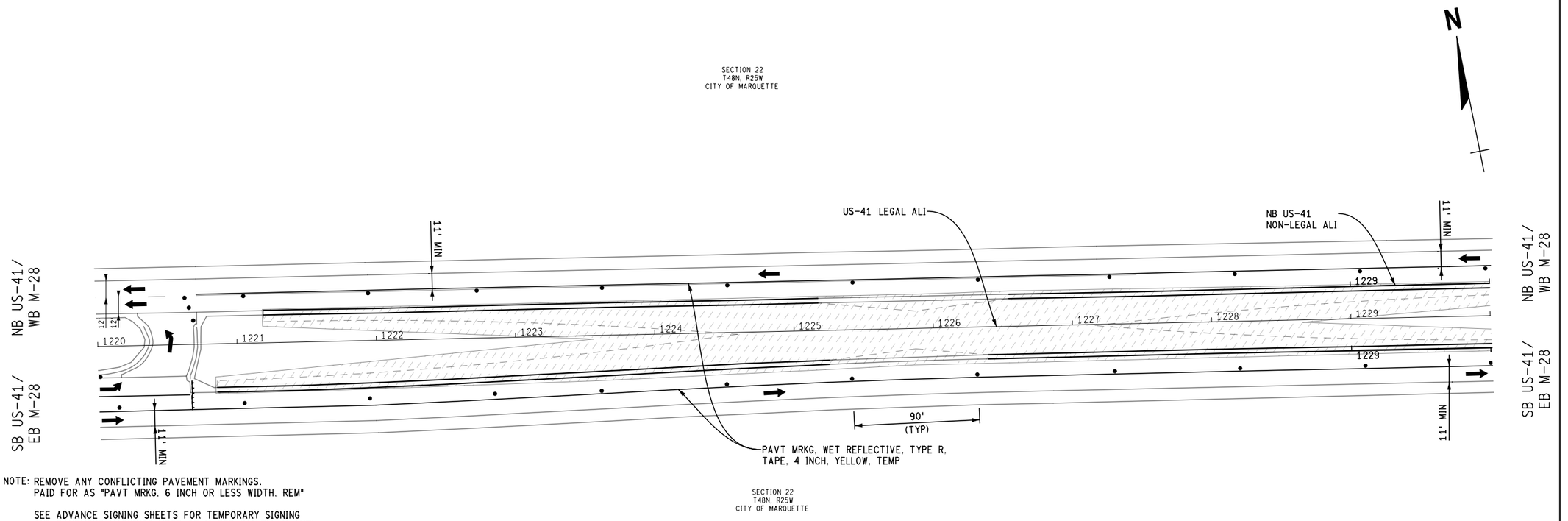
COMPLETE CONSTRUCTION OF THE CURB AND GUTTER AT 7TH STREET AND THE HOSPITAL ENTRANCE DRIVE.

ALL PERMANENT SIGNS REQUIRED FOR ROUNDABOUTS AND ALL PROPOSED LIGHTING WILL BE IN PLACE AND OPERATIONAL PRIOR TO OPENING ROUNDABOUTS.

PLACE REMAINING PERMANENT SIGNING AND PAVEMENT MARKINGS AND PERFORM LANDSCAPING OF THE ROUNDABOUT CENTRAL ISLAND, AND COMPLETE ALL SLOPE RESTORATION WORK.

CONSTRUCTION OPERATIONS WILL BE ALLOWED TO ONE SIDE OF TRAFFIC AT ANY TIME UNLESS AS DIRECTED BY THE ENGINEER.





LEGEND

- TUBULAR MARKER
- PLASTIC DRUM, HIGH INTENSITY
- SIGN TYPE _, TEMP, PRISMATIC
- LIGHTED ARROW, TYPE A
- LIGHTED ARROW, TYPE A (CAUTION MODE)
- BARRICADE, TYPE III, HIGH INTENSITY, DOUBLE SIDED
- DIRECTION OF TRAVEL
- WORK AREA
- TEMPORARY, HMA PAVEMENT

NOTE: REMOVE ANY CONFLICTING PAVEMENT MARKINGS.
PAID FOR AS "PAVT MRKG, 6 INCH OR LESS WIDTH, REM"

SEE ADVANCE SIGNING SHEETS FOR TEMPORARY SIGNING AND PAVEMENT MARKINGS WEST OF M-553 (MCLELLAN AVE)

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

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CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 80

FILE: 6553_US41_MTSTG5_001.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: M017-025
MDOT PERMIT 043179-16

MAINTENANCE OF TRAFFIC STAGE 5
US-41/M-28
M-553 (MCLELLAN AVE) TO STA 1230+00

DRAWING: US41 MTSTG5 001
SHEET: SECT 1 112

SECTION 22
T48N, R25W
CITY OF MARQUETTE

N

BEGIN CONSTRUCTION

CONTROL SECTION 52042
JOB NUMBER MQ17-025
POB STA 1230+74

BARAGA AVE

NB US-41
NON-LEGAL ALI

PAVT MRKG, WET REFLECTIVE, TYPE R, TAPE, 4 INCH, YELLOW, TEMP

NB US-41/
WB M-28

SB US-41/
EB M-28

11' MIN

1230 1231 1232 1233 1234 1235 1236 1237 1238 1239

90' (TYP)

SB US-41
NON-LEGAL ALI

ROUNDABOUT

15 M.P.H.

PERMANENT

SEE SIGNING PLANS FOR PLACEMENT AND INFORMATION

SECTION 22
T48N, R25W
CITY OF MARQUETTE

BARAGA AVE

NB US-41/
EB M-28

SB US-41/
EB M-28

LEGEND

- PLASTIC DRUM, HIGH INTENSITY
- SIGN TYPE _, TEMP, PRISMATIC
- LIGHTED ARROW, TYPE A
- LIGHTED ARROW, TYPE A (CAUTION MODE)
- BARRICADE, TYPE III, HIGH INTENSITY, DOUBLE SIDED
- DIRECTION OF TRAVEL
- WORK AREA
- TEMPORARY, HMA PAVEMENT

NOTE: REMOVE ANY CONFLICTING PAVEMENT MARKINGS.
PAID FOR AS "PAVT MRKG, 6 INCH OR LESS WIDTH, REM"

LIGHTING ALONG SB US-41 NEEDS TO BE ACTIVE PRIOR TO SHIFTING TRAFFIC TO SB FOR STAGE 5.

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
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DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 80

FILE: 6553_US41_MTSTG5_002.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

MAINTENANCE OF TRAFFIC STAGE 5
US-41/M-28
STA 1230+00 TO STA 1240+00

DRAWING	SHEET
US41 MTSTG5 002	SECT 1 113

HOSPITAL DR

SECTION 22
T48N, R25W
CITY OF MARQUETTE

NB US-41 / WB M-28

SB US-41 / EB M-28

HOSPITAL DR
NON-LEGAL ALI

R1-2
PERMANENT
SEE SIGNING PLANS
FOR PLACEMENT AND
INFORMATION

R1-2

PAVT MRKG, WET REFLECTIVE, TYPE R,
TAPE, 4 INCH, YELLOW, TEMP

SPEED LIMIT 45
R2-1

11' MIN

16' MAX

10

25' (TYP)

PAVT MRKG, WET REFLECTIVE, TYPE R,
TAPE, 4 INCH, YELLOW, TEMP

R1-2
PERMANENT
SEE SIGNING PLANS
FOR PLACEMENT AND
INFORMATION

R1-2

R1-2
PERMANENT
SEE SIGNING PLANS
FOR PLACEMENT AND
INFORMATION

PAVT MRKG, WET REFLECTIVE, TYPE R,
TAPE, 4 INCH, WHITE, TEMP

NB US-41
NON-LEGAL ALI

SB US-41
NON-LEGAL ALI

PAVT MRKG, WET REFLECTIVE, TYPE R,
TAPE, 4 INCH, YELLOW, TEMP

ROUNDABOUT
15 M.P.H.
PERMANENT

SEE SIGNING PLANS
FOR PLACEMENT AND
INFORMATION

SECTION 22
T48N, R25W
CITY OF MARQUETTE

NB US-41 / WB M-28

SB US-41 / EB M-28

HOMESTEAD ST

LEGEND

- PLASTIC DRUM, HIGH INTENSITY
- SIGN TYPE _, TEMP, PRISMATIC
- LIGHTED ARROW, TYPE A
- LIGHTED ARROW, TYPE A (CAUTION MODE)
- BARRICADE, TYPE III, HIGH INTENSITY, DOUBLE SIDED
- DIRECTION OF TRAVEL
- WORK AREA
- TEMPORARY, HMA PAVEMENT

NOTE: REMOVE ANY CONFLICTING PAVEMENT MARKINGS.
PAID FOR AS "PAVT MRKG, 6 INCH OR LESS WIDTH, REM"

THE ROUNDABOUT WILL OPERATE AS A SINGLE LANE FACILITY DURING STAGE 5.

LIGHTING ALONG SB US-41 NEEDS TO BE ACTIVE PRIOR TO SHIFTING TRAFFIC TO SB FOR STAGE 5.

ALL PERMANENT SIGNING RELATED TO THE ROUNDABOUT WILL BE INSTALLED PRIOR TO STAGE 5 AS DIRECTED BY THE ENGINEER.

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 80

FILE: 6553_US41_MTSTG5_003.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

MAINTENANCE OF TRAFFIC STAGE 5
US-41/M-28
STA 1240+00 TO STA 1250+00

DRAWING: US41 MTSTG5 003
SHEET: SECT 1 114

S 7TH ST

(SIGN SPACING SHALL BE AS SHOWN ON M0050a AND M0250a)

SECTION 23
T48N, R25W
CITY OF MARQUETTE

ALTAMONT ST

N

ROUNDABOUT

15 M.P.H.

PERMANENT

SEE SIGNING PLANS FOR PLACEMENT AND INFORMATION

R1-2 PERMANENT
SEE SIGNING PLANS FOR PLACEMENT AND INFORMATION

R1-2

ROAD WORK AHEAD
W20-1

WORK ZONE BEGINS
R5-18c

GROVE ST/7TH ST
NON-LEGAL ALI

PAVT MRKG, WET REFLECTIVE, TYPE R, TAPE, 4 INCH, WHITE, TEMP

NB US-41/
WB M-28

SB US-41/
EB M-28

HOMESTEAD ST

11' MIN

16' MAX

25' (TYP)

PAVT MRKG, WET REFLECTIVE, TYPE R, TAPE, 4 INCH, YELLOW, TEMP

R1-2

R1-2 PERMANENT
SEE SIGNING PLANS FOR PLACEMENT AND INFORMATION

END CONSTRUCTION

CONTROL SECTION 52042
JOB NUMBER MQ17-025
POE STA 1260+40

W1-4L

260' LANE SHIFT

NB US-41
NON-LEGAL ALI

SB US-41
NON-LEGAL ALI

90' (TYP)

SPEED LIMIT 45
R2-1

PAVT MRKG, WET REFLECTIVE, TYPE R, TAPE, 4 INCH, YELLOW, TEMP

R1-2 PERMANENT
SEE SIGNING PLANS FOR PLACEMENT AND INFORMATION

STOP

(SIGN SPACING SHALL BE AS SHOWN ON M0050a AND M0250a)
INSTALLED DURING STAGE 1

ROAD WORK AHEAD
W20-1

WORK ZONE BEGINS
R5-18c

SECTION 22
T48N, R25W
CITY OF MARQUETTE

SECTION 23
T48N, R25W
CITY OF MARQUETTE

LEGEND

- PLASTIC DRUM, HIGH INTENSITY
- SIGN TYPE _, TEMP, PRISMATIC
- LIGHTED ARROW, TYPE A
- LIGHTED ARROW, TYPE A (CAUTION MODE)
- BARRICADE, TYPE III, HIGH INTENSITY, DOUBLE SIDED
- DIRECTION OF TRAVEL
- WORK AREA
- TEMPORARY, HMA PAVEMENT

ROAD WORK AHEAD
W20-1

WORK ZONE BEGINS
R5-18c

(SIGN SPACING SHALL BE AS SHOWN ON M0050a AND M0250a)
(SEE DETOUR/ADVANCED SIGNING SHEET)
INSTALLED DURING STAGE 1

GROVE ST

ANDERSON ST

NOTE: REMOVE ANY CONFLICTING PAVEMENT MARKINGS.
PAID FOR AS "PAVT MRKG, 6 INCH OR LESS WIDTH, REM"

THE ROUNDABOUT WILL OPERATE AS A SINGLE LANE FACILITY DURING STAGE 5.

LIGHTING ALONG SB US-41 NEEDS TO BE ACTIVE PRIOR TO SHIFTING TRAFFIC TO SB FOR STAGE 5.

ALL PERMANENT SIGNING RELATED TO THE ROUNDABOUT WILL BE INSTALLED PRIOR TO STAGE 5 AS DIRECTED BY THE ENGINEER.

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

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CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 80

FILE: 6553_US41_MTSTG5_004.dgn

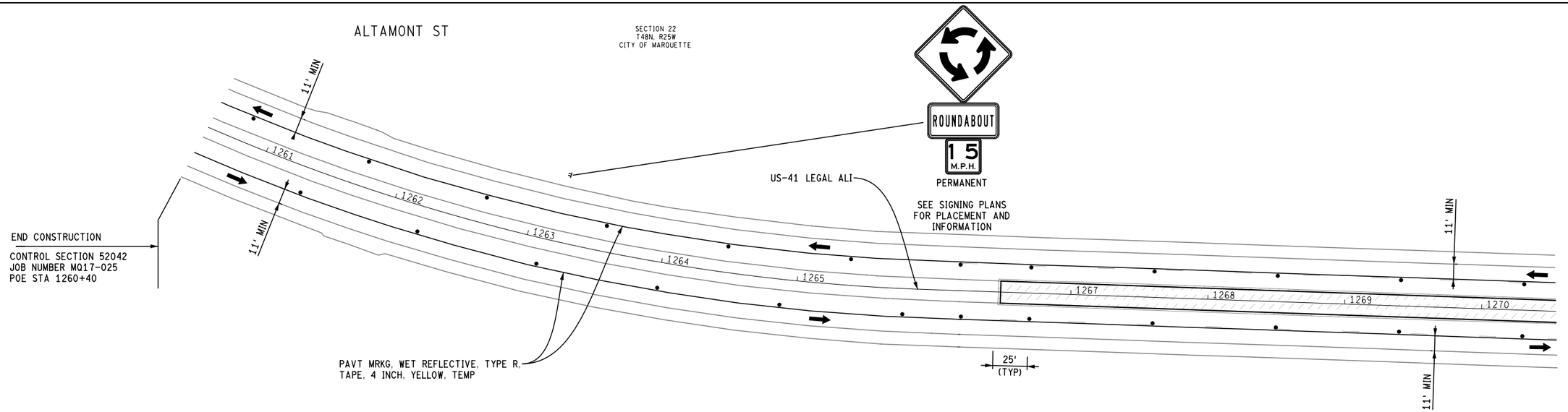
DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

MAINTENANCE OF TRAFFIC STAGE 5
US-41/M-28
STA 1250+00 TO STA 1260+40.04

DRAWING: US41 MTSTG5 004
SHEET: SECT 1 115

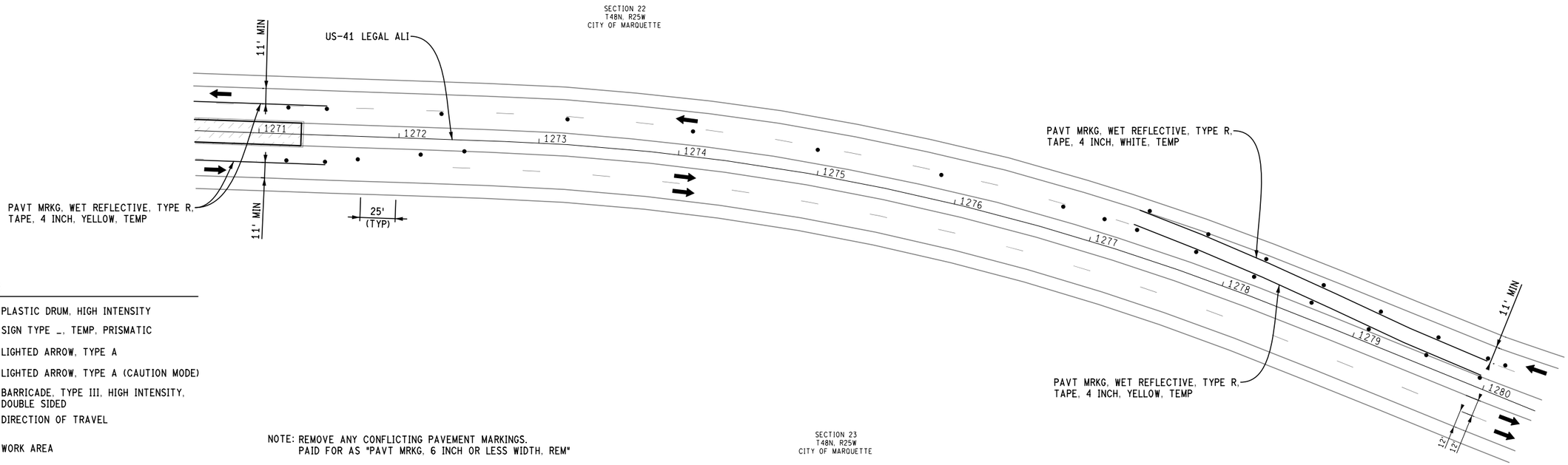
SB US-41/ NB US-41/
EB M-28 WB M-28



N

SB US-41/ NB US-41/
EB M-28 WB M-28

SB US-41/ NB US-41/
EB M-28 WB M-28



N

SB US-41/ NB US-41/
EB M-28 WB M-28

LEGEND

- PLASTIC DRUM, HIGH INTENSITY
- SIGN TYPE _, TEMP, PRISMATIC
- LIGHTED ARROW, TYPE A
- LIGHTED ARROW, TYPE A (CAUTION MODE)
- BARRICADE, TYPE III, HIGH INTENSITY, DOUBLE SIDED
- DIRECTION OF TRAVEL
- WORK AREA
- TEMPORARY, HMA PAVEMENT

NOTE: REMOVE ANY CONFLICTING PAVEMENT MARKINGS. PAID FOR AS "PAVT MRKG, 6 INCH OR LESS WIDTH, REM"

SEE ADVANCE SIGNING SHEETS FOR TEMPORARY SIGNING AND PAVEMENT MARKINGS AT FRONT ST.

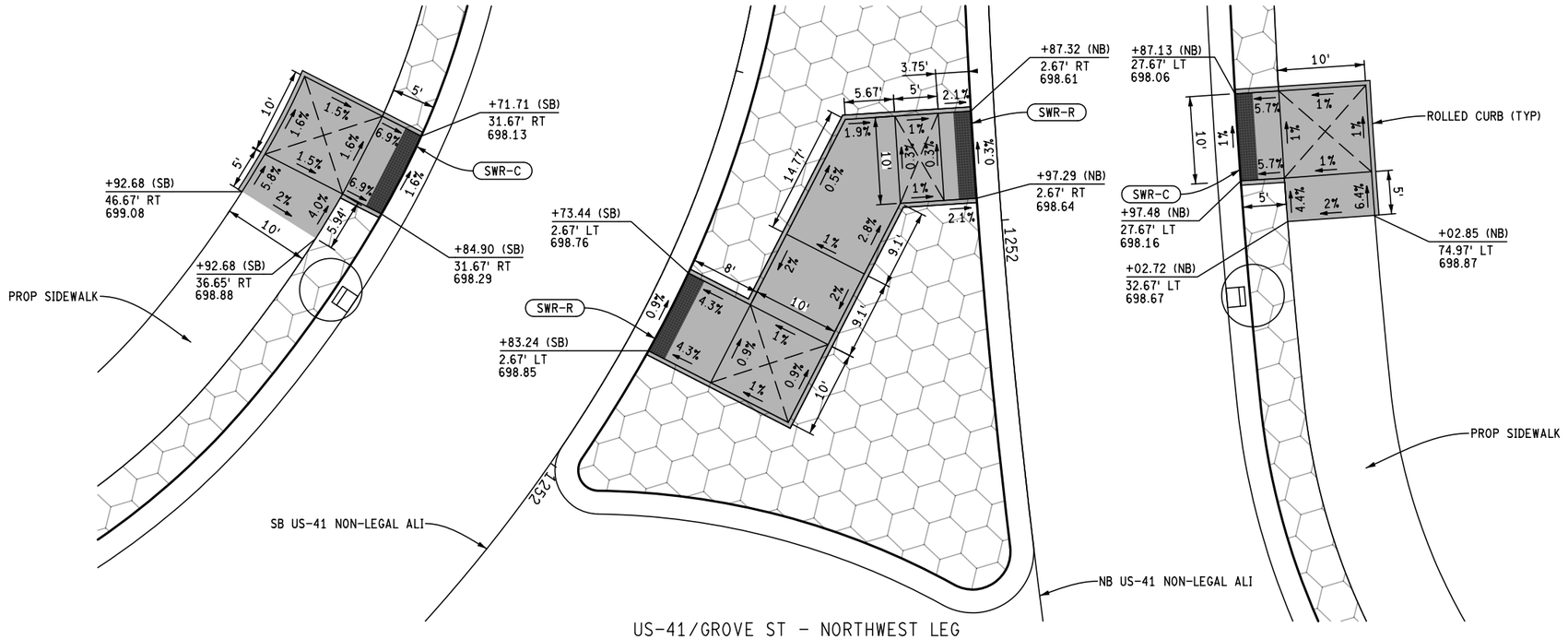
FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

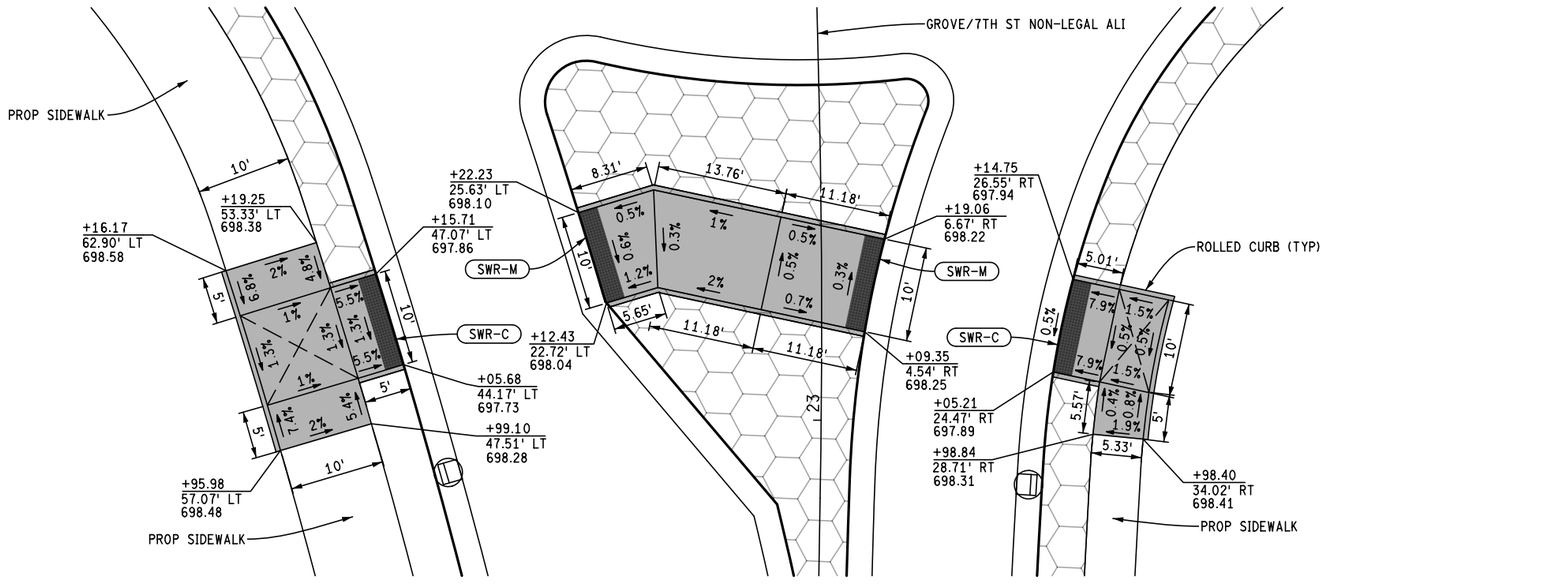
CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 80

	DATE: 2/10/2017	CS: 52042	MAINTENANCE OF TRAFFIC STAGE 5	DRAWING	SHEET
	DESIGN UNIT: FILPUS	JN: MQ17-025	US-41/M-28	US41 MTSTG5 005	SECT 1 116
FILE: 6553_US41_MTSTG5_005.dgn	TSC: ISHPEMING	MDOT PERMIT 043179-16	1260+40.04 TO EAST CROSS-OVER		



US-41/GROVE ST - NORTHWEST LEG



US-41/GROVE ST - SOUTHWEST LEG

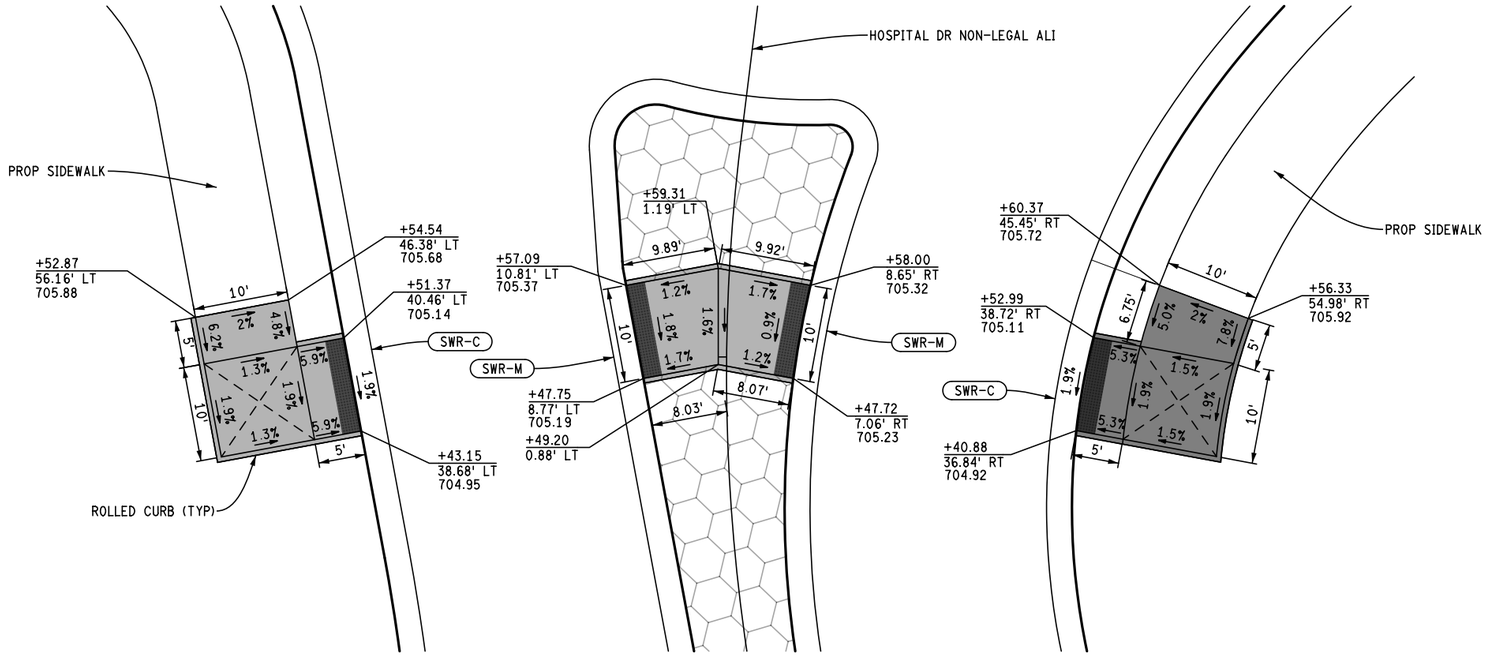
FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

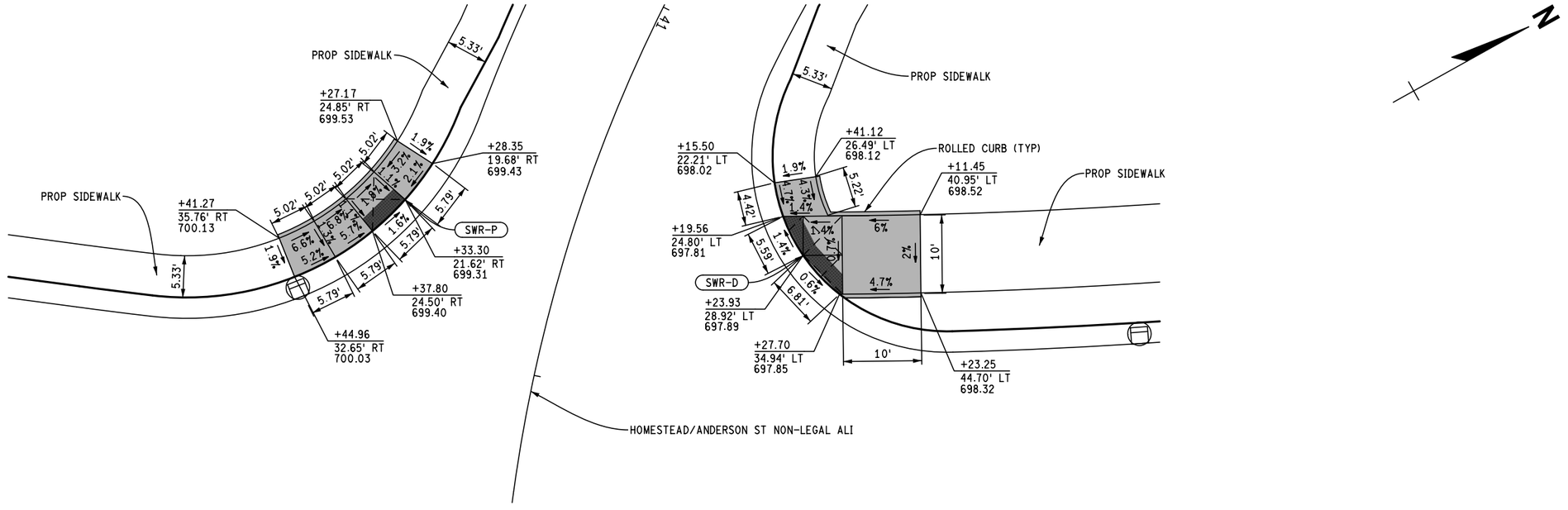
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CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 16

	DATE: 2/10/2017	CS: 52042	DETAIL GRADES	DRAWING	SHEET
	DESIGN UNIT: FILPUS	JN: MQ17-025	SIDEWALK RAMPS	US41 DETGRD 001	SECT 1 117
FILE: 6553_DETGRD001.dgn	TSC: ISHPEMING	MDOT PERMIT 043179-16			



HOSPITAL DR/BARAGA AVE – SOUTH LEG



GROVE ST/HOMESTEAD ST – NORTHWEST LEG

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

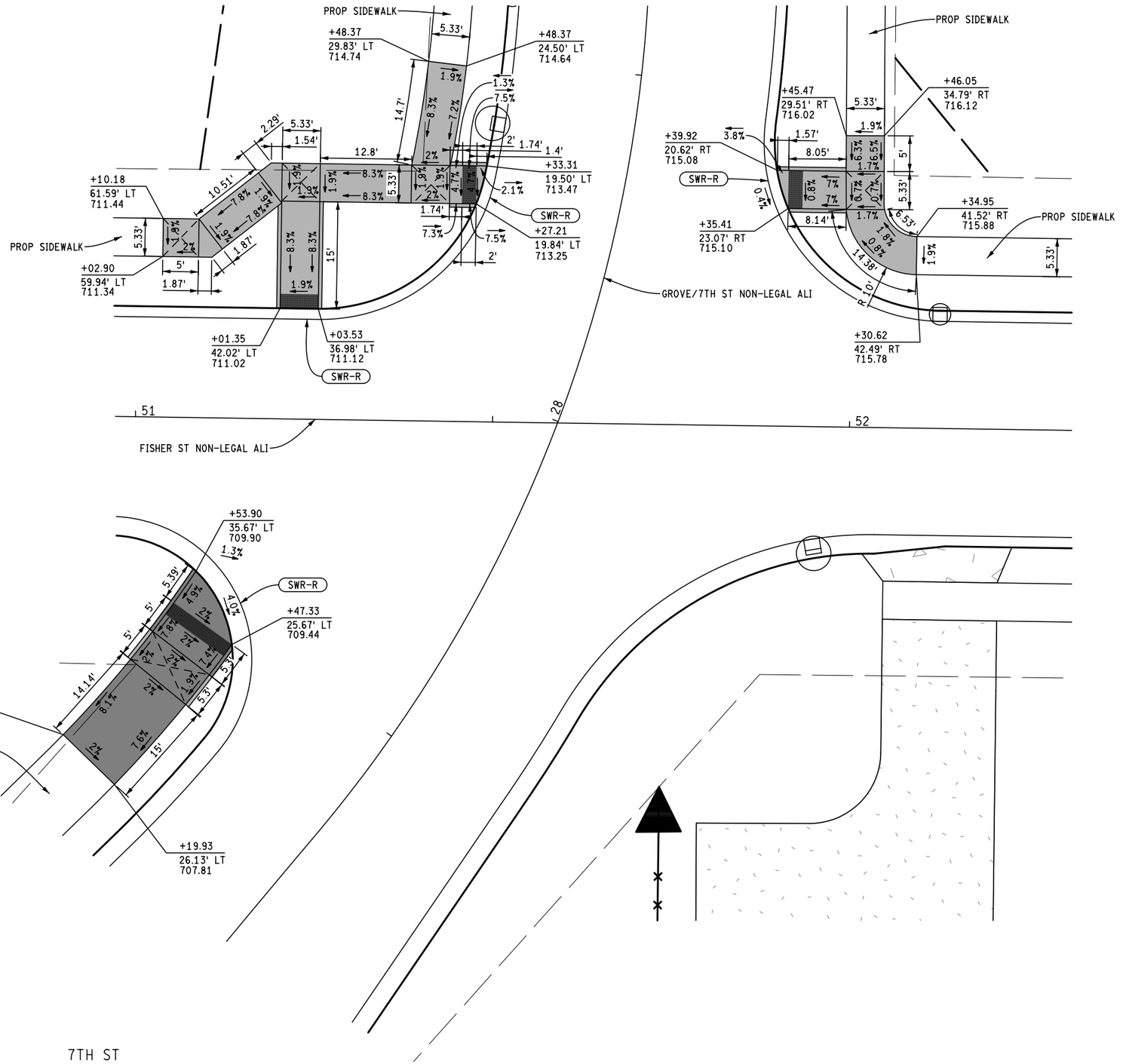
0 HORZ. (FT) 16

	DATE: 2/10/2017	CS: 52042	DETAIL GRADES	DRAWING	SHEET
	DESIGN UNIT: FILPUS	JN: MQ17-025	SIDEWALK RAMPS	US41 DETGRD 002	SECT 1
FILE: 6553_DETGRD002.dgn	TSC: ISHPEMING	MDOT PERMIT 043179-16			118

7TH ST

FISHER ST

FISHER ST



NOTE: POINTS STATIONED OFF GROVE/7TH ST NON-LEGAL ALI

7TH ST

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

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CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 16

FILE: 6553_DETGRD003.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

DETAIL GRADES
SIDEWALK RAMPS

DRAWING	SHEET
US41 DETGRD 003	SECT 1 119

HOMESTEAD ST

GROVE ST

GROVE ST

ANDERSON ST

698.60
22+08.16
50.23' LT

699.21
22+04.63
39.61' LT

699.47
21+94.82
27.11' LT

699.68
21+90.36
23.88' LT

700.13
21+82.26
20.10' LT

700.69
21+71.35
18.19' LT

699.50
21+99.98
19.85' LT

699.29
22+04.72
28.00' LT

698.87
22+15.27
29.18' LT

698.81
22+20.56
22.13' LT

696.96
22+12.99
71.16' LT

697.65
22+10.51
61.48' LT

697.28
22+27.70
66.75' LT

697.64
22+25.48
57.77' LT

698.08
22+23.40
47.33' LT

698.76
22+14.09
39.11' LT

698.36
22+22.28
40.20' LT

698.12
22+32.17
41.72' LT

698.29
22+33.73
31.85' LT

698.01
22+46.44
34.14' LT

698.23
22+42.41
25.58' LT

698.62
22+21.11
29.94' LT

HOMESTEAD NON-LEGAL ALI

GROVE ST NON-LEGAL ALI

696.96
22+42.48
62.50' LT

697.37
22+41.72
53.93' LT

697.78
22+43.94
45.35' LT

697.89
22+53.61
34.50' LT

697.77
22+64.62
31.18' LT

698.32
22+70.33
2.46' LT

698.35
22+67.14
1.84' RT

698.24
22+71.09
5.46' RT

698.02
22+62.13
21.01' RT

697.95
22+70.94
19.93' RT

698.17
22+51.87
25.93' RT

698.45
22+43.46
35.18' RT

698.75
22+39.61
46.09' RT

698.90
22+39.36
51.82' RT

700.51
21+75.27
18.08' RT

699.45
22+02.40
18.35' RT

699.85
21+89.74
21.72' RT

699.22
21+98.15
28.22' RT

698.88
22+03.69
36.83' RT

698.86
22+21.36
18.66' RT

698.86
22+21.73
27.45' RT

698.43
22+39.24
19.04' RT

698.93
22+22.10
36.20' RT

699.10
22+22.56
46.88' RT

699.22
22+22.80
52.47' RT

698.78
22+06.05
47.46' RT

698.90
22+06.22
52.93' RT

21 22 23 41 42

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

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CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 20

	DATE: 2/10/2017	CS: 52042	DETAIL GRADES	DRAWING	SHEET
	DESIGN UNIT: FILPUS	JN: MQ17-025	GROVE ST/HOMESTEAD ST/ANDERSON ST	US41 DETGRD 004	SECT 1 120
FILE: 6553_DETGRD004.dgn	TSC: ISHPEMING	MDOT PERMIT 043179-16			

FISHER ST

7TH ST

7TH ST

N

708.29
27+79.86
74.76' LT

710.16
27+91.93
56.47' LT

708.57
27+60.69
68.09' LT

710.82
27+96.99
46.92' LT

709.30
27+86.30
65.67' LT

708.29
27+43.51
60.34' LT

710.99
27+98.94
42.86' LT

709.40
27+68.05
59.44' LT

710.03
27+74.55
50.61' LT

709.12
27+51.48
52.14' LT

710.92
27+93.86
36.14' LT

711.14
28+01.80
36.49' LT

709.80
27+57.12
43.01' LT

710.49
27+80.46
41.42' LT

710.79
27+90.97
41.87' LT

711.68
28+06.45
29.24' LT

709.93
27+57.20
35.67' LT

710.31
27+72.40
39.00' LT

712.42
28+12.09
24.21' LT

710.09
27+63.58
37.10' LT

710.39
27+75.67
33.46' LT

710.11
27+67.30
31.73' LT

710.25
27+69.87
27.75' LT

710.70
27+84.71
33.98' LT

GROVE ST NON-LEGAL ALI

709.78
27+60.41
24.45' LT

711.10
27+88.75
26.16' LT

707.82
27+32.84
18.00' LT

709.35
27+50.61
24.74' LT

712.80
28+15.49
18.00' LT

713.46
28+31.96
18.00' LT

708.68
27+43.51
20.20' LT

709.01
27+50.61
18.00' LT

710.01
27+65.35
18.00' LT

711.69
27+92.55
18.00' LT

713.11
28+23.46
19.05' LT

710.68
27+75.65
18.00' LT

27

28

29

715.01
28+46.11
18.00' RT

711.09
27+65.35
18.00' RT

714.27
28+24.56
18.00' RT

712.76
27+92.55
18.00' RT

713.44
28+05.74
18.00' RT

715.06
28+32.37
23.81' RT

713.99
28+17.87
18.00' RT

714.52
28+31.37
18.00' RT

713.63
28+00.05
27.89' RT

714.48
28+10.93
36.73' RT

711.83
27+75.65
19.59' RT

713.82
28+07.76
24.93' RT

715.09
28+27.27
31.81' RT

713.45
27+92.55
31.19' RT

714.56
28+00.93
47.94' RT

714.74
28+19.01
34.07' RT

715.07
28+25.60
39.27' RT

716.38
27+56.48
46.62' RT

716.06
27+62.02
42.37' RT

716.33
27+68.43
55.98' RT

716.85
27+48.52
53.33' RT

714.17
27+98.76
41.59' RT

716.79
27+78.86
60.15' RT

715.31
28+14.30
50.81' RT

716.38
27+63.07
60.01' RT

715.01
28+25.99
47.15' RT

716.60
27+55.34
66.38' RT

715.16
27+92.19
52.47' RT

715.01
28+02.98
55.30' RT

716.79
27+73.03
60.75' RT

FISHER ST
NON-LEGAL ALI

716.43
27+58.80
73.65' RT

717.23
27+76.78
70.43' RT

717.17
27+72.34
82.63' RT

717.05
27+81.50
67.36' RT

716.44
27+48.17
88.50' RT

716.10
27+96.70
67.36' RT

716.85
27+69.76
75.49' RT

717.37
27+83.99
74.61' RT

716.32
27+50.07
92.48' RT

716.91
27+65.09
88.38' RT

716.69
27+62.21
81.40' RT

717.55
27+79.38
77.62' RT

716.48
27+53.15
99.25' RT

FISHER ST

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

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CITY ENGINEER'S OFFICE
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MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 20

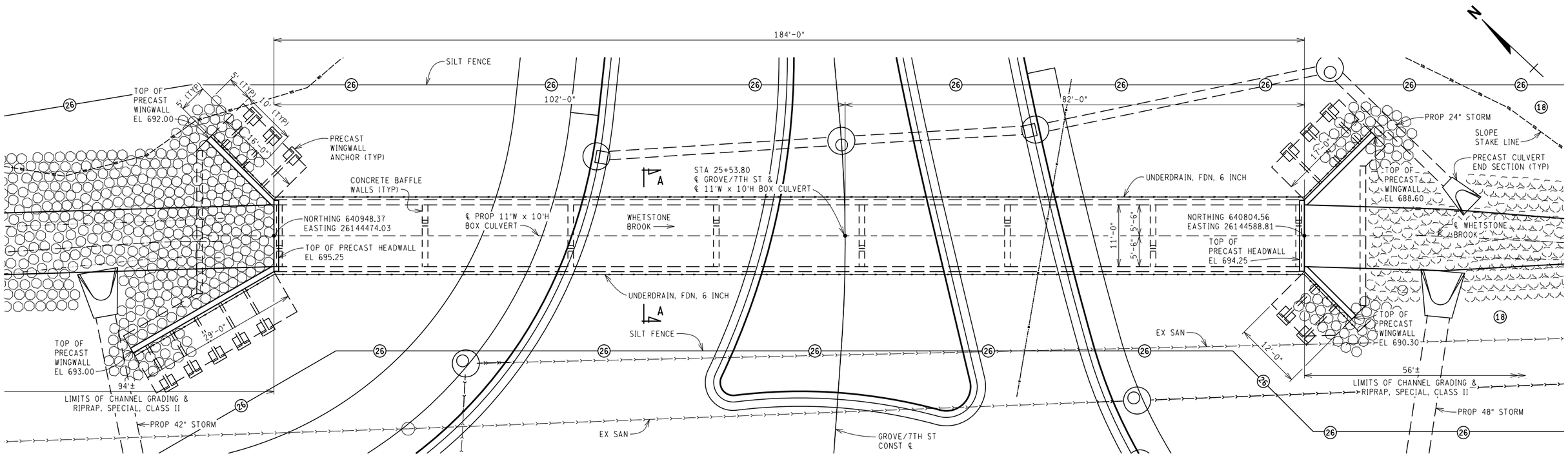
FILE: 6553_DETGRD005.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

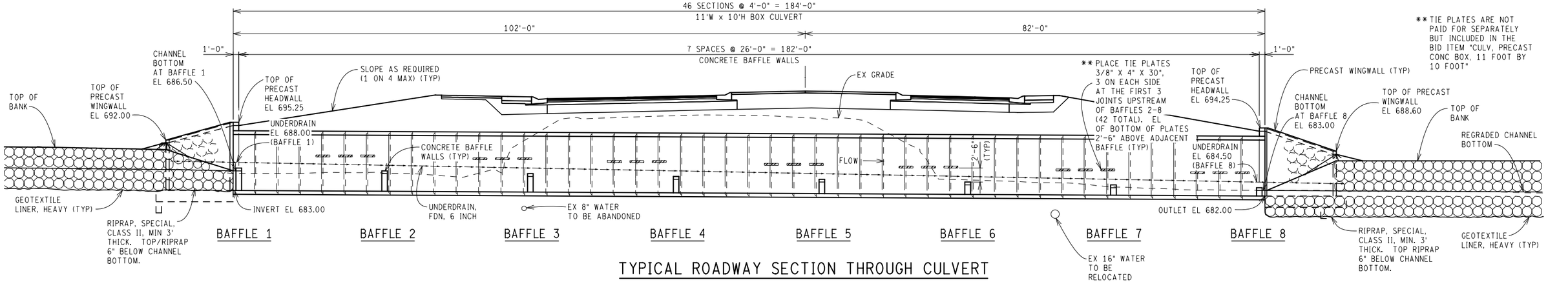
CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

DETAIL GRADES
7TH ST/FISHER ST

DRAWING: US41 DETGRD 005
SHEET: SECT 1 121



PLAN



** TIE PLATES ARE NOT PAID FOR SEPARATELY BUT INCLUDED IN THE BID ITEM "CULV, PRECAST CONC BOX, 11 FOOT BY 10 FOOT"

TYPICAL ROADWAY SECTION THROUGH CULVERT

SUMMARY OF HYDRAULIC ANALYSIS

	EXISTING			PROPOSED			
FLOOD DATA	DIS-CHARGE (CFS)	WATER SURFACE ELEV. AT U/S FACE OF STRUCTURE	VELOCITY AT D/S FACE (FPS)	WATER SURFACE ELEV. AT U/S FACE OF STRUCTURE	VELOCITY AT D/S FACE (FPS)	WATERWAY AREA (SFT) AT D/S FACE	CHANGE IN WS EL 105' U/S OF PROPOSED STRUCTURE
50 YEAR	220	692.77	13.3	689.69	5.1	43.1	-1.69
100 YEAR	290	696.45	17.8	690.31	5.7	50.5	-4.65
MAXIMUM BRIDGE AREA BELOW LOW CHORD IS 110 SQUARE FEET							

THE WATER SURFACE AND/OR ENERGY GRADE ELEVATIONS SHOWN ON THE ABOVE HYDRAULIC TABLE ARE TO BE USED FOR COMPARISON PURPOSES ONLY AND ARE NOT TO BE USED FOR ESTABLISHING A REGULATORY FLOODPLAIN. THE ELEVATIONS MAY BE USED PROVIDED THEY ARE VERIFIED WITH THE LAND AND WATER MANAGEMENT DIVISION, MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY.

EROSION AND SEDIMENTATION CONTROL MEASURES

	KEY NO.
Riprap, Special, Class II	(7)
* Erosion Control, Filter Bag	(18)
* Erosion Control, Silt Fence	(26)

* PLACE AS DIRECTED BY THE ENGINEER

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

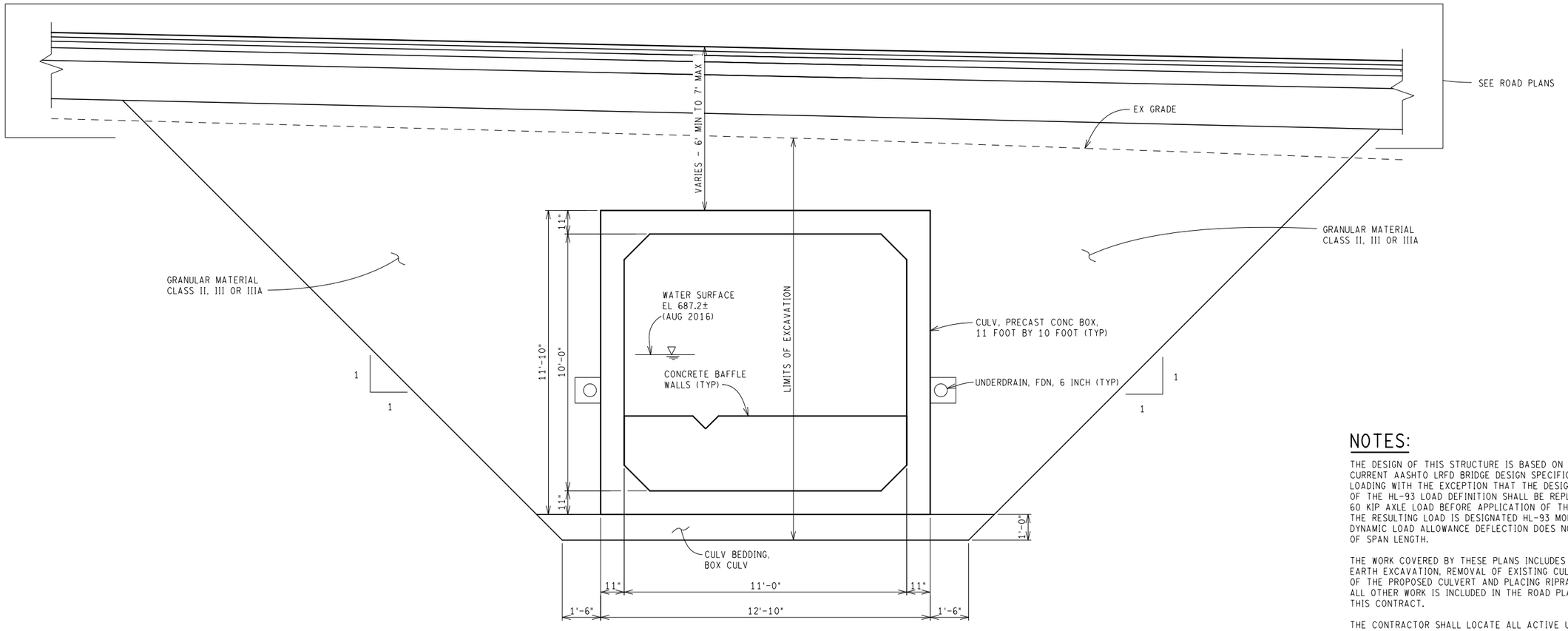
DLZ

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CITY ENGINEER'S OFFICE
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MARQUETTE, MI 49855
PH. (906)228-0440

NO SCALE

DRAWN BY: DAF	DATE: 2/7/2017 7:16:28 AM	CS: 52042	GROVE ST PROP BOX CULVERT
CHK'D BY:	DESIGN UNIT: FILPUS	JN: MQ17-025	GENERAL PLAN OF STRUCTURE
FILE: 6553 US41 Grove St Box Culvert.dgn	TSC: ISHPEMING	MDOT PERMIT 043179-16	

DRAWING: US41 | SHEET: SECT 1 | 122



SECTION A-A

NOTES:

THE DESIGN OF THIS STRUCTURE IS BASED ON 1.2 TIMES THE CURRENT AASHTO LRFD BRIDGE DESIGN SPECIFICATION HL-93 LOADING WITH THE EXCEPTION THAT THE DESIGN TANDEM PORTION OF THE HL-93 LOAD DEFINITION SHALL BE REPLACED BY A SINGLE 60 KIP AXLE LOAD BEFORE APPLICATION OF THIS 1.2 FACTOR. THE RESULTING LOAD IS DESIGNATED HL-93 MOD. LIVE LOAD PLUS DYNAMIC LOAD ALLOWANCE DEFLECTION DOES NOT EXCEED 1/800 OF SPAN LENGTH.

THE WORK COVERED BY THESE PLANS INCLUDES CHANNEL EXCAVATION, EARTH EXCAVATION, REMOVAL OF EXISTING CULVERT, CONSTRUCTION OF THE PROPOSED CULVERT AND PLACING RIPRAP TO THE LIMITS SHOWN. ALL OTHER WORK IS INCLUDED IN THE ROAD PLANS THAT ARE PART OF THIS CONTRACT.

THE CONTRACTOR SHALL LOCATE ALL ACTIVE UNDERGROUND UTILITIES PRIOR TO STARTING WORK AND SHALL CONDUCT HIS OPERATIONS IN SUCH A MANNER AS TO ENSURE THAT THOSE UTILITIES NOT REQUIRING RELOCATION WILL NOT BE DISTURBED.

THE VERTICAL CONTROL FOR THIS PROJECT WAS DETERMINED BY USING BM R329. ALL INTERMEDIATE CONTROL POINTS HAVE ELEVATIONS AND SHOULD BE USED AS THE BASIS OF ELEVATION FOR THIS PROJECT.

WATER LEVEL IS SUBJECT TO CHANGE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING A DETERMINATION OF WATER LEVELS THAT MAY EXIST DURING CONSTRUCTION.

IMMEDIATELY AFTER CONSTRUCTION OF A CULVERT WINGWALL IS COMPLETED, RIPRAP, SPECIAL SHALL BE PLACED ON THE ADJACENT EMBANKMENT SLOPES.

TOP OF RIPRAP ELEVATIONS SHALL BE AT OR BELOW EXISTING STREAMBED OR EXISTING GROUND ELEVATIONS.

GEOTEXTILE LINER SHALL BE PLACED ON ALL SLOPES PRIOR TO PLACING RIPRAP. PAYMENT FOR GEOTEXTILE LINER SHALL BE INCLUDED IN PAYMENT FOR RIPRAP, SPECIAL.

BROKEN CONCRETE SHALL NOT BE USED FOR RIPRAP, SPECIAL.

7TH STREET/GROVE STREET TRAFFIC WILL BE DETOURED OVER OTHER EXISTING ROADS.

FOR LIMITS OF RIPRAP, SPECIAL, CLASS II AND EXCAVATION, CHANNEL SEE DRAWING 'GRADE-CHANNEL-002'.

OVERHEAD UTILITIES PRESENT (SEE ROAD PLANS). CONTRACTOR SHALL TAKE CARE NOT TO DISTURB OVERHEAD UTILITIES DURING CONSTRUCTION OPERATIONS.

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

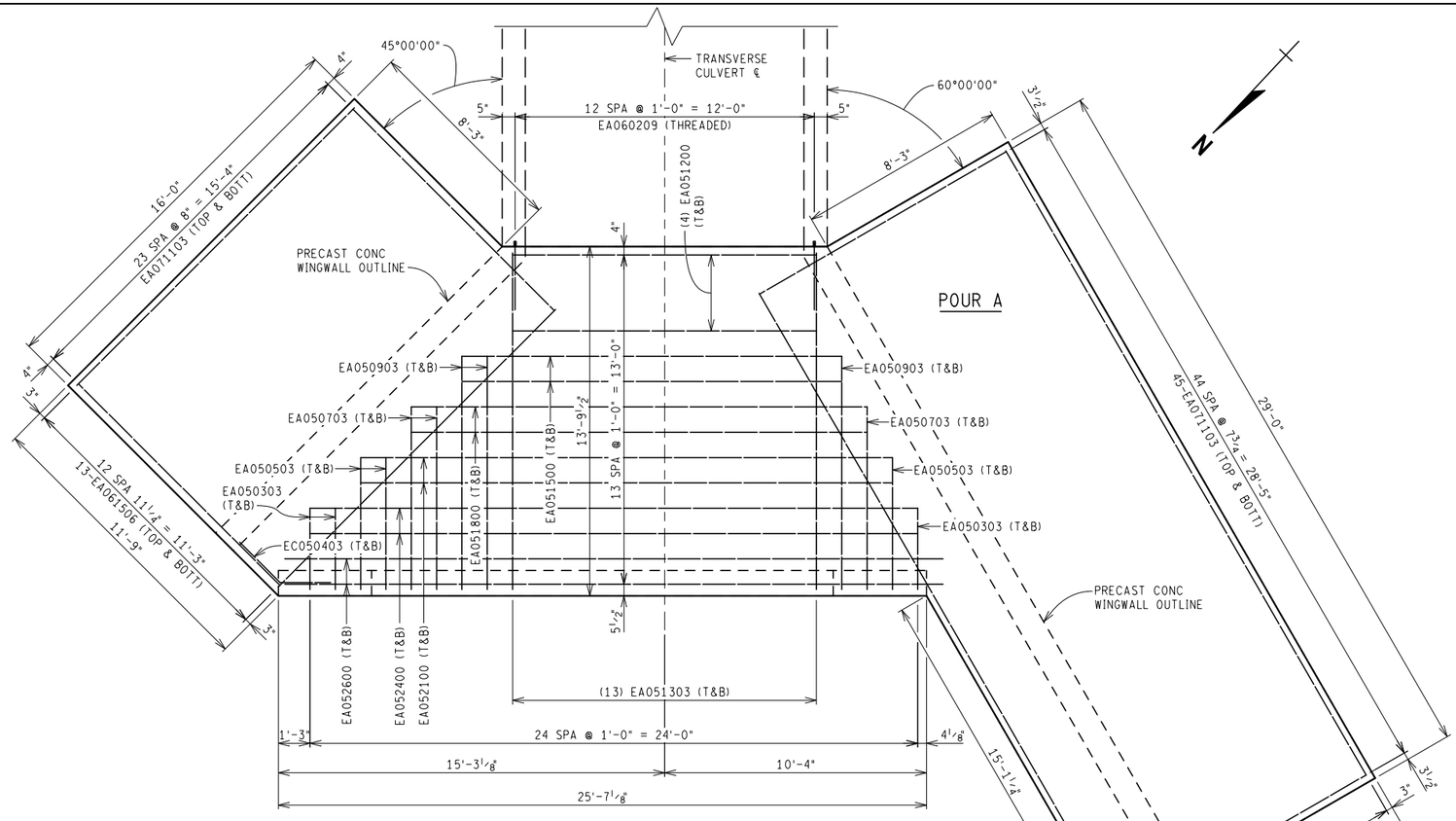
DLZ

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CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

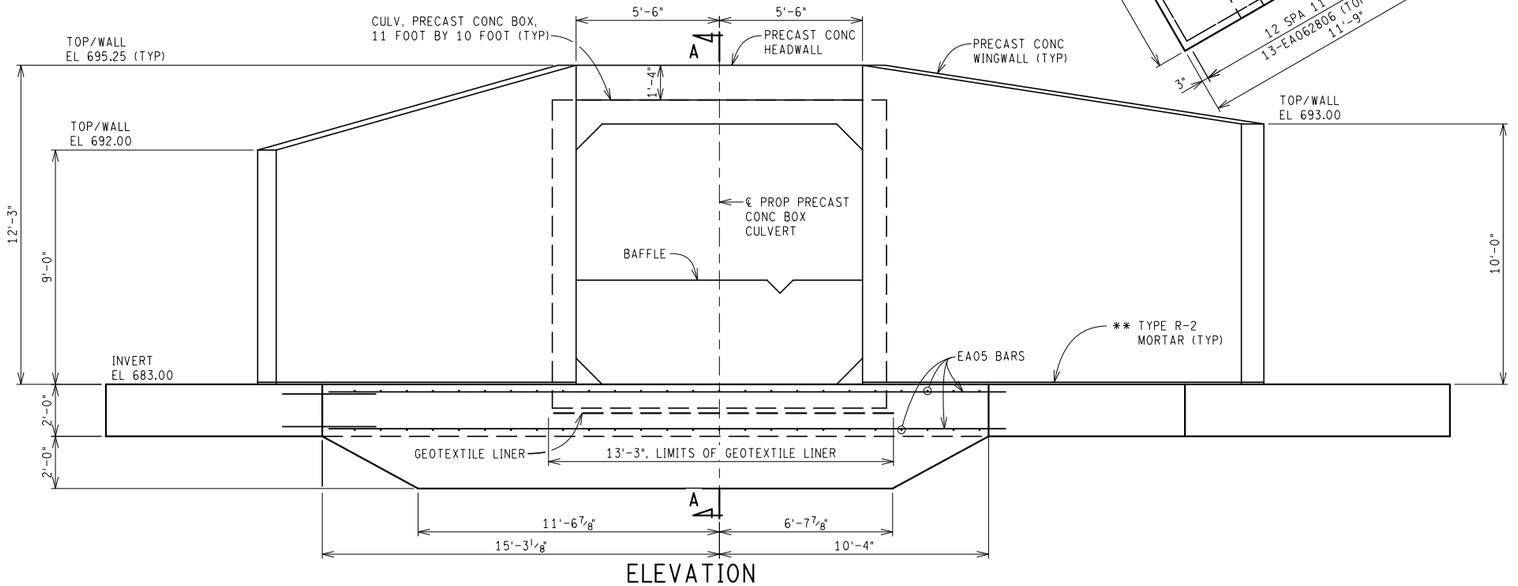
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CHK'D BY:	DESIGN UNIT: FILPUS	JN: MQ17-025	GENERAL PLAN OF STRUCTURE
FILE: 6553_US41_Grove St_Box Culvert_003	TSC: ISHPEMING	MDOT PERMIT 043179-16	

DRAWING	SHEET
US41	SECT 1
	123

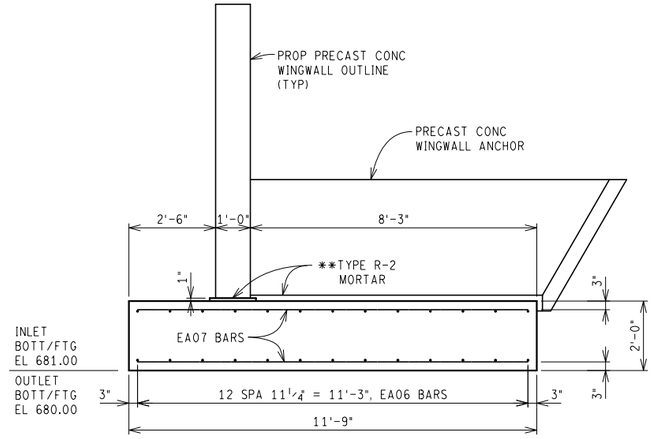


PLAN OF FOOTING – INLET



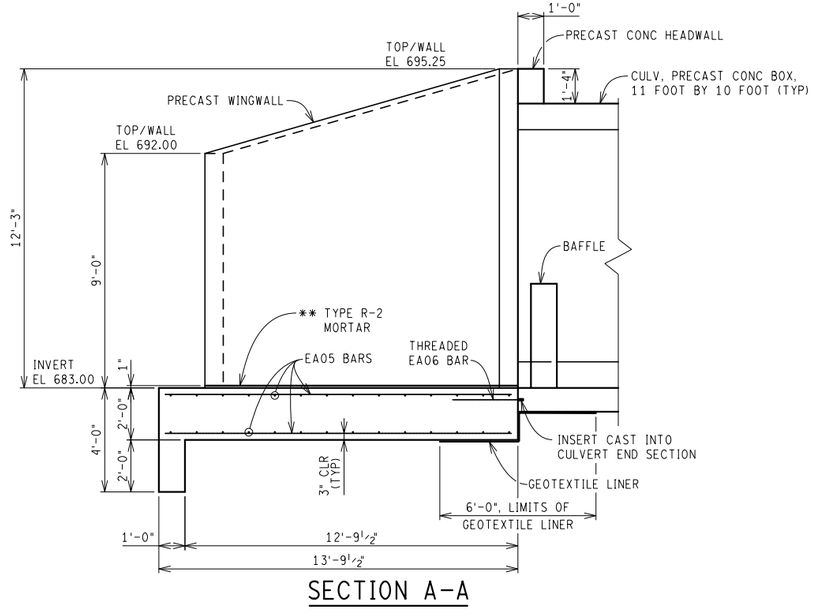
ELEVATION

(INSERTS IN BOTTOM FLANGE OF BOX CULVERTS NOT SHOWN)



TYPICAL WINGWALL FOOTING SECTION

** TYPE R-2 MORTAR IS NOT PAID FOR SEPARATELY BUT INCLUDED IN THE BID ITEM "CULV, PRECAST CONC BOX, 11 FOOT BY 10 FOOT".



SECTION A-A

SUBSTRUCTURE CONCRETE, QUANTITIES*

POUR	CYD
A	56.6
B	38.4
TOTAL	95.0

* FOR INFORMATION ONLY

NOTES:

T&B DENOTES TOP AND BOTTOM.

LOW TEMPERATURE PROTECTION OF CONCRETE SHALL BE APPLIED ACCORDING TO SECTION 706.03J OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION. LOW TEMPERATURE PROTECTION OF CONCRETE WILL NOT BE PAID FOR SEPARATELY, BUT WILL BE INCLUDED IN THE BED ITEM "SUBSTRUCTRUE, CONC."

INSERTS TO FIT 3/4" DIA. THREADED BARS SHALL BE CAST INTO CULVERT SECTIONS AS SHOWN AND ARE NOT PAID FOR SEPARATELY, BUT ARE INCLUDED IN THE BID ITEM "CULV, PRECAST CONC BOX, 11 FOOT BY 10 FOOT."

THE THREADING OF STEEL REINFORCEMENT AND INSTALLING THE THREADED REINFORCEMENT INTO INSERTS IS NOT PAID FOR SEPARATELY, BUT INCLUDED IN THE BID ITEM "CULV, PRECAST CONC BOX, 11 FOOT BY 10 FOOT."

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

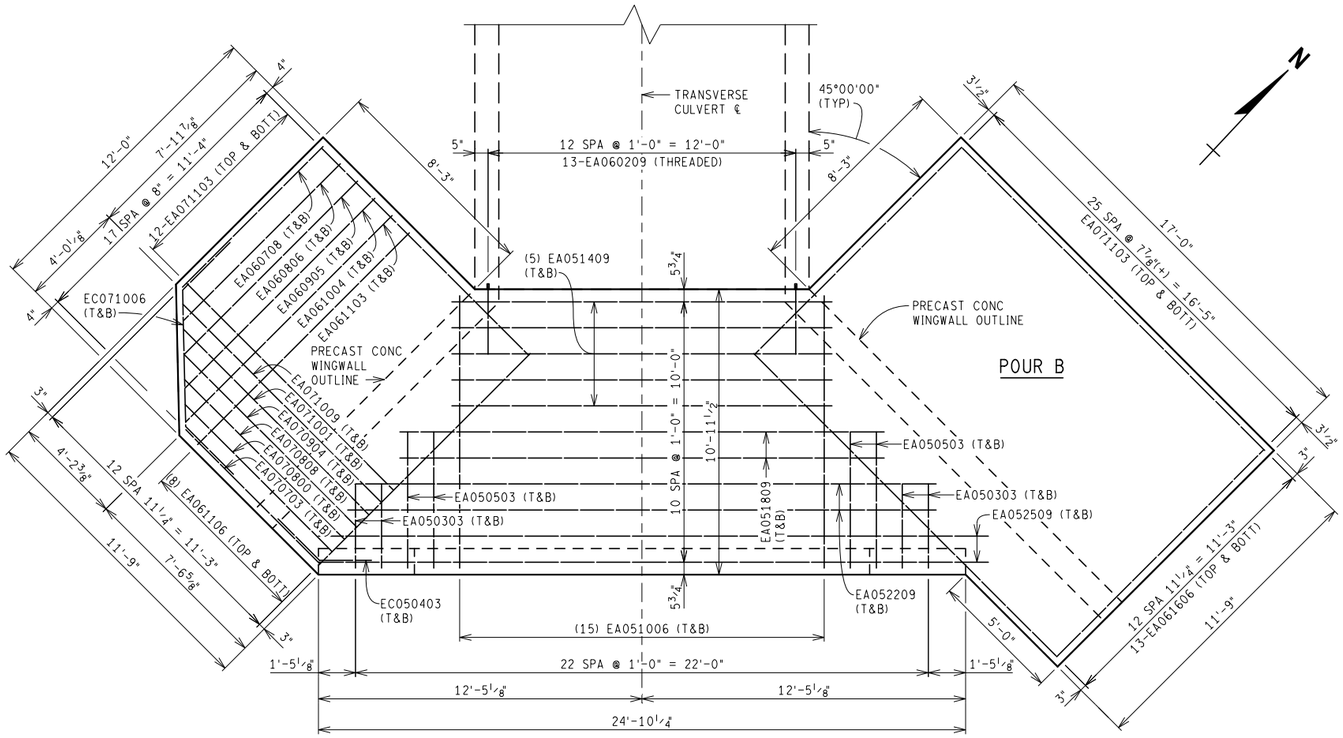
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CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

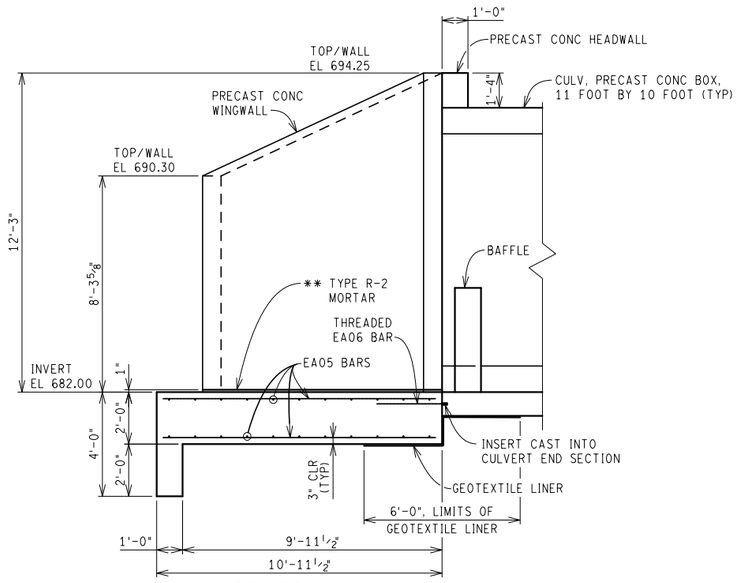
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FILE: 6553_US41_Grove St_Culvert_001.dgn	TSC: ISHPEMING		

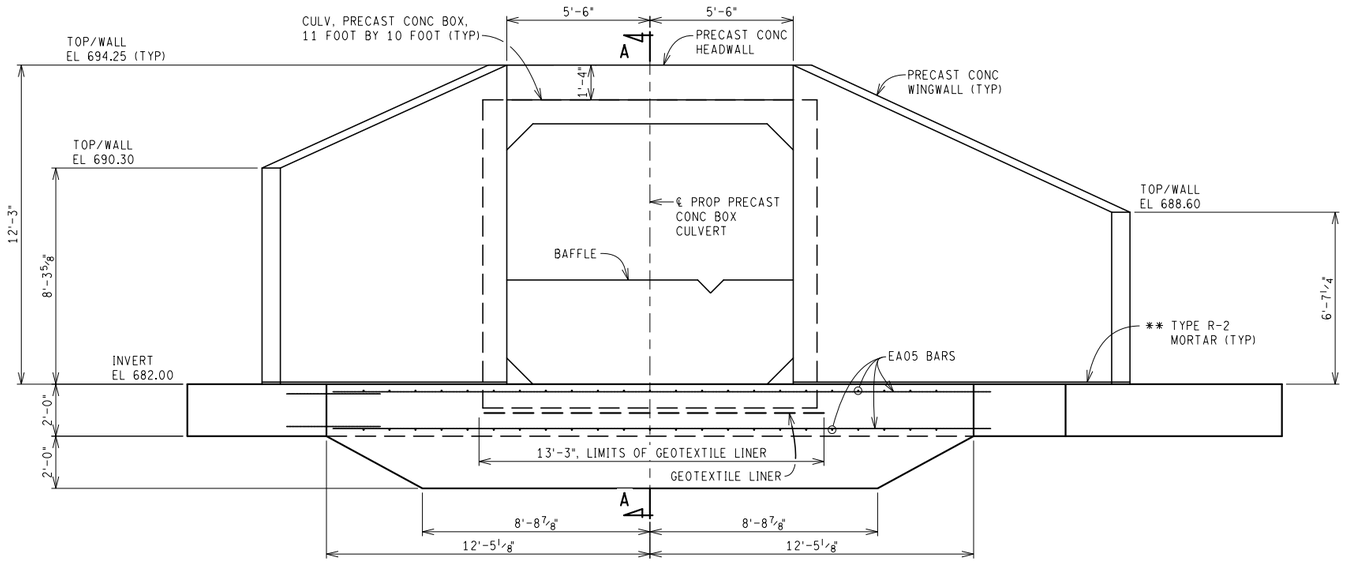
DRAWING	SHEET
US41	SECT 1
	124



PLAN OF FOOTING - OUTLET



SECTION A-A



ELEVATION

(INSERTS IN BOTTOM FLANGE OF BOX CULVERTS NOT SHOWN)

NOTES:

T&B DENOTES TOP AND BOTTOM.

LOW TEMPERATURE PROTECTION OF CONCRETE SHALL BE APPLIED ACCORDING TO SECTION 706.03J OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION. LOW TEMPERATURE PROTECTION OF CONCRETE WILL NOT BE PAID FOR SEPARATELY, BUT WILL BE INCLUDED IN THE BED ITEM "SUBSTRUCTRUE, CONC."

INSERTS TO FIT 3/4" DIA. THREADED BARS SHALL BE CAST INTO CULVERT SECTIONS AS SHOWN AND ARE NOT PAID FOR SEPARATELY, BUT ARE INCLUDED IN THE BID ITEM "CULV, PRECAST CONC BOX, 11 FOOT BY 10 FOOT."

THE THREADING OF STEEL REINFORCEMENT AND INSTALLING THE THREADED REINFORCEMENT INTO INSERTS IS NOT PAID FOR SEPARATELY, BUT INCLUDED IN THE BID ITEM "CULV, PRECAST CONC BOX, 11 FOOT BY 10 FOOT."

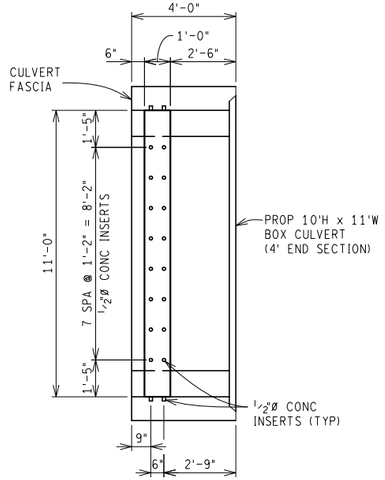
FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

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CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
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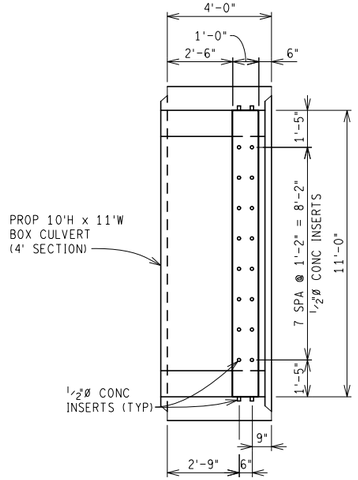
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CHK'D BY:	DESIGN UNIT: $DU	JN: MQ17-025	CULVERT DETAILS	SHEET SECT 1 125
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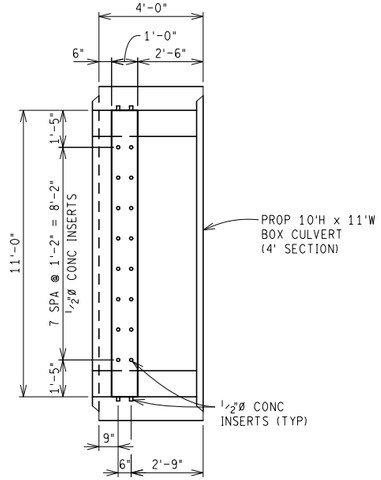


BAFFLE 1 & BAFFLE 8

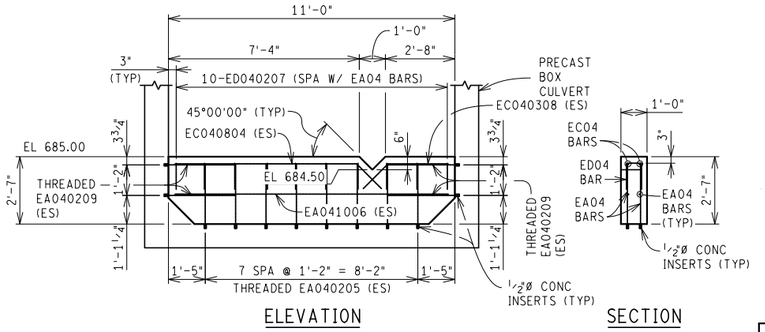
(BAFFLE 8 OPPOSITE HAND)



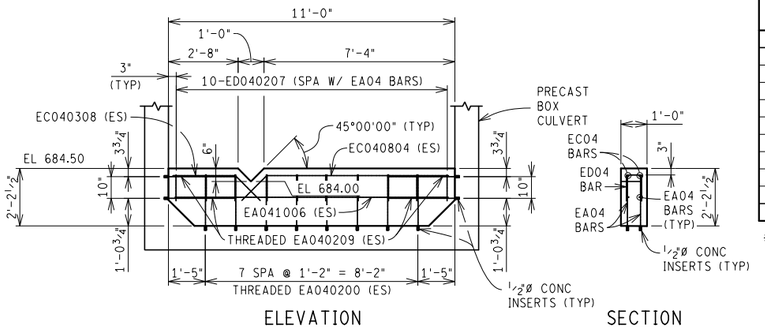
BAFFLES 2, 4 & 6



BAFFLES 3, 5 & 7



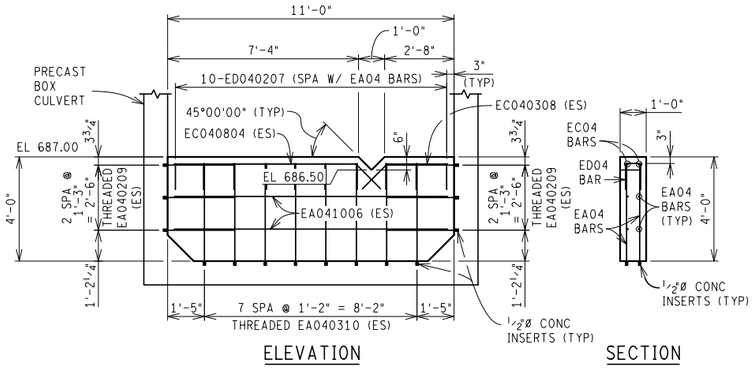
BAFFLE 5 DETAILS



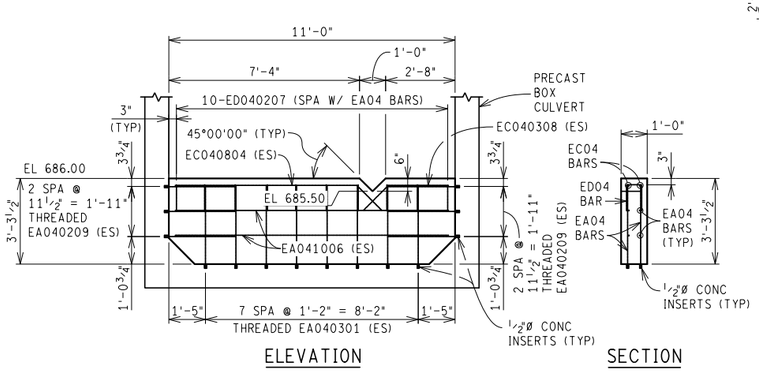
BAFFLE 6 DETAILS

CONCRETE, GRADE S2 QUANTITIES*	
LOCATION	CYD
BAFFLE 1	1.6
BAFFLE 2	1.5
BAFFLE 3	1.4
BAFFLE 4	1.2
BAFFLE 5	1.0
BAFFLE 6	0.9
BAFFLE 7	0.7
BAFFLE 8	0.6
TOTAL	9.0

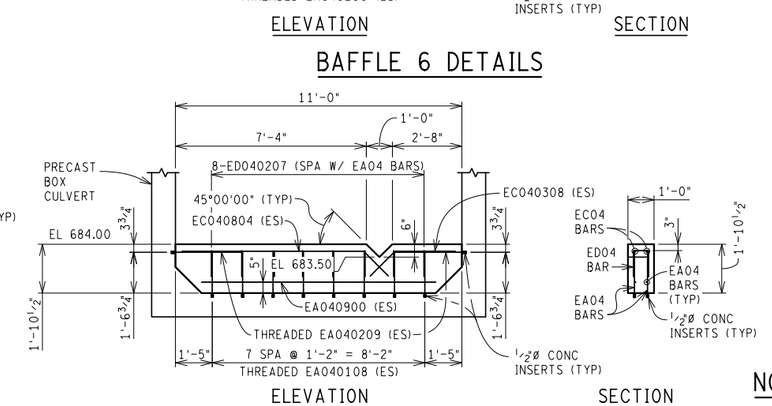
* FOR INFORMATION ONLY



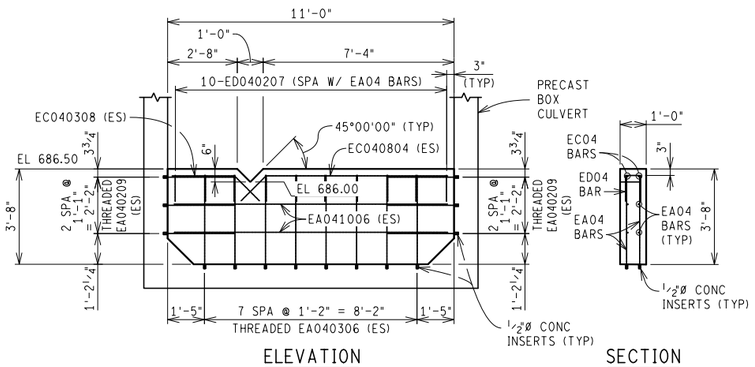
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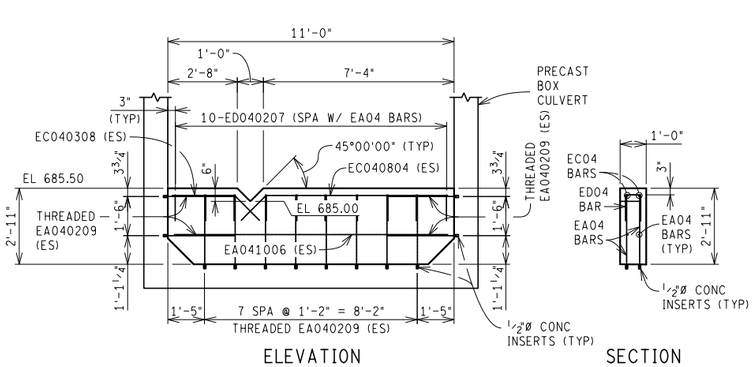
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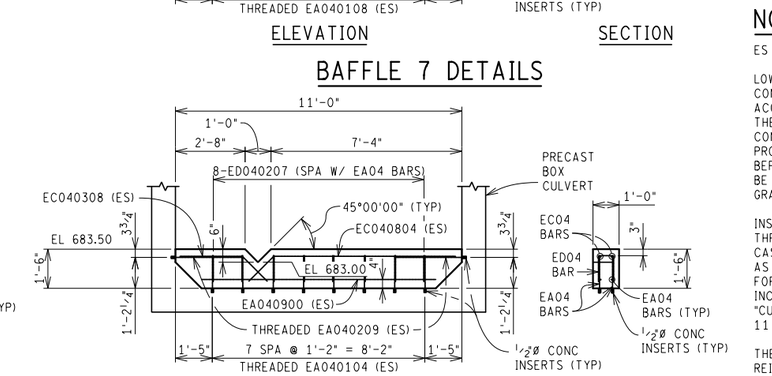
BAFFLE 7 DETAILS



BAFFLE 2 DETAILS



BAFFLE 4 DETAILS



BAFFLE 8 DETAILS

NOTES:

ES DENOTES EACH SIDE

LOW TEMPERATURE PROTECTION OF CONCRETE SHALL BE APPLIED ACCORDING TO SECTION 706.03 J. OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION. LOW TEMPERATURE PROTECTION OF CONCRETE WILL NOT BEPAID FOR SEPARATELY, BUT WILL BE INCLUDED IN THE BID ITEM "CONC, GRADE S2."

INSERTS TO FIT 1/2" DIA. THREADED BARS SHALL BE CAST INTO CULVERT SECTIONS AS SHOWN AND ARE NOT PAID FOR SEPARATELY, BUT ARE INCLUDED IN THE BID ITEM "CULV, PRECAST CONC BOX, 11 FOOT BY 10 FOOT."

THE THREADING OF STEEL REINFORCEMENT AND INSTALLING THE THREADED REINFORCEMENT INTO INSERTS IS NOT PAID FOR SEPARATELY, BUT INCLUDED IN THE BID ITEM "CULV, PRECAST CONC BOX, 11 FOOT BY 10 FOOT."

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

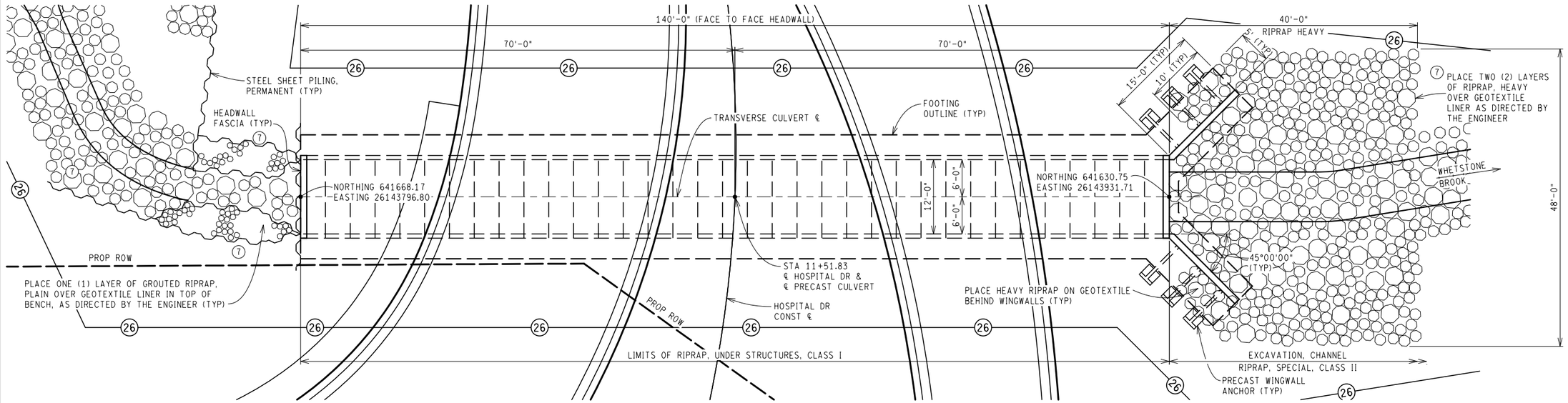
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CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

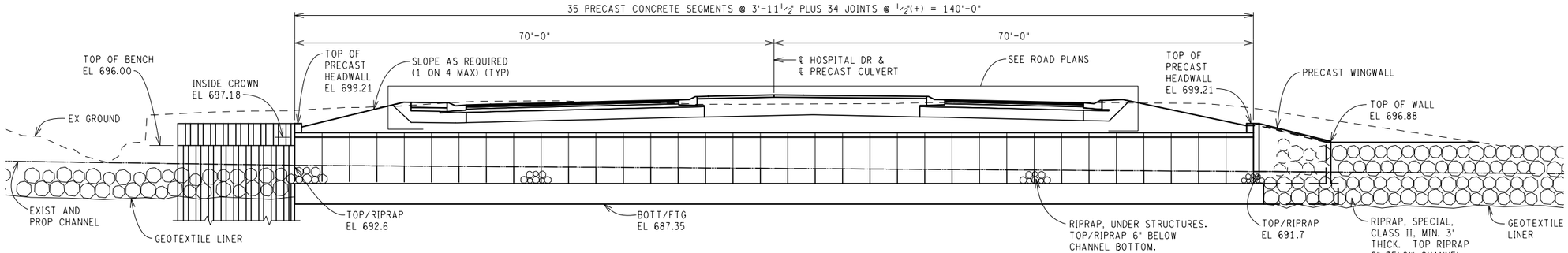
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CHK'D BY:	DESIGN UNIT: FILPUS	JN: MQ17-025	CULVERT DETAILS
FILE: 6553_US41_Grove St_Culvert_002.dgn	TSC: ISHPEMING	MDOT PERMIT 043179-16	

DRAWING	SHEET
US41	SECT 1
	126



PLAN



TYPICAL ROADWAY SECTION THROUGH CULVERT

SUMMARY OF HYDRAULIC ANALYSIS

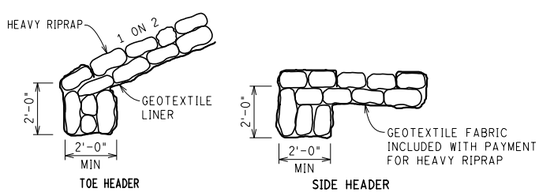
	EXISTING			PROPOSED			
FLOOD DATA	DIS-CHARGE (CFS)	WATER SURFACE ELEV. AT U/S FACE OF STRUCTURE	VELOCITY AT D/S FACE (FPS)	WATER SURFACE ELEV. AT U/S FACE OF STRUCTURE	VELOCITY AT D/S FACE (FPS)	WATERWAY AREA (SFT) AT D/S FACE	CHANGE IN WS EL 105' U/S OF PROPOSED STRUCTURE
50 YEAR	163	N/A	N/A	696.58	3.7	41.3	-0.18
100 YEAR	196	N/A	N/A	697.22	5.2	44.2	-0.36
MAXIMUM BRIDGE AREA BELOW LOW CHORD IS 78 SQUARE FEET							

THE WATER SURFACE AND/OR ENERGY GRADE ELEVATIONS SHOWN ON THE ABOVE HYDRAULIC TABLE ARE TO BE USED FOR COMPARISON PURPOSES ONLY AND ARE NOT TO BE USED FOR ESTABLISHING A REGULATORY FLOODPLAIN. THE ELEVATIONS MAY BE USED PROVIDED THEY ARE VERIFIED WITH THE LAND AND WATER MANAGEMENT DIVISION, MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY.

EROSION AND SEDIMENTATION CONTROL MEASURES

		KEY NO.
*	Riprap, Heavy	(7)
*	Riprap, Plain	(7)
*	Erosion Control, Silt Fence	(26)

* PLACE AS DIRECTED BY THE ENGINEER



RIPRAP HEADER DETAILS

NOTES:

THE DESIGN OF THIS STRUCTURE IS BASED ON 1.2 TIMES THE CURRENT AASHTO LRFD BRIDGE DESIGN SPECIFICATION HL-93 LOADING WITH THE EXCEPTION THAT THE DESIGN TANDEM PORTION OF THE HL-93 LOAD DEFINITION SHALL BE REPLACED BY A SINGLE 60 KIP AXLE LOAD BEFORE APPLICATION OF THIS 1.2 FACTOR. THE RESULTING LOAD IS DESIGNATED HL-93 MOD. LIVE LOAD PLUS DYNAMIC LOAD ALLOWANCE DEFLECTION DOES NOT EXCEED 1/800 OF SPAN LENGTH.

THE WORK COVERED BY THESE PLANS INCLUDES CHANNEL EXCAVATION, EARTH EXCAVATION, REMOVAL OF EXISTING CONSTRICTION STRUCTURE AND BLOCK WALL, CONSTRUCTION OF THE PROPOSED CULVERT & CONSTRICTION STRUCTURE AND PLACING RIPRAP TO THE LIMITS SHOWN. ALL OTHER WORK IS INCLUDED IN THE ROAD PLANS THAT ARE PART OF THIS CONTRACT.

THE CONTRACTOR SHALL LOCATE ALL ACTIVE UNDERGROUND UTILITIES PRIOR TO STARTING WORK AND SHALL CONDUCT HIS OPERATIONS IN SUCH A MANNER AS TO ENSURE THAT THOSE UTILITIES NOT REQUIRING RELOCATION WILL NOT BE DISTURBED.

THE VERTICAL CONTROL FOR THIS PROJECT WAS DETERMINED BY USING BM R329. ALL INTERMEDIATE CONTROL POINTS HAVE ELEVATIONS AND SHOULD BE USED AS THE BASIS OF ELEVATION FOR THIS PROJECT.

WATER LEVEL IS SUBJECT TO CHANGE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING A DETERMINATION OF WATER LEVELS THAT MAY EXIST DURING CONSTRUCTION.

IMMEDIATELY AFTER CONSTRUCTION OF A CULVERT WINGWALL IS COMPLETED, RIPRAP SHALL BE PLACED ON THE ADJACENT EMBANKMENT SLOPES.

THE DRAINAGE AREA CONTRIBUTORY TO THIS CROSSING IS 2 SQUARE MILES.

WITHOUT THE PREVENTIVE MEASURES SHOWN ON THESE PLANS, THERE IS A POSSIBILITY THAT STREAM BED SCOUR MAY OCCUR. THE ESTIMATED TOTAL SCOUR DEPTH IS CALCULATED TO BE 8 FEET. THESE DEPTHS ARE BASED ON A 100 YEAR RUNOFF EVENT.

TOP OF RIPRAP ELEVATIONS SHALL BE AT OR BELOW EXISTING STREAM OR EXISTING GROUND ELEVATIONS.

GEOTEXTILE LINER SHALL BE PLACED ON ALL SLOPES PRIOR TO PLACING RIPRAP. PAYMENT FOR GEOTEXTILE LINER SHALL BE INCLUDED IN PAYMENT FOR RIPRAP.

BROKEN CONCRETE SHALL NOT BE USED FOR RIPRAP.

OVERHEAD UTILITIES PRESENT (SEE ROAD PLANS). CONTRACTOR SHALL TAKE CARE NOT TO DISTURB OVERHEAD UTILITIES DURING CONSTRUCTION OPERATIONS.

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

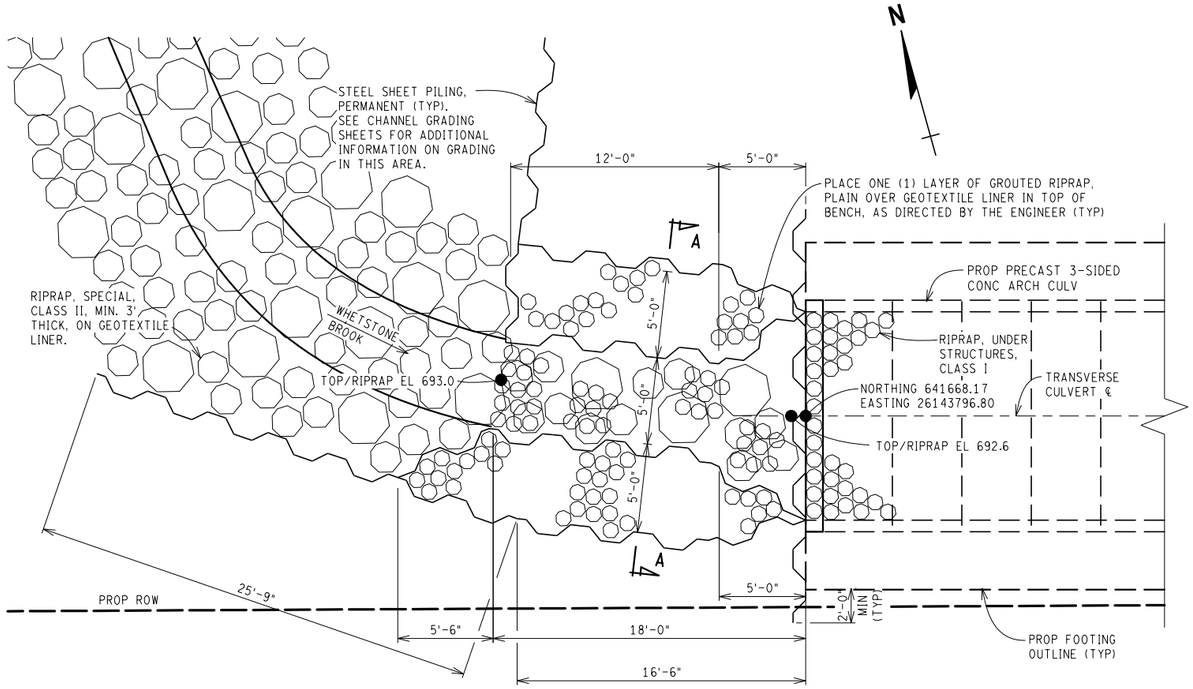
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CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

NO SCALE

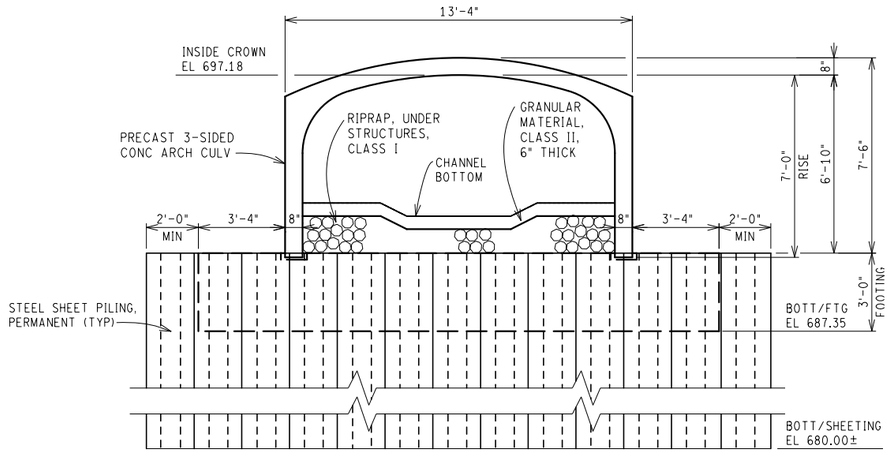
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FILE: 6553 US41 Hospital Dr 3 Sided Culvert	TSC: ISHPEMING		

DRAWING: US41 | SHEET: SECT 1 | 127

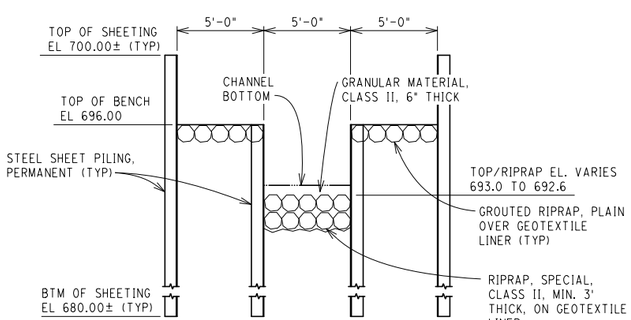


PLAN OF CONSTRICTION

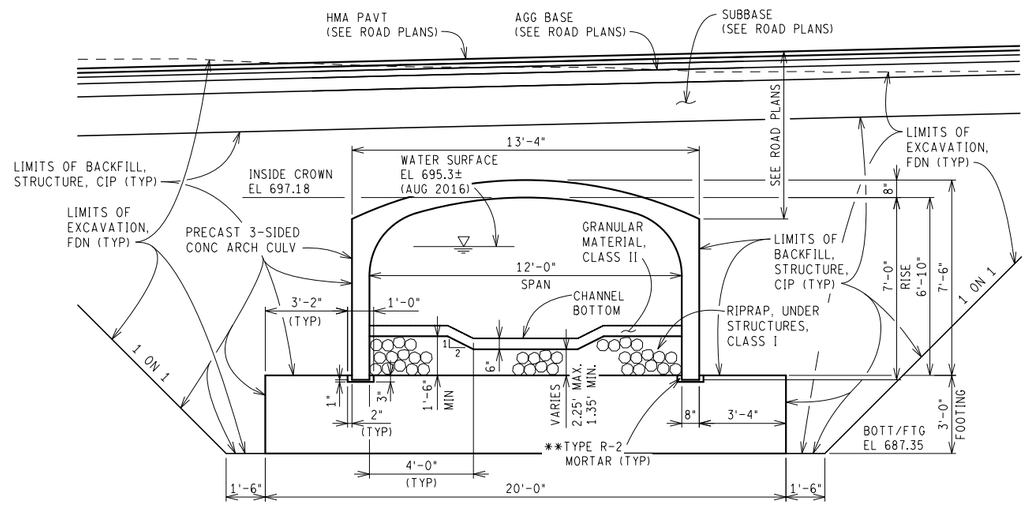
(WEST END OF PROP CULVERT)
(HOSPITAL DR NOT SHOWN)



CULVERT INLET ELEVATION



SECTION A–A



TYPICAL CULVERT SECTION

** TYPE R-2 MORTAR IS NOT PAID FOR SEPARATELY BUT INCLUDED IN THE BID ITEM "CULV, PRECAST THREE-SIDED OR ARCH, 12 FOOT BY 7 FOOT".

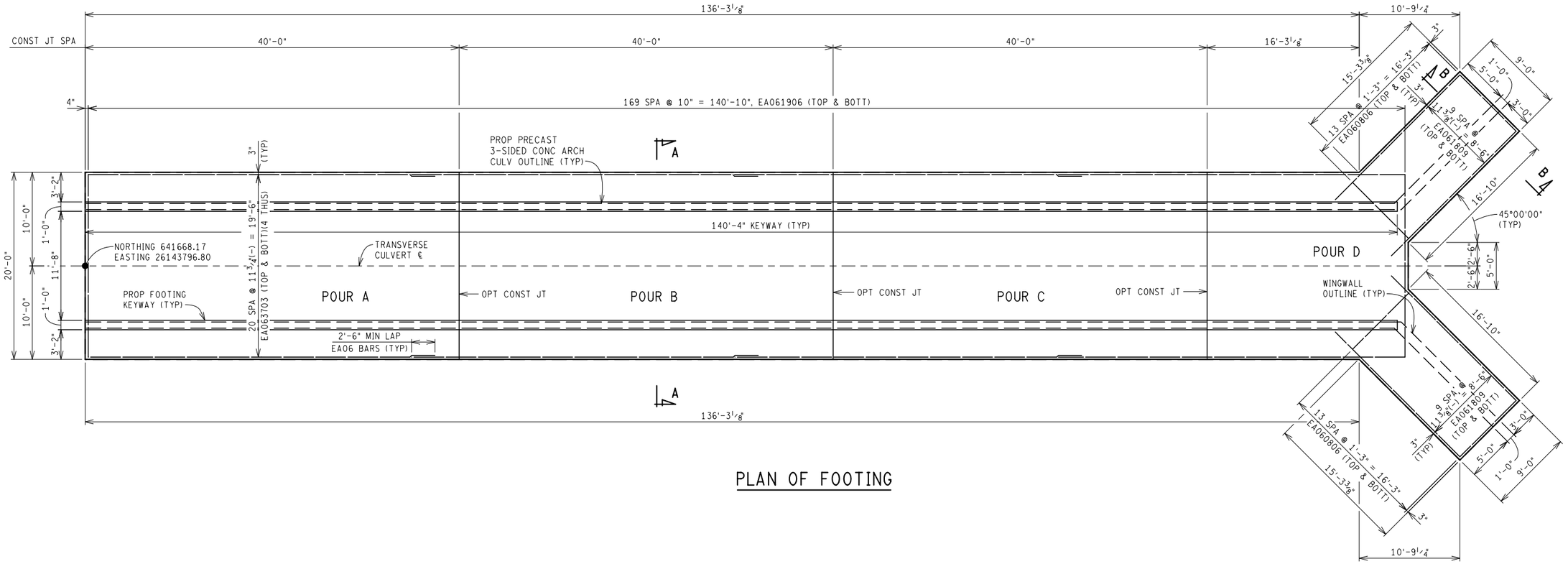
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NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

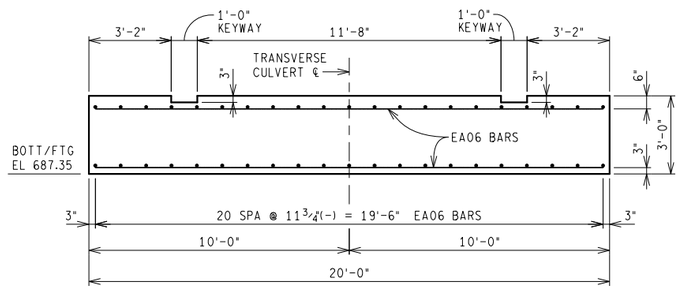
CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

NO SCALE

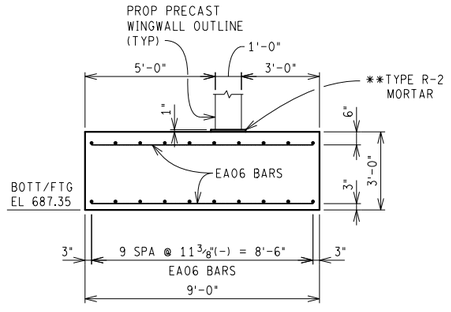
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CHK'D BY:	DESIGN UNIT: FILPUS	JN: MQ17-025	DETAILS	SHEET: SECT 1
FILE: 6553 US41 Hospital Dr 3 Sided Culvert Sections	TSC: ISHPEMING	MDOT PERMIT 043179-16		128



PLAN OF FOOTING



SECTION A-A



SECTION B-B

** TYPE R-2 MORTAR IS NOT PAID FOR SEPARATELY BUT INCLUDED IN THE BID ITEM "CULV, PRECAST THREE-SIDED OR ARCH, 12 FOOT BY 7 FOOT".

SUBSTRUCTURE CONCRETE, QUANTITIES*

POUR	CYD
A	89.1
B	89.1
C	89.1
D	75.7
TOTAL	343.0

* FOR INFORMATION ONLY

NOTES:

LOW TEMPERATURE PROTECTION OF CONCRETE SHALL BE APPLIED ACCORDING TO SECTION 706.03 J OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION. LOW TEMPERATURE PROTECTION OF CONCRETE WILL NOT BE PAID FOR SEPARATELY, BUT WILL BE INCLUDED IN THE BID ITEM "SUBSTRUCTURE, CONC".

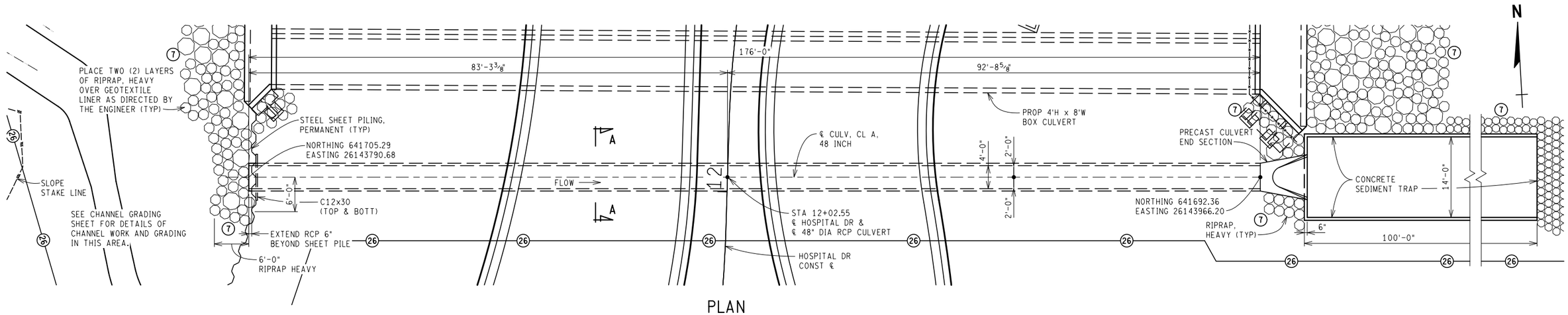
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NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

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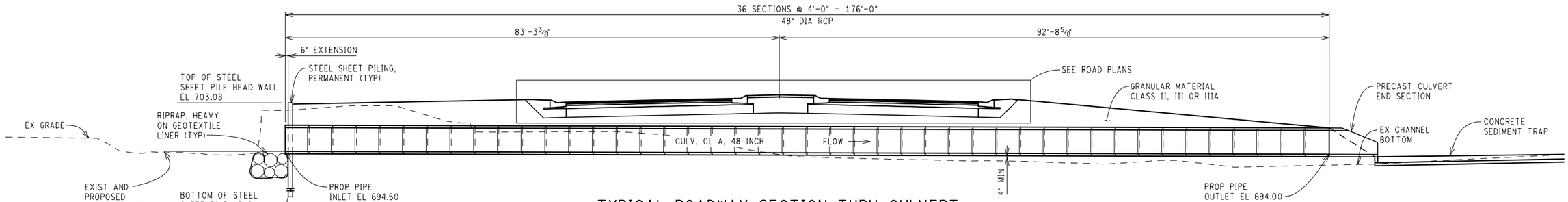
CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

NO SCALE

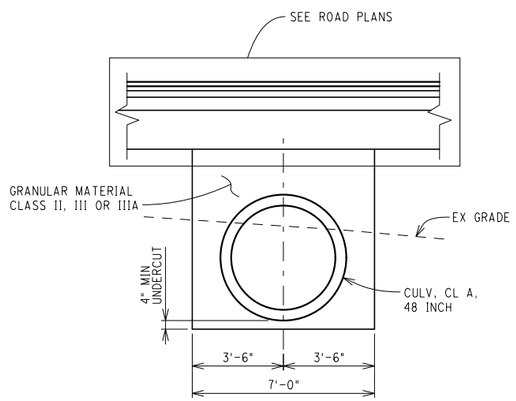
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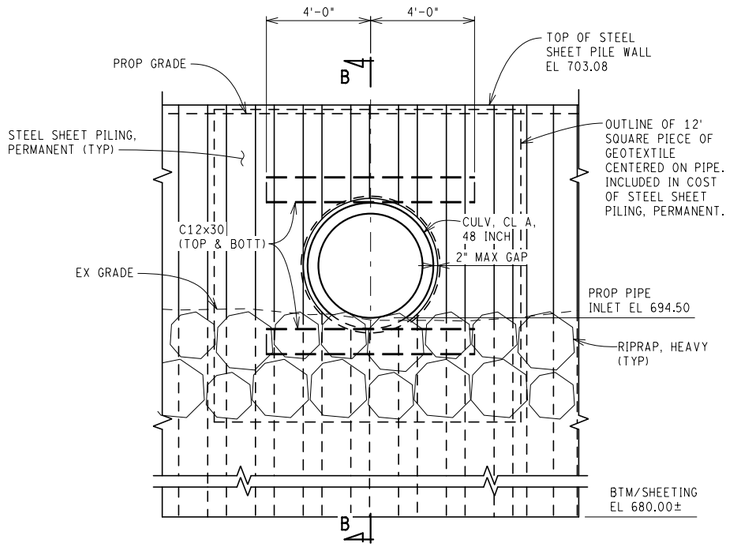
PLAN



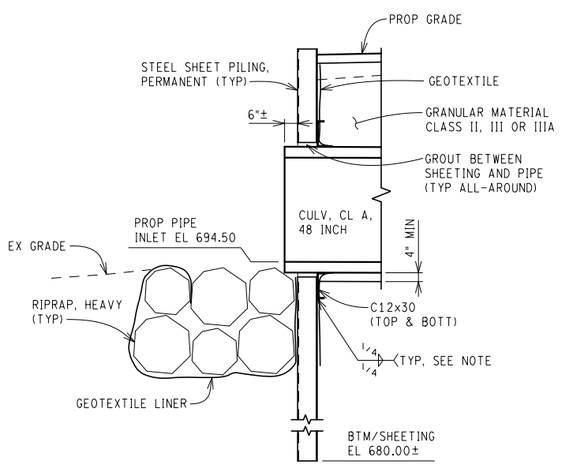
TYPICAL ROADWAY SECTION THRU CULVERT



SECTION A-A



HEADWALL ELEVATION



SECTION B-B

EROSION AND SEDIMENTATION CONTROL MEASURES

		KEY NO.
*	Riprap, Heavy	7
*	Riprap, Plain	7
*	Erosion Control, Silt Fence	26

* PLACE AS DIRECTED BY THE ENGINEER

NOTES:

TOP OF RIPRAP ELEVATIONS SHALL BE AT OR BELOW EXISTING STREAMBED OR EXISTING GROUND ELEVATIONS.

GEOTEXTILE LINER SHALL BE PLACED ON ALL SLOPES PRIOR TO PLACENG RIPRAP. PAYMENT FOR GEOTEXTILE LINER SHALL BE INCLUDED IN THE PAYMENT FOR "Riprap, Plain" and " Riprap, Heavy".

CUT SHEETING NO LARGER THAN 2" CLEAR OF OUTSIDE DIAMETER OF PIPE.

FILL GAP BETWEEN SHEETING & PIPE WITH TYPE H-1 NON-SHRINKING GROUT.

WELD CHANNEL TO SHEETING AT A MINIMUM OF 4 LOCATIONS, 2 EACH SIDE OF ℄ OF PIPE. COST INCLUDED IN OTHER ITEMS OF WORK.

OVERHEAD UTILITIES PRESENT (SEE ROAD PLANS). CONTRACTOR SHALL TAKE CARE NOT TO DISTURB OVERHEAD UTILITIES DURING CONSTRUCTION OPERATIONS.

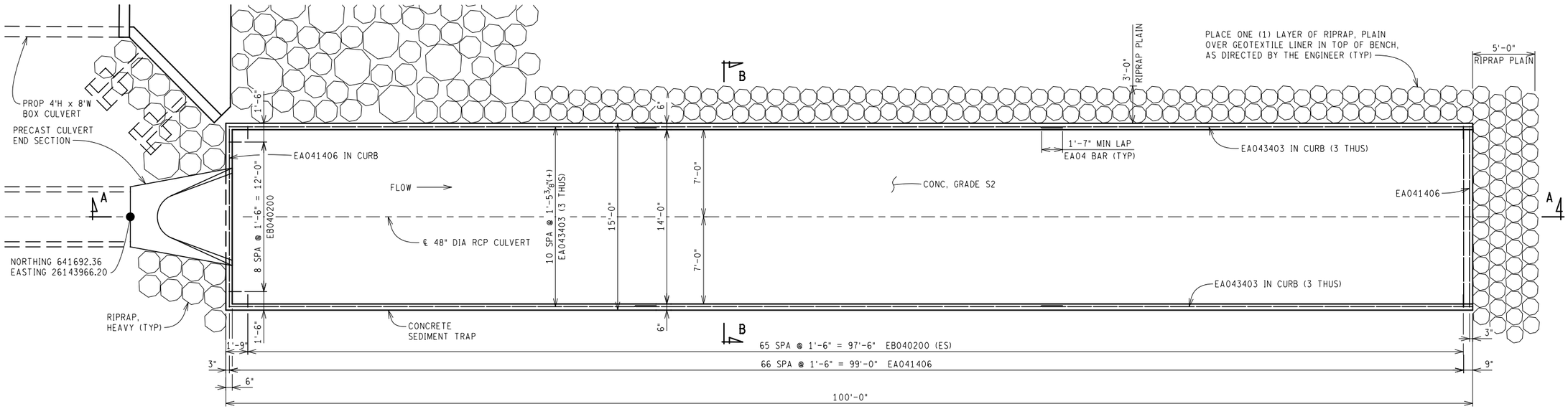
FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

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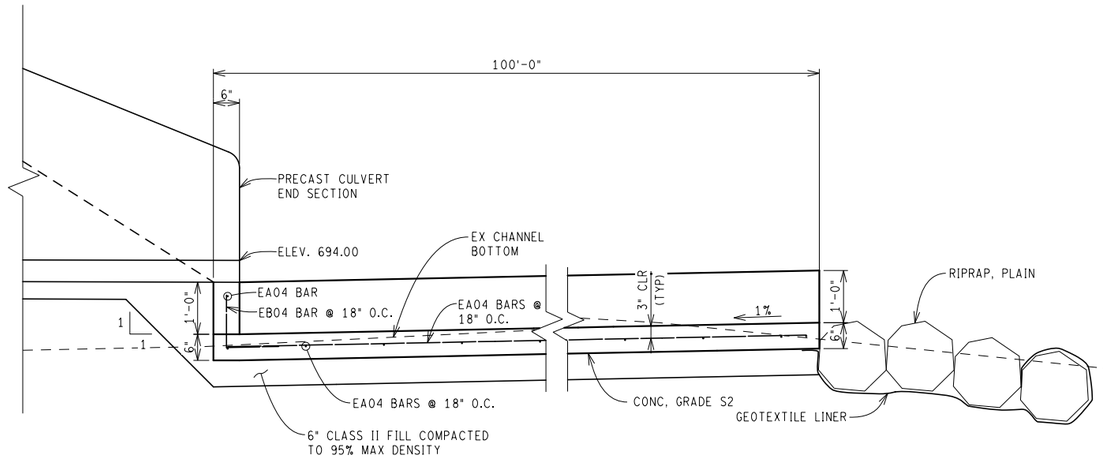
CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

NO SCALE

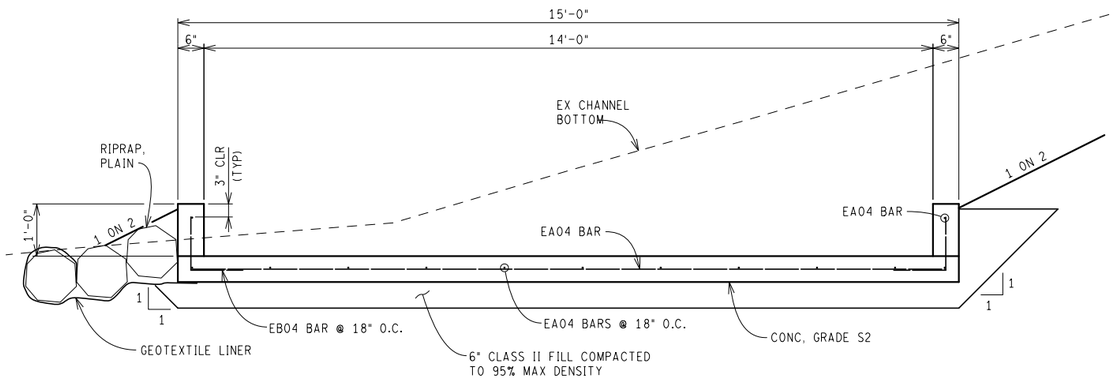
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FILE:6553 US41 Hospital Dr 48 Culvert.dgn	TSC: ISHPEMING	MDOT PERMIT 043179-16			130



PLAN



SECTION A-A CONCRETE SEDIMENT TRAP



SECTION B-B CONCRETE SEDIMENT TRAP

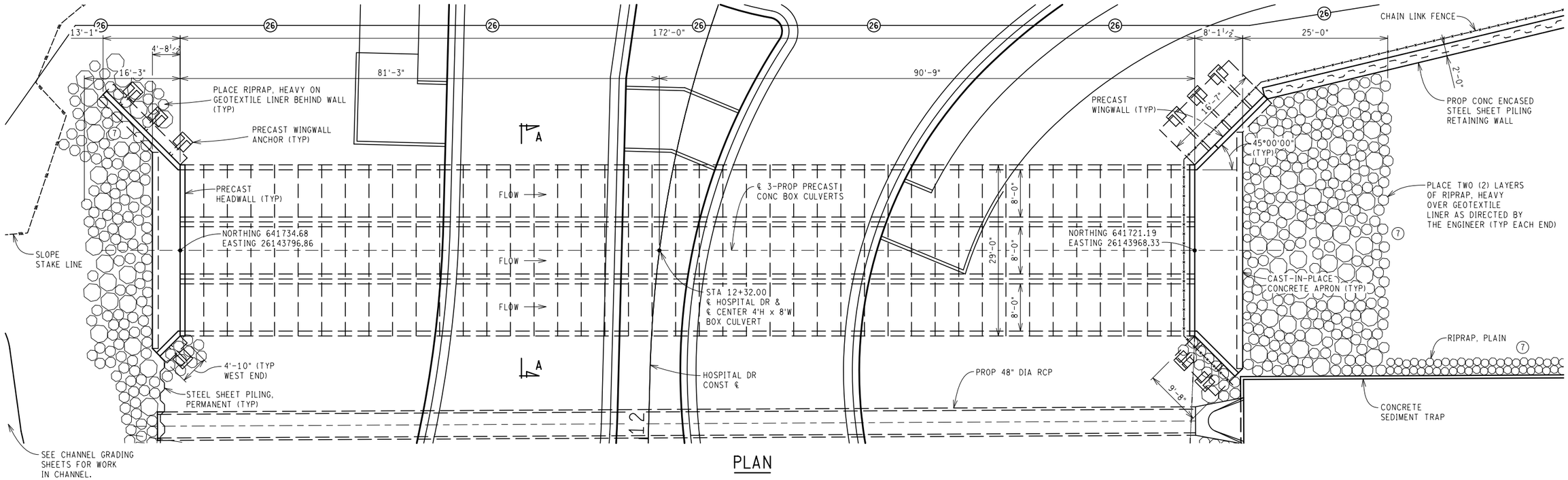
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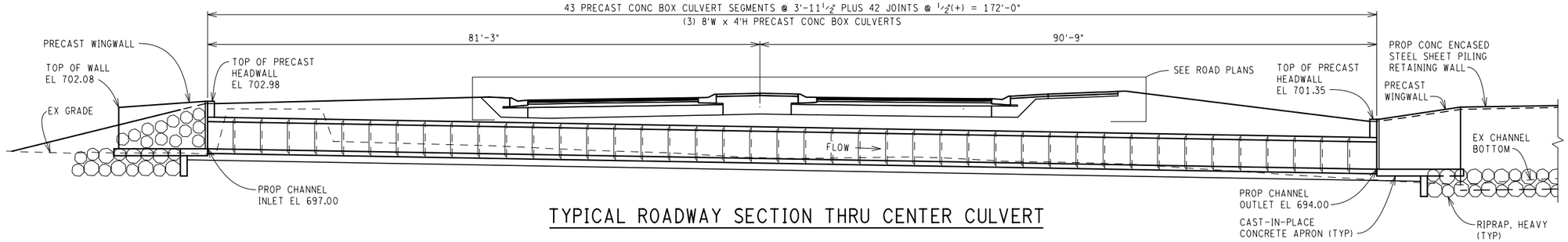
CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

NO SCALE

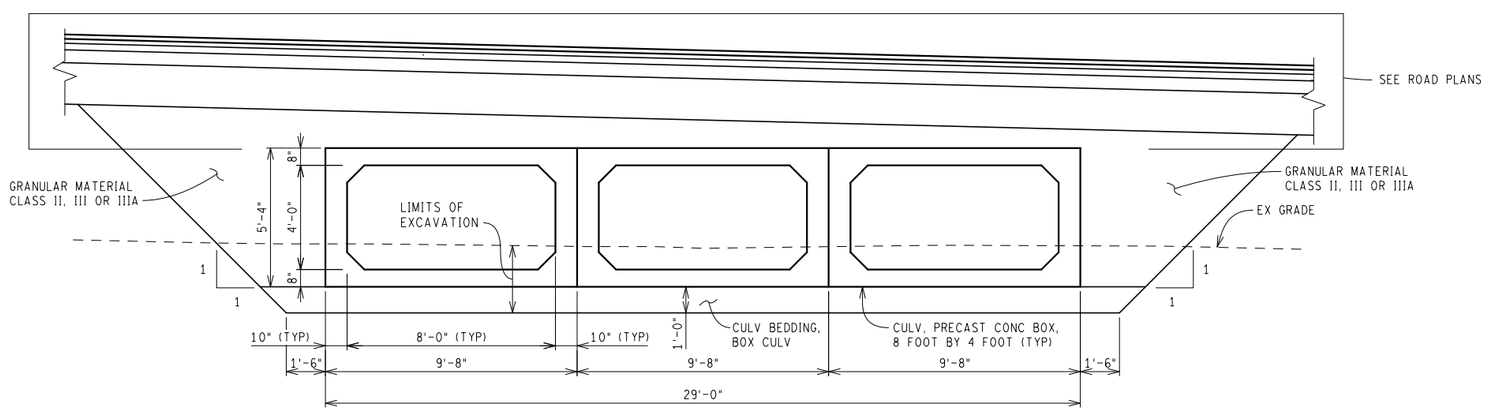
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CHK'D BY:	DESIGN UNIT: FILPUS	JN: M017-025	CONCRETE SPILLWAY DETAILS	US41 / SECT 1
FILE: 6553 US41 Hospital Dr 48 Culvert Details	TSC: ISHPEMING	MDOT PERMIT 043179-16		131



PLAN



TYPICAL ROADWAY SECTION THRU CENTER CULVERT



SECTION A-A

EROSION AND SEDIMENTATION CONTROL MEASURES

		KEY NO.
*	Riprap, Heavy	(7)
*	Riprap, Plain	(7)
*	Erosion Control, Silt Fence	(26)

* PLACE AS DIRECTED BY THE ENGINEER

NOTES:

THE DESIGN OF THIS STRUCTURE IS BASED ON 1.2 TIMES THE CURRENT AASHTO LRFD BRIDGE DESIGN SPECIFICATION HL-93 LOADING WITH THE EXCEPTION THAT THE DESIGN TANDEM PORTION OF THE HL-93 LOAD DEFINITION SHALL BE REPLACED BY A SINGLE 60 KIP AXLE LOAD BEFORE APPLICATION OF THIS 1.2 FACTOR. THE RESULTING LOAD IS DESIGNATED HL-93 MOD. LIVE LOAD PLUS DYNAMIC LOAD ALLOWANCE DEFLECTION DOES NOT EXCEED 1/800 OF SPAN LENGTH.

THE WORK COVERED BY THESE PLANS INCLUDES CHANNEL EXCAVATION, EARTH EXCAVATION, CONSTRUCTION OF THE PROPOSED BOX CULVERTS AND PLACING RIPRAP TO THE LIMITS SHOWN. ALL OTHER WORK IS INCLUDED IN THE ROAD PLANS THAT ARE PART OF THIS CONTRACT.

THE CONTRACTOR SHALL LOCATE ALL ACTIVE UNDERGROUND UTILITIES PRIOR TO STARTING WORK AND SHALL CONDUCT HIS OPERATIONS IN SUCH A MANNER AS TO ENSURE THAT THOSE UTILITIES NOT REQUIRING RELOCATION WILL NOT BE DISTURBED.

THE VERTICAL CONTROL FOR THIS PROJECT WAS DETERMINED BY USING BM R329. ALL INTERMEDIATE CONTROL POINTS HAVE ELEVATIONS AND SHOULD BE USED AS THE BASIS OF ELEVATION FOR THIS PROJECT.

WATER LEVEL IS SUBJECT TO CHANGE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING A DETERMINATION OF WATER LEVELS THAT MAY EXIST DURING CONSTRUCTION.

IMMEDIATELY AFTER CONSTRUCTION OF A CULVERT WINGWALL IS COMPLETED, RIPRAP SHALL BE PLACED ON THE ADJACENT EMBANKMENT SLOPES..

TOP OF RIPRAP ELEVATIONS SHALL BE AT OR BELOW EXISTING STREAMBED OR EXISTING GROUND ELEVATIONS.

GEOTEXTILE LINER SHALL BE PLACED ON ALL SLOPES PRIOR TO PLACING RIPRAP. PAYMENT FOR GEOTEXTILE LINER SHALL BE INCLUDED IN PAYMENT FOR RIPRAP.

BROKEN CONCRETE SHALL NOT BE USED FOR RIPRAP.

OVERHEAD UTILITIES PRESENT (SEE ROAD PLANS). CONTRACTOR SHALL TAKE CARE NOT TO DISTURB OVERHEAD UTILITIES DURING CONSTRUCTION OPERATIONS.

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)

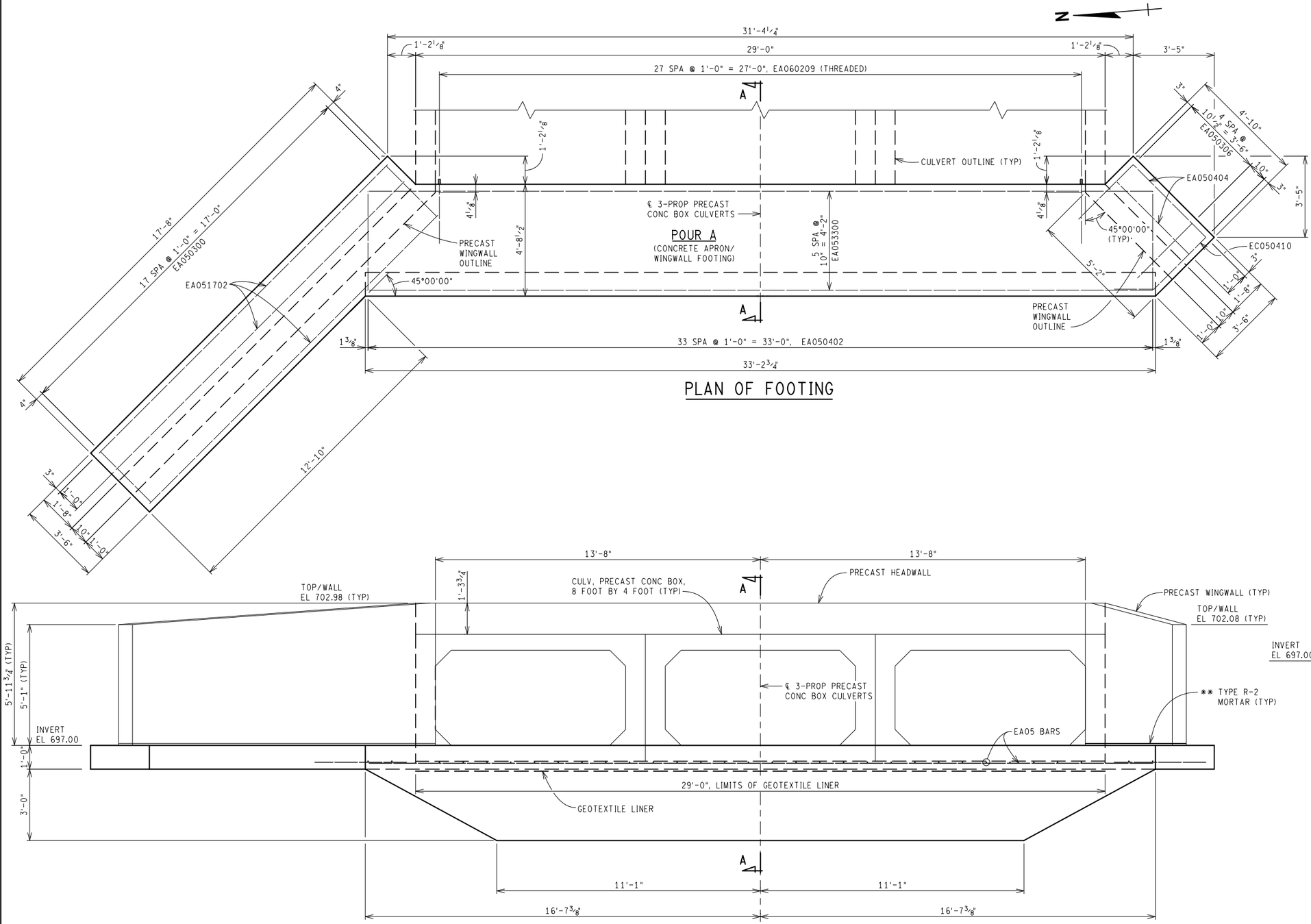
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DLZ

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CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

DRAWN BY: DAF	DATE: 2/3/2017 11:49:09 AM	CS: 52042	HOSPITAL DR PROP BOX CULVERTS
CHK'D BY:	DESIGN UNIT: FILPUS	JN: M017-025	GENERAL PLAN OF STRUCTURE
FILE: 6553 US41 Hospital Dr Box Culvert.dgn	TSC: ISHPEMING	MDOT PERMIT 043179-16	

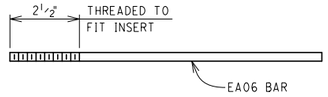
DRAWING	SHEET
US41	SECT 1 132



PLAN OF FOOTING

SUBSTRUCTURE CONCRETE, QUANTITIES*	
POUR	CYD
A	11.5
B	22.5	
TOTAL	34.0

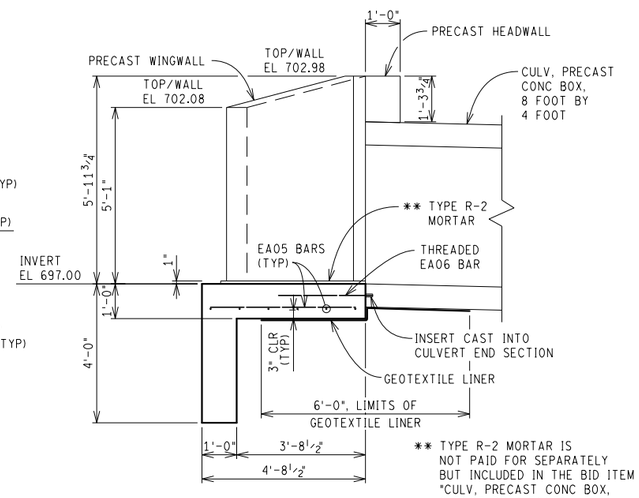
* FOR INFORMATION ONLY



THREADED BAR DETAIL

ELEVATION

(INSERTS IN BOTTOM FLANGE OF BOX CULVERTS NOT SHOWN)



SECTION A-A

** TYPE R-2 MORTAR IS NOT PAID FOR SEPARATELY BUT INCLUDED IN THE BID ITEM "CULV, PRECAST CONC BOX, 8 FOOT BY 4 FOOT".

NOTES:

INSERTS TO FIT ¾" DIA. THREADED BARS SHALL BE CAST INTO CULVERT END SECTIONS AS SHOWN AND ARE NOT PAID FOR SEPARATELY BUT ARE INCLUDED IN THE BID ITEM "CULV, PRECAST CONC BOX, 8 FOOT BY 4 FOOT".

THE THREADING OF STEEL REINFORCEMENT AND INSTALLING THE THREADED REINFORCEMENT INTO INSERTS IS NOT PAID FOR SEPARATELY BUT INCLUDED IN THE BID ITEM "CULV, PRECAST CONC BOX, 8 FOOT BY 4 FOOT".

LOW TEMPERATURE PROTECTION OF CONCRETE SHALL BE APPLIED ACCORDING TO SECTION 706.03J OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION. LOW TEMPERATURE PROTECTION OF CONCRETE SHALL NOT BE PAID FOR SEPARATELY, BUT INCLUDED IN THE BID ITEM "SUBSTRUCTURE CONC".

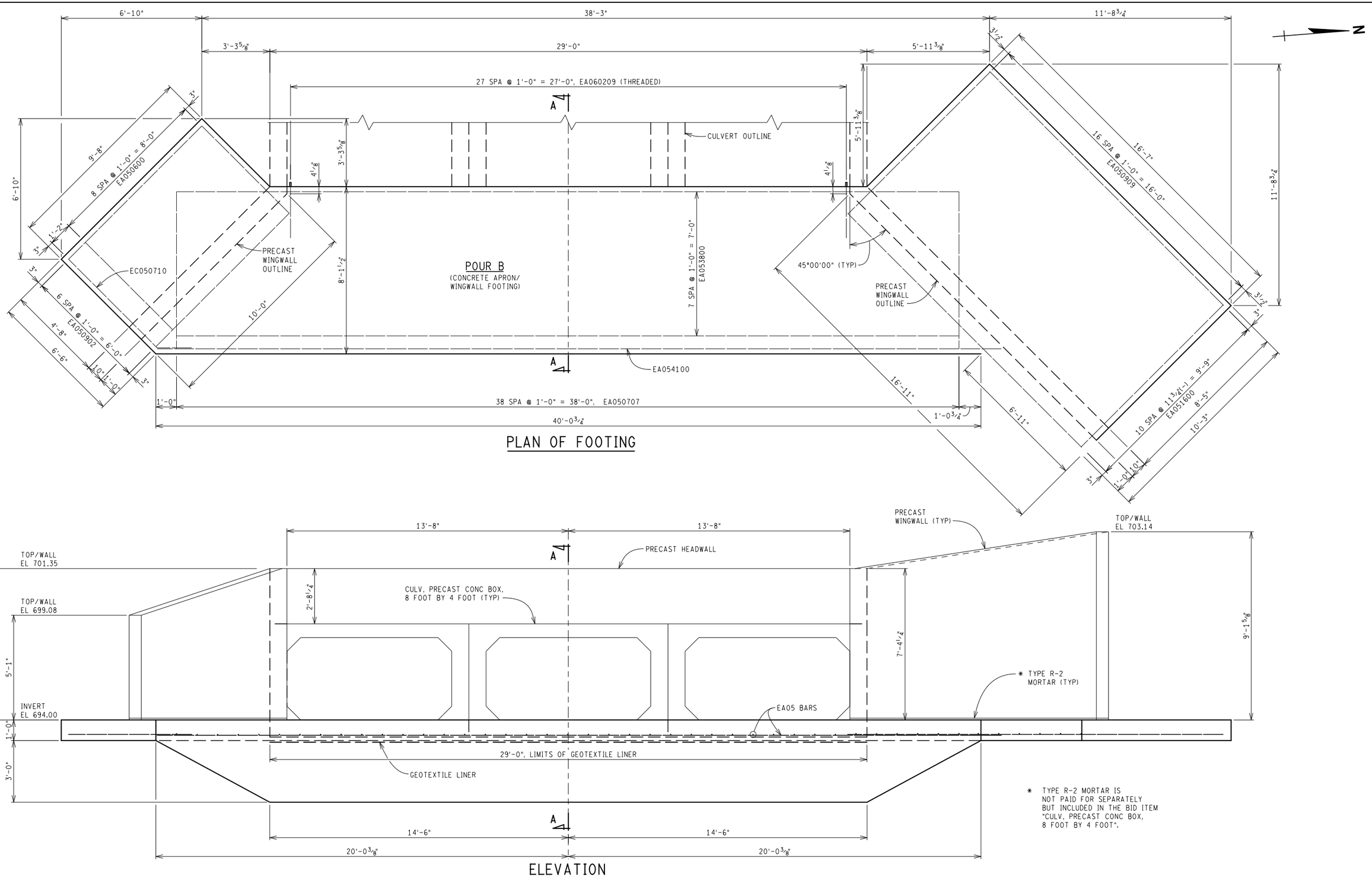
FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

DRAWN BY: DAF	DATE: 2/2/2017 2:14:20 PM	CS: 52042	HOSPITAL DR PROP BOX CULVERTS	DRAWING	SHEET
CHK'D BY:	DESIGN UNIT: FILPUS	JN: MQ17-025	INLET HEADWALL DETAILS	US41	SECT 1
FILE:6553 US41 Hospital Dr Box Culvert Details 001	TSC: ISHPEMING	MDOT PERMIT 043179-16			133



PLAN OF FOOTING

ELEVATION

(INSERTS IN BOTTOM FLANGE OF BOX CULVERTS NOT SHOWN)

* TYPE R-2 MORTAR IS NOT PAID FOR SEPARATELY BUT INCLUDED IN THE BID ITEM "CULV, PRECAST CONC BOX, 8 FOOT BY 4 FOOT".

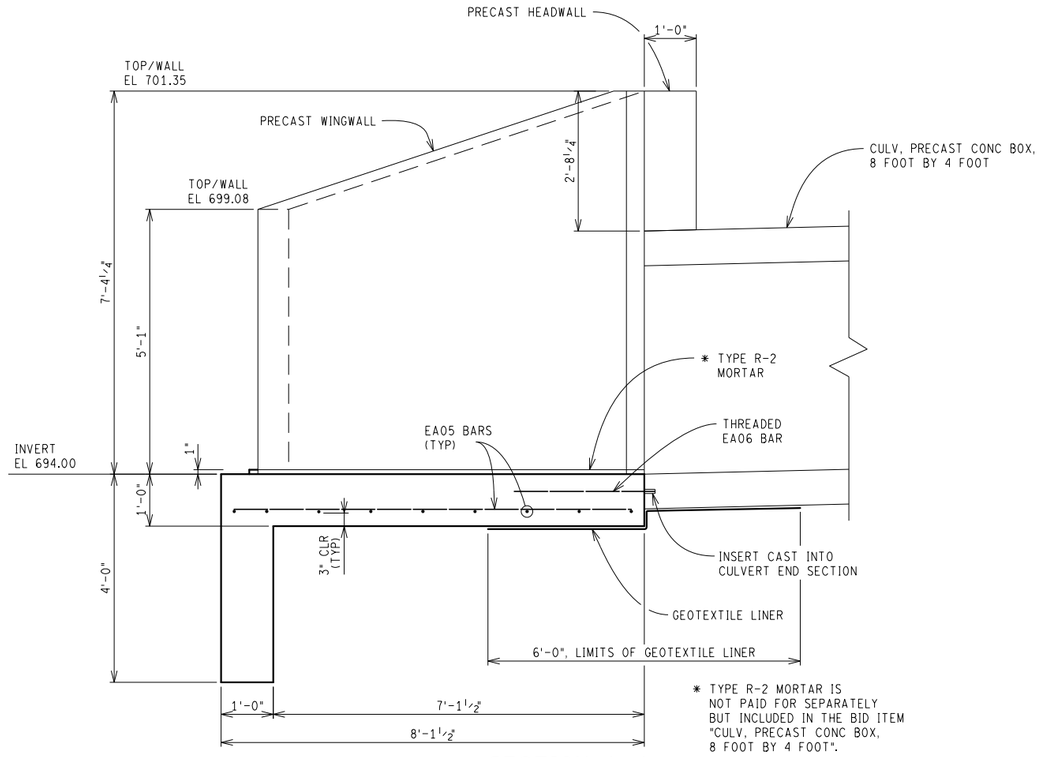
FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

DRAWN BY: DAF	DATE: 1/31/2017 10:01:57 AM	CS: 52042	HOSPITAL DR PROP BOX CULVERTS
CHK'D BY:	DESIGN UNIT: FILPUS	JN: MQ17-025	OUTLET HEADWALL DETAILS
FILE:6553 US41 Hospital Dr Box Culvert Details 002	TSC: ISHPEMING	MDOT PERMIT 043179-16	

DRAWING	SHEET
US41	SECT 1
	134



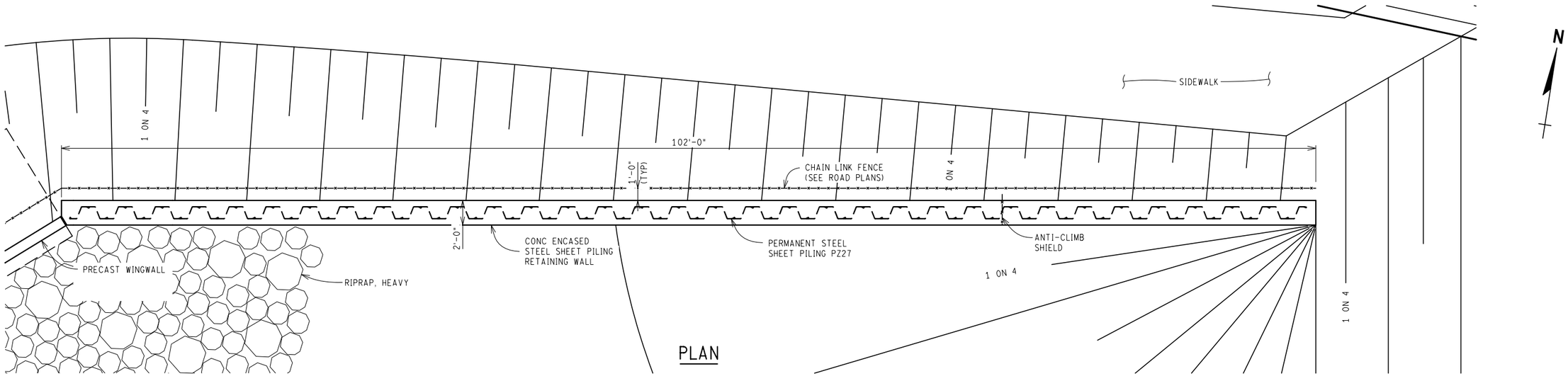
SECTION A-A

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

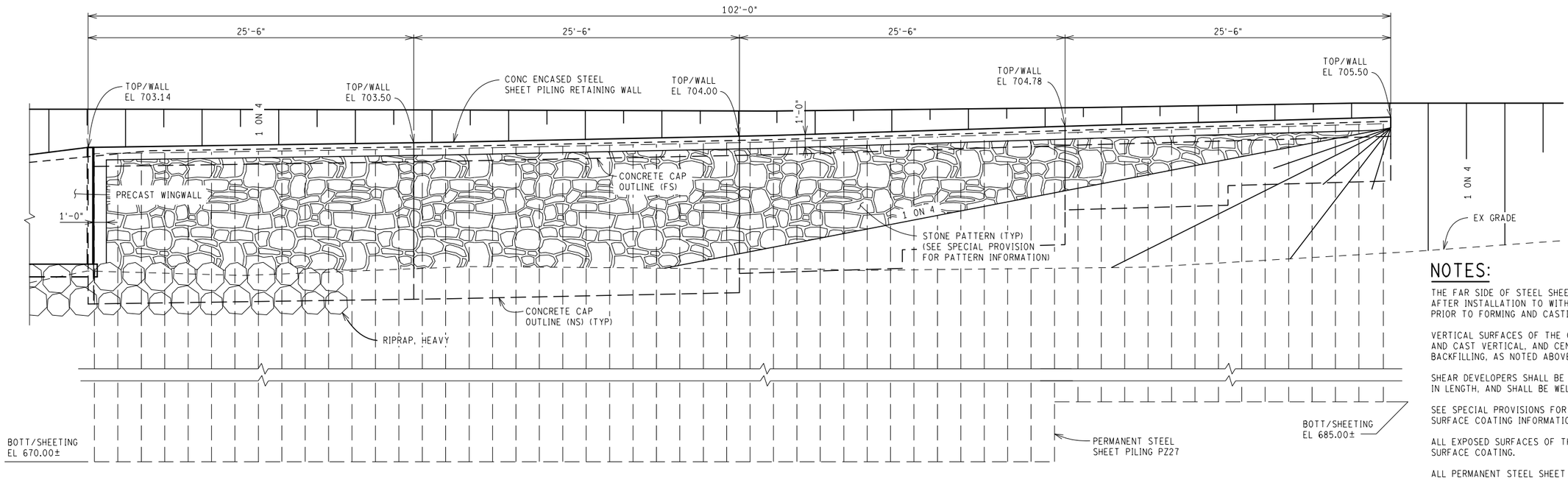
DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

DRAWN BY: DAF	DATE: 1/31/2017 10:02:35 AM	CS: 52042	HOSPITAL DR PROP BOX CULVERTS	DRAWING	SHEET
CHK'D BY:	DESIGN UNIT: FILPUS	JN: MQ17-025	OUTLET HEADWALL DETAILS	US41	SECT 1
FILE:6553 US41 Hospital Dr Box Culvert Details 003	TSC: ISHPEMING	MDOT PERMIT 043179-16			135



PLAN



ELEVATION-SHEET PILE WALL

CHAIN LINK FENCE NOT SHOWN FOR CLARITY

NOTES:

THE FAR SIDE OF STEEL SHEET PILING RETAINING WALL SHALL BE BACKFILLED AFTER INSTALLATION TO WITHIN 2 FEET OF THE TOP OF WALL ELEVATIONS PRIOR TO FORMING AND CASTING THE CONCRETE ENCASEMENT.

VERTICAL SURFACES OF THE CONCRETE WALL ENCASEMENT SHALL BE FORMED AND CAST VERTICAL, AND CENTERED ON THE STEEL SHEET PILING, AFTER BACKFILLING, AS NOTED ABOVE.

SHEAR DEVELOPERS SHALL BE 3/4" DIAMETER HEADED STUDS AND 3 INCHES IN LENGTH, AND SHALL BE WELDED ALL-AROUND TO THE STEEL SHEET PILING.

SEE SPECIAL PROVISIONS FOR CONCRETE TEXTURING AND CONCRETE SURFACE COATING INFORMATION.

ALL EXPOSED SURFACES OF THE CONCRETE SHALL RECEIVE CONCRETE SURFACE COATING.

ALL PERMANENT STEEL SHEET PILING SHALL BE PZ27. WHERE ALLOWED BY THE ENGINEER, SELECT ALTERNATE HOT ROLLED SHEET PILING WITH A NOMINAL SECTION MODULUS OF AT LEAST 30.2 IN3/FT, OR A COLD ROLLED SHEET PILING WITH A NOMINAL SECTION MODULUS OF AT LEAST 35.5 IN3/FT.

LOW TEMPERATURE PROTECTION OF CONCRETE SHALL BE APPLIED ACCORDING TO SECTION 706.03 J. OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION. LOW TEMPERATURE PROTECTION OF CONCRETE WILL NOT BE PAID FOR SEPARATELY, BUT WILL BE INCLUDED IN THE BID ITEM "CONC, GRADE D".

OVERHEAD UTILITIES PRESENT (SEE ROAD PLANS). CONTRACTOR SHALL TAKE CARE NOT TO DISTURB OVERHEAD UTILITIES DURING CONSTRUCTION OPERATIONS.

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

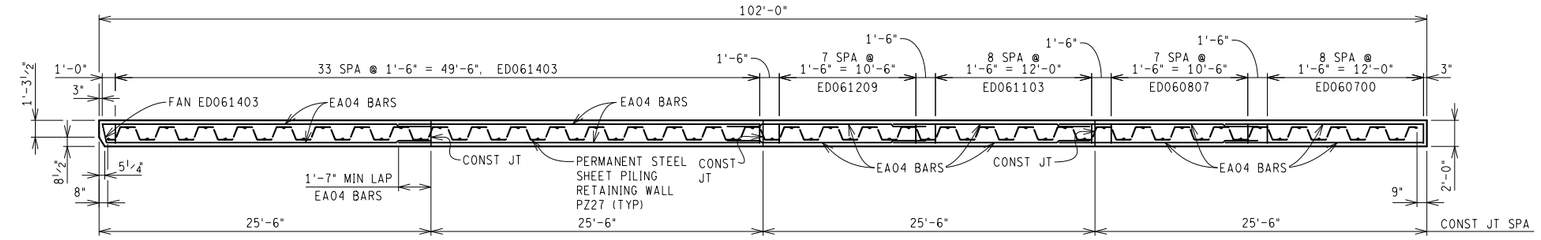
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CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

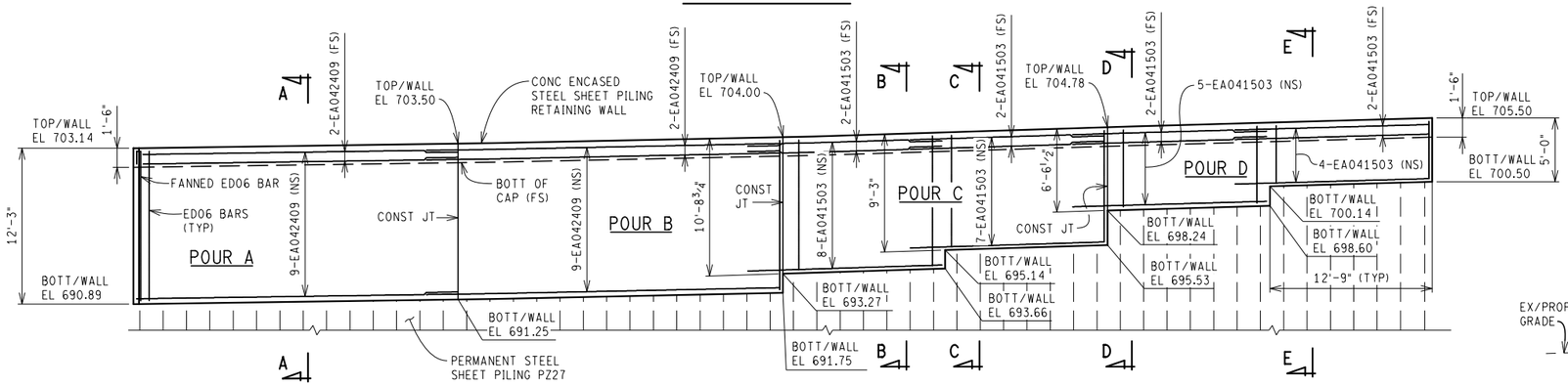
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CHK'D BY:	DESIGN UNIT: FILPUS	JN: MQ17-025	SHEET PILE WALL DETAILS
FILE: 6553 US41 Hospital Dr SSP Wall Details 001	TSC: ISHPEMING	MDOT PERMIT 043179-16	

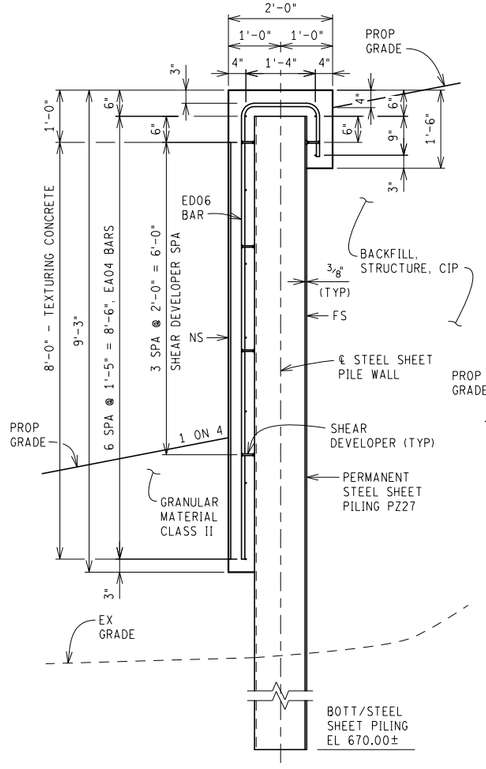
DRAWING	SHEET
US41	SECT 1
	136



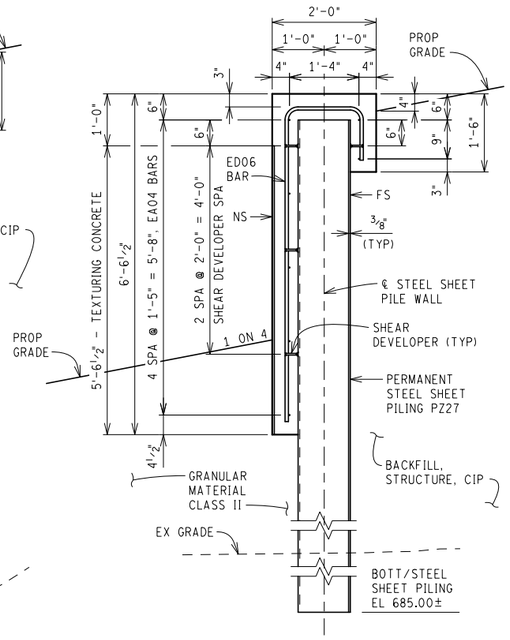
PLAN OF WALL



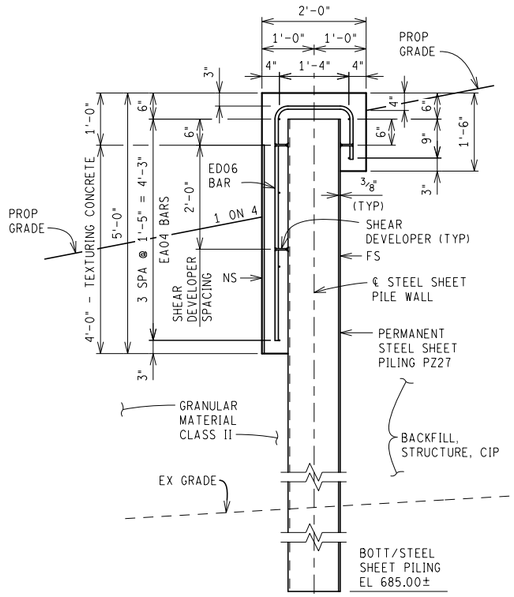
ELEVATION-SHEET PILE WALL



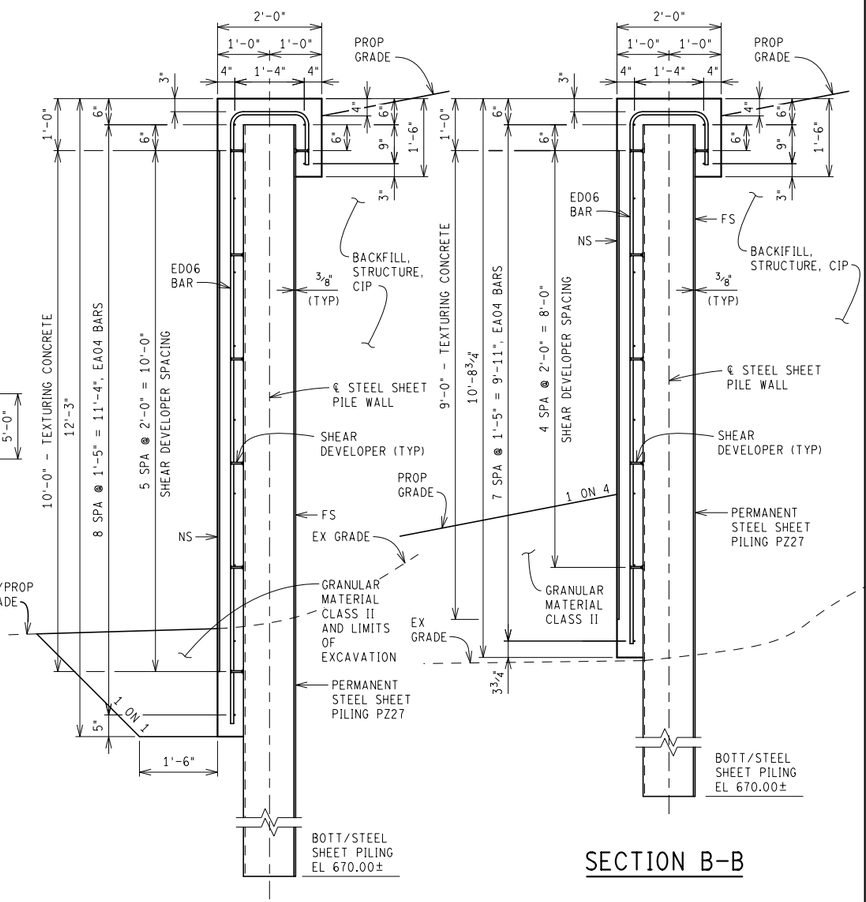
SECTION C-C



SECTION D-D

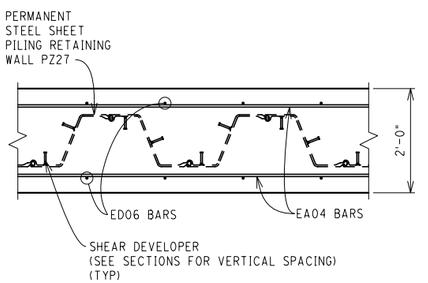


SECTION E-E



SECTION A-A

SECTION B-B



PARTIAL PLAN OF CONCRETE CAP

SHOWING SHEAR DEVELOPERS - 784 REQUIRED

CONC, GRADE D QUANTITIES*	
POUR	CYD
A	13.0
B	13.0
C	11.0
D	7.0
TOTAL	44.0

* FOR INFORMATION ONLY

NOTES:

NS DENOTES NEAR SIDE.

FS DENOTES FAR SIDE.

FOR BEVEL AND MOLDING DETAILS, SEE STANDARD PLAN B-103-SERIES.

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

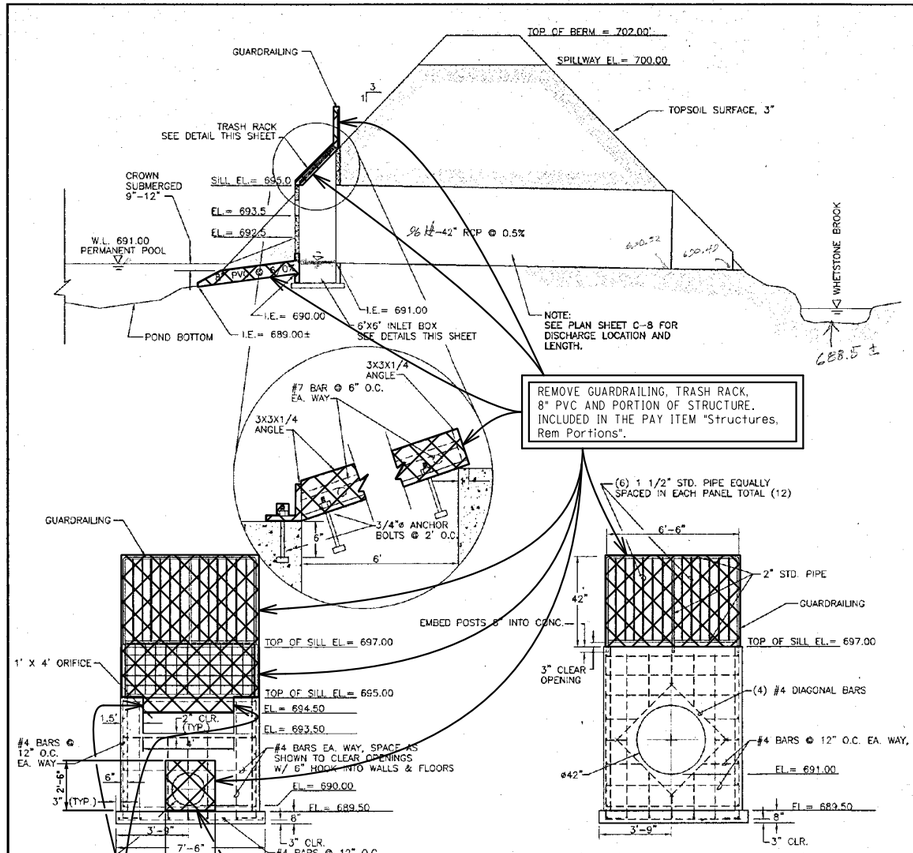
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CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

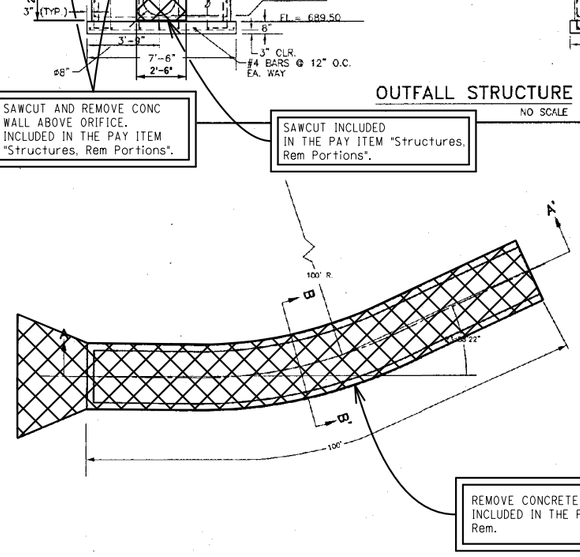
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CHK'D BY:	DESIGN UNIT: FILPUS	JN: MQ17-025	SHEET PILE WALL DETAILS
FILE: 6553_US41_Hospital Dr_SSP Wall Details_002	TSC: ISHPEMING	MDOT PERMIT 043179-16	

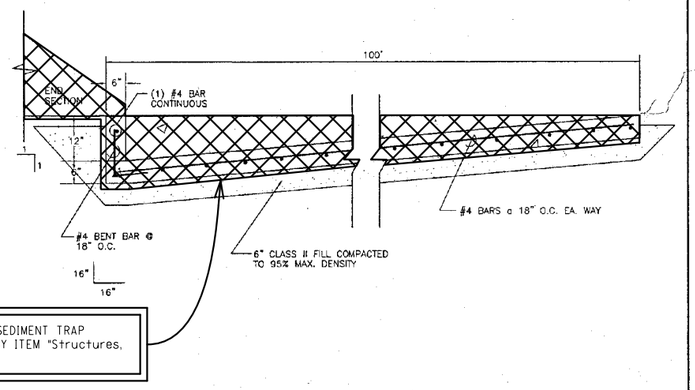
DRAWING	SHEET
US41	SECT 1
	137



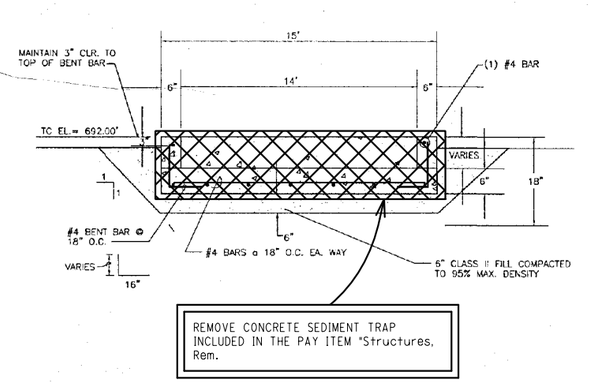
OUTFALL STRUCTURE
NO SCALE



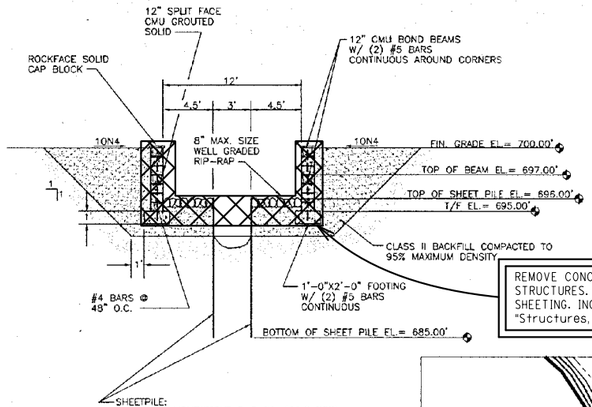
CONCRETE SEDIMENT TRAP
NO SCALE



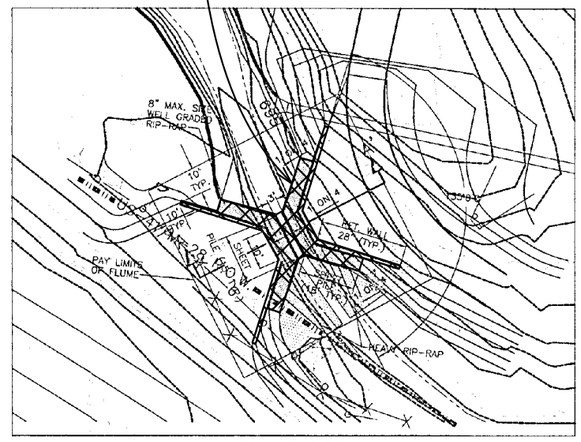
CONCRETE SEDIMENT TRAP A-A'
NO SCALE



CONCRETE SEDIMENT TRAP B-B'
NO SCALE



FLUME DETAIL A-A'
SCALE 1"= 5'



FLUME DETAIL
SCALE 1"= 20'

SUNDBERG, CARLSON & ASSOCIATES, INC.

Engineers
Architects
Surveyors
Environmental Services
Computer Services

914 W. Baraga Avenue
Marquette, MI 49855

(906) 228-2333
(906) 226-8371 Fax

PROJECT TITLE

BARAGA AVENUE DETENTION BASIN

CITY OF MARQUETTE
IN COOPERATION
WITH
MARQUETTE COUNTY
CONSERVATION DISTRICT

DATE	ISSUED FOR
4/28/97	REISSUED FOR BIDS
9/25/96	REISSUED FOR PERMITS
8/6/96	ISSUED FOR BIDS
8/6/96	ISSUED FOR REVIEW
designed	MG/BAH 8/1/96
drawn	RCM 8/1/96
checked	DSB 8/1/96
approved	RAH 8/5/96

SHEET TITLE

DETAIL SHEET

CAD DRAWING FILE
N:\MARQCITY\DET-POND\BARAGA\EP DETAIL-2.DWG

JOB No.
96-061

SHEET No.
C-9

THE ONLY ITEMS OF WORK TO BE DONE FROM THIS SHEET ARE IDENTIFIED BY THE LEGEND BOX BELOW, LABELED WITH THIS PROJECT'S JOB NUMBER.

PROPOSED WORK

DENOTES REMOVAL PORTIONS

REMOVAL SHEET

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

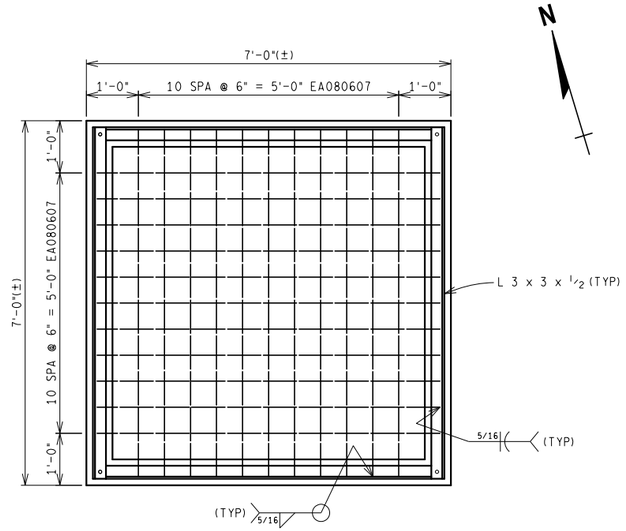
DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

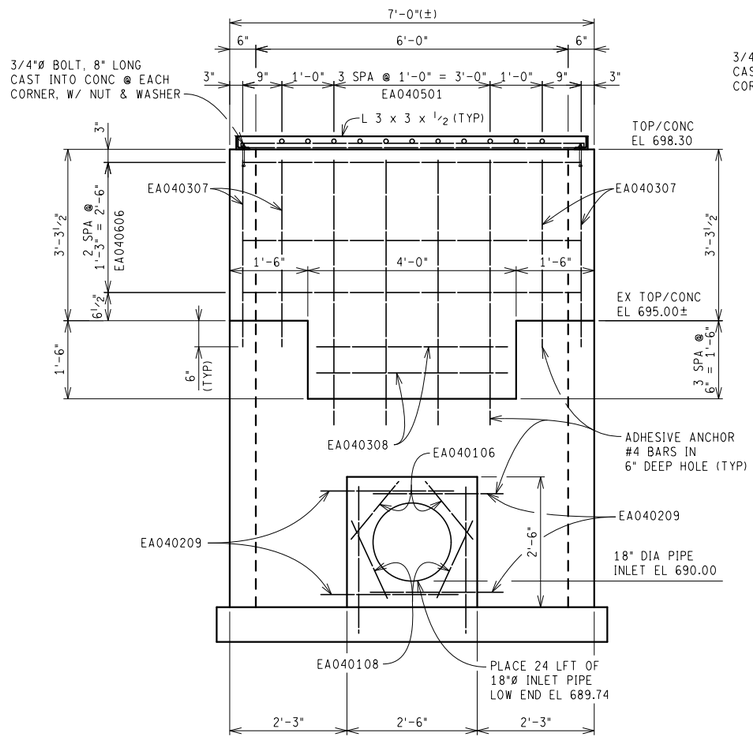
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DRAWN BY: DAF	DATE: 12/19/2016 10:04:35 AM	CS: 52042	HOSPITAL DR RETENTION BASIN
CHK'D BY: MTL	DESIGN UNIT: FILPUS	JN: MQ17-025	REMOVAL SHEET
FILE: 6553_Hospital Dr_Rem.dgn	TSC: ISHPEMING	MDOT PERMIT 043179-16	

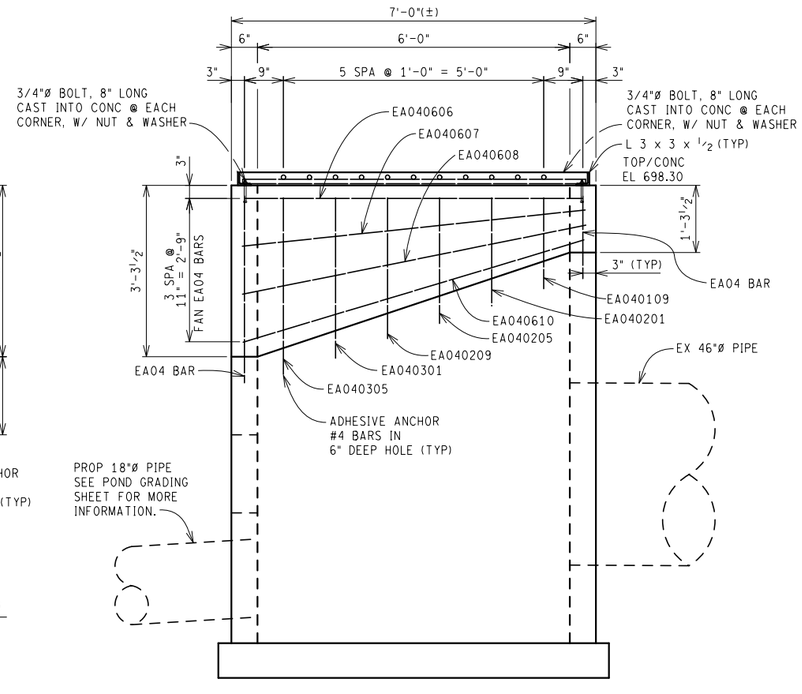
DRAWING	SHEET
US41	SECT 1
	138



PLAN OF TOP GRATING

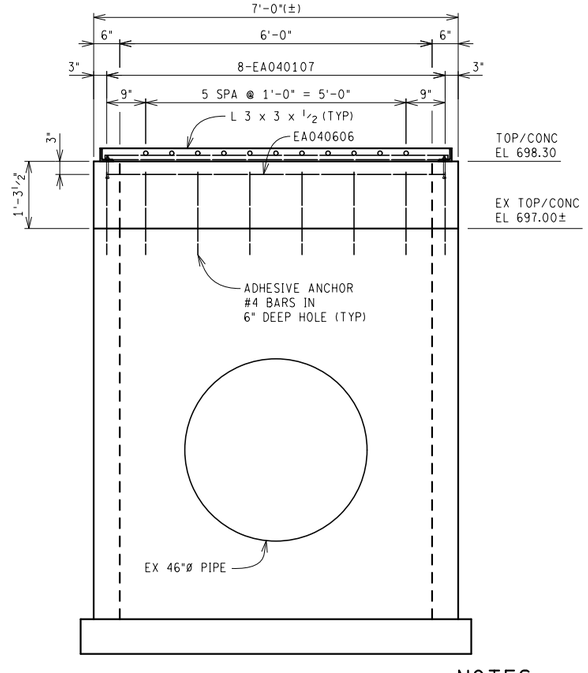


NORTH ELEVATION



WEST ELEVATION

(EAST ELEVATION SAME OPPOSITE HAND)



SOUTH ELEVATION

NOTES

FIELD VERIFY ALL EXISTING DIMENSIONS.

WELD REBAR FOR GRATE TO ANGLES - INCLUDED IN THE COST OF STRUCTURAL STEEL, ERECT.

COST OF FURN AND INSTALLING ANCHOR BOLTS INCLUDED IN THE COST OF STRUCTURAL STEEL, FURN AND FAB.

REINFORCING STEEL IS PAID FOR SEPARATELY AND INCLUDED ON THE REINFORCEMENT DETAILS SHEET.

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

NO SCALE

DRAWN BY: DAF	DATE: 1/16/2017 12:12:30 PM
CHK'D BY: MTL	DESIGN UNIT: FILPUS
FILE: 6553_US41_Hospital Dr Basin_002.dgn	TSC: ISHPEMING

CS: 52042	HOSPITAL DR RETENTION BASIN
JN: MQ17-025	OUTFALL STRUCTURE
MDOT PERMIT 043179-16	

DRAWING	SHEET
US41	SECT 1
	139

TRIPLE BOX CULVERT INLET

	BAR	DIMENSIONS a	b	c	d	e	f	g	h	NO. REQ'D	TOTAL WT.
	EA050300	3'-0"								18	57
	EA050306	3'-6"								5	19
	EA050402	4'-2"								34	148
	EA050404	4'-4"								2	10
	EA051702	17'-2"								3	54
	EA053300	33'-0"								6	207
*	EA060209	2'-9"								28	116
									TOTAL WT		611

TRIPLE BOX CULVERT OUTLET

	BAR	DIMENSIONS a	b	c	d	e	f	g	h	NO. REQ'D	TOTAL WT.
	EA050600	6'-0"								9	57
	EA050707	7'-7"								39	309
	EA050902	9'-2"								7	67
	EA050909	9'-9"								17	173
	EA051600	16'-0"								11	184
	EA053800	38'-0"								8	318
	EA054100	41'-0"								1	43
*	EA060209	2'-9"								28	116
	EC050710	4'-4 3/8"	1'-8"	0'-0"	0'-0"	0'-0"	4'-4 3/8"	6'-2"		1	9
									TOTAL WT		1276

RETENTION BASIN

	BAR	DIMENSIONS a	b	c	d	e	f	g	h	NO. REQ'D	TOTAL WT.
	EA040101	1'-1"								8	6
	EA040103	1'-3"								2	2
	EA040106	1'-6"								2	3
	EA040107	1'-7"								2	3
	EA040108	1'-8"								2	3
	EA040111	1'-11"								2	3
	EA040203	2'-3"								2	4
	EA040207	2'-7"								2	4
	EA040209	2'-9"								4	8
	EA040211	2'-11"								2	4
	EA040301	3'-1"								4	9
	EA040308	3'-8"								2	5
	EA040407	4'-7"								4	13
	EA040606	6'-6"								6	27
	EA040607	6'-7"								2	9
	EA040608	6'-8"								2	9
	EA040610	6'-10"								2	10
	EA080607	6'-7"								22	387
									TOTAL WT		509

TRIPLE BOX SSP WALL

	BAR	DIMENSIONS a	b	c	d	e	f	g	h	NO. REQ'D	TOTAL WT.
	EA041503	15'-3"								32	326
	EA042409	24'-9"								22	364
	ED060700	1'-0"	1'-6"	4'-6"						9	95
	ED060807	1'-0"	1'-6"	6'-1"						8	104
	ED061103	1'-0"	1'-6"	8'-9"						9	153
	ED061209	1'-0"	1'-6"	10'-3"						8	154
	ED061403	1'-0"	1'-6"	11'-9"						35	750
									TOTAL WT		1946

SEDIMENT TRAP

	BAR	DIMENSIONS a	b	c	d	e	f	g	h	NO. REQ'D	TOTAL WT.
	EA041406	14'-6"								69	669
	EA043403	34'-3"								39	893
	EB040200	1'-0"	1'-0"							141	189
									TOTAL WT		1751

* THREADED BAR

HOSPITAL DR 3 SIDED CULVERT

	BAR	DIMENSIONS a	b	c	d	e	f	g	h	NO. REQ'D	TOTAL WT.
	EA060806	8'-6"								56	715
	EA061809	18'-9"								40	1127
	EA061906	19'-6"								340	9959
	EA063703	37'-3"								168	9400
									TOTAL WT		21,201

GROVE BAFFLES

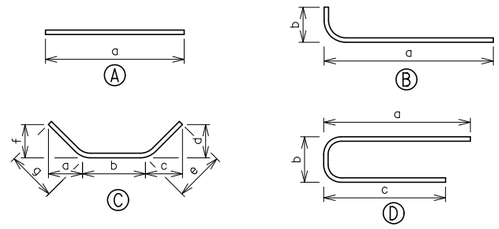
	BAR	DIMENSIONS a	b	c	d	e	f	g	h	NO. REQ'D	TOTAL WT.
*	EA040104	1'-4"								16	15
*	EA040108	1'-8"								16	18
*	EA040200	2'-0"								16	22
*	EA040205	2'-5"								16	26
*	EA040209	2'-9"								84	155
*	EA040301	3'-1"								16	33
*	EA040306	3'-6"								16	38
*	EA040310	3'-10"								16	41
	EA040900	9'-0"								4	25
	EA041006	10'-6"								18	127
	EC040308	0'-0"	2'-3 3/4"	0'-11 1/2"	0'-11 1/2"	1'-4 1/4"	0'-0"	0'-0"		16	40
	EC040804	0'-0"	6'-11 3/4"	0'-11 1/2"	0'-11 1/2"	1'-4 1/4"	0'-0"	0'-0"		16	90
	ED040207	1'-0"	0'-7"	1'-0"						76	132
									TOTAL WT		762

GROVE BOX INLET

	BAR	DIMENSIONS a	b	c	d	e	f	g	h	NO. REQ'D	TOTAL WT.
	EA050303	3'-3"								6	21
	EA050503	5'-3"								6	33
	EA050703	7'-3"								6	46
	EA050903	9'-3"								6	58
	EA051200	12'-0"								8	101
	EA051303	13'-3"								26	360
	EA051500	15'-0"								4	63
	EA051800	18'-0"								4	76
	EA052100	21'-0"								4	88
	EA052400	24'-0"								4	101
	EA052600	26'-0"								4	109
*	EA060209	2'-9"								13	54
	EA061506	15'-6"								26	606
	EA062806	28'-6"								26	1113
	EA071103	11'-3"								138	3174
	EC050403	1'-5"	2'-3"	0'-0"	0'-0"	0'-0"	1'-5"	2'-0"		2	9
									TOTAL WT		6012

GROVE BOX OUTLET

	BAR	DIMENSIONS a	b	c	d	e	f	g	h	NO. REQ'D	TOTAL WT.
	EA050303	3'-3"								8	28
	EA050503	5'-3"								8	44
	EA051006	10'-6"								30	329
	EA051409	14'-9"								10	154
	EA051809	18'-9"								4	79
	EA052209	22'-9"								4	95
	EA052509	25'-9"								4	108
*	EA060209	2'-9"								13	54
	EA060708	7'-8"								2	24
	EA060806	8'-6"								2	26
	EA060905	9'-5"								2	29
	EA061004	10'-4"								2	32
	EA061103	11'-3"								2	34
	EA061106	11'-6"								16	277
	EA061606	16'-6"								26	645
	EA070703	7'-3"								2	30
	EA070800	8'-0"								2	33
	EA070808	8'-8"								2	36
	EA070904	9'-4"								2	39
	EA071001	10'-1"								2	42
	EA071009	10'-9"								2	44
	EA071103	11'-3"								76	1748
	EC050403	1'-5"	2'-3"	0'-0"	0'-0"	0'-0"	1'-5"	2'-0"		2	9
	EC071006	1'-8 3/4"	5'-6"	1'-9 3/4"	1'-8 3/4"	2'-6"	1'-9 3/4"	2'-6"		2	43
									TOTAL WT		3982



EPOXY COATED
BAR SIZE
BAR LENGTH (FT)
BAR LENGTH (IN)
EA064700
BAR SHAPE

BAR LEGEND

MISCELLANEOUS QUANTITIES

38,050	Lb	Reinforcement, Steel, Epoxy Coated

NOTE:

REINFORCEMENT SHALL BE BUNDLED AND TAGGED AS TO THE LOCATION AS SHOWN ON THIS SHEET.

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)

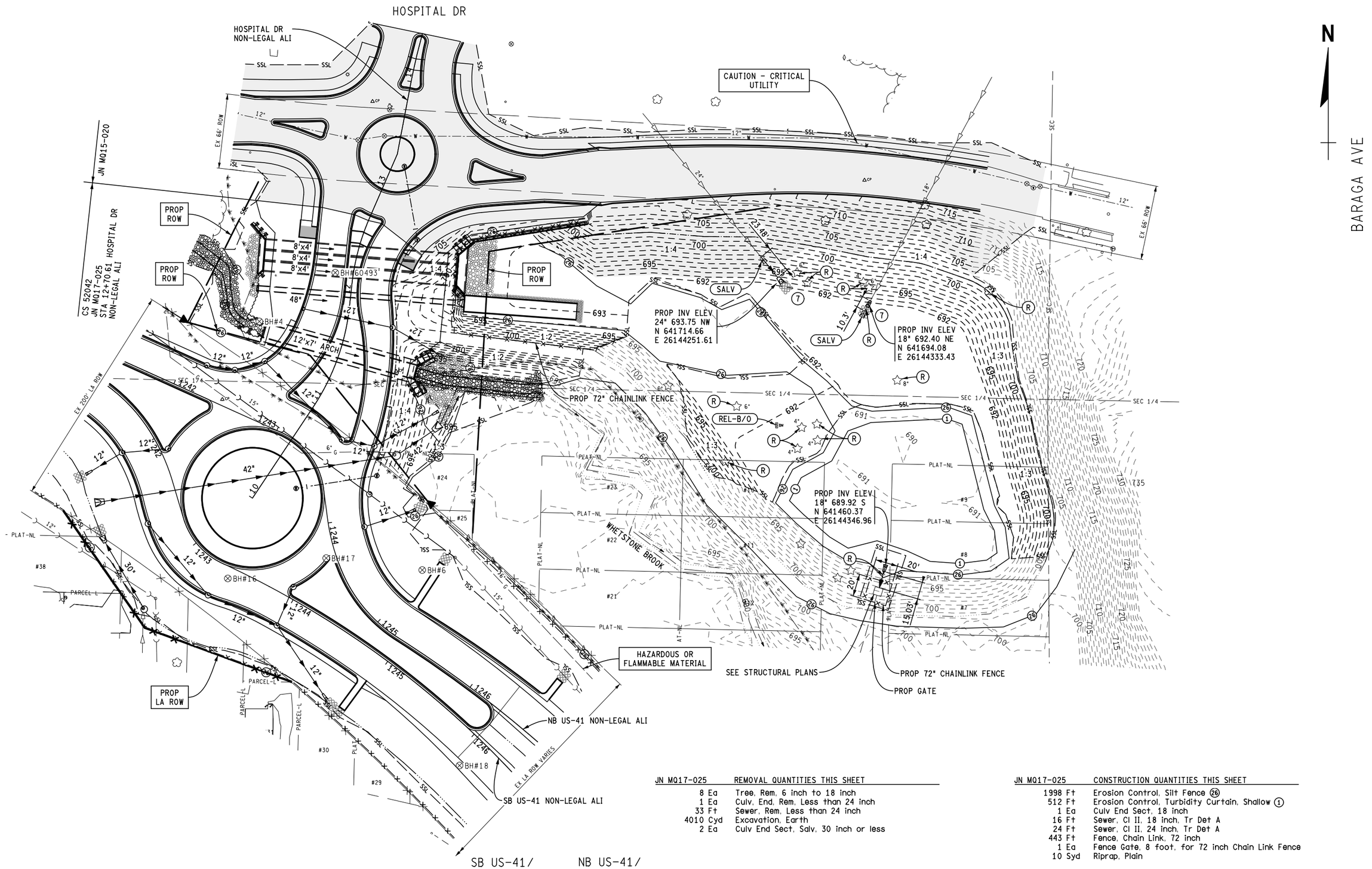
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

NO SCALE

DRAWN BY: DAF	DATE: 11/21/2016 12:02:18 PM	CS: 52042	DRAWING / SHEET
CHK'D BY:	DESIGN UNIT: FILPUS	JN: M017-025 MDOT PERMIT 043179-16	REINFORCEMENT DETAILS / US41 / SECT 2
FILE: 6553_US41_reinf.dgn	TSC: ISHPEMING		140



JN M017-025	REMOVAL QUANTITIES THIS SHEET
8 Ea	Tree, Rem, 6 inch to 18 inch
1 Ea	Culv, End, Rem, Less than 24 inch
33 Ft	Sewer, Rem, Less than 24 inch
4010 Cyd	Excavation, Earth
2 Ea	Culv End Sect, Salv, 30 inch or less

JN M017-025	CONSTRUCTION QUANTITIES THIS SHEET
1998 Ft	Erosion Control, Silt Fence (26)
512 Ft	Erosion Control, Turbidity Curtain, Shallow (1)
1 Ea	Culv End Sect, 18 inch
16 Ft	Sewer, Cl II, 18 inch, Tr Det A
24 Ft	Sewer, Cl II, 24 inch, Tr Det A
443 Ft	Fence, Chain Link, 72 inch
1 Ea	Fence Gate, 8 foot, for 72 inch Chain Link Fence
10 Syd	Riprap, Plain

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 80

FILE: 6553_POND_GRADING.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: M017-025
MDOT PERMIT 043179-16

GRADING SHEET
US41/M-28/HOSPITAL DR AND
FLOOD CONTROL POND

DRAWING: GRADE POND 001
SHEET: SECT 1 141

NB US-41 /
WB M-28

BARAGA AVE

HOSPITAL DR

N

BARAGA AVE

JN MQ15-020

HOSPITAL DR NON-LEGAL ALI

CAUTION - CRITICAL UTILITY

MATCH EXISTING ELEVATION
STA 12+24.61
OFF 152.93' LT

MATCH EXISTING CHANNEL WIDTH

PROP ROW

HAZARDOUS OR FLAMMABLE MATERIAL

CS 52042
JN MQ17-025
STA 12+70.61 HOSPITAL DR
NON-LEGAL ALI

8'x4'
8'x4'
8'x4'

48"

12"

12'x7' ARCH

18"

SEC 1/4

EXISTING WHETSTONE BROOK

WHETSTONE BROOK

MATCH EXISTING ELEVATION
STA 11+64.00
OFF 181.00' RT

PLAT-NL

SECTION A-A

EX GROUND

1:3

6"

36"

6"

GRANULAR MATERIAL, CL II

RIPRAP, SPECIAL, CL II

GRADE TO THIS LINE
PAID FOR AS EXCAVATION,
CHANNEL

MATCH EXISTING
BOTTOM WIDTH

SECTION B-B

SHEET PILE
(SEE CULVERT PLANS)

WETLAND SEEDING

RIPRAP

ELEV 694.50

5' BOTTOM
WIDTH

SECTION C-C

ELEV 703.00

SLOPE RESTORATION,
TYPE C (HIGH VELOCITY
MULCH BLANKET)

EXCAVATION, EARTH

EXCAVATION, CHANNEL

1:2

ELEV 694.00

EMBANKMENT, CIP *

8' BOTTOM
WIDTH

LEGEND

WETLAND SEEDING

(a)	12+19.64 694.49 140.00' LT	(d)	11+94.86 693.65 105.40' LT
(b)	12+24.28 694.49 136.11' LT	(e)	11+57.43 691.56 145.02' RT
(c)	11+93.44 693.65 109.66' LT	(f)	11+62.05 691.56 144.13' RT

NOTE:
SEE MISCELLANEOUS QUANTITY SHEET AND HOSPITAL DR CONSTRUCTION AND REMOVAL SHEETS FOR QUANTITIES

* BACKFILL EXISTING WHETSTONE BROOK OUTSIDE OF ROAD EMBANKMENT WITH NATIVE WETLAND SOILS EXCAVATED FROM UNDER THE ROAD EMBANKMENT AS DIRECTED BY ENGINEER AND PAID FOR AS EMBANKMENT, CIP.

HOSPITAL DR

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 40

FILE: 6553_STREAM_GRADING001.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

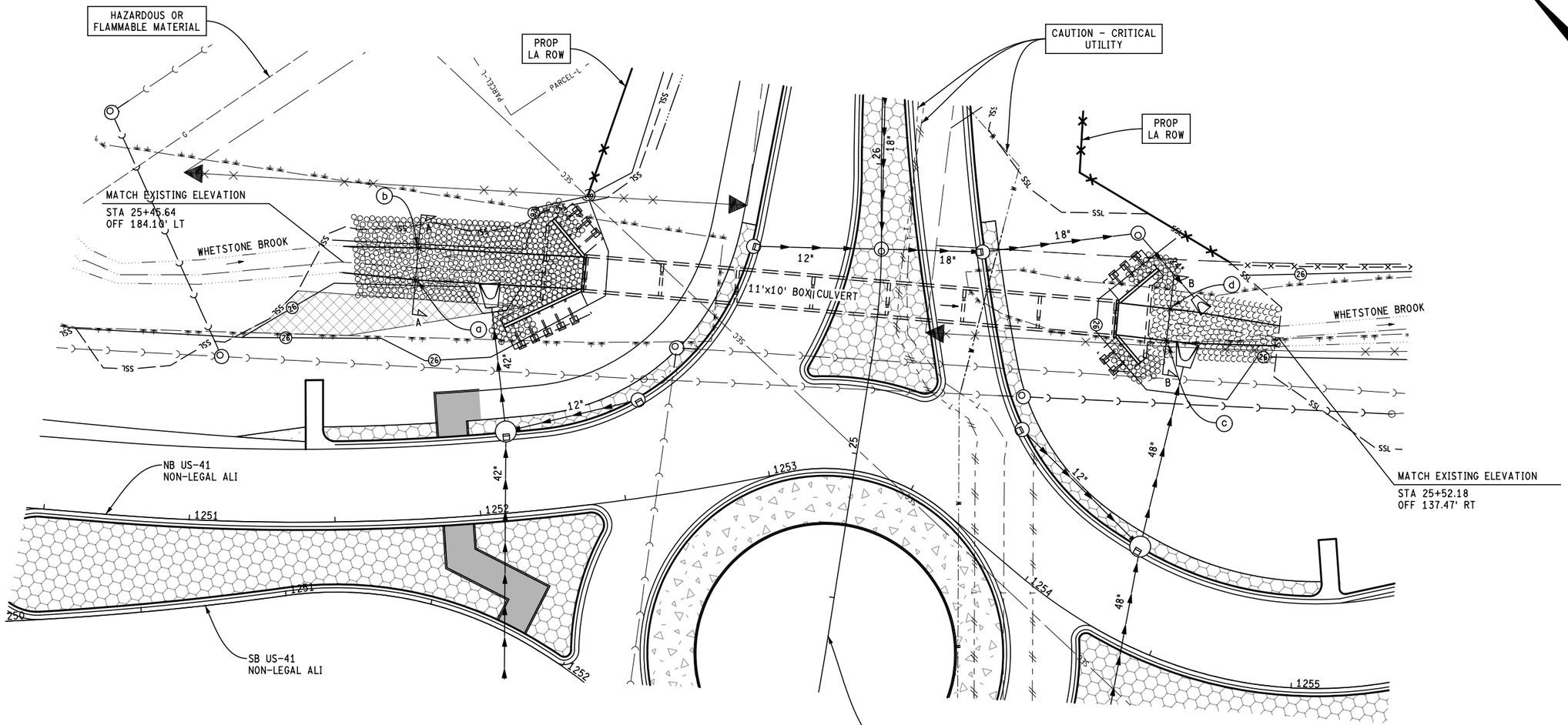
CHANNEL GRADING SHEET
US41/M-28/HOSPITAL DR AND
FLOOD CONTROL POND

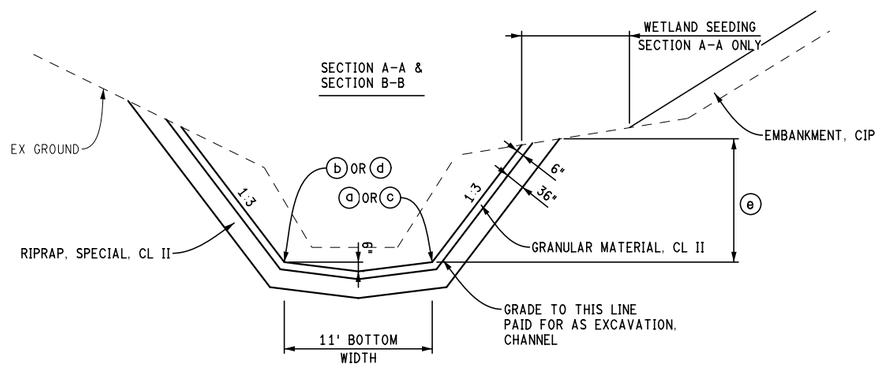
DRAWING: GRADE CHANNEL 001
SHEET: SECT 1 142

S 7TH ST

SB US-41 / EB M-28

NB US-41 / WB M-28





LEGEND

WETLAND SEEDING

(a) 25+36.62, 687.55, 158.77' LT

(b) 25+66.80, 687.55, 158.75' LT

(c) 25+49.07, 685.50, 99.41' RT

(d) 25+56.93, 685.50, 99.80' RT

(e) 5' MAXIMUM FOR SECTION B-B FOR GRANULAR MATERIAL, CL II AND RIPRAP, SPECIAL, CL II.

NOTE:
SEE MISCELLANEOUS QUANTITY SHEET AND US-41 AND 7TH ST CONSTRUCTION AND REMOVAL SHEETS FOR QUANTITIES

GROVE ST

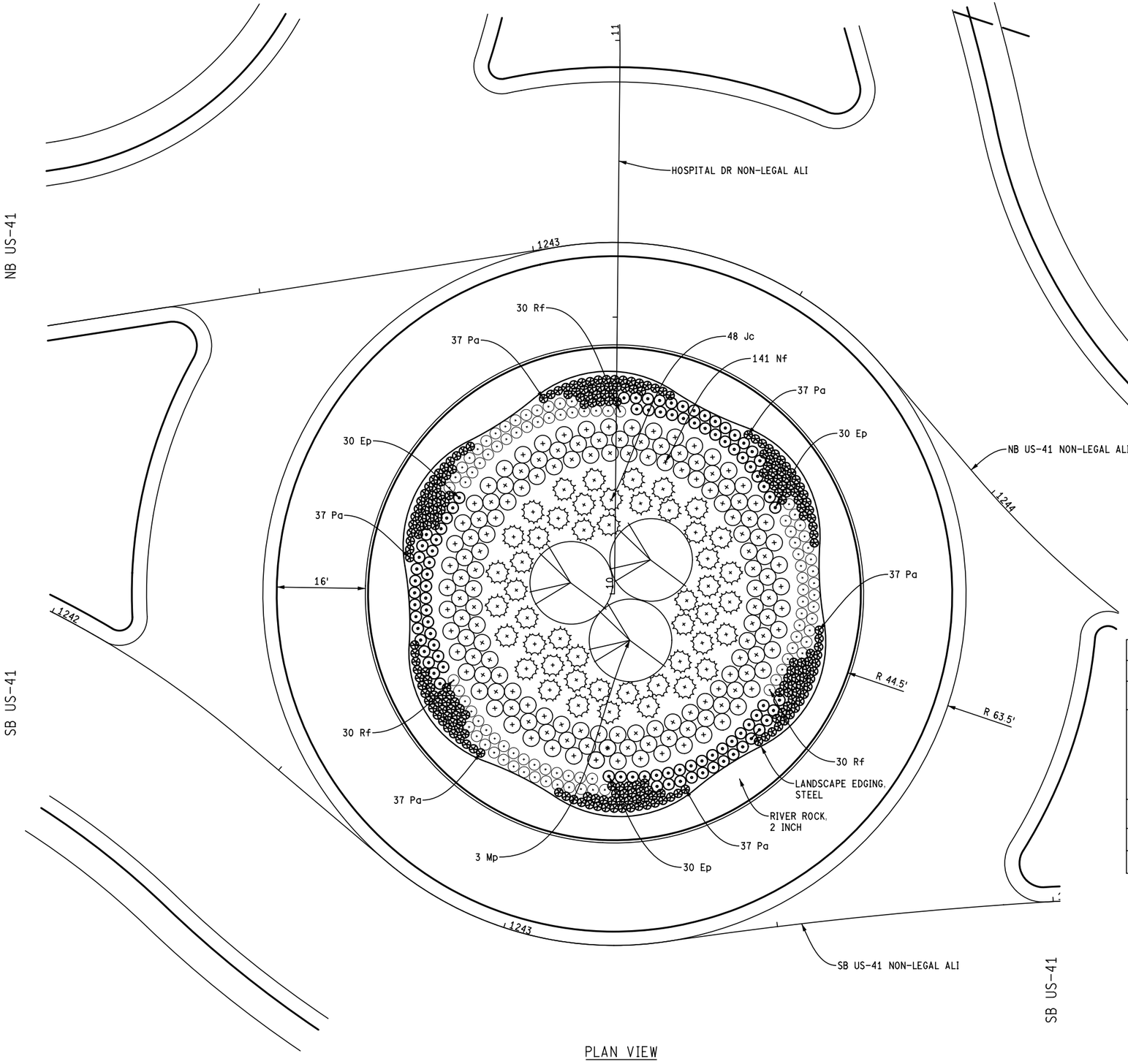
FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

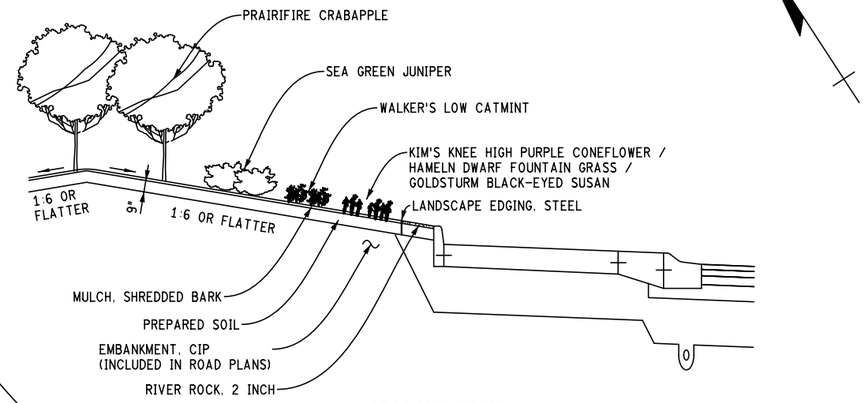
CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 40

	DATE: 2/10/2017	CS: 52042	CHANNEL GRADING SHEET	DRAWING / SHEET
	DESIGN UNIT: FILPUS	JN: MQ17-025	US41/M-28/7TH ST	GRADE CHANNEL 002 / SECT 1
FILE: 6553_STREAM_GRADING002.dgn	TSC: ISHPEMING	MDOT PERMIT 043179-16		143



PLAN VIEW



SECTION VIEW

LANDSCAPING NOTES

1. EXISTING SOIL WITHIN THE CENTRAL ISLAND SHALL BE EXCAVATED AND REMOVED TO A DEPTH OF 18" BELOW FINISH GRADE PRIOR TO PLANTING. REPLACE WITH PREPARED SOIL IN ACCORDANCE WITH MDOT STANDARD SPECIFICATIONS, SECTION 815 FOR SITE PREPARATION. ALL PREPARED SOIL WILL BE INCLUDED IN THE ITEM SITE PREPARATION.
2. IN ADDITION TO PREPARED SOIL INCLUDED IN THE ITEM SITE PREPARATION, PLACE 9" OF COMPOST UNIFORMLY WITHIN THE CENTRAL ISLAND AND THOROUGHLY MIX INTO PREPARED SOIL PRIOR TO PLANTING.
3. SHREDDED BARK MULCH SHALL BE PLACED OVER THE ENTIRE PLANTING BED. REFER TO TYPICAL PLANTING PROCEDURES FOR REQUIRED DEPTH.
4. NEW PERIMETER PLANT BED EDGE SHALL BE A STEEL EDGE.

Symbol	Key	Botanical Name	Common Name	Size	Spacing/Comments
⊙	Ep	Echinacea purpurea 'Kim's Knee High'	'Kim's Knee High' Purple Coneflower	#1 Cont.	2' O.C.
✳	Jc	Juniperus chinensis 'Sea Green'	Sea Green Juniper	#3 Cont.	6' O.C.
◔	Ms	Malus 'Prairifire'	Prairifire Crabapple	1¾" Cal.	15' O.C., Matched Crown, B&B
⊕	Nf	Nepeta x faassenii 'Walker's Low'	Walker's Low Catmint	#1 Cont.	3' O.C.
⊛	Pa	Pennisetum alopecuroides 'Hameln'	'Hameln' Dwarf Fountain Grass	#1 Cont.	18" O.C.
⊙	Rf	Rudbeckia fulgida 'Goldsturm'	'Goldsturm' Black-eyed Susan	#1 Cont.	2' O.C.

JN MQ17-025 LANDSCAPING QUANTITIES THIS SHEET

0.33 LSUM	Site Preparation, Max
0.33 LSUM	Watering and Cultivating, First Season, Min
0.33 LSUM	Watering and Cultivating, Second Season, Min
90 Ea	Echinacea purpurpea 'Kim's Knee High', #1 cont.
48 Ea	Juniperus chinensis 'Sea Green', #3 cont.
3 Ea	Malus 'Prairie Fire', 1 3/4 inch
141 Ea	Nepeta x faassenii 'Walkers Low', #1 cont.
222 Ea	Pennisetum alopecuroides 'Hameln', #1 cont.
90 Ea	Rudbeckia fuldiga 'Goldsturm', #1 cont.
248 Ft	Landscape Edging, Steel
19 Cyd	River Rock, 2 inch
88 Cyd	Shredded Bark Mulch
132 Cyd	Compost Surface, Furn, LM

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 20

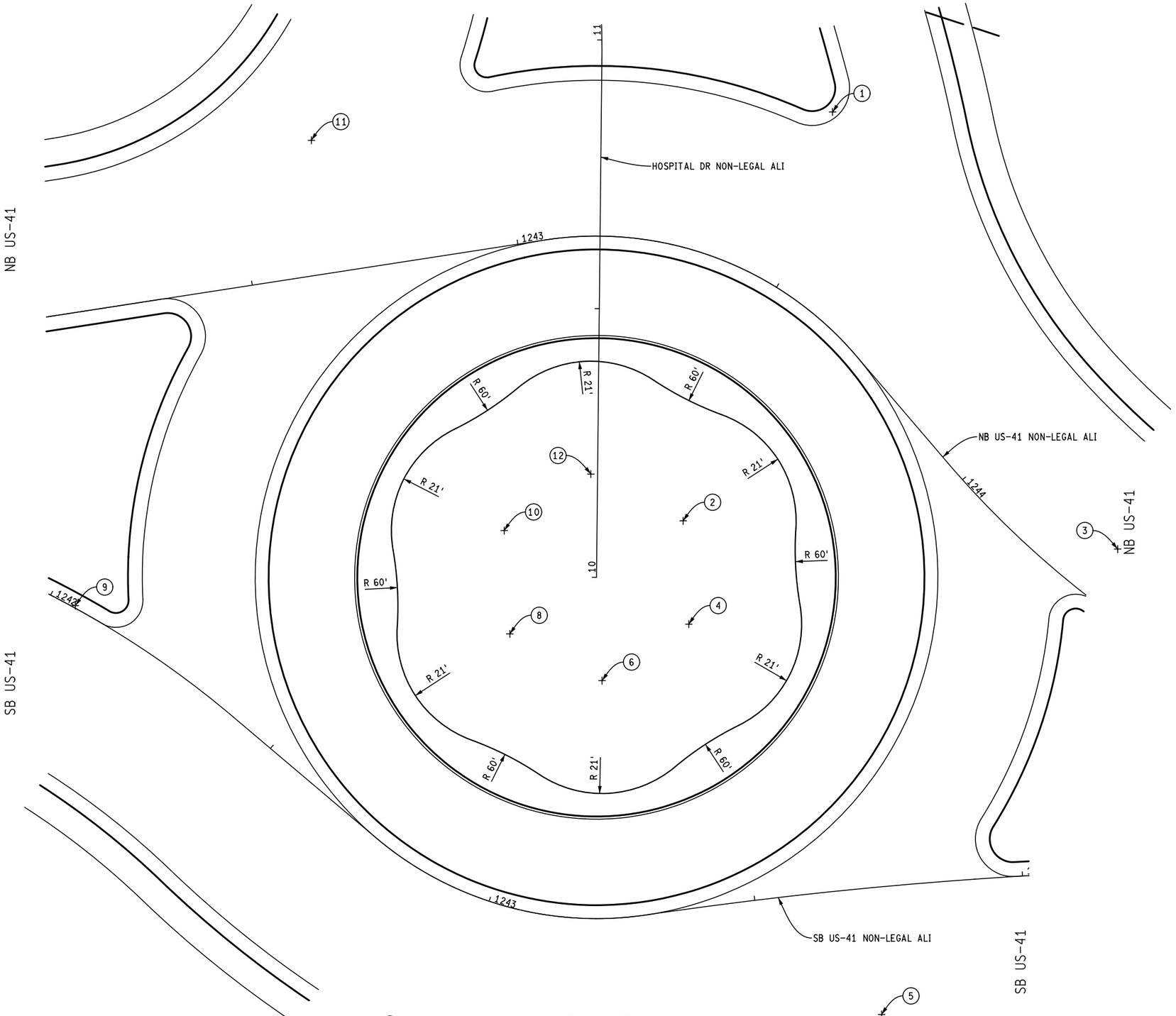
FILE: 6553_US41_LNDSCP_001.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

LANDSCAPING SHEET
US-41/M-28 AT HOSPITAL DR

DRAWING: US-41 LNDSCP 001
SHEET: SECT 1 144



PLAN VIEW

BED RADIUS CENTER POINTS		
KEY	NORTHING	EASTING
1	641568.04	26143870.86
2	641519.49	26143806.02
3	641470.94	26143870.86
4	641502.82	26143796.40
5	641422.39	26143786.77
6	641502.82	26143777.15
7	641470.94	26143702.68
8	641519.49	26143767.52
9	641568.04	26143702.68
10	641536.16	26143777.15
11	641616.59	26143786.77
12	641536.16	26143796.40

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)

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DLZ

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CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 20

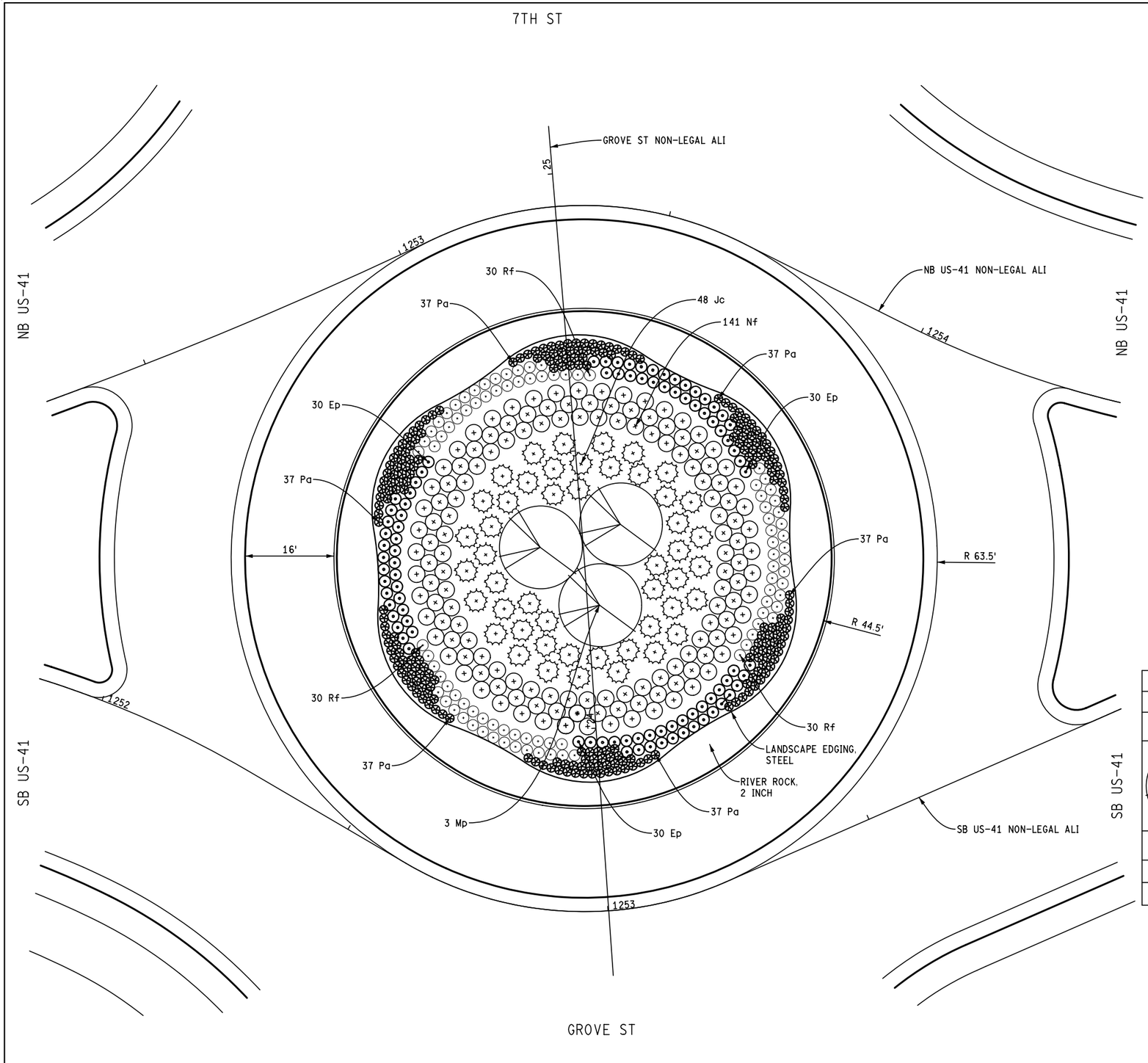
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DATE: 2/10/2017
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TSC: ISHPEMING

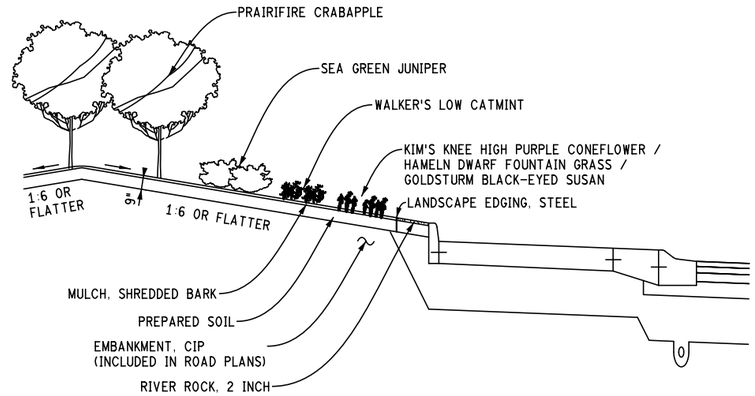
CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

LANDSCAPING SHEET
US-41/M-28 AT HOSPITAL DR

DRAWING	SHEET
US-41 LNDSCP 002	SECT 1 145



PLAN VIEW



SECTION VIEW

LANDSCAPING NOTES

1. EXISTING SOIL WITHIN THE CENTRAL ISLAND SHALL BE EXCAVATED AND REMOVED TO A DEPTH OF 18" BELOW FINISH GRADE PRIOR TO PLANTING. REPLACE WITH PREPARED SOIL IN ACCORDANCE WITH MDOT STANDARD SPECIFICATIONS, SECTION 815 FOR SITE PREPARATION. ALL PREPARED SOIL WILL BE INCLUDED IN THE ITEM SITE PREPARATION.
2. IN ADDITION TO PREPARED SOIL INCLUDED IN THE ITEM SITE PREPARATION, PLACE 9" OF COMPOST UNIFORMLY WITHIN THE CENTRAL ISLAND AND THOROUGHLY MIX INTO PREPARED SOIL PRIOR TO PLANTING.
3. SHREDDED BARK MULCH SHALL BE PLACED OVER THE ENTIRE PLANTING BED. REFER TO TYPICAL PLANTING PROCEDURES FOR REQUIRED DEPTH.
4. NEW PERIMETER PLANT BED EDGE SHALL BE A STEEL EDGE.

Symbol	Key	Botanical Name	Common Name	Size	Spacing/Comments
⊙	Ep	Echinacea purpurea 'Kim's Knee High'	'Kim's Knee High' Purple Coneflower	#1 Cont.	2' O.C.
✳	Jc	Juniperus chinensis 'Sea Green'	Sea Green Juniper	#3 Cont.	6' O.C.
	Ms	Malus 'Prairifire'	Prairifire Crabapple	1¾" Cal.	15' O.C., Matched Crown, B&B
⊕	Nf	Nepeta x faassenii 'Walker's Low'	Walker's Low Catmint	#1 Cont.	3' O.C.
⊛	Pa	Pennisetum alopecuroides 'Hameln'	'Hameln' Dwarf Fountain Grass	#1 Cont.	18" O.C.
⊙	Rf	Rudbeckia fulgida 'Goldsturm'	'Goldsturm' Black-eyed Susan	#1 Cont.	2' O.C.

JN MQ17-025 LANDSCAPING QUANTITIES THIS SHEET

0.34 LSUM	Site Preparation, Max
0.34 LSUM	Watering and Cultivating, First Season, Min
0.34 LSUM	Watering and Cultivating, Second Season, Min
3 Ea	Echinacea purpurpea 'Kim's Knee High', #1 cont.
48 Ea	Juniperus chinensis 'Sea Green', #3 cont.
3 Ea	Malus 'Prairie Fire', 1 3/4 inch
141 Ea	Nepeta x faassenii 'Walkers Low', #1 cont.
222 Ea	Pennisetum alopecuroides 'Hameln', #1 cont.
90 Ea	Rudbeckia fuldiga 'Goldsturm', #1 cont.
248 Ft	Landscape Edging, Steel
19 Cyd	River Rock, 2 inch
88 Cyd	Shredded Bark Mulch
132 Cyd	Compost Surface, Furn, LM

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 20

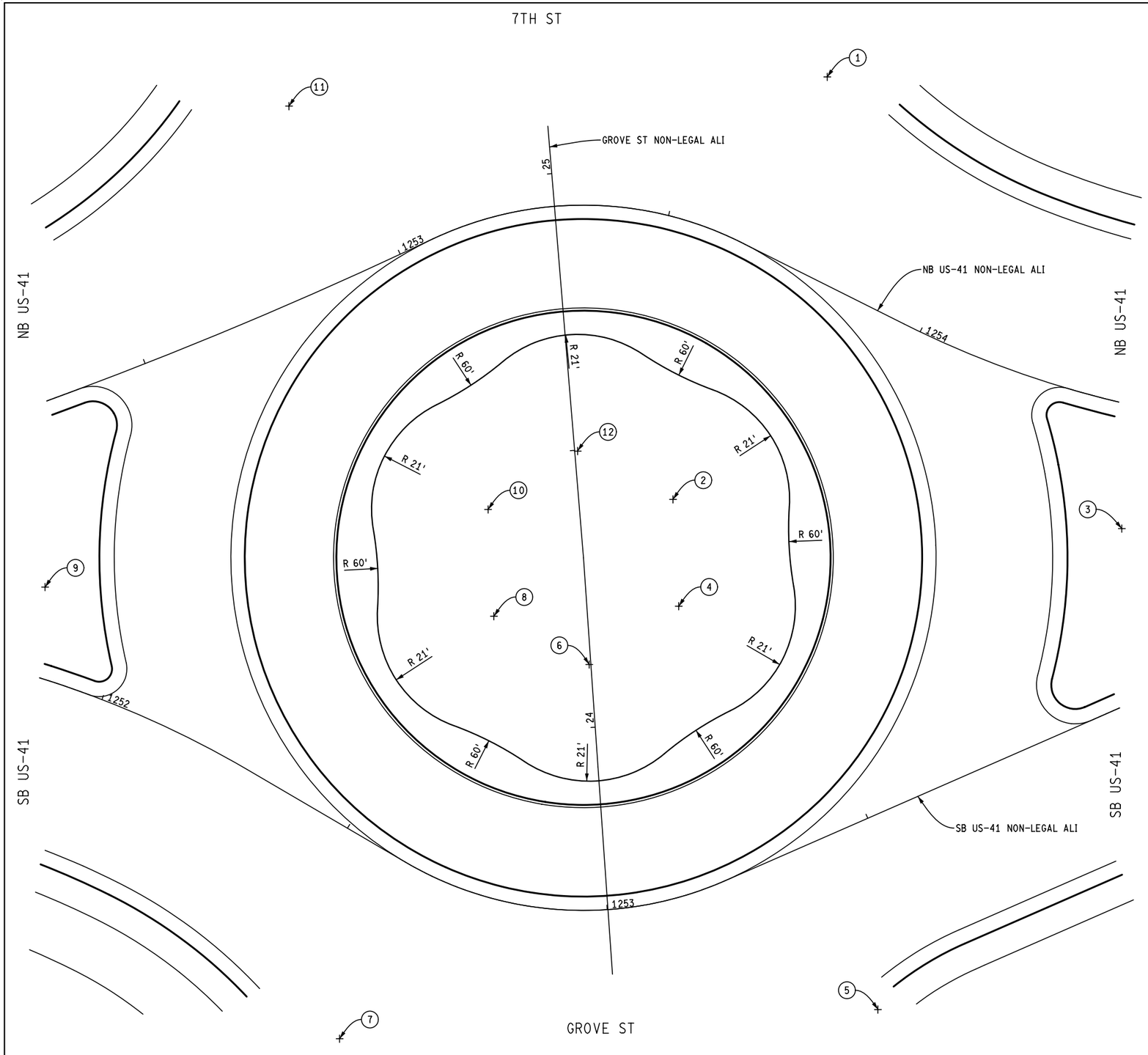
FILE: 6553_US41_LNDSCP_003.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

LANDSCAPING SHEET
US-41/M-28 AT GROVE ST/7TH ST

DRAWING: US-41 LNDSCP 003
SHEET: SECT 2 146



PLAN VIEW

BED RADIUS CENTER POINTS		
KEY	NORTHING	EASTING
1	640803.16	26144533.55
2	640789.47	26144453.71
3	640716.72	26144489.32
4	640779.01	26144437.55
5	640711.79	26144392.35
6	640787.78	26144420.41
7	640793.31	26144339.60
8	640807.00	26144419.44
9	640879.75	26144383.82
10	640817.46	26144435.60
11	640884.68	26144480.79
12	640808.69	26144452.73

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 20

FILE: 6553_US41_LNDSCP_004.dgn

DATE: 2/10/2017
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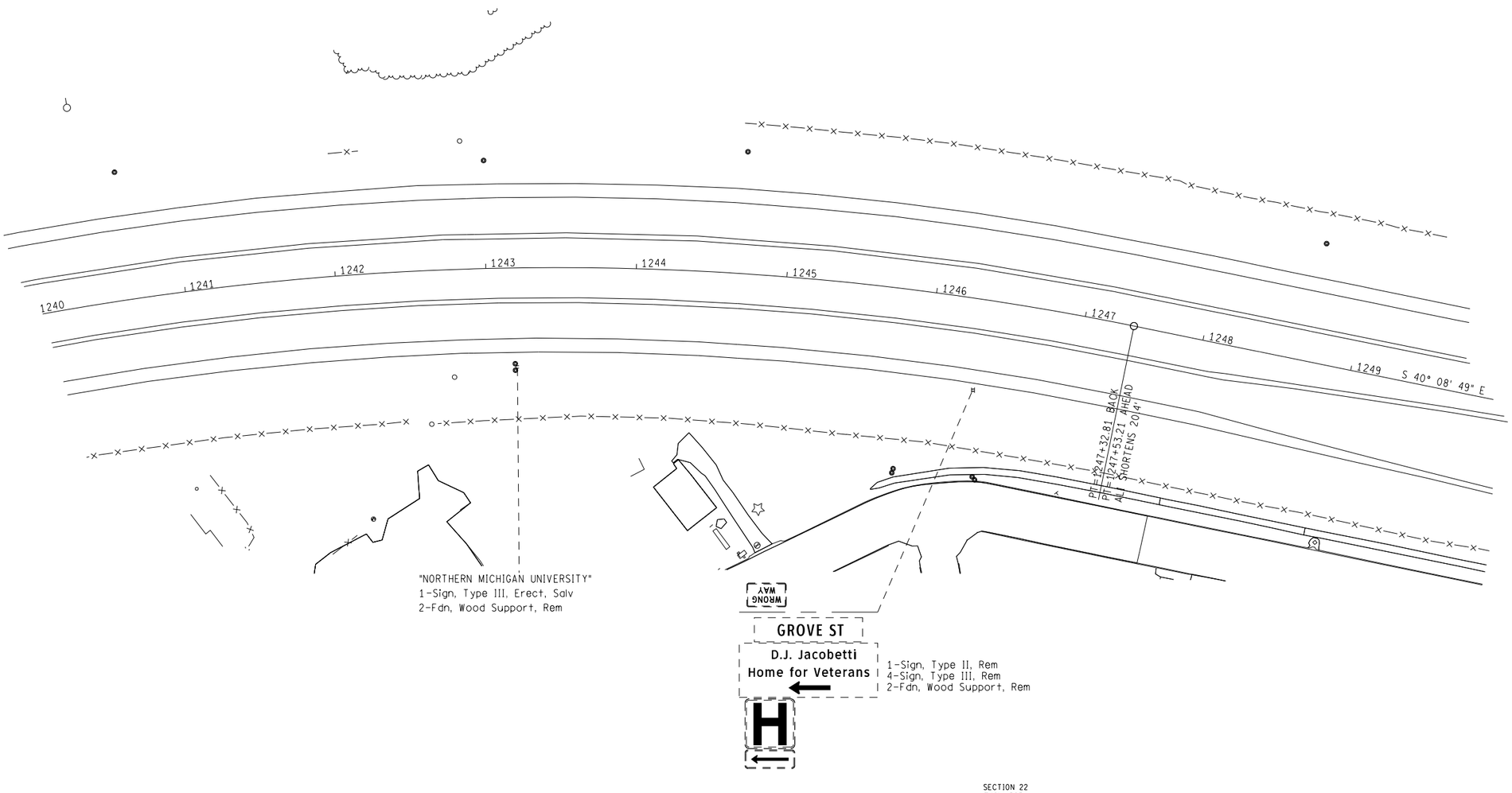
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JN: MQ17-025
MDOT PERMIT 043179-16

LANDSCAPING SHEET
US-41/M-28 AT GROVE ST/7TH ST

DRAWING: US-41 LNDSCP 004
SHEET: SECT 2 147

SB US-41/
EB M-28

NB US-41/
WB M-28



SB US-41/
EB M-28

NB US-41/
WB M-28

HOMESTEAD ST

SECTION 22
T48N, R25W
CITY OF MARQUETTE

JN MQ17-025 SIGNING QUANTITIES THIS SHEET

4 Ea	Fdn, Wood Support, Rem
1 Ea	Sign, Type II, Rem
1 Ea	Sign, Type III, Erect, Salv
4 Ea	Sign, Type III, Rem

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 80

FILE: 6553_US41_SIGN002.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

EXISTING SIGNING SHEET
US-41/M-28
STA 1240+00 TO STA 1250+00

DRAWING: US41 SIGN 002

SHEET: SECT 1 148

S 7TH ST

SB US-41/
EB M-28

NB US-41/
WB M-28

SECTION 22
T48N, R25W
CITY OF MARQUETTE

SECTION 23
T48N, R25W
CITY OF MARQUETTE

1-Sign, City, Rem

3-Sign, City, Rem

2-Sign, Type II, Rem
1-Fdn, Column Breakaway, Rem

1-Sign, Type III, Rem
1-Fdn, Column Breakaway, Rem

2-Sign, City, Rem

1-Sign, Type III, Rem
1-Fdn, Column Breakaway, Rem

2-Sign, Type III, Rem
1-Fdn, Wood Support, Rem

1250 1251 1252 1253 1254 1255 1256 1257 1258 1259 1260

PC=1253+95.57

1-Sign, Type III, Rem
1-Fdn, Column Breakaway, Rem

1-Sign, Type III, Rem
1-Fdn, Column Breakaway, Rem

2-Sign, City, Rem

2-Sign, Type III, Rem
1-Fdn, Column Breakaway, Rem

2-Sign, Type II, Rem
1-Fdn, Column Breakaway, Rem

2-Sign, City, Rem

1-Sign, City, Rem

GROVE ST

ALTAMONT ST

1-Sign, Type III, Rem

1261 1262 1263

MATCHLINE – THIS SHEET

Altamont St

2-Sign, Type III, Retain
Mounted on Bridge

ALTAMONT ST

EXPRESSWAY ENDS
1/2 MILE

1-Sign, Type II, Retain
2-Fdn, Column Breakaway, Retain

MATCHLINE – THIS SHEET

US-41
LEGAL ALI

GROVE ST

D.J. Jacobetti
Home for Veterans

1-Sign, Type II, Rem
4-Sign, Type III, Rem
2-Fdn, Wood Support, Rem

1-Sign, 'WATER MAIN CROSSING', Retain

END CONSTRUCTION

CONTROL SECTION 52042
JOB NUMBER MQ17-025
POE STA 1260+40.04 NB US-41 NON-LEGAL ALI
POE STA 1260+20.69 SB US-41 NON-LEGAL ALI
N = 640370.77 NB, E = 26144983.33 NB
N = 640355.79 SB, E = 26144976.02 SB

JN MQ17-025	SIGNING QUANTITIES THIS SHEET
7 Ea	Fdn, Column Breakaway, Rem
3 Ea	Fdn, Wood Support, Rem
7 Ea	Sign, Type II, Rem
5 Ea	Sign, Type III, Rem
11 Ea	Sign, City, Rem

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 80

FILE: 6553_US41_SIGN003.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

EXISTING SIGNING SHEET
US-41/M-28
STA 1250+00 TO STA 1260+40.04

DRAWING: US41 SIGN 003
SHEET: SECT 1 149

SB US-41/
EB M-28

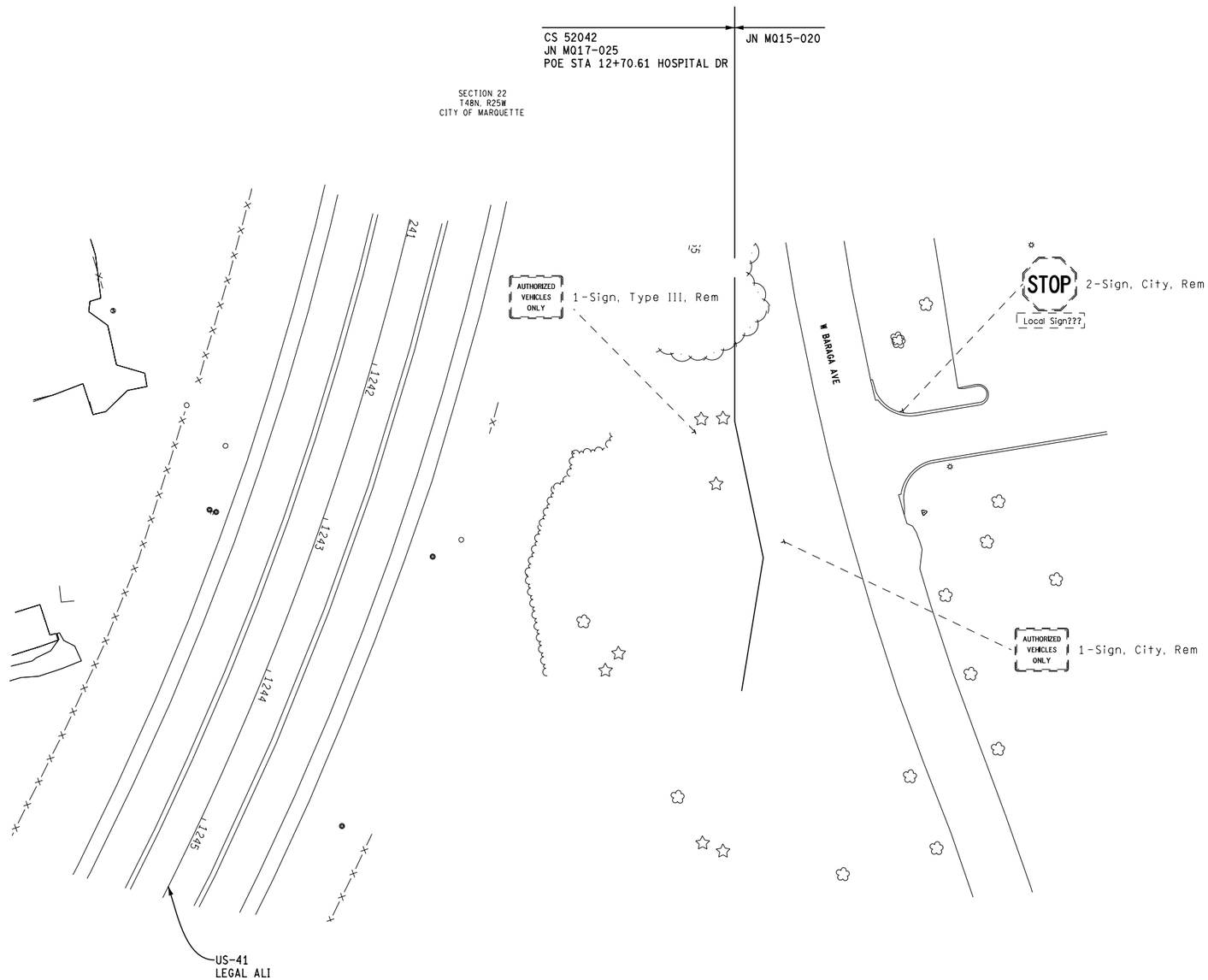
NB US-41/
WB M-28

BARAGA AVE

CS 52042
JN MQ17-025
POE STA 12+70.61 HOSPITAL DR

JN MQ15-020

SECTION 22
T48N, R25W
CITY OF MARQUETTE



HOSPITAL DR

SECTION 22
T48N, R25W
CITY OF MARQUETTE

JN MQ17-025 SIGNING QUANTITIES THIS SHEET

1 Ea	Sign, Type III, Rem
3 Ea	Sign, City, Rem

SB US-41/
EB M-28

NB US-41/
WB M-28

BARAGA AVE

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 80

FILE: 6553_HOSPITAL_DR_SIGN004.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

EXISTING SIGNING SHEET
HOSPITAL DR
STA 10+00.00 TO STA 14+43.65

DRAWING	SHEET
US41 SIGN 004	SECT 1 150

HOMESTEAD ST | SB US-41/ EB M-28 | NB US-41/ WB M-28 | FISHER ST

GROVE ST

SECTION 22
T48N, R25W
CITY OF MARQUETTE

700 GROVE ST
STOP
700 HOMESTEAD ST
3-Sign, City, Rem

SPEED LIMIT 25
1-Sign, Type III, Retain

HOMESTEAD STREET

MATCHLINE - THIS SHEET

NO PARKING AT ANY TIME
1-Sign, Local Business Sign, Retain

NO PARKING AT ANY TIME
1-Sign, City, Rem

NO PARKING AT ANY TIME
1-Sign, City, Rem

MATCHLINE - THIS SHEET

1-Sign, City, Rem

ANDERSON ST

ANDERSON STREET

US-41
LEGAL ALI

1250
1251
1252
1253
1254
1255

PC=1253+95.57

GROVE ST
STOP
ANDERSON ST
3-Sign, Type III, Rem

SECTION 23
T48N, R25W
CITY OF MARQUETTE

SECTION 23
T48N, R25W
CITY OF MARQUETTE

S 7TH ST

NO PARKING HERE TO CORNER
1-Sign, City, Rem

STOP
2-Sign, City, Rem

NO OUTLET
2-Sign, City, Rem

NO PARKING HERE TO CORNER

ONLY
NO PARKING HERE TO CORNER
2-Sign, City, Rem

FISHER ST

ONLY
2-Sign, City, Rem

NO PARKING AT ANY TIME

15
HIDDEN ROAD
2-Sign, City, Rem

S 7TH

JN MQ15-020
CS 52042
JN MQ17-025
POE 29+85.00 7TH ST

NO PARKING AT ANY TIME
1-Sign, City, Rem

500 S SEVENTH St
STOP
2-Sign, City, Rem

ONLY
POLICE DEPT
3-Sign, City, Rem

FISHER ST

TRAIL TOWN
NORTH COUNTRY TRAIL ASSOCIATION
1-Sign, Type III, Erect, Salv

NO PARKING AT ANY TIME
1-Sign, City, Rem

SECTION 23
T48N, R25W
CITY OF MARQUETTE

NOTE:
(F) SEE EXISTING SIGNING SHEET 003 FOR EXISTING SIGN

JN MQ17-025 SIGNING QUANTITIES THIS SHEET

1 Ea	Sign, Type III, Erect, Salv
27 Ea	Sign, City, Rem

ANDERSON ST

SB US-41/ EB M-28 | NB US-41/ WB M-28

FISHER ST

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 80

FILE: 6553_GROVE_ST_SIGN005.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

EXISTING SIGNING SHEET
GROVE ST & S 7TH ST
STA 21+00 TO STA 29+85.00

DRAWING: US41 SIGN 005
SHEET: SECT 1 151

SECTION 22
T48N, R25W
CITY OF MARQUETTE

BEGIN CONSTRUCTION

CONTROL SECTION 52042
JOB NUMBER MQ17-025
POB STA 1230+74.31 NB US-41 NON-LEGAL ALI
POB STA 1230+74.24 SB US-41 NON-LEGAL ALI
N = 641940.61 NB, E = 2614645.66 NB
N = 641895.11 SB, E 26142638.88 SB

BARAGA AVE

NB US-41/
WB M-28

SB US-41/
EB M-28

NB US-41
NON-LEGAL ALI

SB US-41
NON-LEGAL ALI

1230 1231 S 81° 31' 26" E 1232 1233 1234 1235 1236 1237 1238 1239 S 67° 39' 44" E

SEE SIGN 010 FOR DETAILS

M3-1 (24" X 12")
2 Sft Sign, Type IIIB

M1-4 (24")
4 Sft Sign, Type IIIB

NORTH WEST
41
M 28

M3-4 (24" X 12")
2 Sft Sign, Type IIIB

M1-6 (24")
4 Sft Sign, Type IIIB
20 Ft 1-Post, Wood, 4 inch by 6 inch

D9-2 (24")
4 Sft Sign, Type IIIA
15 Ft 1-Post, Steel, 3lb

M5-3 MOD (21" X 15")
2.2 Sft Sign, Type IIIA
White Legend on Blue Background

LEFT LANE | RIGHT LANE

R3-7g MOD (48")
16 Sft Sign, Type VB
34 Ft 2-Post, Steel, 3lb
Refer to Special Detail A

BARAGA AVE

NB US-41/
EB M-28

SB US-41/
EB M-28

SECTION 22
T48N, R25W
CITY OF MARQUETTE

JN MQ17-025 SIGNING QUANTITIES THIS SHEET

49 Ft	Post, Steel, 3 lb
20 Ft	Post, Wood, 4 inch by 6 inch
4 Sft	Sign, Type IIIA
15 Sft	Sign, Type IIIB
16 Sft	Sign, Type VB

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 80

FILE: 6553_US41_SIGN006.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

PERMANENT SIGNING SHEET
US-41/M-28
STA 1230+74.31 TO STA 1240+00

DRAWING	SHEET
US41 SIGN 006	SECT 1 152

HOSPITAL DR

BARAGA AVE

CS 52042
JN MQ17-025
POE STA 12+70.61 HOSPITAL DR

JN MQ15-020

HOSPITAL DR
NON-LEGAL ALI

BARAGA AVE

NB US-41 / WB M-28

SB US-41 / EB M-28

M3-3 (24" X 12")
2 Sft Sign, Type IIIB
M1-4 (24")
4 Sft Sign, Type IIIB
M3-2 (24" X 12")
2 Sft Sign, Type IIIB
M1-6 (24")
4 Sft Sign, Type IIIB
M5-3 (21" X 15")
2.2 Sft Sign, Type IIIB

M3-1 (24" X 12")
2 Sft Sign, Type IIIB
M1-4 (24")
4 Sft Sign, Type IIIB
M3-4 (24" X 12")
2 Sft Sign, Type IIIB
M1-6 (24")
4 Sft Sign, Type IIIB
M6-1R (21" X 15")
2.2 Sft Sign, Type IIIB
26 Ft 1-Post, Wood, 6 inch by 8 inch

NO PEDESTRIANS BICYCLES MOTORCYCLES UNDER 125 CC
R5-12a (24" X 30")
5 Sft Sign, Type IIIB
14 Ft 1-Post, Steel, 3 lb

W11-2 (36")
9 Sft Sign, Type IIIB
30 Ft 2-Post, Steel, 3 lb
W16-7PL (36" X 18")
4.5 Sft Sign, Type IIIB

LEFT LANE | RIGHT LANE
R3-7g MOD (48")
16 Sft Sign, Type VB
34 Ft 2-Post, Steel, 3lb
Refer to Special Detail B

R1-2 (36")
4 Sft Sign, Type IIIA
14 Ft 1-Post, Wood, 4 inch by 6 inch
1-Post Hole Through Conc for Wood Post
1-Reflective Panel for Permanent Sign Support, 6 foot
3' Back of Curb

R1-2 (36")
4 Sft Sign, Type IIIA
14 Ft 1-Post, Steel, 3 lb
1-Reflective Panel for Permanent Sign Support, 6 foot
3' Back of Curb

W11-2 (36")
9 Sft Sign, Type IIIB
15 Ft 1-Post, Wood, 4 inch by 6 inch
1-Post Hole Through Conc for Wood Post
W16-7PR (36" X 18")
4.5 Sft Sign, Type IIIB

W11-2 (36")
9 Sft Sign, Type IIIB
30 Ft 2-Post, Steel, 3 lb
W16-7PL (36" X 18")
4.5 Sft Sign, Type IIIB

R9-3 (18")
2.25 Sft Sign, Type IIIB
13 Ft 1-Post, Steel, 3 lb
W11-2 (36")
9 Sft Sign, Type IIIB
15 Ft 1-Post, Wood, 4 inch by 6 inch
1-Post Hole Through Conc for Wood Post
W16-7PR (36" X 18")
4.5 Sft Sign, Type IIIB

LEFT LANE | RIGHT LANE
R3-7g MOD (48")
16 Sft Sign, Type VB
34 Ft 2-Post, Steel, 3lb
Refer to Special Detail D

Hospital
Emergency
WEST Baraga Ave
EAST Baraga Ave
LEFT LANE
RIGHT LANE

SPECIAL DETAIL E (11' X 6')
66 Sft Sign, Type IA
2-Column, Breakaway, W8 x 13
2-Fdn, Breakaway, W8 x 13

Hospital Dr
D1-1d (1.1) (60" X 12")
5 Sft Sign, Type IIA
30 Ft 2-Post, Wood, 4 inch by 6 inch
2-Post Hole Through Conc for Wood Posts
Refer to Special Detail G

M3-1 (24" X 12")
2 Sft Sign, Type IIIB
M1-4 (24")
4 Sft Sign, Type IIIB
NORTH | WEST
41 | 28
M3-4 (24" X 12")
2 Sft Sign, Type IIIB
M1-6 (24")
4 Sft Sign, Type IIIB
M6-3 (21" X 15")
2.2 Sft Sign, Type IIIB
20 Ft 1-Post, Wood, 4 inch by 6 inch

R6-4b (60" X 24")
10 Sft Sign, Type IIB
26 Ft 2-Post, Steel, 3 lb
4' Bottom Height
R6-4b (60" X 24")
10 Sft Sign, Type IIB
26 Ft 2-Post, Steel, 3 lb
4' Bottom Height

LEFT LANE | RIGHT LANE
R3-7g MOD (48")
16 Sft Sign, Type VB
34 Ft 2-Post, Steel, 3lb
Refer to Special Detail C

D9-2 (24")
4 Sft Sign, Type IIIA
15 Ft 1-Post, Steel, 3lb
M6-1aR (21" X 15")
2.2 Sft Sign, Type IIIA

LEFT LANE | RIGHT LANE
R3-7g MOD (48")
16 Sft Sign, Type VB
34 Ft 2-Post, Steel, 3lb
Refer to Special Detail D

R1-2 (36")
4 Sft Sign, Type IIIA
14 Ft 1-Post, Steel, 3 lb
1-Reflective Panel for Permanent Sign Support, 6 foot
3' Back of Curb

R1-2 (36")
4 Sft Sign, Type IIIA
14 Ft 1-Post, Wood, 4 inch by 6 inch
1-Post Hole Through Conc for Wood Post
1-Reflective Panel for Permanent Sign Support, 6 foot
3' Back of Curb

S 65° 40' 24" E
S 40° 14' 05" E

NB US-41
NON-LEGAL ALI

"NORTHERN MICHIGAN UNIVERSITY"
1-Sign, Type III, Erect, Salv

SB US-41
NON-LEGAL ALI

M3-3 (24" X 12")
2 Sft Sign, Type IIIB
M1-4 (24")
4 Sft Sign, Type IIIB
SOUTH | EAST
41 | 28
M3-2 (24" X 12")
2 Sft Sign, Type IIIB
M1-6 (24")
4 Sft Sign, Type IIIB
M6-3 (21" X 15")
2.2 Sft Sign, Type IIIB
20 Ft 1-Post, Wood, 4 inch by 6 inch

M3-1 (24" X 12")
2 Sft Sign, Type IIIB
M1-4 (24")
4 Sft Sign, Type IIIB
NORTH | WEST
41 | 28
M3-4 (24" X 12")
2 Sft Sign, Type IIIB
M1-6 (24")
4 Sft Sign, Type IIIB
M6-2R (21" X 15")
2.2 Sft Sign, Type IIIB
16 Ft 1-Post, Wood, 4 inch by 6 inch
1-Post Hole Through Conc for Wood Post
3' Back of Curb

R1-2 (36")
4 Sft Sign, Type IIIA
14 Ft 1-Post, Wood, 4 inch by 6 inch
1-Post Hole Through Conc for Wood Post
1-Reflective Panel for Permanent Sign Support, 6 foot
3' Back of Curb

R1-2 (36")
4 Sft Sign, Type IIIA
14 Ft 1-Post, Steel, 3 lb
1-Reflective Panel for Permanent Sign Support, 6 foot
3' Back of Curb

R6-4b (60" X 24")
10 Sft Sign, Type IIB
26 Ft 2-Post, Steel, 3 lb
4' Bottom Height

M3-3 (24" X 12")
2 Sft Sign, Type IIIB
M1-4 (24")
4 Sft Sign, Type IIIB
SOUTH | EAST
41 | 28
M3-2 (24" X 12")
2 Sft Sign, Type IIIB
M1-6 (24")
4 Sft Sign, Type IIIB
M6-2R (21" X 15")
2.2 Sft Sign, Type IIIB
16 Ft 1-Post, Wood, 4 inch by 6 inch
1-Post Hole Through Conc for Wood Post
3' Back of Curb

SECTION 22
T48N, R25W
CITY OF MARQUETTE

M3-3 (24" X 12")
2 Sft Sign, Type IIIB
M1-4 (24")
4 Sft Sign, Type IIIB
SOUTH | EAST
41 | 28
M3-2 (24" X 12")
2 Sft Sign, Type IIIB
M1-6 (24")
4 Sft Sign, Type IIIB
M6-3 (21" X 15")
2.2 Sft Sign, Type IIIB
20 Ft 1-Post, Wood, 4 inch by 6 inch

W2-6 (36")
9 Sft Sign, Type IIIB
ROUNDABOUT
W16-17P (36" X 18")
4.5 Sft Sign, Type IIIB
W13-1P (24")
4 Sft Sign, Type IIIB
36 Ft 2-Post, Steel, 3 lb
2-Reflective Panel for Permanent Sign Support, 3 foot
5' Bottom Height
15 M.P.H.

JN MQ17-025	SIGNING QUANTITIES THIS SHEET
2 Ea	Column, Breakaway, W8 x 13
2 Ea	Fdn, Breakaway, W8 x 13
9 Ea	Post Hole Through Conc for Wood Post
217 Ft	Post, Steel, 3 lb
164 Ft	Post, Wood, 4 inch by 6 inch
26 Ft	Post, Wood, 6 inch by 8 inch
66 Sft	Sign, Type IA
5 Sft	Sign, Type IIA
78 Sft	Sign, Type IIB
1 Ea	Sign, Type III, Erect, Salv
61 Sft	Sign, Type IIIA
122 Sft	Sign, Type IIIB
64 Sft	Sign, Type VB
2 Ea	Reflective Panel for Permanent Sign Support, 3 foot
6 Ea	Reflective Panel for Permanent Sign Support, 6 foot

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 80

DATE: 2/10/2017
DESIGN UNIT: FILPUS
FILE: 6553_US41_SIGN007.dgn
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

PERMANENT SIGNING SHEET
US-41/M-28
STA 1240+00 TO STA 1250+00

DRAWING: US41 SIGN 007
SHEET: SECT 1 153

M3-1 (24" X 12")
2 Sft Sign, Type IIIB
M1-4 (24")
4 Sft Sign, Type IIIB
NORTH WEST
41 M 28
M3-4 (24" X 12")
2 Sft Sign, Type IIIB
M1-6 (24")
4 Sft Sign, Type IIIB

SECTION 22
T48N, R25W
CITY OF MARQUETTE

M6-2R (21" X 15")
2.2 Sft Sign, Type IIIB
16 Ft 1-Post, Wood, 4 inch by 6 inch
1-Post Hole Through Conc for Wood Post
3' Back of Curb

M3-1 (24" X 12")
2 Sft Sign, Type IIIB
M1-4 (24")
4 Sft Sign, Type IIIB
NORTH WEST
41 M 28
M3-4 (24" X 12")
2 Sft Sign, Type IIIB
M1-6 (24")
4 Sft Sign, Type IIIB
4 Sft Sign, Type IIIB
20 Ft 1-Post, Wood, 4 inch by 6 inch

W11-2 (36")
9 Sft Sign, Type IIIB
30 Ft 2-Post, Steel, 3 lb
W16-7PL (36" X 18")
4.5 Sft Sign, Type IIIB

W11-2 (36")
9 Sft Sign, Type IIIB
15 Ft 1-Post, Wood, 4 inch by 6 inch
1-Post Hole Through Conc for Wood Post
W16-7PR (36" X 18")
4.5 Sft Sign, Type IIIB

NO PEDESTRIANS BICYCLES MOTORCYCLES UNDER 125 CC
R5-12a (24" X 30")
5 Sft Sign, Type IIIB
14 Ft 1-Post, Steel, 3 lb

S 7TH ST

M3-3 (24" X 12")
2 Sft Sign, Type IIIB
M1-4 (24")
4 Sft Sign, Type IIIB
SOUTH
41
M3-1 (24" X 12")
2 Sft Sign, Type IIIB
M1-4 (24")
4 Sft Sign, Type IIIB
NORTH
41
M3-2 (24" X 12")
2 Sft Sign, Type IIIB
M1-6 (24")
4 Sft Sign, Type IIIB
EAST
M 28
M3-4 (24" X 12")
2 Sft Sign, Type IIIB
M1-6 (24")
4 Sft Sign, Type IIIB
M5-3 (21" X 15")
2.2 Sft Sign, Type IIIB
M6-1R (21" X 15")
2.2 Sft Sign, Type IIIB
26 Ft 1-Post, Wood, 6 inch by 8 inch

R3-7g MOD (48")
16 Sft Sign, Type VB
34 Ft 2-Post, Steel, 3lb
Refer to Special Detail O
LEFT LANE
RIGHT LANE

GROVE ST/7TH ST
NON-LEGAL ALI

S Seventh St
D1-1d (1.1) (66" X 12")
5.5 Sft Sign, Type IIA
30 Ft 1-Post, Wood, 4 inch by 6 inch
2-Post Hole Through Conc for Wood Posts
Refer to Special Detail F

SECTION 23
T48N, R25W
CITY OF MARQUETTE

1-Sign, Type III, Erect, Salv
TRAIL TOWN NORTH COUNTRY TRAIL ASSOCIATION
POLICE
D9-14 (24")
4 Sft Sign, Type IIIA
M6-1dR (21" X 15")
2.2 Sft Sign, Type IIIA
32 Ft 2-Post, Steel, 3 lb

R3-7g MOD (48")
16 Sft Sign, Type VB
34 Ft 2-Post, Steel, 3 lb
Refer to Special Detail D
LEFT LANE
RIGHT LANE

D9-2 (24")
4 Sft Sign, Type IIIA
M6-3a (21" X 15")
2.2 Sft Sign, Type IIIA
15 Ft 1-Post, Steel, 3 lb

NB US-41
NON-LEGAL ALI

SB US-41
NON-LEGAL ALI

M3-3 (24" X 12")
2 Sft Sign, Type IIIB
M1-4 (24")
4 Sft Sign, Type IIIB
SOUTH
41
M3-2 (24" X 12")
2 Sft Sign, Type IIIB
M1-6 (24")
4 Sft Sign, Type IIIB
EAST
M 28
M6-2R (21" X 15")
2.2 Sft Sign, Type IIIB
16 Ft 1-Post, Wood, 4 inch by 6 inch
1-Post Hole Through Conc for Wood Post
3' Back of Curb

END CONSTRUCTION

CONTROL SECTION 52042
JOB NUMBER MQ17-025
POE STA 1260+40.04 NB US-41 NON-LEGAL ALI
POE STA 1260+20.69 SB US-41 NON-LEGAL ALI
N = 640370.77 NB, E = 26144983.33 NB
N = 640355.79 SB, E = 26144976.02 SB

SECTION 23
T48N, R25W
CITY OF MARQUETTE

W2-6 (36")
9 Sft Sign, Type IIIB
ROUNDABOUT
W16-17P (36" X 18")
4.5 Sft Sign, Type IIIB
15 M.P.H.
W13-1P (24")
4 Sft Sign, Type IIIB
36 Ft 2-Post, Steel, 3 lb
2-Reflective Panel for Permanent Sign Support, 3 foot
5' Bottom Height

W11-2 (36")
9 Sft Sign, Type IIIB
30 Ft 2-Post, Steel, 3 lb
W16-7PR (36" X 18")
4.5 Sft Sign, Type IIIB

R9-3 (24")
4 Sft Sign, Type IIIB
M3-3 (24" X 12")
2 Sft Sign, Type IIIB
M1-4 (24")
4 Sft Sign, Type IIIB
SOUTH
41
M3-2 (24" X 12")
2 Sft Sign, Type IIIB
M1-6 (24")
4 Sft Sign, Type IIIB
EAST
M 28
M6-3 (21" X 15")
2.2 Sft Sign, Type IIIB
20 Ft 1-Post, Wood, 4 inch by 6 inch

SECTION 22
T48N, R25W
CITY OF MARQUETTE

W11-2 (36")
9 Sft Sign, Type IIIB
30 Ft 2-Post, Steel, 3 lb
W16-7PR (36" X 18")
4.5 Sft Sign, Type IIIB

R4-7 (24" X 30")
5 Sft Sign, Type IIIB
14 Ft 1-Post, Wood, 4 inch by 6 inch
1-Post Hole Through Conc for Wood Post
Center in Island

GROVE ST

W11-2 (36")
9 Sft Sign, Type IIIB
30 Ft 2-Post, Steel, 3 lb
W16-7PL (36" X 18")
4.5 Sft Sign, Type IIIB

Grove St
D1-1d (1.1) (48" X 12")
4 Sft Sign, Type IIA
30 Ft 2-Post, Wood, 4 inch by 6 inch
2-Post Hole Through Conc for Wood Posts
Refer to Special Detail H

NOTE:
Ⓟ SEE PERMANENT SIGNING SHEET 009 FOR PERMANENT SIGN

SB US-41/ EB M-28
NB US-41/ WB M-28

JN MQ17-025	SIGNING QUANTITIES THIS SHEET
9 Ea	Post Hole Through Conc for Wood Post
310 Ft	Post, Steel, 3 lb
252 Ft	Post, Wood, 4 inch by 6 inch
26 Ft	Post, Wood, 6 inch by 8 inch
10 Sft	Sign, Type IIA
32 Sft	Sign, Type IIB
1 Ea	Sign, Type III, Erect, Salv
13 Sft	Sign, Type IIIA
241 Sft	Sign, Type IIIB
32 Sft	Sign, Type VB
2 Ea	Reflective Panel for Permanent Sign Support, 3 foot

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 80

FILE: 6553_US41_SIGN008.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

PERMANENT SIGNING SHEET
US-41/M-28
STA 1250+00 TO STA 1260+40.04

DRAWING: US41 SIGN 008
SHEET: SECT 1 154

HOMESTEAD ST

SB US-41/ EB M-28

NB US-41/ WB M-28

FISHER ST

GROVE ST

S 7TH ST

ANDERSON ST

SB US-41/ EB M-28

NB US-41/ WB M-28

FISHER ST

D3-1 (96" X 14")
9.4 Sft Sign, Type IIIA
Refer to Special Detail L

700 Homestead St

D3-1 (66" X 14")
6.5 Sft Sign, Type IIIA
Refer to Special Detail K

700 Grove St

STOP

R1-1 (30")
6.25 Sft Sign, Type IIIA
16 Ft 1-Post, Steel, 3 lb

SECTION 22
T48N, R25W
CITY OF MARQUETTE

W2-6 (36")
9 Sft Sign, Type IIIB

ROUNDABOUT

W16-17P (36" X 18")
4.5 Sft Sign, Type IIIB

15 M.P.H.

W13-1P (24")
4 Sft Sign, Type IIIB
32 Ft 2-Post, Steel, 3 lb
5' Bottom Height

R1-2 (36")
4 Sft Sign, Type IIIA
14 Ft 1-Post, Wood, 4 inch by 6 inch
1-Post Hole Through Conc for Wood Post
1-Reflective Panel for
Permanent Sign Support, 6 foot
3' Back of Curb

R1-2 (36")
4 Sft Sign, Type IIIA
14 Ft 1-Post, Wood, 4 inch by 6 inch
1-Post Hole Through Conc for Wood Post
1-Reflective Panel for
Permanent Sign Support, 6 foot
3' Back of Curb

NB US-41
NON-LEGAL ALI

SB US-41
NON-LEGAL ALI

HOMESTEAD ST/
ANDERSON ST
NON-LEGAL ALI

S 6° 25' 03" E
40

N 53° 11' 23" E
20

S 36° 30' 00" E
42

S 50° 46' 40" E
43

N 55° 29' 14" E
24

1250
1251
1252
1253
1254
1255
1256

R6-4b (60" X 24")
10 Sft Sign, Type IIB
26 Ft 2-Post, Steel, 3 lb
4' Bottom Height

R6-4b (60" X 24")
10 Sft Sign, Type IIB
26 Ft 2-Post, Steel, 3 lb
4' Bottom Height

R1-2 (36")
4 Sft Sign, Type IIIA
14 Ft 1-Post, Wood, 4 inch by 6 inch
1-Post Hole Through Conc for Wood Post
1-Reflective Panel for
Permanent Sign Support, 6 foot
3' Back of Curb

R1-2 (36")
4 Sft Sign, Type IIIA
14 Ft 1-Post, Wood, 4 inch by 6 inch
1-Post Hole Through Conc for Wood Post
1-Reflective Panel for
Permanent Sign Support, 6 foot
3' Back of Curb

R4-7 (24" X 30")
5 Sft Sign, Type IIIB
14 Ft 1-Post, Wood, 4 inch by 6 inch
1-Post Hole Through Conc for Wood Post
Center in Island

D3-1 (52" X 14")
5.1 Sft Sign, Type IIIA
Refer to Special Detail J

Fisher st

500 S Seventh st

D3-1 (88" X 14")
8.6 Sft Sign, Type IIIA
Refer to Special Detail I

STOP

R1-1 (30")
6.25 Sft Sign, Type IIIA

R8-3 (18")
2.25 Sft Sign, Type IIIB
16 Ft 1-Post, Steel, 3 lb

SECTION 23
T48N, R25W
CITY OF MARQUETTE

W2-6 (36")
9 Sft Sign, Type IIIB

ROUNDABOUT

W16-17P (36" X 18")
4.5 Sft Sign, Type IIIB

15 M.P.H.

W13-1P (24")
4 Sft Sign, Type IIIB
32 Ft 2-Post, Steel, 3 lb
5' Bottom Height

NO OUTLET

W14-2 (30")
6.25 Sft Sign, Type IIIB

R8-3 (18")
2.25 Sft Sign, Type IIIB
14 Ft 1-Post, Steel, 3 lb

S 77° 24' 34" E
50

N 12° 22' 30" E
30

R3-7d (36" X 30")
7.5 Sft Sign, Type IIIB
28 Ft 2-Post, Steel, 3 lb

ONLY

JN MQ15-020
CS 52042
JN MQ17-025
POE 29+85.00 7TH ST

R8-3 (18")
2.25 Sft Sign, Type IIIB
14 Ft 1-Post, Steel, 3 lb

D3-1 (52" X 14")
5.1 Sft Sign, Type IIIA
Refer to Special Detail J

Fisher st

500 S Seventh st

D3-1 (88" X 14")
8.6 Sft Sign, Type IIIA
Refer to Special Detail I

STOP

R1-1 (30")
6.25 Sft Sign, Type IIIA
16 Ft 1-Post, Steel, 3 lb

S 77° 24' 34" E
53

D9-2 (24")
4 Sft Sign, Type IIIA
14 Ft 1-Post, Steel, 3 lb

M5-3 MOD (21" X 15")
2.2 Sft Sign, Type IIIB
White Legend on Blue Background

R8-3 (18")
2.25 Sft Sign, Type IIIB

M3-1 (24" X 12")
2 Sft Sign, Type IIIB

NORTH

M1-4 (24")
4 Sft Sign, Type IIIB

41

M3-4 (24" X 12")
2 Sft Sign, Type IIIB

WEST

M1-6 (24")
4 Sft Sign, Type IIIB

28

M5-3 (21" X 15")
2.2 Sft Sign, Type IIIB

M3-3 (24" X 12")
2 Sft Sign, Type IIIB

SOUTH

M1-4 (24")
4 Sft Sign, Type IIIB

41

M3-2 (24" X 12")
2 Sft Sign, Type IIIB

EAST

M1-6 (24")
4 Sft Sign, Type IIIB

28

M5-1R (21" X 15")
2.2 Sft Sign, Type IIIB
26 Ft 1-Post, Wood, 6 inch by 8 inch

R1-2 (36")
4 Sft Sign, Type IIIA
14 Ft 1-Post, Steel, 3 lb
1-Reflective Panel for
Permanent Sign Support, 6 foot
3' Back of Curb

R6-4b (60" X 24")
10 Sft Sign, Type IIB
26 Ft 2-Post, Steel, 3 lb
4' Bottom Height

R6-4a (48" X 24")
8 Sft Sign, Type IIB
26 Ft 2-Post, Steel, 3 lb
4' Bottom Height

R1-2 (36")
4 Sft Sign, Type IIIA
14 Ft 1-Post, Wood, 4 inch by 6 inch
1-Post Hole Through Conc for Wood Post
1-Reflective Panel for
Permanent Sign Support, 6 foot
3' Back of Curb

SECTION 23
T48N, R25W
CITY OF MARQUETTE

R9-3 (24")
4 Sft Sign, Type IIIB

R3-7d (36" X 30")
7.5 Sft Sign, Type IIIB

ONLY

R8-3 (18")
2.25 Sft Sign, Type IIIB
32 Ft 2-Post, Steel, 3 lb

R1-2 (36")
4 Sft Sign, Type IIIA
14 Ft 1-Post, Steel, 3 lb
1-Reflective Panel for
Permanent Sign Support, 6 foot
3' Back of Curb

R1-2 (36")
4 Sft Sign, Type IIIA
14 Ft 1-Post, Wood, 4 inch by 6 inch
1-Post Hole Through Conc for Wood Post
1-Reflective Panel for
Permanent Sign Support, 6 foot
3' Back of Curb

D3-1 (68" X 14")
7.1 Sft Sign, Type IIIA
Refer to Special Detail N

Anderson st

Grove st

D3-1 (48" X 14")
4.7 Sft Sign, Type IIIA
Refer to Special Detail M

STOP

R1-1 (30")
6.25 Sft Sign, Type IIIA
16 Ft 1-Post, Steel, 3 lb

NOTE:

Ⓔ SEE PERMANENT SIGNING SHEET 008 FOR PERMANENT SIGN

JN MQ17-025	SIGNING QUANTITIES THIS SHEET
7 Ea	Post Hole Through Conc for Wood Post
390 Ft	Post, Steel, 3 lb
70 Ft	Post, Wood, 4 inch by 6 inch
26 Ft	Post, Wood, 6 inch by 8 inch
38 Sft	Sign, Type IIB
157 Sft	Sign, Type IIIA
108 Sft	Sign, Type IIIB
8 Ea	Reflective Panel for Permanent Sign Support, 6 foot

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 80

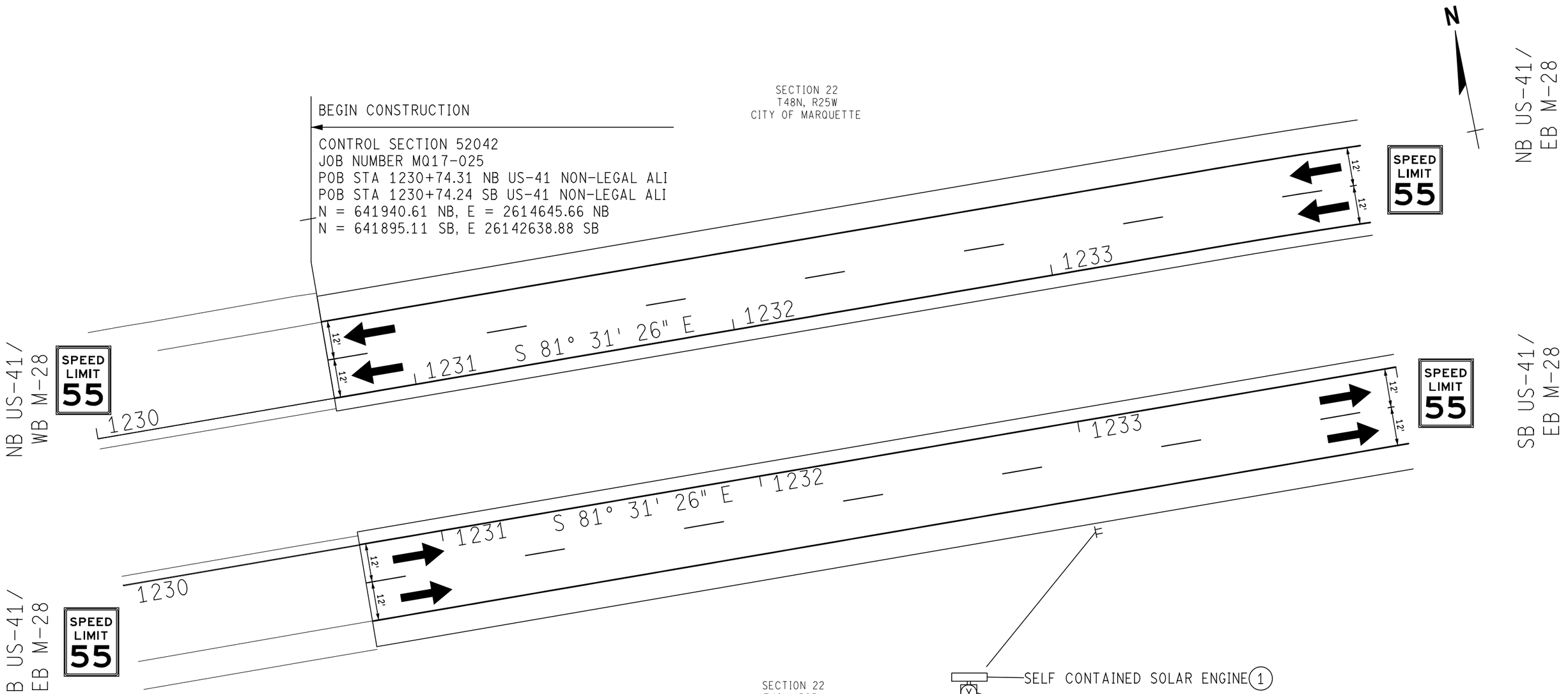
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DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

PERMANENT SIGNING SHEET
GROVE ST & S 7TH ST
STA 21+00 TO STA 29+85.00

DRAWING: US41 SIGN 009
SHEET: SECT 1 155



LIST OF MATERIAL

NO.	ITEM	QUANTITIES
1	Fish Beacon, Solar Power	1 Ea
2	Sign, Type VB	16 Sft
3	Sign, Type IIIB	15 Sft
4	Post, Wood, 4 inch by 6 inch	38 Ft
5	Reflective Panel for Permanent Sign Support, 3 foot	2 Ea

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 30

FILE: 6553_US41_SIGN010.dgn

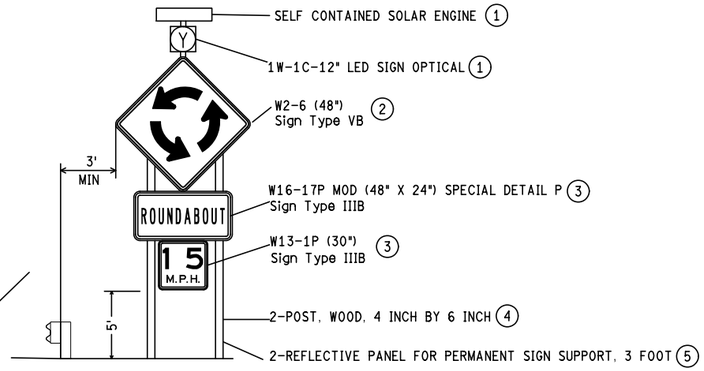
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TSC: ISHPEMING

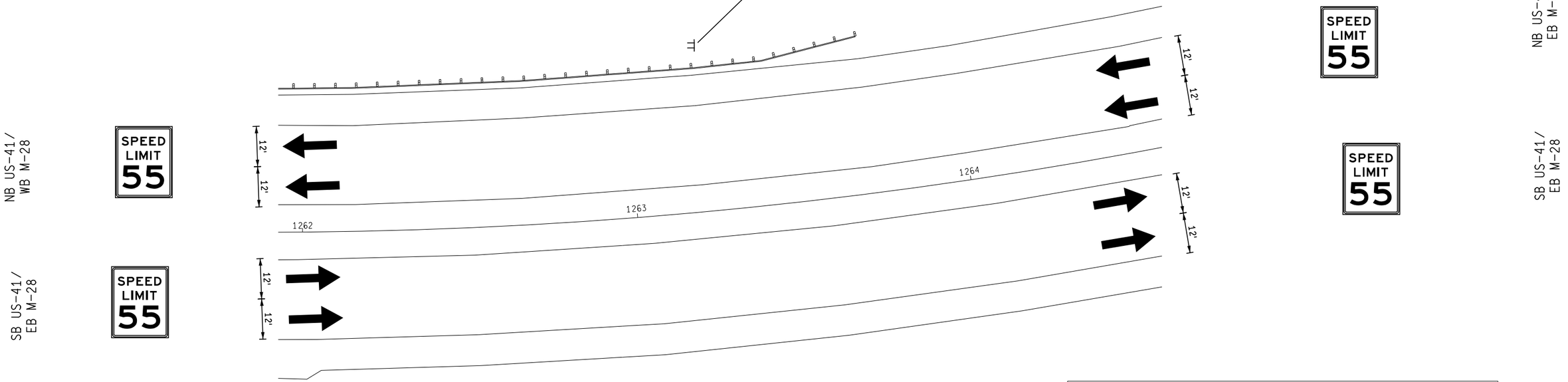
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JN: MQ17-025
MDOT PERMIT 043179-16

PERMANENT SIGNING/SIGNAL SHEET
US-41/M-28
STA 1230+74.31 TO STA 1240+00

DRAWING: US41 SIGN 010
SHEET: SECT 1 156

SECTION 22
T48N, R25W
CITY OF MARQUETTE





SECTION 22
T48N, R25W
CITY OF MARQUETTE

LIST OF MATERIAL

NO.	ITEM	QUANTITIES
(1)	Fish Beacon, Solar Power	1 Ea
(2)	Sign, Type VB	16 Sft
(3)	Sign, Type IIIB	15 Sft
(4)	Post, Wood, 4 inch by 6 inch	38 Ft
(5)	Reflective Panel for Permanent Sign Support, 3 foot	2 Ea

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 30

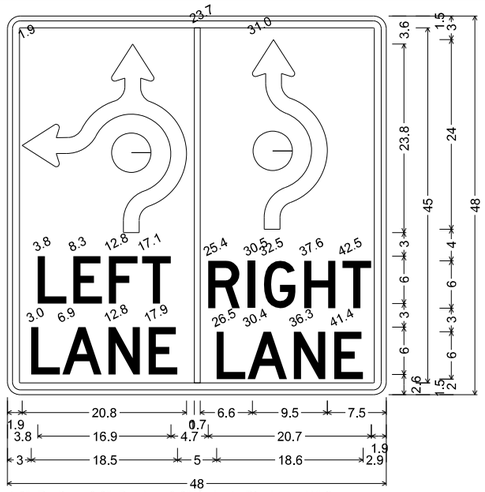
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DATE: 2/10/2017
DESIGN UNIT: FILPUS
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CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

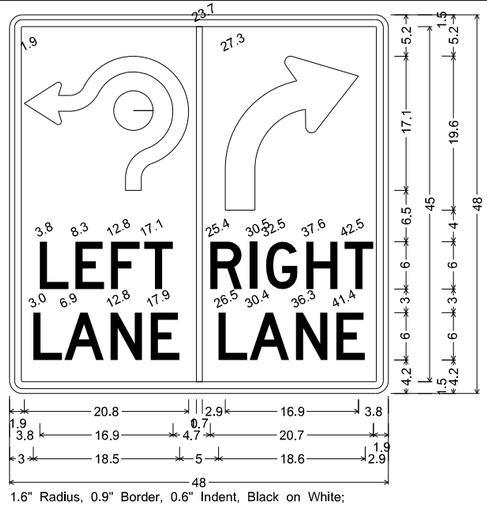
PERMANENT SIGNING/SIGNAL SHEET
US-41/M-28
STA 1262+00 TO STA 1264+50

DRAWING: US41 SIGN 011
SHEET: SECT 1 157



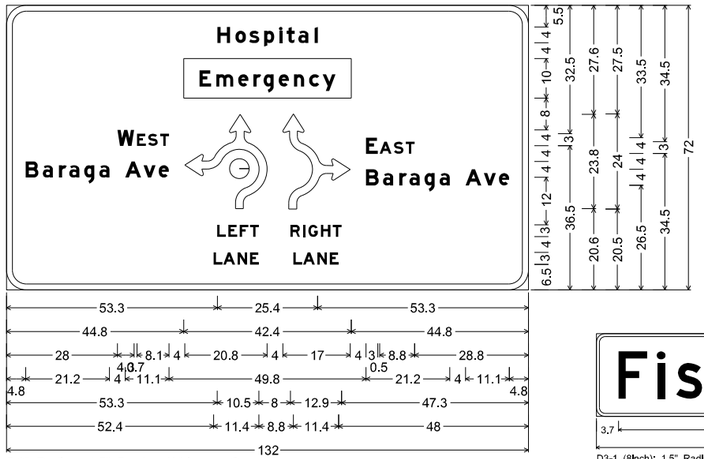
1.6" Radius, 0.9" Border, 0.6" Indent, Black on White;
[LEFT] D 75% spacing; [LANE] D 75% spacing;
[RIGHT] D 75% spacing; [LANE] D 76% spacing;

SPECIAL DETAIL A



1.6" Radius, 0.9" Border, 0.6" Indent, Black on White;
[LEFT] D 75% spacing; [LANE] D 75% spacing;
R3-5R right turn arrow ir=9.5, s=3.75;
[RIGHT] D 75% spacing; [LANE] D 76% spacing;

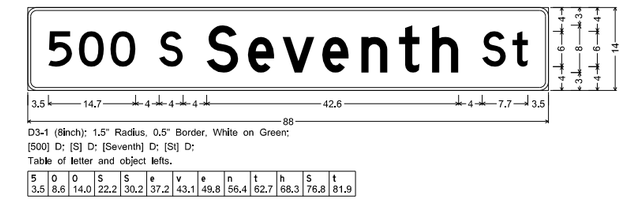
SPECIAL DETAIL B



5.0" Radius, 1.5" Border, White on Green;
[Hospital] E Mod; Rectangle Red;
[WEST] E Mod; [Baraga Ave] E Mod; [EAST] E Mod; [Baraga Ave] E Mod;
[LEFT] E Mod; [RIGHT] E Mod; [LANE] E Mod; [LANE] E Mod;
Table of letter and object lefts.

H	o	s	p	I	t	a	l	
53.3	57.9	61.4	65.2	69.0	70.9	73.8	77.9	
44.8								
W	E	S	T	45.1	69.9	E	A	S	T
28.0	33.0	35.8	38.8			90.9	94.4	98.0	101.0
B	a	r	a	g	a	A	v	e	
4.8	9.2	13.3	15.8	19.6	23.5	30.0	34.7	38.5	
B	a	r	a	g	a	A	v	e	
90.9	95.2	99.3	101.9	105.7	109.5	116.1	120.7	124.6	
L	E	F	T	R	I	G	H	T	
53.3	56.1	58.9	61.6	71.8	75.0	76.3	79.5	82.5	
L	A	N	E	L	A	N	E	
52.4	54.8	58.4	61.6	72.6	75.0	78.6	81.8	

SPECIAL DETAIL E



D3-1 (6inch): 1.5" Radius, 0.5" Border, White on Green;
[500] D; [S] D; [Seventh] D; [St] D;
Table of letter and object lefts.

5	0	0	S	S	e	v	e	n	t	h	S	t	
3.5	8.6	14.0	22.2	30.2	37.2	43.1	49.8	56.4	62.7	68.3	76.8	81.9	

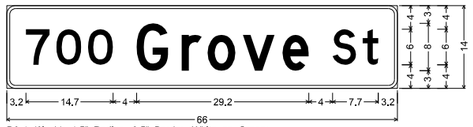
SPECIAL DETAIL I



D3-1 (8inch): 1.5" Radius, 0.5" Border, White on Green;
[Fisher] D; [St] D;
Table of letter and object lefts.

F	i	s	h	e	r	S	t	
3.7	10.3	13.5	20.0	26.6	33.2	40.5	45.7	

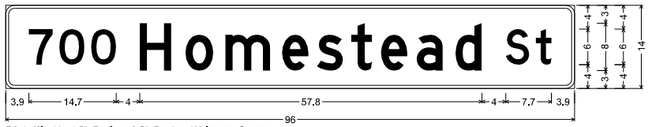
SPECIAL DETAIL J



D3-1 (8inch): 1.5" Radius, 0.5" Border, White on Green;
[700] D; [Grove] D; [St] D;
Table of letter and object lefts.

7	0	0	G	r	o	v	e	S	t		
3.2	8.4	13.7	21.9	29.6	33.9	39.9	46.6	55.1	60.2		

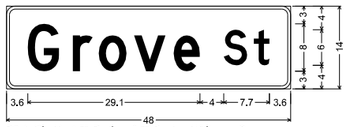
SPECIAL DETAIL K



D3-1 (8inch): 1.5" Radius, 0.5" Border, White on Green;
[700] D; [Homestead] D; [St] D;
Table of letter and object lefts.

7	0	0	H	o	m	e	s	t	e	a	d	S	t	
3.9	9.1	14.4	22.6	30.3	37.1	46.6	52.5	58.3	63.3	69.4	75.9	84.4	89.5	

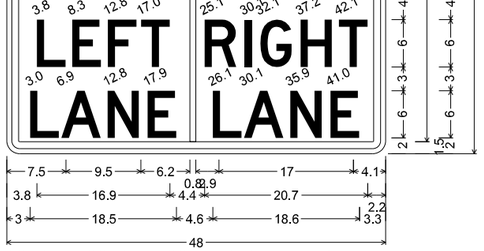
SPECIAL DETAIL L



D3-1 (6inch): 1.5" Radius, 0.5" Border, White on Green;
[Grove] D; [St] D;
Table of letter and object lefts.

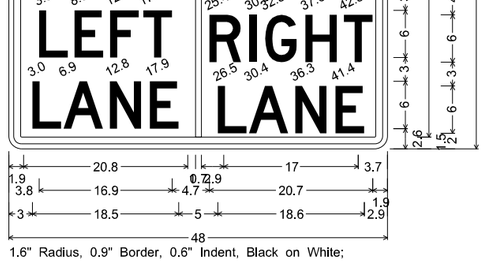
G	r	o	v	e	S	t	
3.6	11.2	15.6	21.6	28.2	36.7	41.8	

SPECIAL DETAIL M



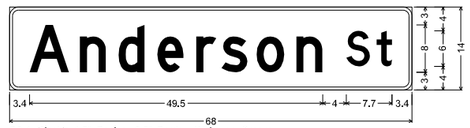
1.6" Radius, 0.9" Border, 0.6" Indent, Black on White;
[LEFT] D 75% spacing; [LANE] D 75% spacing;
[RIGHT] D 75% spacing; [LANE] D 76% spacing;

SPECIAL DETAIL C



1.6" Radius, 0.9" Border, 0.6" Indent, Black on White;
[LEFT] D 75% spacing; [LANE] D 75% spacing;
[RIGHT] D 75% spacing; [LANE] D 76% spacing;

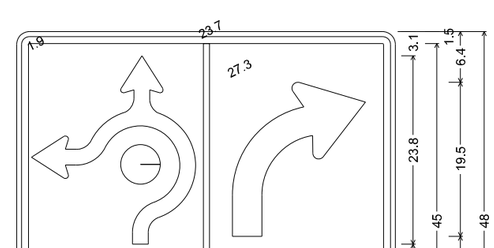
SPECIAL DETAIL D



D3-1 (8inch): 1.5" Radius, 0.5" Border, White on Green;
[Anderson] D; [St] D;
Table of letter and object lefts.

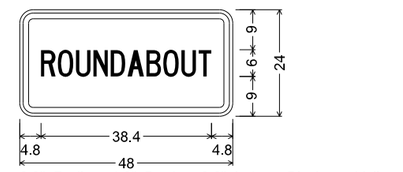
A	n	d	e	r	s	o	n	S	t
3.4	11.9	18.4	25.0	31.5	35.8	41.7	48.5	56.9	62.0

SPECIAL DETAIL N



1.6" Radius, 0.9" Border, 0.6" Indent, Black on White;
[LEFT] D 75% spacing; [LANE] D 75% spacing;
R3-5R right turn arrow ir=9.5, s=3.75;
[RIGHT] D 75% spacing; [LANE] D 76% spacing;

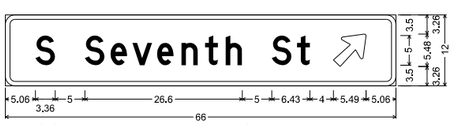
SPECIAL DETAIL O



3.0" Radius, 1.3" Border, 0.8" Indent, Black on Yellow;
[ROUNDABOUT] C 50% spacing;
Table of letter and object lefts.

R	O	U	N	D	A	B	O	U	T
4.8	8.6	12.7	16.6	20.5	24.3	28.5	32.3	36.4	40.2

SPECIAL DETAIL P



D1-1d (1.1); 1.63" Radius, 0.75" Border, White on Green;
[S Seventh St] D; Arrow A-5 - 6.88" 45°;
Table of letter and object lefts.

S	S	e	v	e	n	t	h	S	t		
5.06	13.42	17.77	21.45	25.63	29.75	33.73	37.24	45.02	49.27	55.45	

SPECIAL DETAIL F



D1-1d (1.1); 1.63" Radius, 0.75" Border, White on Green;
[Hospital Dr] D; Arrow A-5 - 6.88" 45°;
Table of letter and object lefts.

H	o	s	p	I	t	a	l	D	r		
5.79	10.61	14.34	18.43	22.52	24.49	27.62	32.04	37.82	42.60	48.72	

SPECIAL DETAIL G



D1-1d (1.1); 1.63" Radius, 0.75" Border, White on Green;
[Grove St] D; Arrow A-5 - 6.88" 45°;
Table of letter and object lefts.

G	r	o	v	e	S	t		
4.45	9.20	11.94	15.68	19.85	27.64	31.89	38.07	

SPECIAL DETAIL H

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

NO SCALE

FILE: 6553_US41_SIGN012.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

SIGNING DETAILS

DRAWING	SHEET
US41 SIGN 012	SECT 1 158

U.S. & MICHIGAN

SIGN	SIGN NO.	SIZE	SIGN AREA AREA	SIGN TYPE
	M1-4	2′ x 2′	4	IIIB
	M1-4	2.5′ x 2′	5	IIIB
FOR GUIDE SIGN USE	M1-4a	2.5′ x 2.5′	6.25	IIIB
	M1-4a	3′ x 2.5′	7.5	IIIB
	M1-4a	3′ x 3′	9	IIIB
	M1-4a	3.75′ x 3′	11.25	IIIB
	M1-6	2′ x 2′	4	IIIB
	M1-6	2.5′ x 2′	5	IIIB
	M1-6	3′ x 3′	9	IIIB
	M1-6	3.75′ x 3′	11.25	IIIB
	M1-6a	2.5′ x 2.5′	6.25	IIIB
	M1-6a	3′ x 2.5′	7.5	IIIB
	M1-6a	3′ x 3′	9	IIIB
FOR GUIDE SIGN USE	M1-6a	3.77′ x 2.83′	10.67	IIIB
	M1-6a	4.57′ x 3.92′	17.88	IIIB
JCT	M2-1	1.75′ x 1.25′	2.2	IIIB
NORTH	M3-1	2′ x 1′	2	IIIB
	M3-1	2.5′ x 1.25′	3.1	IIIB
EAST	M3-2	2′ x 1′	2	IIIB
	M3-2	2.5′ x 1.25′	3.1	IIIB
SOUTH	M3-3	2′ x 1′	2	IIIB
	M3-3	2.5′ x 1.25′	3.1	IIIB
WEST	M3-4	2′ x 1′	2	IIIB
	M3-4	2.5′ x 1.25′	3.1	IIIB
BUSINESS	M4-3	2′ x 1′	2	IIIB
	M4-3	2.5′ x 1.25′	3.1	IIIB
TO	M4-5	2′ x 1′	2	IIIB
	M4-5	2.5′ x 1.25′	3.1	IIIB
END	M4-6	2′ x 1′	2	IIIB
	M4-6	2.5′ x 1.25′	3.1	IIIB
TEMPORARY	M4-7	2′ x 1′	2	IIIB
	M4-7	2.5′ x 1.25′	3.1	IIIB
	M5-1	1.75′ x 1.25′	2.2	IIIB
	M5-1	2.5′ x 1.75′	4.4	IIIB
	M5-2	1.75′ x 1.25′	2.2	IIIB
	M5-2	2.5′ x 1.75′	4.4	IIIB
	M6-1	1.75′ x 1.25′	2.2	IIIB
	M6-1	2.5′ x 1.75′	4.4	IIIB
	M6-2	1.75′ x 1.25′	2.2	IIIB
	M6-2	2.5′ x 1.75′	4.4	IIIB
	M6-3	1.75′ x 1.25′	2.2	IIIB
	M6-3	2.5′ x 1.75′	4.4	IIIB
	M6-4	1.75′ x 1.25′	2.2	IIIB
	M6-4	2.5′ x 1.75′	4.4	IIIB
	M6-5	1.75′ x 1.25′	2.2	IIIB
	M6-5	2.5′ x 1.75′	4.4	IIIB
	M6-6	1.75′ x 1.25′	2.2	IIIB
	M6-6	2.5′ x 1.75′	4.4	IIIB
	M6-7	1.75′ x 1.25′	2.2	IIIB
	M6-7	2.5′ x 1.75′	4.4	IIIB

MDOT Michigan Department of Transportation

PREPARED BY DESIGN DIVISION

DRAWN BY: AKJ

CHECKED BY: AJU

DEPARTMENT DIRECTOR
Kirk T. Steudle

APPROVED BY: _____
DIRECTOR, BUREAU OF FIELD SERVICES

APPROVED BY: _____
DIRECTOR, BUREAU OF HIGHWAY DEVELOPMENT

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

STANDARD ROUTE MARKER INSTALLATIONS

(SPECIAL DETAIL) F.H.W.A. APPROVAL	03/31/2016 PLAN DATE	SIGN-110-E	SHEET 1 OF 5

INTERSTATE

SIGN	SIGN NO.	SIZE	SIGN AREA ft2	SIGN TYPE
	M1-1	2′ x 2′	4	IIIA
	M1-1	2.5′ x 2′	5	IIIA
	M1-1	2.5′ x 2.5′	6.25	IIIA
	M1-1	3′ x 2.5′	7.5	IIIA
	M1-1	3′ x 3′	9	IIIA
	M1-1	3.75′ x 3′	11.25	IIIA
JCT	M2-1a	1.75′ x 1.25′	2.2	IIIA
NORTH	M3-1a	2′ x 1′	2	IIIA
	M3-1a	2.5′ x 1.25′	3.1	IIIA
EAST	M3-2a	2′ x 1′	2	IIIA
	M3-2a	2.5′ x 1.25′	3.1	IIIA
SOUTH	M3-3a	2′ x 1′	2	IIIA
	M3-3a	2.5′ x 1.25′	3.1	IIIA
WEST	M3-4a	2′ x 1′	2	IIIA
	M3-4a	2.5′ x 1.25′	3.1	IIIA
TO	M4-5a	2′ x 1′	2	IIIA
	M4-5a	2.5′ x 1.25′	3.1	IIIA
END	M4-6a	2′ X 1′	2	IIIA
	M4-6a	2.5′ x 1.25′	3.1	IIIA
TEMPORARY	M4-7a	2′ x 1′	2	IIIA
	M4-7a	2.5′ x 1.25′	3.1	IIIA
	M5-1a	1.75′ x 1.25′	2.2	IIIA
	M5-1a	2.5′ x 1.75′	4.4	IIIA
	M5-2a	1.75′ x 1.25′	2.2	IIIA
	M5-2a	2.5′ x 1.75′	4.4	IIIA
	M6-1a	1.75′ x 1.25′	2.2	IIIA
	M6-1a	2.5′ x 1.75′	4.4	IIIA
	M6-2a	1.75′ x 1.25′	2.2	IIIA
	M6-2a	2.5′ x 1.75′	4.4	IIIA
	M6-3a	1.75′ x 1.25′	2.2	IIIA
	M6-3a	2.5′ x 1.75′	4.4	IIIA
	M6-4a	1.75′ x 1.25′	2.2	IIIA
	M6-4a	2.5′ x 1.75′	4.4	IIIA
	M6-5a	1.75′ x 1.25′	2.2	IIIA
	M6-5a	2.5′ x 1.75′	4.4	IIIA
	M6-6a	1.75′ x 1.25′	2.2	IIIA
	M6-6a	2.5′ x 1.75′	4.4	IIIA
	M6-7a	1.75′ x 1.25′	2.2	IIIA
	M6-7a	2.5′ x 1.75′	4.4	IIIA

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN

(SPECIAL DETAIL) F.H.W.A. APPROVAL	03/31/2016 PLAN DATE	SIGN-110-E	SHEET 2 OF 5

NOTE: THE ORIGINAL SIGNED COPY IS KEPT ON FILE AT THE MICHIGAN DEPARTMENT OF TRANSPORTATION.

AS-LET PLAN REVISIONS

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

MDOT Michigan Department of Transportation

	DATE:	CS:		DRAWING	SHEET
	DESIGN UNIT:	JN:			
FILE:	TSC:				159

OFF-INTERSTATE LOOP OR SPUR

SIGN	SIGN NO.	SIZE	SIGN AREA ft2	SIGN TYPE
(LOOP)	M1-2	2′ x 2′	4	IIIA
	M1-2	2.5′ x 2′	5	IIIA
	M1-2	2.5′ x 2.5′	6.25	IIIA
	M1-2	3′ x 2.5′	7.5	IIIA
	M1-2	3′ x 3′	9	IIIA
	M1-2	3.75′ x 3′	11.25	IIIA
(SPUR)	M1-3	2′ x 2′	4	IIIA
	M1-3	2.5′ x 2′	5	IIIA
	M1-3	2.5′ x 2.5′	6.25	IIIA
	M1-3	3′ x 2.5′	7.5	IIIA
	M1-3	3′ x 3′	9	IIIA
	M1-3	3.75′ x 3′	11.25	IIIA
JCT	M2-1b	1.75′ x 1.25′	2.2	IIIA
NORTH	M3-1b	2′ x 1′	2	IIIA
	M3-1b	2.5′ x 1.25′	3.1	IIIA
EAST	M3-2b	2′ x 1′	2	IIIA
	M3-2b	2.5′ x 1.25′	3.1	IIIA
SOUTH	M3-3b	2′ x 1′	2	IIIA
	M3-3b	2.5′ x 1.25′	3.1	IIIA
WEST	M3-4b	2′ x 1′	2	IIIA
	M3-4b	2.5′ x 1.25′	3.1	IIIA
TO	M4-5b	2′ x 1′	2	IIIA
	M4-5b	2.5′ x 1.25′	3.1	IIIA
END	M4-6b	2′ x 1′	2	IIIA
	M4-6b	2.5′ x 1.25′	3.1	IIIA
	M5-1b	1.75′ x 1.25′	2.2	IIIA
	M5-1b	2.5′ x 1.75′	4.4	IIIA
	M5-2b	1.75′ x 1.25′	2.2	IIIA
	M5-2b	2.5′ x 1.75′	4.4	IIIA
	M6-1b	1.75′ x 1.25′	2.2	IIIA
	M6-1b	2.5′ x 1.75′	4.4	IIIA
	M6-2b	1.75′ x 1.25′	2.2	IIIA
	M6-2b	2.5′ x 1.75′	4.4	IIIA
	M6-3b	1.75′ x 1.25′	2.2	IIIA
	M6-3b	2.5′ x 1.75′	4.4	IIIA
	M6-4b	1.75′ x 1.25′	2.2	IIIA
	M6-4b	2.5′ x 1.75′	4.4	IIIA
	M6-5b	1.75′ x 1.25′	2.2	IIIA
	M6-5b	2.5′ x 1.75′	4.4	IIIA
	M6-6b	1.75′ x 1.25′	2.2	IIIA
	M6-6b	2.5′ x 1.75′	4.4	IIIA
	M6-7b	1.75′ x 1.25′	2.2	IIIA
	M6-7b	2.5′ x 1.75′	4.4	IIIA

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN	(SPECIAL DETAIL) F.H.W.A. APPROVAL	03/31/2016 PLAN DATE	SIGN-110-E	SHEET 3 OF 5

NOTE: THE ORIGINAL SIGNED COPY IS KEPT ON FILE AT THE MICHIGAN DEPARTMENT OF TRANSPORTATION.

SIGN	STEEL SUPPORTS				WOOD SUPPORTS			
	NO. OF POSTS	POST SIZE	LENGTH REQUIRED ft	BOTTOM HEIGHT ft	NO. OF POSTS	POST SIZE	LENGTH REQUIRED ft	BOTTOM HEIGHT ft
JCT 1.75′ x 1.25′ 2′ x 2′	1	3 lbs	14	7	1	4 in x 6 in	16	7
			16	7			18	7
JCT					1	4 in x 6 in	16	7
							18	7
2′ x 1′ 2′ x 2′	1	3 lbs	15	7				
			16	7				
					1	4 in x 6 in	16	7
							18	7
2′ x 2′ 1.75′ x 1.25′	1	3 lbs	15	7				
			16	7				
					1	4 in x 6 in	16	7
							18	
					1	6 in x 8 in	20	7
							22	7
2′ x 1′ 2′ x 2′ 1.75′ x 1.25′	1	3 lbs	16	7	1	4 in x 6 in	16	7
			18	7			18	7
					1	4 in x 6 in	18	7
							18	7
					1	6 in x 8 in	24	7
							26	7
					2	6 in x 8 in	38	7
							40	7
					2	6 in x 8 in	48	7
							50	7

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN	(SPECIAL DETAIL) F.H.W.A. APPROVAL	03/31/2016 PLAN DATE	SIGN-110-E	SHEET 4 OF 5

NOTE: THE ORIGINAL SIGNED COPY IS KEPT ON FILE AT THE MICHIGAN DEPARTMENT OF TRANSPORTATION.

AS-LET PLAN REVISIONS							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

MDOT Michigan Department of Transportation

	DATE:	CS:		DRAWING	SHEET
	DESIGN UNIT:	JN:			
FILE:	TSC:				160

SIGN	STEEL SUPPORTS				WOOD SUPPORTS			
	NO. OF POSTS	POST SIZE	LENGTH REQUIRED ft	BOTTOM HEIGHT ft	NO. OF POSTS	POST SIZE	LENGTH REQUIRED ft	BOTTOM HEIGHT ft
2.5′ x 1.25′ 3′ x 3′					1	4 in x 6 in	18	7
2.5′ x 1.25′ 3′ x 3′ 2′ x 2′					1	6 in x 8 in	22	7
2.5′ x 1.25′ 3′ x 3′ 2′ x 1′ 2′ x 2′					1	6 in x 8 in	24	7
2.5′ x 1.25′ 3′ x 3′ 2.5′ x 1.75′					1	6 in x 8 in	22	7
2.5′ x 1.25′ 3.75′ x 3′					1	6 in x 8 in	20	7
2.5′ x 1.25′ 3.75′ x 3′ 2′ x 2′					1	6 in x 8 in	22	7
2.5′ x 1.25′ 3.75′ x 3′ 2′ x 1′ 2′ x 2′					1	6 in x 8 in	24	7
2.5′ x 1.25′ 3.75′ x 3′ 2.5′ x 1.75′′					1	6 in x 8 in	22	7

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN	(SPECIAL DETAIL) F.H.W.A. APPROVAL	03/31/2016 PLAN DATE	SIGN-110-E	SHEET 5 OF 5

NOTE: THE ORIGINAL SIGNED COPY IS KEPT ON FILE AT THE MICHIGAN DEPARTMENT OF TRANSPORTATION.

AS-LET PLAN REVISIONS							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

MDOT Michigan Department of Transportation

	DATE:	CS:		DRAWING	SHEET
	DESIGN UNIT:	JN:			161
FILE:	TSC:				

SECTION 22
T48N, R25W
CITY OF MARQUETTE

BEGIN CONSTRUCTION

CONTROL SECTION 52042
JOB NUMBER MQ17-025
POB STA 1230+74.31 NB US-41 NON-LEGAL ALI
POB STA 1230+74.24 SB US-41 NON-LEGAL ALI
N = 641940.61 NB, E = 2614645.66 NB
N = 641895.11 SB, E 26142638.88 SB

N

NB US-41/
WB M-28

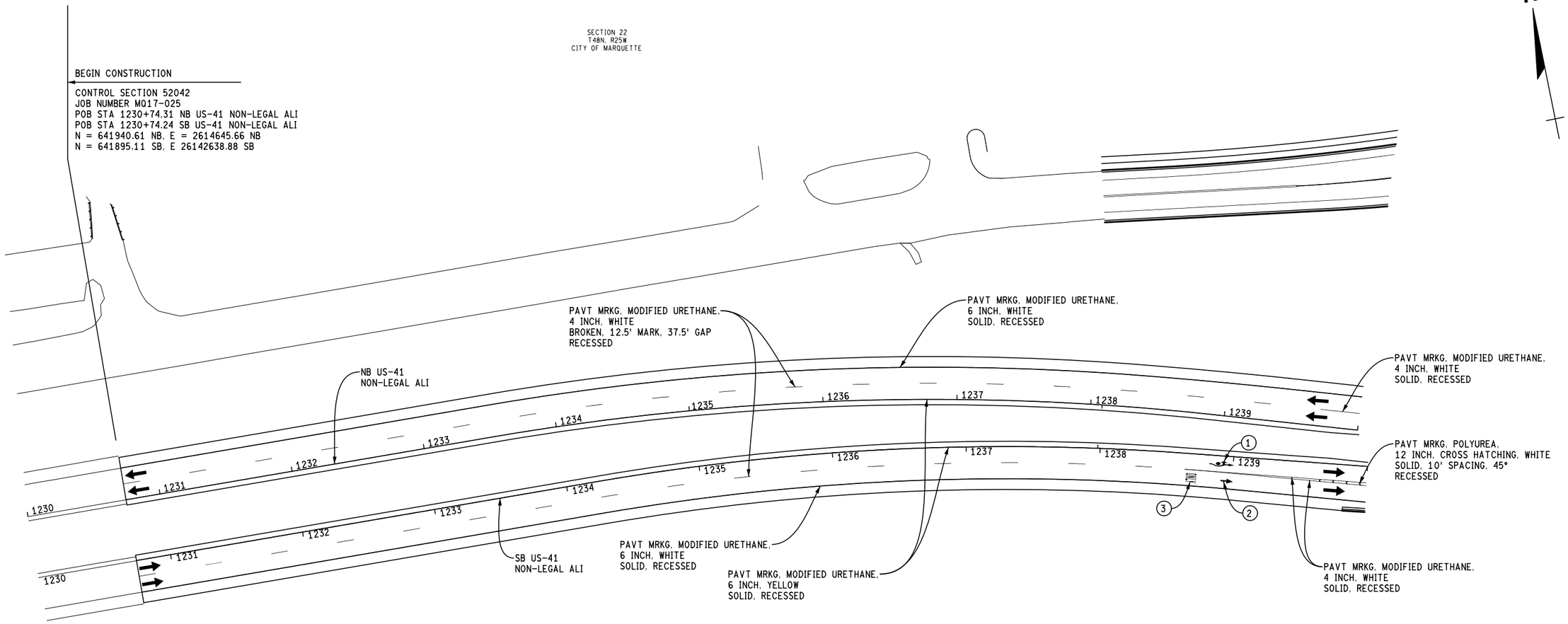
BARAGA AVE

SB US-41/
EB M-28

BARAGA AVE

NB US-41/
EB M-28

SB US-41/
EB M-28



SECTION 22
T48N, R25W
CITY OF MARQUETTE

(1) PAVT MRKG, POLYUREA,
THRU AND LT ROUNDABOUT ARROW SYM
RECESSED

(2) PAVT MRKG, POLYUREA,
THRU ARROW SYM
RECESSED

(3) PAVT MRKG, POLYUREA,
ONLY SYM
RECESSED

JN MQ17-025 PAVEMENT MARKING QUANTITIES THIS SHEET

11 Ft	Pavt Mrkg, Polyurea, 12 inch Cross Hatching, White
1 Ea	Pavt Mrkg, Polyurea, Thru and Lt Roundabout Arrow Sym
1 Ea	Pavt Mrkg, Polyurea, Only
1 Ea	Pavt Mrkg, Polyurea, Thru Arrow Sym
4428 Ft	Recessing Pavement Markings, Longit
103 Sft	Recessing Pavement Markings, Transv
723 Ft	Pavt Mrkg, Modified Urethane, 4 inch, White
1853 Ft	Pavt Mrkg, Modified Urethane, 6 inch, White
1852 Ft	Pavt Mrkg, Modified Urethane, 6 inch, Yellow

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 80

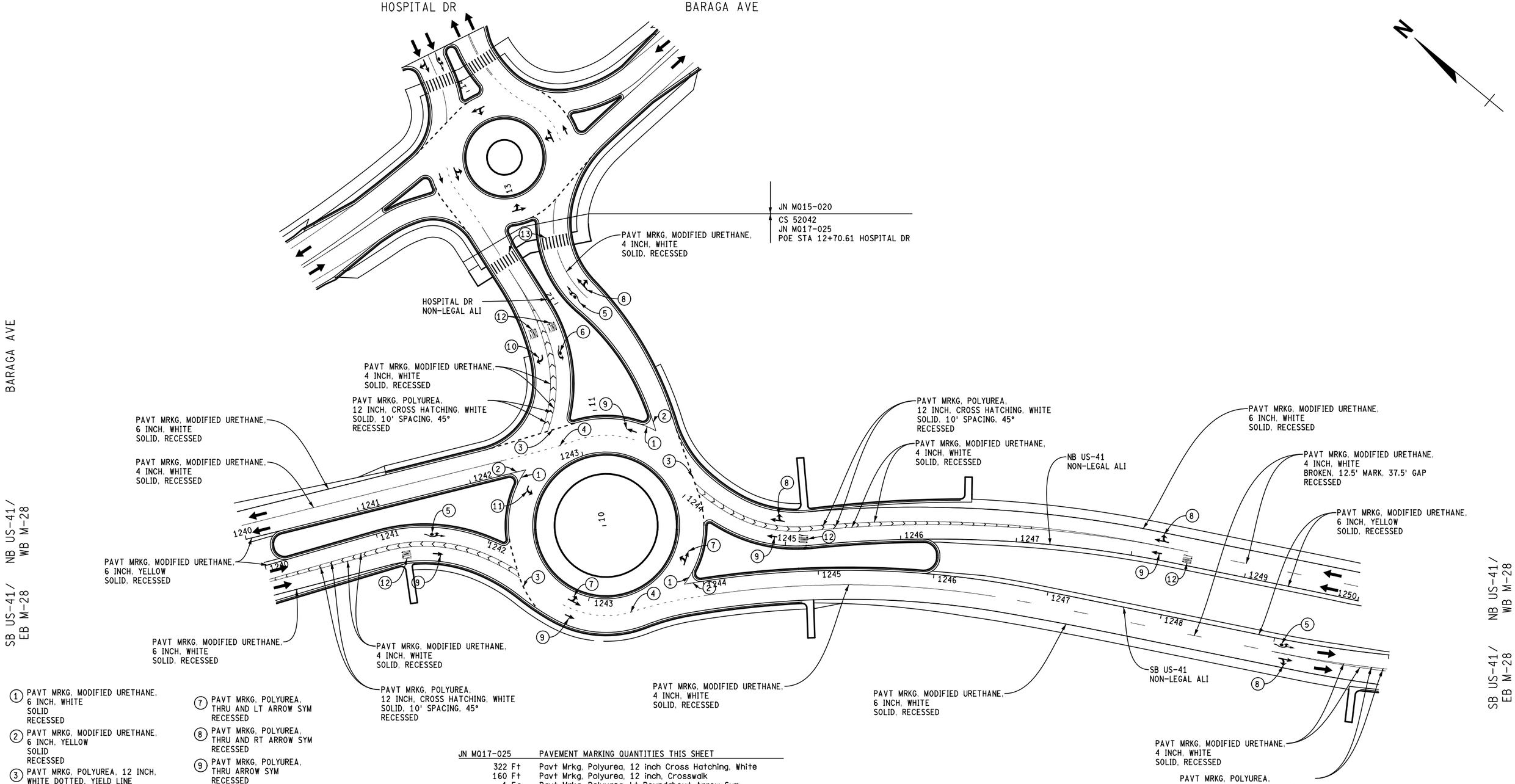
FILE: 6553_US41_PVTMRK001.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

PAVEMENT MARKING SHEET
US-41/M-28
STA 1230+74.31 TO STA 1240+00

DRAWING: US41 PVTMRK 001
SHEET: SECT 1 162



1. PAVT MRKG, MODIFIED URETHANE, 6 INCH, WHITE SOLID RECESSED
2. PAVT MRKG, MODIFIED URETHANE, 6 INCH, YELLOW SOLID RECESSED
3. PAVT MRKG, POLYUREA, 12 INCH, WHITE DOTTED, YIELD LINE 3' MARK, 3' GAP RECESSED
4. PAVT MRKG, MODIFIED URETHANE, 4 INCH, WHITE DASHED 12' MARK, 6' GAP RECESSED
5. PAVT MRKG, POLYUREA, THRU AND LT ROUNDABOUT ARROW SYM RECESSED
6. PAVT MRKG, POLYUREA, LT ROUNDABOUT ARROW SYM RECESSED
7. PAVT MRKG, POLYUREA, THRU AND LT ARROW SYM RECESSED
8. PAVT MRKG, POLYUREA, THRU AND RT ARROW SYM RECESSED
9. PAVT MRKG, POLYUREA, THRU ARROW SYM RECESSED
10. PAVT MRKG, POLYUREA, RT ARROW SYM RECESSED
11. PAVT MRKG, POLYUREA, LT ARROW SYM RECESSED
12. PAVT MRKG, POLYUREA, ONLY SYM RECESSED
13. PAVT MRKG, POLYUREA, 12 INCH, CROSSWALK RECESSED

JN MQ17-025 PAVEMENT MARKING QUANTITIES THIS SHEET

322 Ft	Pavt Mrkg, Polyurea, 12 inch Cross Hatching, White
160 Ft	Pavt Mrkg, Polyurea, 12 inch, Crosswalk
1 Ea	Pavt Mrkg, Polyurea, Lt Roundabout Arrow Sym
3 Ea	Pavt Mrkg, Polyurea, Thru and Lt Roundabout Arrow Sym
1 Ea	Pavt Mrkg, Polyurea, Lt Turn Arrow Sym
5 Ea	Pavt Mrkg, Polyurea, Only
1 Ea	Pavt Mrkg, Polyurea, Rt Turn Arrow Sym
2 Ea	Pavt Mrkg, Polyurea, Thru & Lt Turn Arrow Sym
4 Ea	Pavt Mrkg, Polyurea, Thru & Rt Turn Arrow Sym
5 Ea	Pavt Mrkg, Polyurea, Thru Arrow Sym
4794 Ft	Recessing Pavement Markings, Longit
1118 Sft	Recessing Pavement Markings, Transv
2546 Ft	Pavt Mrkg, Modified Urethane, 4 inch, White
1281 Ft	Pavt Mrkg, Modified Urethane, 6 inch, White
78 Ft	Pavt Mrkg, Modified Urethane, 12 inch, White
889 Ft	Pavt Mrkg, Modified Urethane, 6 inch, Yellow

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 80

FILE: 6553_US41_PVTMRK002.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

PAVEMENT MARKING SHEET
US-41/M-28
STA 1240+00 TO STA 1250+00

DRAWING: US41 PVTMRK 002
SHEET: SECT 1 163

S 7TH ST

SECTION 22
T48N, R25W
CITY OF MARQUETTE

SECTION 23
T48N, R25W
CITY OF MARQUETTE

PAVT MRKG, MODIFIED URETHANE,
6 INCH, WHITE
SOLID, RECESSED

PAVT MRKG, MODIFIED URETHANE,
4 INCH, WHITE
SOLID, RECESSED

PAVT MRKG, MODIFIED URETHANE,
4 INCH, WHITE
BROKEN, 12.5' MARK, 37.5' GAP
RECESSED

GROVE ST/7TH ST
NON-LEGAL ALI

PAVT MRKG, POLYUREA,
12 INCH, CROSS HATCHING, WHITE
SOLID, 10' SPACING, 45°
RECESSED

PAVT MRKG, MODIFIED URETHANE,
4 INCH, WHITE
SOLID, RECESSED

NB US-41 / WB M-28

SB US-41 / EB M-28

PAVT MRKG, MODIFIED
URETHANE, 6 INCH, YELLOW
SOLID, RECESSED

PAVT MRKG, MODIFIED
URETHANE, 6 INCH, WHITE
SOLID, RECESSED

PAVT MRKG, MODIFIED URETHANE,
4 INCH, WHITE
SOLID, RECESSED

PAVT MRKG, POLYUREA,
12 INCH, CROSS HATCHING, WHITE
SOLID, 10' SPACING, 45°
RECESSED

PAVT MRKG, MODIFIED URETHANE,
4 INCH, WHITE
SOLID, RECESSED

PAVT MRKG, MODIFIED URETHANE,
6 INCH, WHITE
SOLID, RECESSED

NB US-41
NON-LEGAL ALI

PAVT MRKG, MODIFIED URETHANE,
4 INCH, WHITE
BROKEN, 12.5' MARK, 37.5' GAP
RECESSED

SB US-41
NON-LEGAL ALI

PAVT MRKG, MODIFIED URETHANE,
6 INCH, YELLOW
SOLID, RECESSED

PAVT MRKG, MODIFIED URETHANE,
6 INCH, WHITE
SOLID, RECESSED

PAVT MRKG, MODIFIED URETHANE,
4 INCH, WHITE
SOLID, RECESSED

PAVT MRKG, MODIFIED URETHANE,
4 INCH, WHITE
SOLID, RECESSED

PAVT MRKG, POLYUREA,
12 INCH, CROSS HATCHING, WHITE
SOLID, 10' SPACING, 45°
RECESSED

PAVT MRKG, MODIFIED URETHANE,
4 INCH, YELLOW
DOUBLE SOLID, RECESSED

SECTION 22
T48N, R25W
CITY OF MARQUETTE

SECTION 23
T48N, R25W
CITY OF MARQUETTE

END CONSTRUCTION

CONTROL SECTION 52042
JOB NUMBER MQ17-025
POE STA 1260+40.04 NB US-41 NON-LEGAL ALI
POE STA 1260+20.69 SB US-41 NON-LEGAL ALI
N = 640370.77 NB, E = 26144983.33 NB
N = 640355.79 SB, E = 26144976.02 SB

GROVE ST

1. PAVT MRKG, MODIFIED URETHANE, 6 INCH, WHITE SOLID RECESSED
2. PAVT MRKG, MODIFIED URETHANE, 6 INCH, YELLOW SOLID RECESSED
3. PAVT MRKG, POLYUREA, 12 INCH, WHITE DOTTED, YIELD LINE 3' MARK, 3' GAP RECESSED
4. PAVT MRKG, MODIFIED URETHANE, 4 INCH, WHITE DASHED 12' MARK, 6' GAP RECESSED
5. PAVT MRKG, POLYUREA, THRU AND LT ROUNDABOUT ARROW SYM RECESSED
6. PAVT MRKG, POLYUREA, THRU AND LT ARROW SYM RECESSED
7. PAVT MRKG, POLYUREA, THRU AND RT ARROW SYM RECESSED
8. PAVT MRKG, POLYUREA, THRU ARROW SYM RECESSED
9. PAVT MRKG, POLYUREA, RT ARROW SYM RECESSED
10. PAVT MRKG, POLYUREA, LT ARROW SYM RECESSED
11. PAVT MRKG, POLYUREA, ONLY SYM RECESSED
12. PAVT MRKG, POLYUREA, 12 INCH, CROSSWALK RECESSED

JN MQ17-025 PAVEMENT MARKING QUANTITIES THIS SHEET

291 Ft	Pavt Mrkg, Polyurea, 12 inch Cross Hatching, White
270 Ft	Pavt Mrkg, Polyurea, 12 inch, Crosswalk
4 Ea	Pavt Mrkg, Polyurea, Thru and Lt Roundabout Arrow Sym
1 Ea	Pavt Mrkg, Polyurea, Lt Turn Arrow Sym
2 Ea	Pavt Mrkg, Polyurea, Only
1 Ea	Pavt Mrkg, Polyurea, Rt Turn Arrow Sym
4 Ea	Pavt Mrkg, Polyurea, Thru & Lt Turn Arrow Sym
3 Ea	Pavt Mrkg, Polyurea, Thru & Rt Turn Arrow Sym
2 Ea	Pavt Mrkg, Polyurea, Thru Arrow Sym
4690 Ft	Recessing Pavement Markings, Longit
917 Sft	Recessing Pavement Markings, Transv
2241 Ft	Pavt Mrkg, Modified Urethane, 4 inch, White
1346 Ft	Pavt Mrkg, Modified Urethane, 6 inch, White
154 Ft	Pavt Mrkg, Modified Urethane, 12 inch, White
949 Ft	Pavt Mrkg, Modified Urethane, 6 inch, Yellow

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 80

FILE: 6553_US41_PVTMRK003.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

PAVEMENT MARKING SHEET
US-41/M-28
STA 1250+00 TO STA 1260+40.04

DRAWING: US41 PVTMRK 003
SHEET: SECT 1 164

HOMESTEAD ST

SB US-41/
EB M-28

NB US-41/
WB M-28

FISHER ST

N

SECTION 22
T48N, R25W
CITY OF MARQUETTE

SECTION 23
T48N, R25W
CITY OF MARQUETTE

S 7TH ST

GROVE ST

NB US-41
NON-LEGAL ALI

SB US-41
NON-LEGAL ALI

HOMESTEAD ST/ANDERSON ST
NON-LEGAL ALI

PAVT MRKG, MODIFIED URETHANE,
4 INCH, YELLOW
DOUBLE SOLID, RECESSED

PAVT MRKG, MODIFIED URETHANE,
4 INCH, YELLOW
SOLID BROKEN, 12.5' MARK, 37.5' GAP
RECESSED

PAVT MRKG, MODIFIED URETHANE,
4 INCH, YELLOW
DOUBLE SOLID, RECESSED

PAVT MRKG, MODIFIED URETHANE,
4 INCH, YELLOW
SOLID BROKEN, 12.5' MARK, 37.5' GAP
RECESSED

PAVT MRKG, MODIFIED URETHANE,
4 INCH, YELLOW
DOUBLE SOLID, RECESSED

PAVT MRKG, MODIFIED URETHANE,
4 INCH, WHITE
SOLID, RECESSED

JN MQ15-020
CS 52042
JN MQ17-025
POE 29+85.00 7TH ST

PAVT MRKG, MODIFIED URETHANE,
4 INCH, YELLOW
DOUBLE SOLID, RECESSED

PAVT MRKG, MODIFIED URETHANE,
4 INCH, YELLOW
DOUBLE SOLID, RECESSED

PAVT MRKG, MODIFIED URETHANE,
4 INCH, WHITE
SOLID, RECESSED

SEE PAVEMENT MARKING SHEET 003 FOR PAVEMENT MARKINGS

SECTION 23
T48N, R25W
CITY OF MARQUETTE

(1) PAVT MRKG, POLYUREA,
LT ARROW SYM
RECESSED

(2) PAVT MRKG, POLYUREA,
ONLY SYM
RECESSED

(3) PAVT MRKG, POLYUREA,
12 INCH, CROSSWALK
RECESSED

(4) PAVT MRKG, POLYUREA,
24 INCH, STOPBAR
RECESSED

JN MQ017-025	PAVEMENT MARKING QUANTITIES THIS SHEET
360 Ft	Pavt Mrkg, Polyurea, 12 inch, Crosswalk
75 Ft	Pavt Mrkg, Polyurea, 24 inch, Stop Bar
3 Ea	Pavt Mrkg, Polyurea, Lt Turn Arrow Sym
2 Ea	Pavt Mrkg, Polyurea, Only
1751 Ft	Recessing Pavement Markings, Longit
595 Sft	Recessing Pavement Markings, Transv
134 Ft	Pavt Mrkg, Modified Urethane, 4 inch, White
1617 Ft	Pavt Mrkg, Modified Urethane, 4 inch, Yellow

ANDERSON ST

SB US-41/
EB M-28

NB US-41/
WB M-28

FISHER ST

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0 HORZ. (FT) 80

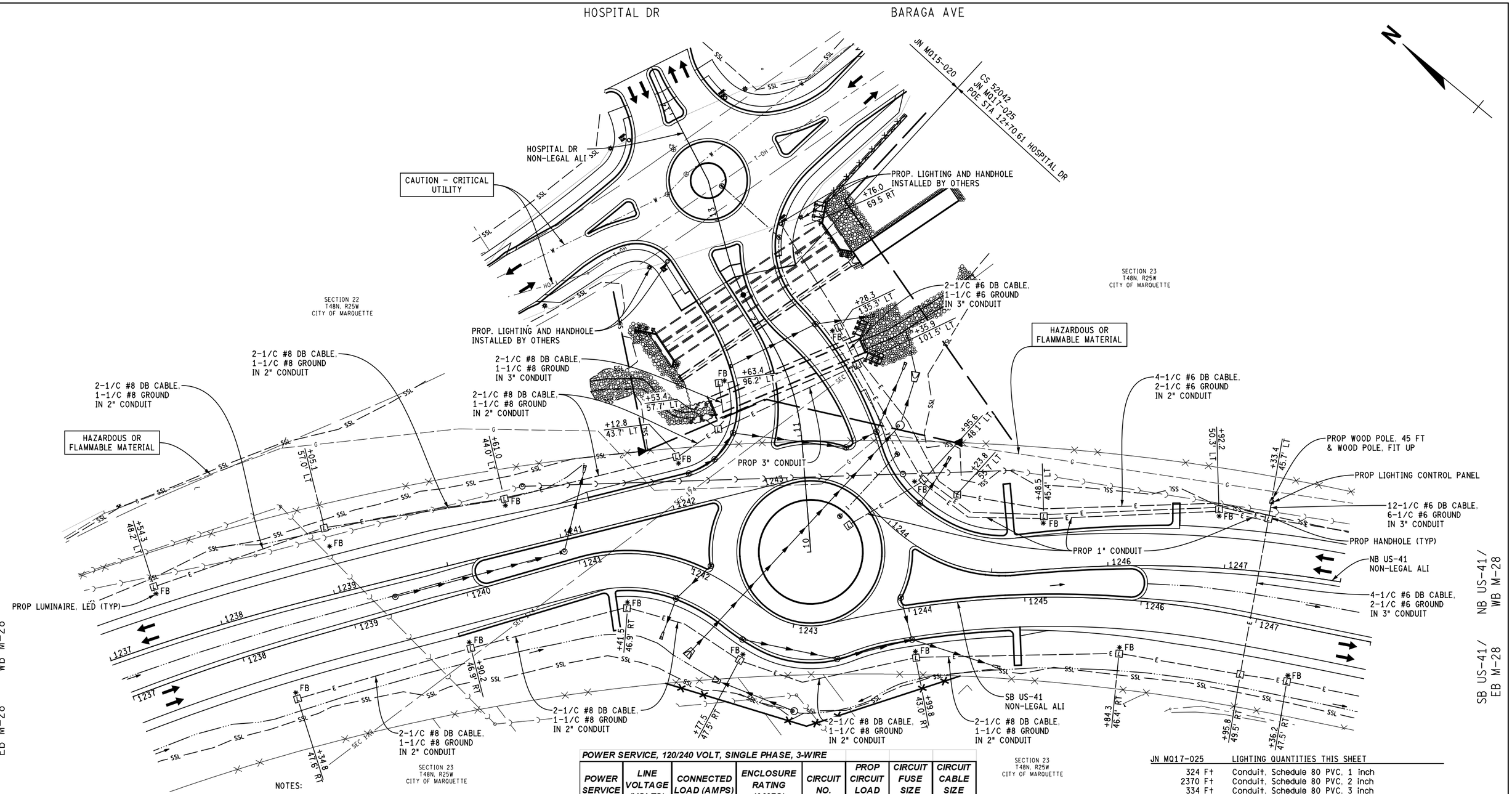
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DATE: 2/10/2017
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TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

PAVEMENT MARKING SHEET
GROVE ST & S 7TH ST
STA 21+00 TO STA 29+85.00

DRAWING: US41 PVTMRK 004
SHEET: SECT 1 165



LIGHTING LEGEND

- ✱ LED, ROADWAY, TYPE III, 35' MOUNTING HEIGHT, 10' ARM
- ▪ PROP LIGHTING CONTROL PANEL
- H LIGHTING HANDHOLE
- FB FRANGIBLE BASE

NOTES:

CONDUIT SHALL BE 2 INCH EXCEPT WHERE OTHERWISE NOTED.

ALL LIGHTING CABLE GROUPS TO BE 2-1/C#6 DB CABLES & 1-1/C#6 GROUND WIRE IN CONDUIT EXCEPT WHERE OTHERWISE NOTED.

STATION LABELS ARE TO CENTER OF HANDHOLES.

HANDHOLE COVERS SHALL BE HEAVY DUTY.

PROPOSED 1" CONDUIT IS TO PROVIDE FUTURE POWER TO THE ROUNDABOUT ISLAND. INSTALL AS DIRECTED BY THE ENGINEER.

POWER SERVICE, 120/240 VOLT, SINGLE PHASE, 3-WIRE

POWER SERVICE	LINE VOLTAGE (VOLTS)	CONNECTED LOAD (AMPS)	ENCLOSURE RATING (AMPS)	CIRCUIT NO.	PROP CIRCUIT LOAD (AMPS)	CIRCUIT FUSE SIZE (AMPS)	CIRCUIT CABLE SIZE (AWG)
LIGHTING	240	30	100	A	5.58	20 (2-P)	6
	240			B	6.2	20 (2-P)	6
	240			C	3.72	20 (2-P)	6
	240			D	5.58	20 (2-P)	6
	240			E	4.34	20 (2-P)	6
	240			F	4.34	20 (2-P)	6
FUTURE*	120*			G	Future 20 (1-P)*		
	120*			H	Future 20 (1-P)*		

*AS DIRECTED BY ENGINEER.

JN MQ17-025	LIGHTING QUANTITIES THIS SHEET
324 Ft	Conduit, Schedule 80 PVC, 1 inch
2370 Ft	Conduit, Schedule 80 PVC, 2 inch
334 Ft	Conduit, Schedule 80 PVC, 3 inch
4450 Ft	DB Cable, in Conduit, 600V, 1/C#6
2446 Ft	DB Cable, in Conduit, 600V, 1/C#8
2225 Ft	Cable, Equipment Grounding Wire, 1/C#6
1223 Ft	Cable, Equipment Grounding Wire, 1/C#8
22 Ea	Hh, Round
16 Ea	Light Std Arm, 10 foot
16 Ea	Light Std Fdn
16 Ea	Light Std, Frangible Transformer Base
16 Ea	Light Std Shaft, 31 foot to 40 foot
1 Ea	Wood Pole, Cl 4, 45 foot
1 Ea	Wood Pole, Fit Up, Elec Serv Pole, Photo Control
1 Ea	Lighting Control Panel
16 Ea	Luminaire, Roadway
2200 Dlr	Utility, Elec

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PH. (906)228-0440

0 HORZ. (FT) 80

FILE: 6553_US41_LTG001.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

LIGHTING SHEET
US-41/M-28
STA 1237+00 TO STA 1248+00

DRAWING	SHEET
US41 LTG 001	SECT 1 166

7TH ST

FISHER ST

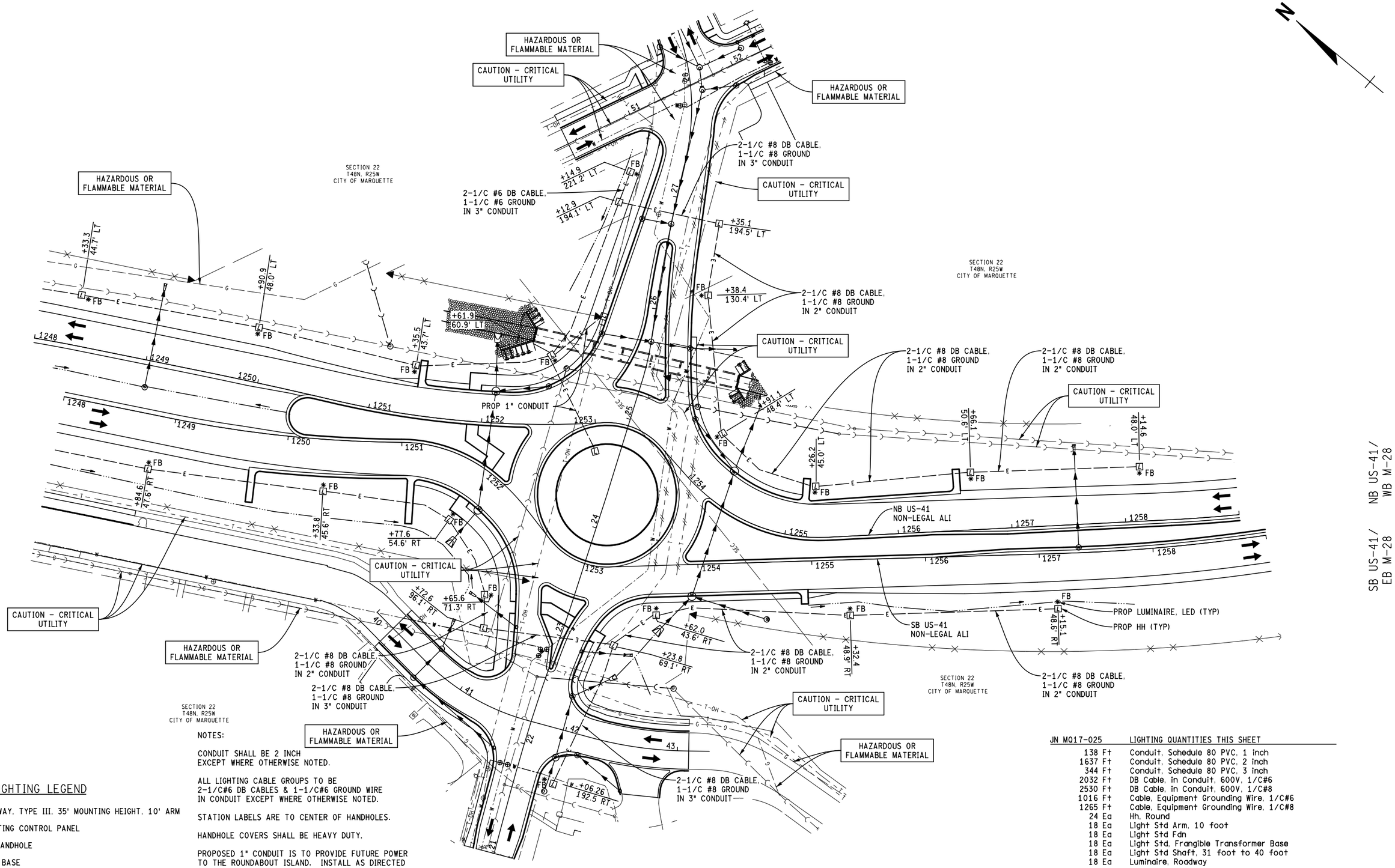
HOMESTEAD ST

SB US-41/ NB US-41/
EB M-28 WB M-28

SB US-41/ NB US-41/
EB M-28 WB M-28

GROVE ST

ANDERSON ST



LIGHTING LEGEND

✳	LED, ROADWAY, TYPE III, 35' MOUNTING HEIGHT, 10' ARM
▪	PROP LIGHTING CONTROL PANEL
⍁	LIGHTING HANDHOLE
FB	FRANGIBLE BASE

NOTES:

CONDUIT SHALL BE 2 INCH EXCEPT WHERE OTHERWISE NOTED.

ALL LIGHTING CABLE GROUPS TO BE 2-1/C#6 DB CABLES & 1-1/C#6 GROUND WIRE IN CONDUIT EXCEPT WHERE OTHERWISE NOTED.

STATION LABELS ARE TO CENTER OF HANDHOLES.

HANDHOLE COVERS SHALL BE HEAVY DUTY.

PROPOSED 1" CONDUIT IS TO PROVIDE FUTURE POWER TO THE ROUNDABOUT ISLAND. INSTALL AS DIRECTED BY THE ENGINEER.

JN MQ17-025	LIGHTING QUANTITIES THIS SHEET
138 Ft	Conduit, Schedule 80 PVC, 1 inch
1637 Ft	Conduit, Schedule 80 PVC, 2 inch
344 Ft	Conduit, Schedule 80 PVC, 3 inch
2032 Ft	DB Cable, In Conduit, 600V, 1/C#6
2530 Ft	DB Cable, In Conduit, 600V, 1/C#8
1016 Ft	Cable, Equipment Grounding Wire, 1/C#6
1265 Ft	Cable, Equipment Grounding Wire, 1/C#8
24 Ea	Hh, Round
18 Ea	Light Std Arm, 10 foot
18 Ea	Light Std Fdn
18 Ea	Light Std, Frangible Transformer Base
18 Ea	Light Std Shaft, 31 foot to 40 foot
18 Ea	Luminaire, Roadway

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)

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300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 80

FILE: 6553_US41_LTG002.dgn

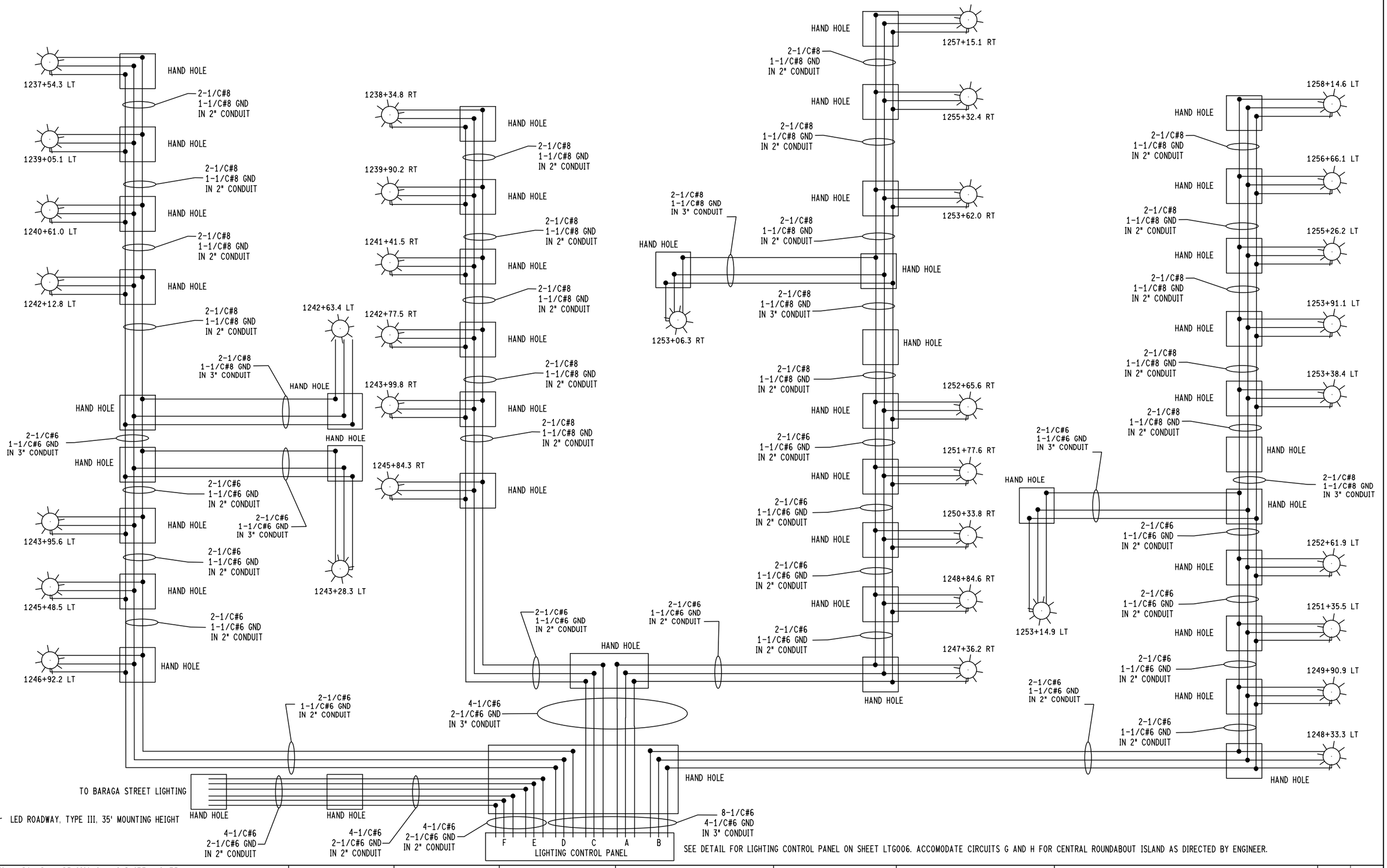
DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

LIGHTING SHEET
US-41/M-28
STA 1248+00 TO STA 1259+00

DRAWING: US41 LTG 002

SHEET: SECT 1 167



SEE DETAIL FOR LIGHTING CONTROL PANEL ON SHEET LTG006. ACCOMODATE CIRCUITS G AND H FOR CENTRAL ROUNDABOUT ISLAND AS DIRECTED BY ENGINEER.

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CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

NO SCALE

FILE: 6553_US41_LTG003.dgn

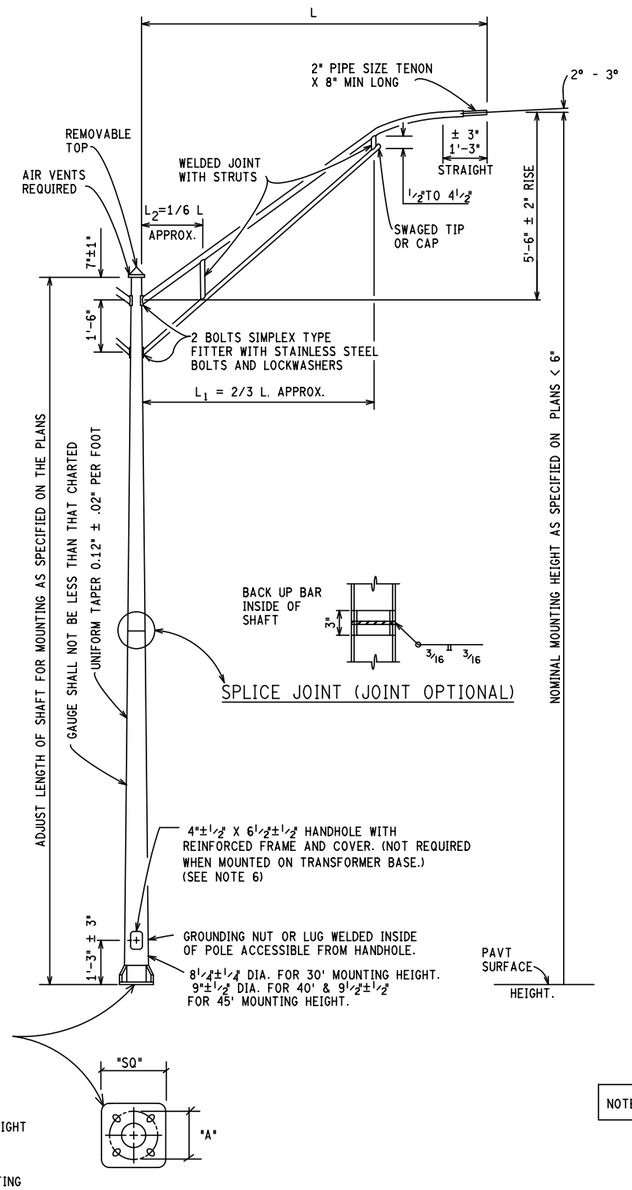
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LIGHTING WIRING DIAGRAM

DRAWING	SHEET
US41 LTG 003	SECT 1 168

BRACKET LENGTH 8'-0", 10'-0", 12'-0" -- 2" PIPE TOP MEMBER AND 1 1/2" LOWER MEMBER.
BRACKET LENGTH 15'-0" -- 2" PIPE BOTH MEMBERS.
BRACKET LENGTH 17'-0" -- 2 1/2" PIPE TOP MEMBER AND 2" PIPE LOWER MEMBER.
(ALUMINUM BRACKET ARMS SHALL NOT BE LESS THAN 2" DIA. PIPE)



SPLICE JOINT (JOINT OPTIONAL)

LIGHT STANDARD ANCHOR BASE

ROUND OR SLOTTED HOLES CENTERED ON BOLT CIRCLE. (SLOT DIMENSION - 2 X BOLT DIA. + 1/4")

1/2" THICK WASHERS MUST COVER THE ENTIRE SLOT.

11" DIA. BOLT CIRLCE "A" FOR 30' MTG. HEIGHT
11 1/2" MAX "SQ". FOR 30' MOUNTING HEIGHT

1'-1" DIA. BOLT CIRCLE "A" FOR 40' & 45' MTG. HEIGHT
1'-2" MAX. "SQ" FOR 40' & 45' MOUNTING

TYPICAL LIGHT STANDARD DESIGN

* THE HANDHOLES SHALL BE PLACED SO THEY DO NOT INTERSECT THE LONGITUDINAL SEAM WELD ON THE POLE.

(THIS DETAIL TO BE USED WITH PAY ITEMS "LIGHT STD SHAFT, ____" AND "LIGHT STD ARM, ___")

NOTES:

1 ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE CURRENT MICHIGAN DEPARTMENT OF TRANSPORTATION SPECIFICATIONS FOR CONSTRUCTION.

2 LIGHT STANDARD SHAFTS SHALL BE MOUNTED ON LEVELING NUTS AS SHOWN IN DETAIL "M ".

3 BOLT CIRCLE DIMENSION "A" FOR ANCHOR BOLTS MUST BE EXACT. A TEMPLATE SHALL BE USED TO SET THE ANCHOR BOLTS.

4 ANCHOR BOLTS MUST BE THREADED 4 INCHES MORE THAN THE BOLT PROJECTIONS LISTED UNDER ITEM "E" IN THE TABLE ON THIS SHEET.

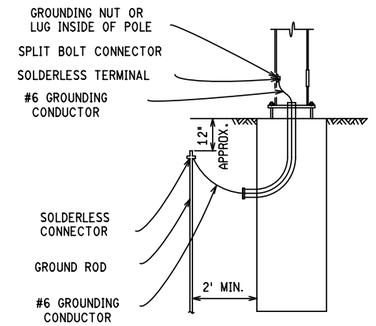
5 SEE SUBSECTION 908.14 OF THE STANDARD SPECIFICATION FOR CONSTRUCITON FOR ANCHOR BOLT REQUIREMENTS.

6 HANDHOLE TO FACE AWAY FROM TRAFFIC EXCEPT IT MUST FACE ROADWAY WHEN MOUNTED ON BRIDGE OR MEDIAN WALL. USE STAINLESS STEEL HEX HEAD MACHINE SCREWS. THE HANDHOLES SHALL BE PLACED SO THEY DO NOT INTERSECT THE LONGITUDINAL SEAM WELD ON THE POLE.

7 EACH BRACKET ARM MUST BE SUPPLIED WITH ITS OWN SIMPLEX FITTERS.

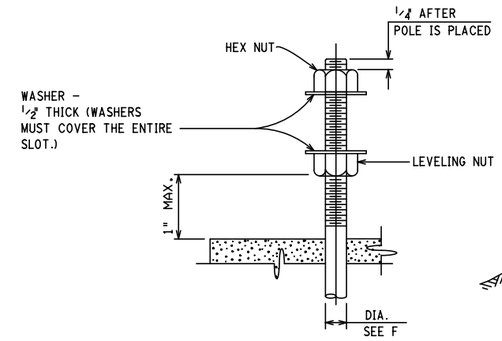
8 FOR ALUMINUM LIGHT STANDARDS, ELLIPTICAL SHAFT AT BOTTOM WILL BE CONSIDERED UPON APPROVAL BY THE ENGINEER.

NOTE: NUT COVERS ARE NOT ALLOWED FOR USE ON THIS DETAIL.



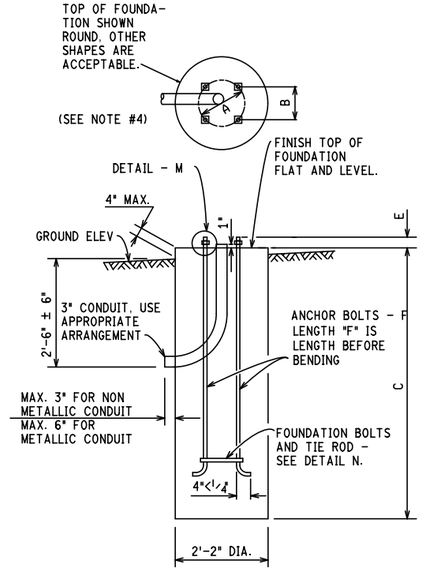
NOTE: IF CONDUIT EXTENDS TO HANDHOLE, DRIVE GROUND ROD IN OR NEAR HANDHOLE.

LIGHT STANDARD GROUNDING DETAIL

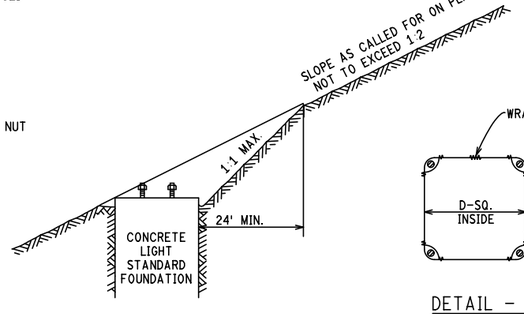


DETAIL - M

(THIS DETAIL DOES NOT APPLY WHEN USING FRANGIBLE TRANSFORMER BASE.)

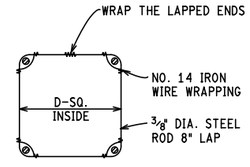


TYPICAL LIGHT STANDARD FOUNDATION



FOUNDATION DETAIL

(ON FILL OR CUT SLOPE)



DETAIL - N
ANCHOR BOLTS AND TIE ROD

LIGHT STANDARD FOR	A	B	C	D	E	STEEL POLES GA. (MIN.)	F	MINIMUM ANCHOR BASE THICKNESS	ALUM. POLES MIN. SHAFT THICKNESS
30 FT. MOUNTING HEIGHT WITH 4 OR 6 FT. SINGLE OR DOUBLE BRACKET ARM.	11"	7 3/4	5'-0"	8 3/4	5 1/2	11	1": X 3'-4"	1"	.188"
30 FT. MOUNTING HEIGHT WITH 8.10.12 FT. SINGLE OR DOUBLE BRACKET ARM.	11"	7 3/4	6'-0"	8 3/4	5 1/2	11	1": X 5'-0"	1"	.188" SGL.ARM .219" DBL.ARM
30 FT. MOUNTING HEIGHT WITH 15 FT. SINGLE OR DOUBLE BRACKET ARM.	11"	7 3/4	6'-0"	8 3/4	5 1/2	7	1": X 5'-0"	1"	.188" SGL.ARM .219" DBL.ARM
30 FT. MOUNTING HEIGHT WITH 17 FT. SINGLE OR DOUBLE BRACKET ARM.	11"	7 3/4	6'-0"	9"	5 1/2	7	1 1/4": X 5'-0"	1 1/8	.188" SGL.ARM .219" DBL.ARM
40 & 45 FT. MOUNTING HEIGHT WITH 4.6.8.10 12.15.17 FT. SINGLE OR DOUBLE BRACKET ARM.	1'-1"	9 1/4	8'-6"	10 3/4	5 1/2	11 GA. UP TO 15' BKT.ARM 7 GA. FOR 15' & 17' BKT.ARM	1 1/4": X 5'-0"	1 3/8	.219" LOWER SECTION .188" UPPER SECTION

NOTE: THE BOTTOM ROW OF THIS TABLE SHALL BE USED FOR THIS PROJECT.

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
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DLZ

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300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

NO SCALE

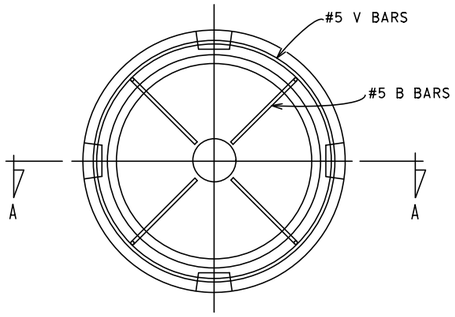
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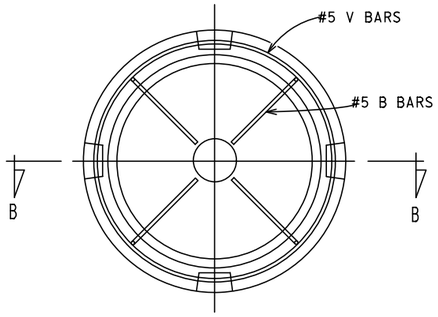
CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

LIGHTING STANDARD DETAILS

DRAWING	SHEET
US41 LTG 004	SECT 1 169



PLAN VIEW



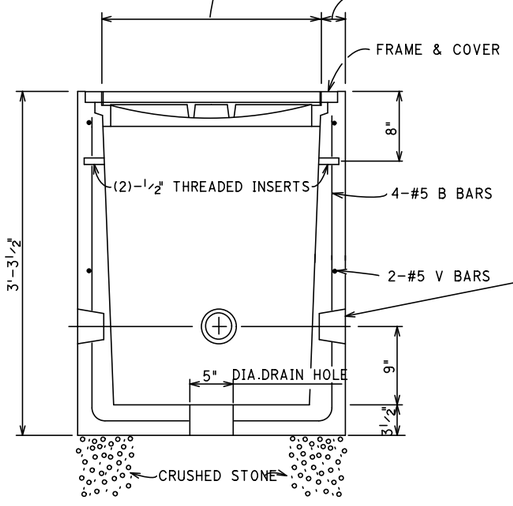
PLAN VIEW

OPENING
18" FOR LIGHT DUTY COVER
24" FOR HEAVY DUTY COVER

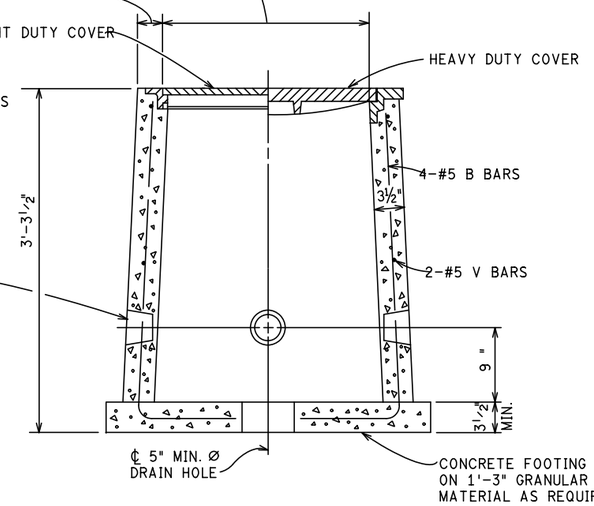
FRAME
FRAME & COVER
SEE MATERIAL NOTES

WALL THICKNESS
MIN. WALL THICKNESS FOR LIGHT DUTY COVER – $2^{3}/_{4}$", FOR HEAVY DUTY COVER – $3^{1}/_{2}$". SHOULD THE WALL BE TAPERED, A 0.3"/FT. SLOPE SHALL BE USED.

STEEL REINFORCEMENT
REINFORCEMENT SHALL BE #5 BARS AS SHOWN OR AN EQUIVALENT AREA OF STEEL USING WELDED WIRE MESH.

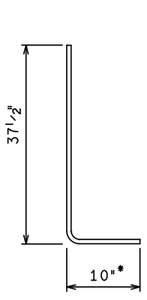


ENTRANCE HOLES AS REQUIRED FOR 3" & 4" CONDUIT. ADDITIONAL OPENINGS SHALL BE PROVIDED AS REQUIRED. HOLES MAY BE DRILLED IN THE FIELD.

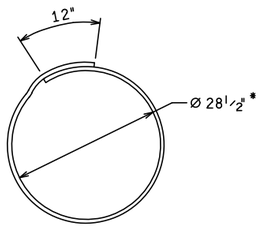


SECTION A–A PRECAST CONCRETE HANDHOLE
(TO BE USED IN EARTH)

SECTION B–B PRECAST CONCRETE HANDHOLE
(TO BE USED IN EARTH)



B BAR



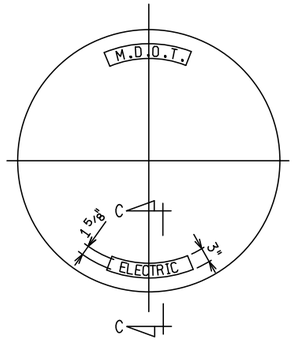
V BAR

* APPLIES TO 24" HANDHOLE

ALL LETTERING TO BE 1/4" HIGH AND FLUSH WITH SURFACE OF COVER

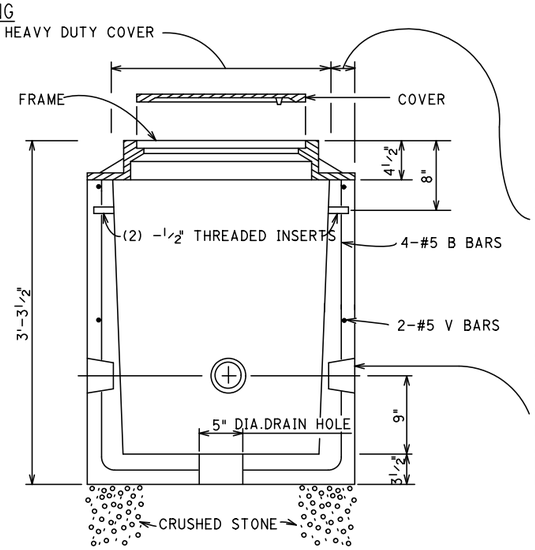


SECTION C–C



TOP VIEW

OPENING
24" FOR HEAVY DUTY COVER



FRAME
FRAME & COVER
SEE MATERIAL NOTES

WALL THICKNESS
MIN. WALL THICKNESS FOR HEAVY DUTY COVER – $3^{1}/_{2}$". SHOULD THE WALL BE TAPERED, A 0.3"/FT. SLOPE SHALL BE USED.

STEEL REINFORCEMENT
REINFORCEMENT SHALL BE #5 BARS AS SHOWN OR AN EQUIVALENT AREA OF STEEL USING WELDED WIRE MESH.

ENTRANCE HOLES AS REQUIRED FOR 3" & 4" CONDUIT. ADDITIONAL OPENINGS SHALL BE PROVIDED AS REQUIRED. HOLES MAY BE DRILLED IN THE FIELD.

SECTION A–A PRECAST CONCRETE HANDHOLE
(TO BE USED IN PAVED AREAS – HEAVY DUTY COVER ONLY)

GENERAL NOTES:

THE MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE CURRENT M.D.O.T. STANDARD SPECIFICATIONS.

THE CONTRACTOR MAY CONSTRUCT THE HANDHOLE STRUCTURE OF CONCRETE MASONRY, OR OF PRECAST REINFORCED CONCRETE.

THE INNER SURFACE OF THE HANDHOLE SHALL BE SMOOTH.

ALL CASTINGS SHALL BE CLEANED BY SAND BLASTING.

THE SEATING FACE OF THE COVER AND THE SEAT FOR THE COVER ON THE FRAME IF REQUIRED, SHALL BE GROUND OR MACHINED SO THAT THE COVER SHALL HAVE AN EVEN BEARING ON ITS SEAT TO PREVENT ROCKING OR TILTING.

THE CASTINGS SHALL BE FREE OF POURING FAULTS, BLOW HOLES, CRACKS, AND OTHER IMPERFECTIONS. THEY SHALL BE SOUND, TRUE TO FORM AND THICKNESS, CLEAN AND NEATLY FINISHED AND SHALL BE COATED WITH COAL TAR PITCH VARNISH.

HANDHOLE SHALL BE EQUIPPED WITH CABLE RACK AND HOOKS TO TRAIN CABLE.

LIGHT DUTY COVER SHALL BE BOLTED TO FRAME WITH NOT LESS THAN 2 COUNTERSUNK HEX HEAD BRONZE BOLTS.

PRECAST HANDHOLE WITH HEAVY DUTY COVER SHALL BE SET ON A CONCRETE SLAB .

MATERIAL NOTES:

HEAVY DUTY COVERS SHALL BE CASTINGS WHICH MEET THE REQUIREMENTS OF THE CURRENT SPECIFICATIONS FOR GRAY IRON CASTINGS ASTM DESIGNATION A48 AND SHALL HAVE A MINIMUM STRENGTH AS PROVIDED FOR CLASS NO. 30B GRAY IRON CASTINGS.

ALL CONCRETE MASONRY SHALL BE GRADE 30M.

HEAVY DUTY COVERS & FRAMES FOR USE IN EARTH SHALL BE EAST JORDAN IRON WORKS #2860 TYPE "A" OR NEENAH FOUNDRY #R-6052 D FOR CIRCULAR COVER OR AN APPROVED EQUAL.

HEAVY DUTY COVERS & FRAMES TO BE USED IN PAVED AREAS SHALL BE EAST JORDAN IRON WORKS #3100 FOR CIRCULAR COVER OR AN APPROVED EQUAL.

LIGHT DUTY COVER AND FRAME SHALL BE EAST JORDAN IRON WORKS #2982A–18 OR NEENAH FOUNDRY #R–6012 D FOR CIRCULAR COVER OR AN APPROVED EQUAL.

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

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MARQUETTE, MI 49855
PH. (906)228-0440

NO SCALE

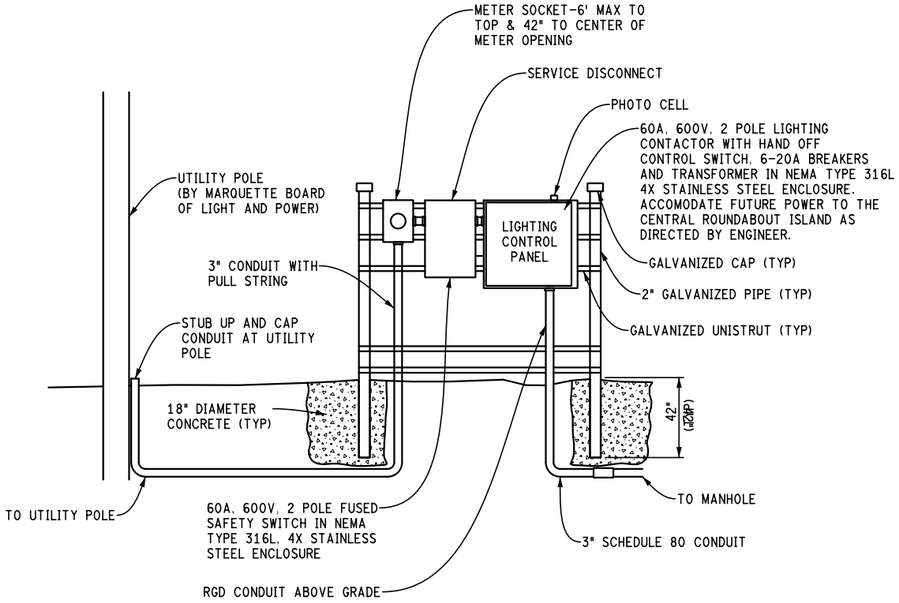
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TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

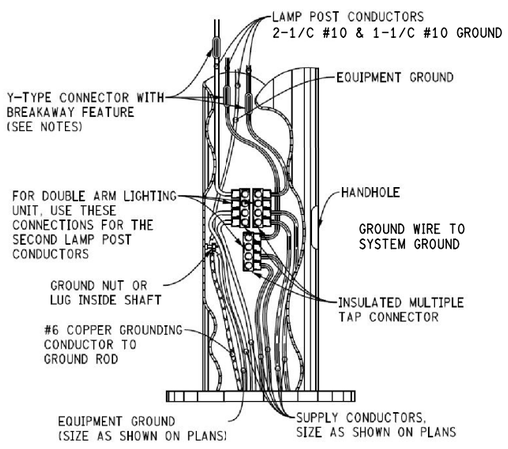
LIGHTING STANDARD DETAILS

DRAWING	SHEET
US41 LTG 005	SECT 1 170



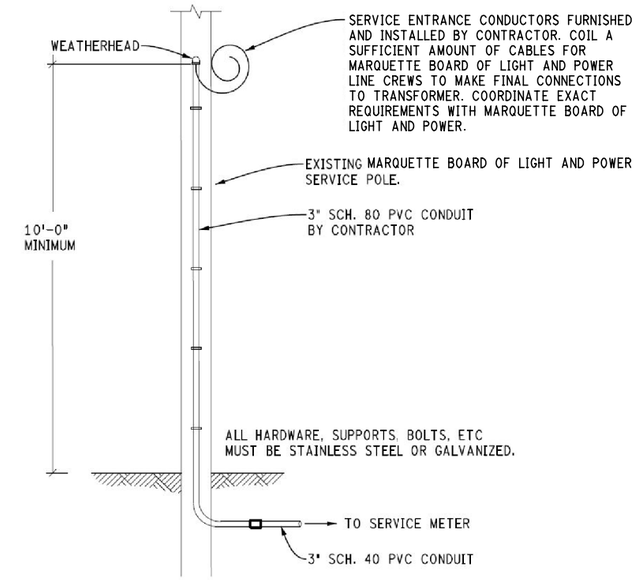
LIGHTING CONTROL PANEL DETAIL

NOTE:
INSTALLATION OF LIGHTING CONROL PANEL AS SHOWN.
ALL ITEMS INCLUDED IN PAYMENT FOR "LIGHTING CONTROL PANEL".
ACCOMODATE CIRCUITS G AND H FOR THE CENTRAL ROUNDABOUT ISLAND AS DIRECTED BY THE ENGINEER.



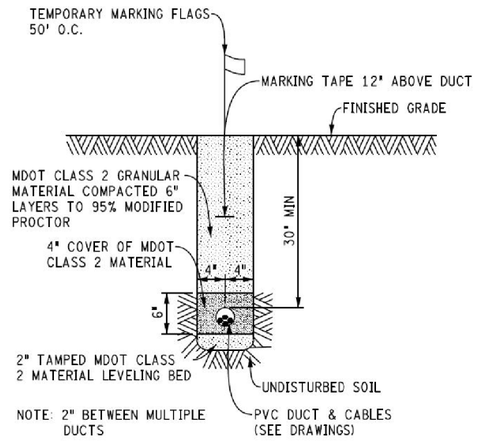
TYPICAL MULTIPLE STREET LIGHTING CONNECTION

NOT TO SCALE



WOOD POLE, FIT UP, SEC SERV POLE

NOT TO SCALE



BURIED DUCTBANK

NOT TO SCALE

GENERAL NOTES

1. THIS CONTRACTOR SHALL FURNISH ALL MATERIALS AND LABOR AS INDICATED ON PLANS AND AS REQUIRED FOR A COMPLETE ELECTRICAL SYSTEM.

2. THE CONTRACTOR SHALL VISIT THE JOB SITE, THOROUGHLY CHECK THE EXISTING FIELD CONDITIONS AND EXISTING ELECTRICAL INSTALLATIONS AND CLARIFY ALL DISCREPANCIES WITH THE ENGINEER BEFORE SUBMITTING A BID, AS NOT EXTRAS WILL BE ALLOWED FOR OMITTED WORK DUE TO HIS FAILURE TO INSPECT THE PREMISES.

3. ALL ELECTRICAL WORK SHALL COMPLY WITH MDOT, N.E.C., LOCAL CODES, ORDINANCES AND REGULATIONS INCLUDING THE FEDERAL OCCUPATIONAL SAFETY AND HEALTH ACT.

4. ALL MATERIALS SHALL BE NEW AND BEAR THE UL LABEL.

5. ELECTRICAL ENCLOSURES, SUPPORT RACKS, CONDUIT SYSTEMS, ETC., SHALL BE THOROUGHLY GROUNDED IN ACCORDANCE WITH THE N.E.C. AND ALL LOCAL CODES.

6. COORDINATE ALL ELECTRICAL UNDERGROUND WORK WITH NEW AND EXISTING UNDERGROUND UTILITIES BEFORE INSTALLATION.

7. HAND DIG WHERE REQUIRED TO LOCATE EXISTING UTILITIES PRIOR TO INSTALLATION OF THE NEW DIRECT BURIAL ROADWAY LIGHTING CONDUIT.

8. ALL LIGHT POLES SHALL BE STORED WITH WOOD BLOCKING SEPARATION AND CARE SHALL BE TAKEN SO AS NOT TO DAMAGE THE FACTORY FINISH OF POLES AND LUMINAIRES. ALL DAMAGE SHALL BE TOUCHED UP WITH FACTORY APPROVED TOUCH- UP PAINT.

9. EXTREME CARE SHALL BE EXERCISED DURING POLE BASE & POLE PLACEMENT, SO THAT ANCHOR BOLTS ARE CORRECTLY ALIGNED, POLES ARE PLUMB, LUMINAIRES ARE HORIZONTAL AND ORIENTED AS SHOWN ON PLANS.

10. FINAL LOCATIONS OF LIGHT STANDARDS, CONDUIT, HANDHOLES AND LIGHTING CONTROL ENCLOSURES SHALL BE FIELD ADJUSTED AS DIRECTED BY THE ENGINEER TO AVOID CONFLICTS THAT MAY BE ENCOUNTERED.

11. COMPLETE UNDERGROUND SYSTEM SHALL BE INSPECTED AND CERTIFIED PRIOR TO BACKFILLING BY THE LOCAL BUILDING DEPARTMENT ELECTRICAL INSPECTOR.

12. PROVIDE A COMPLETE UNDERGROUND SYSTEM AS SHOWN INCLUDING ALL EXCAVATION AND BACKFILL. ALL CONDUIT JOINTS SHALL BE MADE WATERTIGHT.

13. ALL THREADED ELECTRICAL EQUIPMENT(CONDUIT, COUPLINGS, JUNCTION BOXES, ETC.) INSTALLED OUTDOORS SHALL BE COATED WITH ANTI-SEIZE COMPOUND PRIOR TO INSTALLATION.

14. ALL DIRECT BURIAL CONDUITS BELOW ROADWAYS OR PARKING LOTS SHALL BE BACKFILLED TO 95% COMPACTION OF MAXIMUM DENSITY OF MDOT GRANULAR MATERIAL, CLASS 2.

15. ELECTRICAL SERVICE SHALL BE 240 VOLT, 1 PHASE, 3 WIRE.

16. STREET LIGHTING LUMINAIRES SHALL BE LED TYPE III. DESIGN SHALL MEET THE DESIGN CRITERIA AS SPECIFIED IN THE SPECIAL PROVISION, LUMINAIRE, ROADWAY.

17. SMOOTH SURFACE CONDUIT ONLY IS ALLOWED ON THIS JOB.

18. ALL CABLE SHALL BE INSTALLED IN CONTINUOUS UNCUT LENGTH BETWEEN HANDHOLES OR LIGHT STANDARDS.

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
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NO SCALE

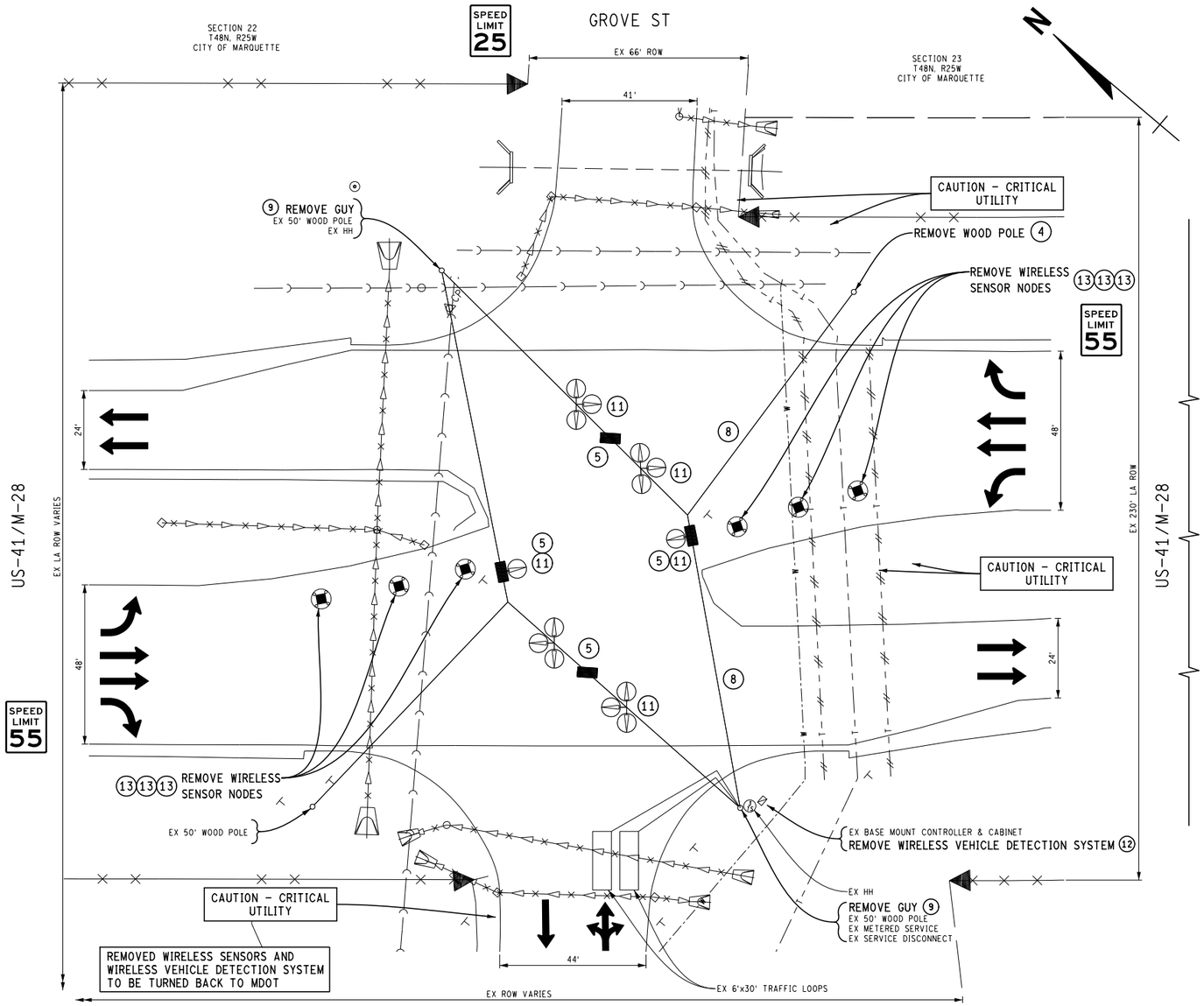
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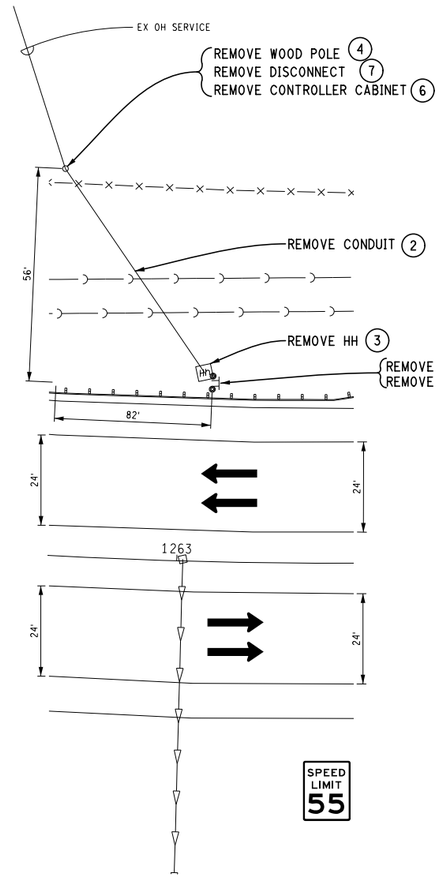
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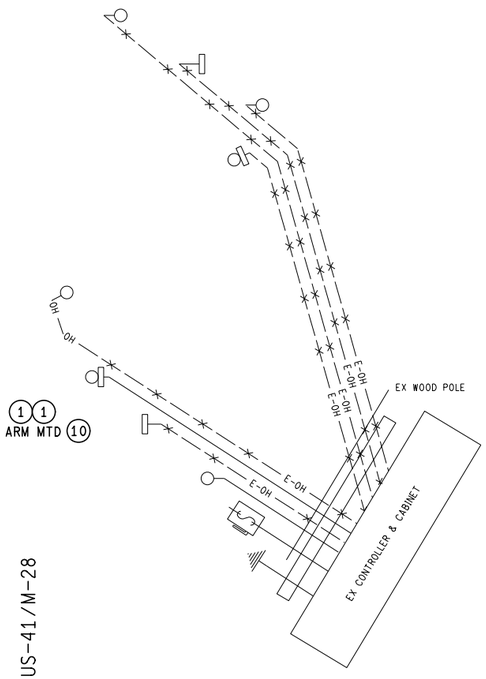
CS: 52042
JN: M017-025
MDOT PERMIT 043179-16

LIGHTING STANDARD DETAILS & GENERAL NOTES

DRAWING: US41 LTG 006
SHEET: SECT 1 171

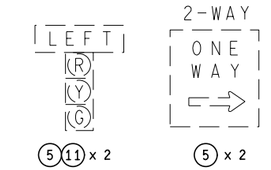






REMOVAL CABLING DIAGRAM

NOT TO SCALE



CASE SIGN/SIGNAL REMOVAL

NOT TO SCALE

SECTION 22
T48N, R25W
CITY OF MARQUETTE

GROVE ST

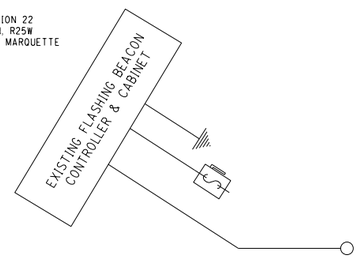
SPEED LIMIT 25

EXISTING TRAFFIC SIGNAL TO BE USED DURING STAGE 1 OF CONSTRUCTION.

PART OF EXISTING TRAFFIC SIGNAL TO BE USED DURING STAGE 2 OF CONSTRUCTION.

TIME OF REMOVAL OF TRAFFIC SIGNALS TO BE AS DIRECTED BY THE ENGINEER.

CONTACT: FRED BENNETT (906-630-0498) FIVE (5) BUISNESS DAYS PRIOR TO SIGNAL REMOVAL TO PICK UP SIGNAL EQUIPMENT.



EXISTING CABLING DIAGRAM

NOT TO SCALE

LIST OF MATERIAL

No.	ITEM	QUANTITIES	ITEM CODE
1	Fdn, Wood Support, Rem	2 Ea	8100280
2	Conduit, Rem	70 Ft	8190140
3	Hh, Rem	1 Ea	8190254
4	Wood Pole, Rem	2 Ea	8190505
5	Case Sign, Rem	4 Ea	8200020
6	Controller and Cabinet, Rem	1 Ea	8200030
7	Serv Disconnect, Rem	1 Ea	8200136
8	Span Wire, Rem	2 Ea	8200141
9	Guy, Rem	2 Ea	8200167
10	TS, Bracket Arm Mtd, Rem	1 Ea	8200175
11	TS, Span Wire Mtd, Rem	5 Ea	8200182
12	Wireless Vehicle Detection System, Rem	1 Ea	8200423
13	Wireless Vehicle Sensor Node, Rem	6 Ea	8200426

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

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CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 40

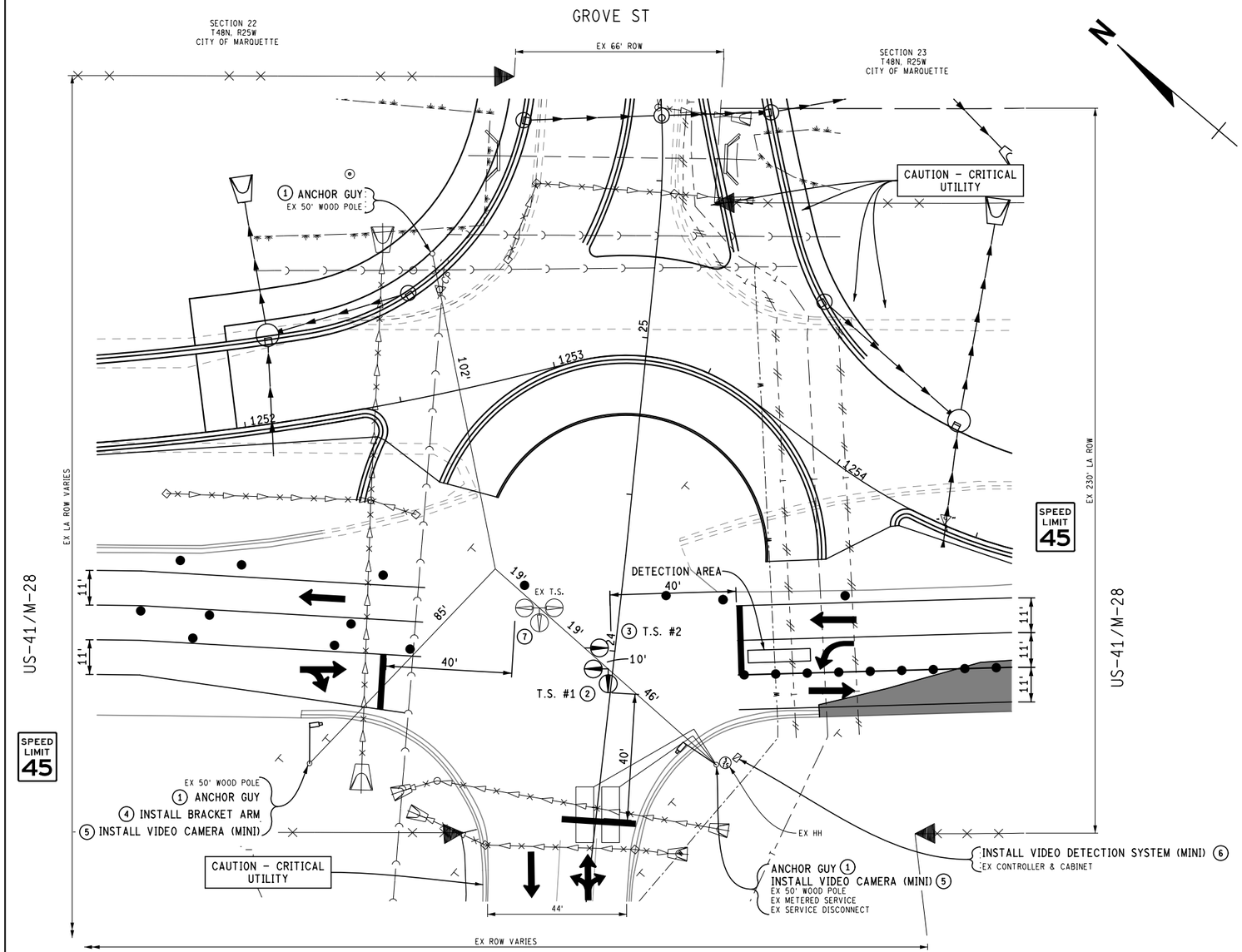
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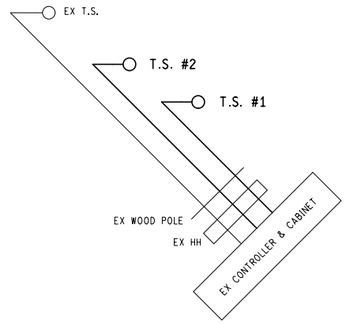
DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: M017-025
MDOT PERMIT 043179-16

TRAFFIC SIGNAL REMOVAL - STAGE 1 REMOVAL
US-41/M-28 AT GROVE ST
CITY OF MARQUETTE, MARQUETTE COUNTY

DRAWING: SIG LOC 001
SHEET: SECT 1 172



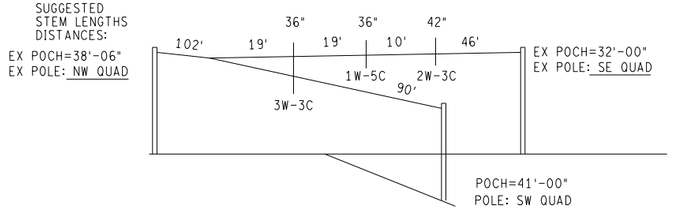


CABLES TO BE USED UNLESS SPECIFIED OTHERWISE

1. TRAFFIC SIGNAL CABLES ARE 5/C#16 PJ.
2. 1W-5C (DOGHOUSE) CABLES ARE 7/C#16 PJ.
3. CABLE TO VIDEO CAMERAS TO BE COMBINATION COAXIAL/POWER CABLE RG 59-3 CONDUCTOR 16AWG.

(3-WAY) SPAN CALCULATIONS

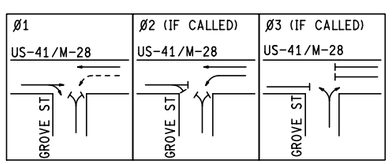
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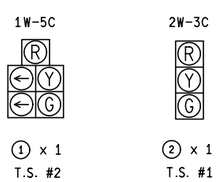
POCH IS CALCULATED AT 1200 POUNDS TENSION.

MAINTAIN 17' MINIMUM VERTICAL CLEARANCE AT ALL TIMES.

UTILIZE EXISTING TRAFFIC LOOPS ON GROVE ST FOR VEHICLE DETECTION.



PHASING DIAGRAM



1 x 1 T.S. #2

2 x 1 T.S. #1

LIST OF MATERIAL

No.	ITEM	QUANTITIES	ITEM CODE
1	Anchor Guy	3 Ea	8200001
2	TS, One Way Span Wire Mtd, Five Sect (LED)	1 Ea	8200315
3	TS, Two Way Span Wire Mtd (LED)	1 Ea	8200322
4	Bracket, Truss, With 18 Foot Arm	1 Ea	8200378
5	Video Traffic Detection Camera (Mini)	2 Ea	8200386
6	Video Traffic Detection System (Mini)	1 Ea	8200387
7	TS Head, Adj	1 Ea	8200452

SIGNALS	
OPENINGS:	20
CYCLIC WATTS:	2706
STEADY WATTS:	0
PLAN:	52042-01-018

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)

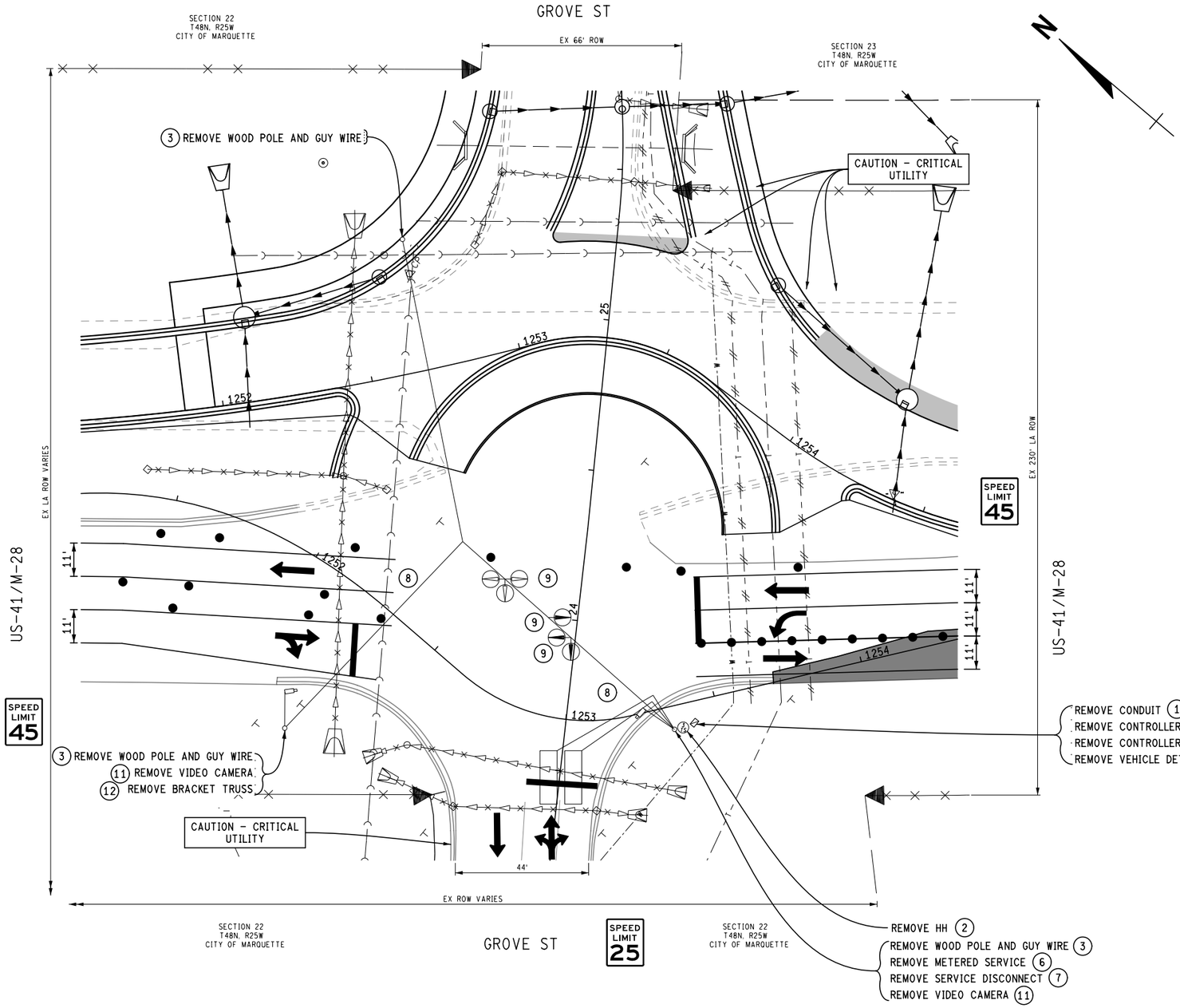
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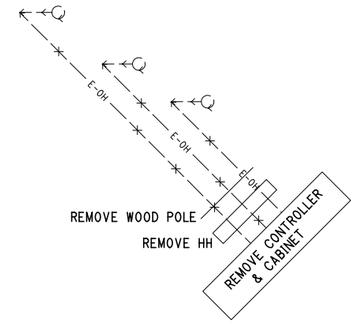
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CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 40

	DATE: 2/10/2017	CS: 52042	TRAFFIC SIGNAL INSTALL - STAGE 2 PLAN	DRAWING	SHEET
	DESIGN UNIT: FILPUS	JN: MQ17-025	US-41/M-28 AT GROVE ST	SIG LOC 001	SECT 1 173
FILE: 6553_US41_SIG002.dgn	TSC: ISHPEMING	MDOT PERMIT 043179-16	CITY OF MARQUETTE, MARQUETTE COUNTY		





LIST OF MATERIAL			
No.	ITEM	QUANTITIES	ITEM CODE
1	Conduit, Rem	35 Ft	8190140
2	Hh, Rem	1 Ea	8190254
3	Wood Pole, Rem	3 Ea	8190505
4	Controller and Cabinet, Rem	1 Ea	8200030
5	Controller Fdn, Rem	1 Ea	8200046
6	Metered Serv, Rem	1 Ea	8200095
7	Serv Disconnect, Rem	1 Ea	8200136
8	Span Wire, Rem	2 Ea	8200141
9	TS, Span Wire Mtd, Rem	3 Ea	8200182
10	Video Traf Detection System, Rem	1 Ea	8200383
11	Video Traf Detection Camera, Rem	2 Ea	8200384
12	Bracket, Truss, Rem	1 Ea	8200388

CONTACT: FRED BENNET (906-630-0498) FIVE (5) BUISNESS DAYS PRIOR TO SIGNAL REMOVAL TO PICK UP MDOT OWNED SIGNAL EQUIPMENT.

CONTACT: KEITH WHITTINGTON (906-228-0440) FIVE (5) BUISNESS DAYS PRIOR TO SIGNAL REMOVAL TO PICK UP CITY OWNED SIGNAL EQUIPMENT.

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

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CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
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0 HORZ. (FT) 40

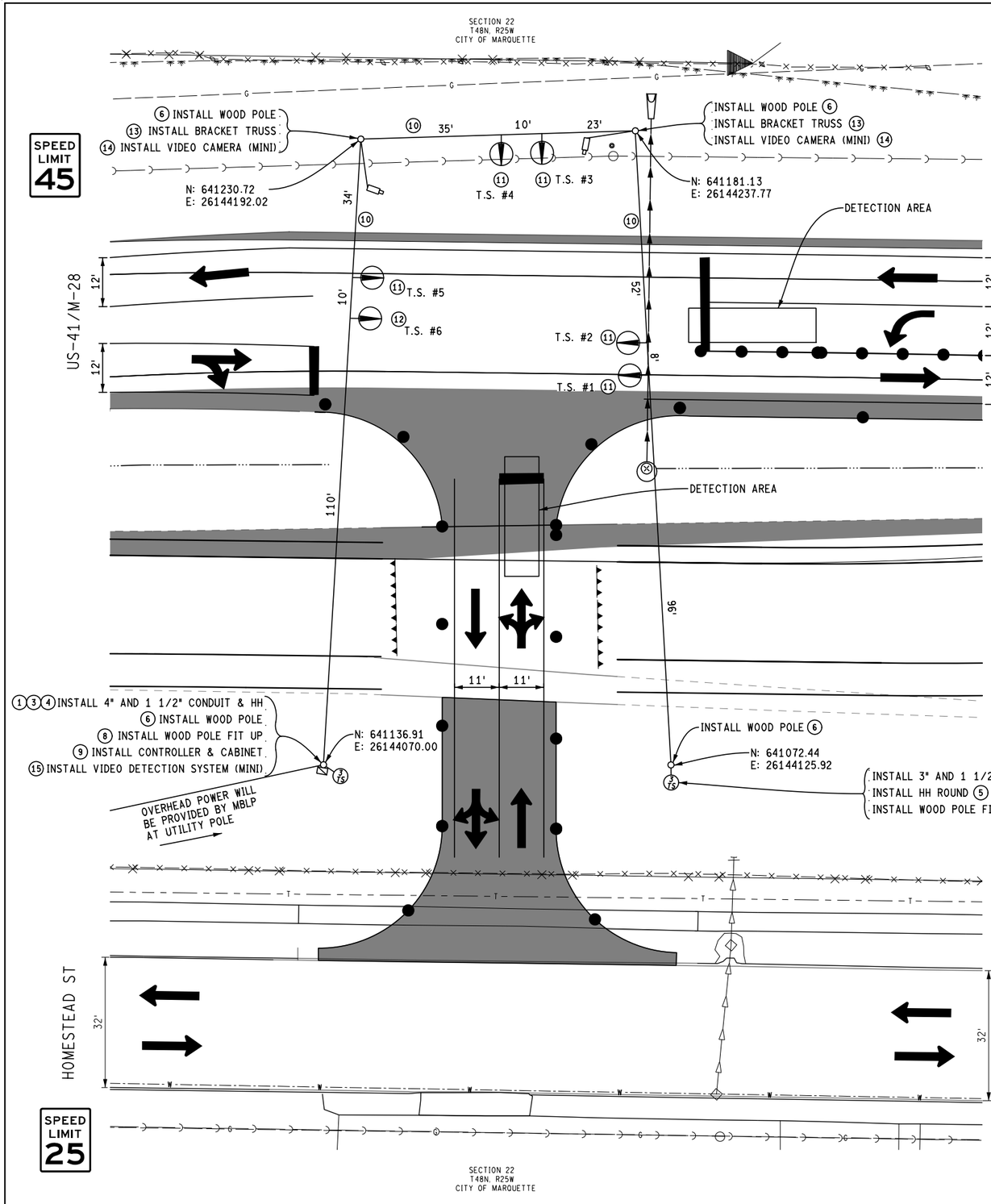
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CS: 52042
JN: M017-025
MDOT PERMIT 043179-16

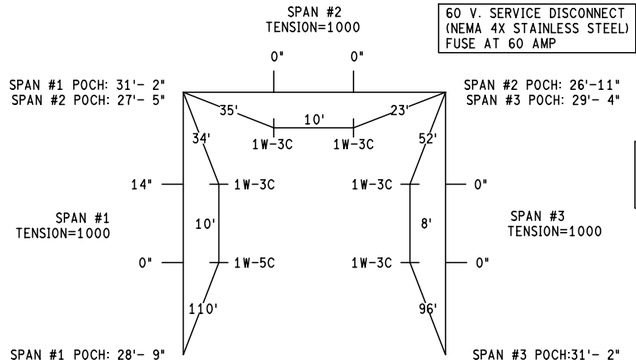
TRAFFIC SIGNAL REMOVAL - STAGE 2 REMOVAL
US-41/M-28 AT GROVE ST
CITY OF MARQUETTE, MARQUETTE COUNTY

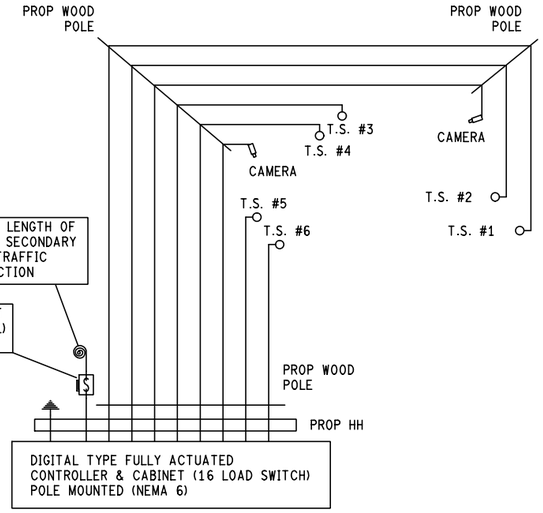
DRAWING: SIG LOC 001
SHEET: SECT 1 174



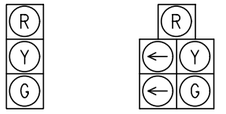
NOTE: WAIT TO INSTALL PROPOSED LIGHT STANDARD ALONG NB US-41 WITHIN THE VICINITY OF THE TEMPORARY SIGNAL UNTIL AFTER THE TEMPORARY SIGNAL IS REMOVED IN STAGE 4C.

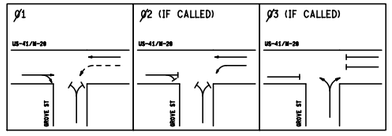
BOX SPAN CALCULATIONS
NOT TO SCALE





INSTALL CABLING DIAGRAM
NOT TO SCALE





PHASING DIAGRAM

THIS TRAFFIC SIGNAL TO BE USED DURING STAGES 3 AND 4 OF CONSTRUCTION.

LIST OF MATERIAL

No.	ITEM	QUANTITIES	ITEM CODE
1	Conduit, DB, 1, 1 1/2 inch	20 Ft	8190027
2	Conduit, DB, 1, 3 inch	10 Ft	8190029
3	Conduit, DB, 1, 4 inch	10 Ft	8190030
4	Hh, Round, 3 foot Dia.	1 Ea	8190259
5	Hh, Round	1 Ea	8190260
6	Wood Pole, Cl 4, 40 foot	4 Ea	8190473
7	Wood Pole, Fit Up, Comb Sec and TS Cable Pole	1 Ea	8190485
8	Wood Pole, Fit Up, TS Cable Pole	1 Ea	8190501
9	Controller and Cabinet, Digital Type	1 Ea	8200031
10	Span Wire	3 Ea	8200140
11	TS, One Way Span Wire Mtd (LED)	5 Ea	8200313
12	TS, One Way Span Wire Mtd, Five Sect (LED)	1 Ea	8200315
13	Bracket, Truss, With 18 Foot Arm	2 Ea	8200378
14	Video Traffic Detection Camera (Mini)	2 Ea	8200386
15	Video Traffic Detection System (Mini)	1 Ea	8200387
	Power Co. (Est. Cost to Contractor)	500 Dlr	8200116

SIGNALS	
OPENINGS:	22
CYCLIC WATTS:	274
STEADY WATTS:	0
PLAN: 52042-01-018	

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

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MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 30

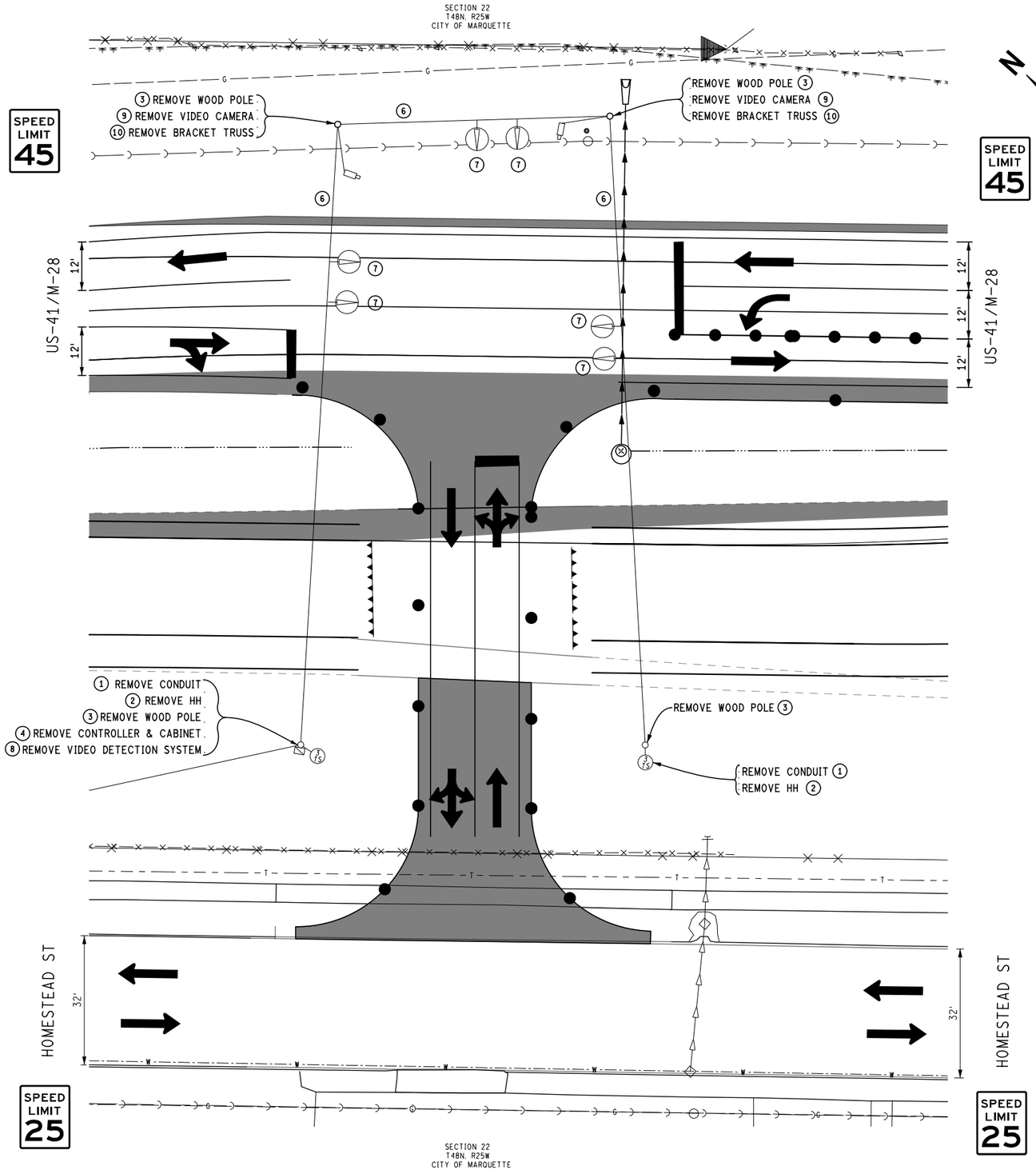
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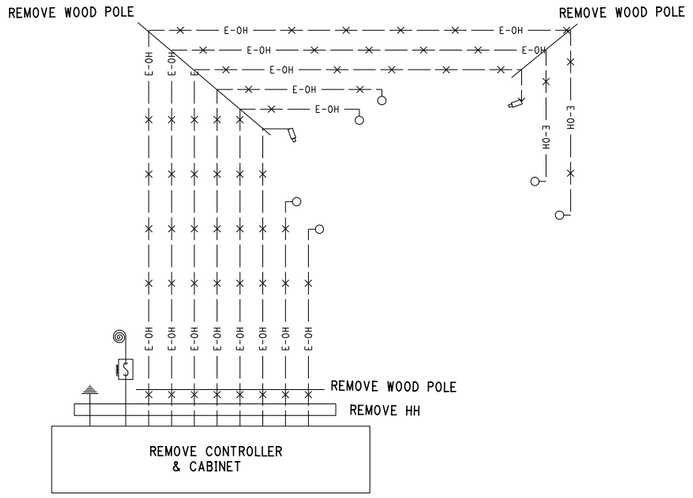
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TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

TRAFFIC SIGNAL INSTALL - STAGE 3 PLAN
US-41/M-28 AT TEMPORARY ROAD
CITY OF MARQUETTE, MARQUETTE COUNTY

DRAWING	SHEET
SIG LOC 002	SECT 1 175





REMOVAL CABLING DIAGRAM

NOT TO SCALE

TIME OF REMOVAL OF TRAFFIC SIGNALS TO BE AS DIRECTED BY THE ENGINEER.

CONTACT: KEITH WHITTINGTON (906-228-0440) FIVE (5) BUISNESS DAYS PRIOR TO SIGNAL REMOVAL TO PICK UP SIGNAL EQUIPMENT.

LIST OF MATERIAL

No.	ITEM	QUANTITIES	ITEM CODE
1	Conduit, Rem	40 Ft	8190140
2	Hh, Rem	2 Ea	8190254
3	Wood Pole, Rem	4 Ea	8190505
4	Controller and Cabinet, Rem	1 Ea	8200030
6	Span Wire, Rem	3 Ea	8200141
7	TS, Span Wire Mtd, Rem	6 Ea	8200182
8	Video Traf Detection System, Rem	1 Ea	8200383
9	Video Traf Detection Camera, Rem	2 Ea	8200384
10	Bracket, Truss, Rem	2 Ea	8200388

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

0 HORZ. (FT) 30

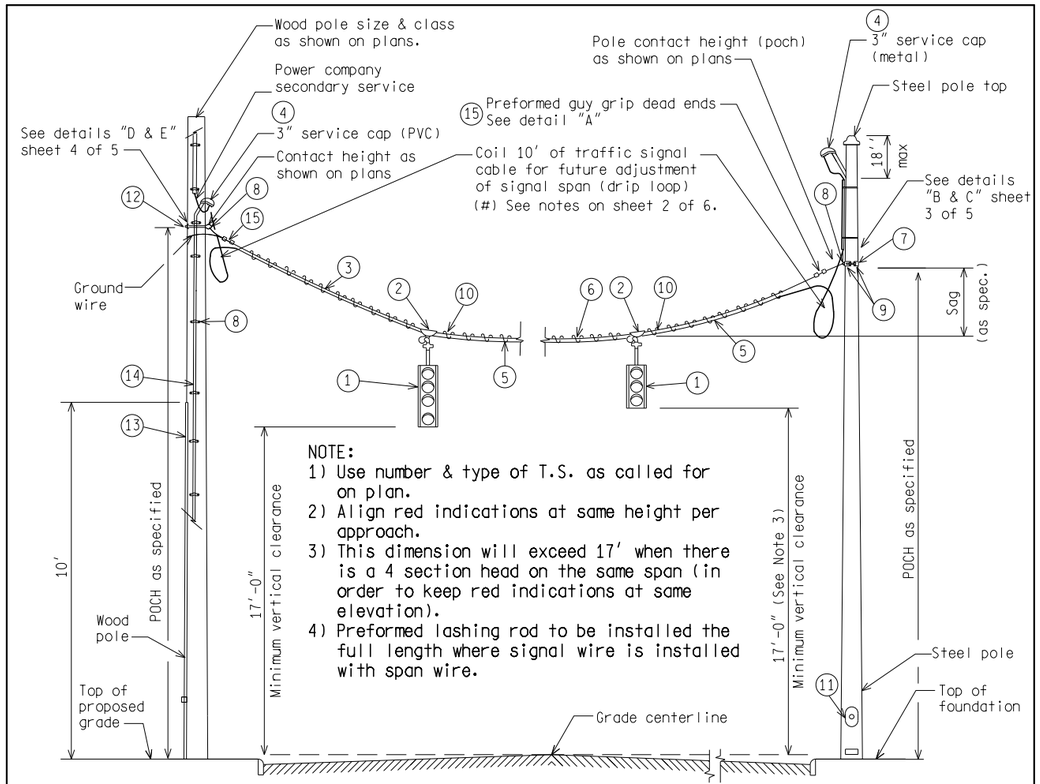
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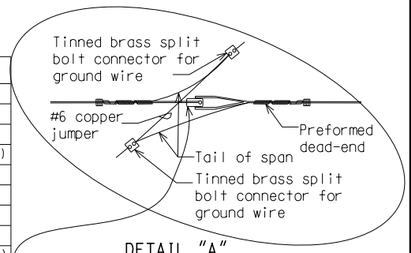
TRAFFIC SIGNAL REMOVAL - STAGE 4C REMOVAL
US-41/M-28 AT TEMPORARY ROAD
CITY OF MARQUETTE, MARQUETTE COUNTY

DRAWING	SHEET
SIG LOC 002	SECT 1 176



TYPICAL SPAN WIRE INSTALLATION T.S. ON STEEL AND WOOD POLES

NO.	ITEM
1	Traffic signal (no. heads as indicated)
2	Span wire hanger
3	5/16" extra high strength span wire
4	3" Service cap (weatherhead), (metal for steel and PVC for wood poles)
5	P.J. traffic signal cable (as specified)
6	Preformed lashing rods
7	Pole band clamp (steel pole)
8	Guy thimble (2" dia.)
9	(2) 5/8" x 4" long bolt, nut, washers per pole band clamp (steel pole)
10	Install span wire preformed (armor rod) under each span hanger
11	Access hand hole all new & existing steel poles
12	5/8" eyebolt, oval eye and nut
13	Wood moulding or plastic duct (10' from ground level)
14	3" schedule 80 PVC or rigid metal (*) See note on sheet 2 of 5
15	Preformed guy grip dead ends



DETAIL "A"
COPPER JUMPER

NOTE: Porcelain strain insulator (if required shall meet the codes and placement requirements of the local utility co.

NOT TO SCALE

File: PW:RD/TR/Signals/Web/Statewide SD/Final Rev. 10/25/16

MDOT Michigan Department of Transportation

PREPARED BY TRAFFIC AND SAFETY

DRAWN BY: DJF

CHECKED BY:

ENGINEER OF DELIVERY

ENGINEER OF DEVELOPMENT

(SPECIAL DETAIL) FHWA APPROVAL DATE

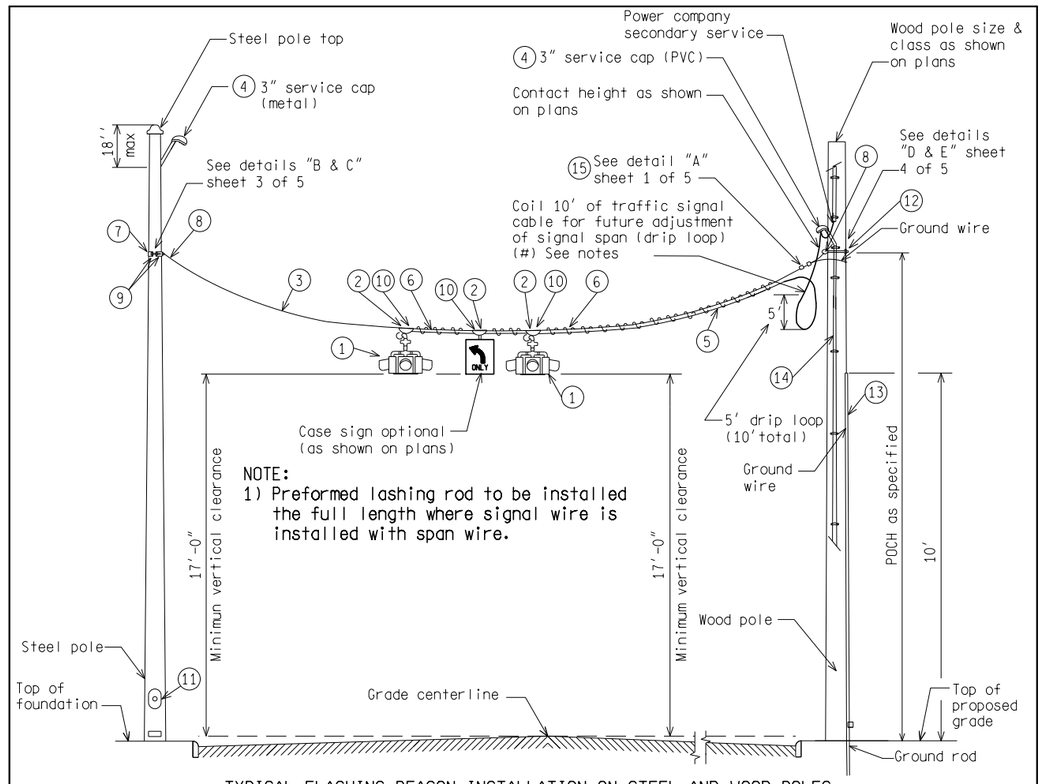
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR

ALL SPAN WIRE T.S. ON STEEL AND WOOD POLES

PLAN DATE

SIG-010-A

SHEET 1 of 7



TYPICAL FLASHING BEACON INSTALLATION ON STEEL AND WOOD POLES

NO.	ITEM
1	Traffic signal (no. heads as indicated)
2	Span wire hanger
3	5/16" extra high strength span wire
4	3" service cap (weatherhead), (metal for steel and PVC for wood poles)
5	P.J. traffic signal cable (as specified)
6	Preformed lashing rods
7	Pole band clamp (steel pole)
8	Guy thimble (2" dia.)
9	(2) 5/8" x 4" long bolt, nut, washers per pole band clamp (steel pole)
10	Install span wire preformed (armor rod) under each span hanger
11	Access hand hole all new & existing steel poles
12	5/8" eyebolt, oval eye and nut
13	Wood moulding or plastic duct (10' from ground level)
14	1 1/2" to 2" schedule 80 PVC or rigid metal (*) See note
15	Preformed guy grip dead ends

NOTES:
(*) For projects maintained by the Wayne Co. Department of Public Services (WCDPS), use rigid metal for conduit(s) from grade level to 10' (min.) above grade or as directed by the Engineer.

(#) For projects maintained by the Road Commission for Oakland County (RCOC), use drip loop (without coil) for future adjustment of signal span.

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN

(SPECIAL DETAIL) FHWA APPROVAL DATE

File: PW:RD/TR/Signals/Web/Statewide SD/Final Rev. 10/25/16

PLAN DATE

SIG-010-A

SHEET 2 of 7

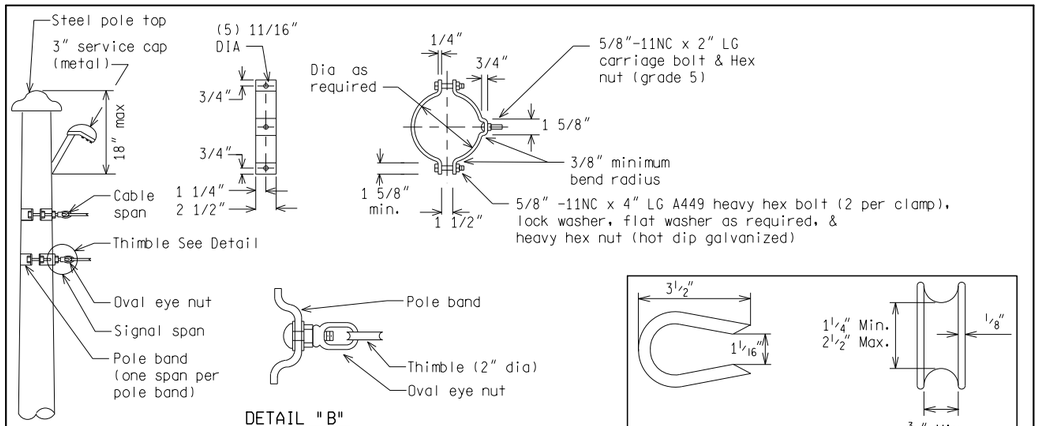
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NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

MDOT Michigan Department of Transportation

FILE: DATE: DESIGN UNIT: TSC: CS: JN:

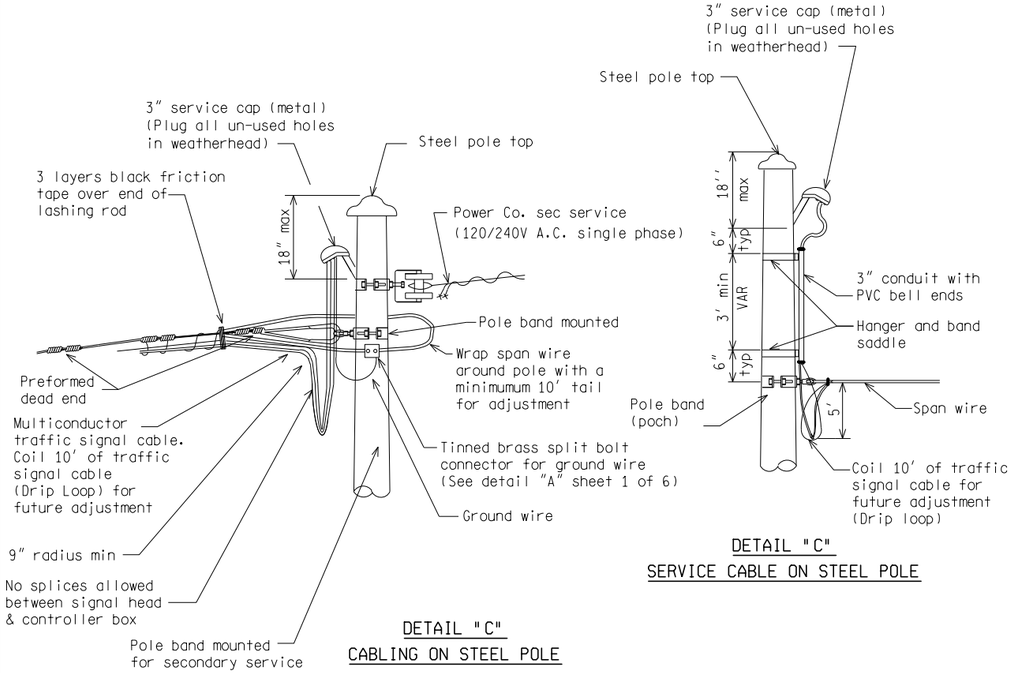
DRAWING SHEET 177



DETAIL "B"

POLE BAND CLAMP ON STEEL POLE

ASTM A36 steel pole band clamps must be stamped with identification that is traceable back to the manufacturer, which can be used to determine the month and year of clamp manufacture. The stamping method must be a low stress stamping method. The stamp cannot be located near the bolted flange, must be located near the center of the clamp on the back side facing away from traffic, and be visible after galvanizing. All bend radii are to be a minimum of 1.5 times the pole band thickness.



DETAIL "C"

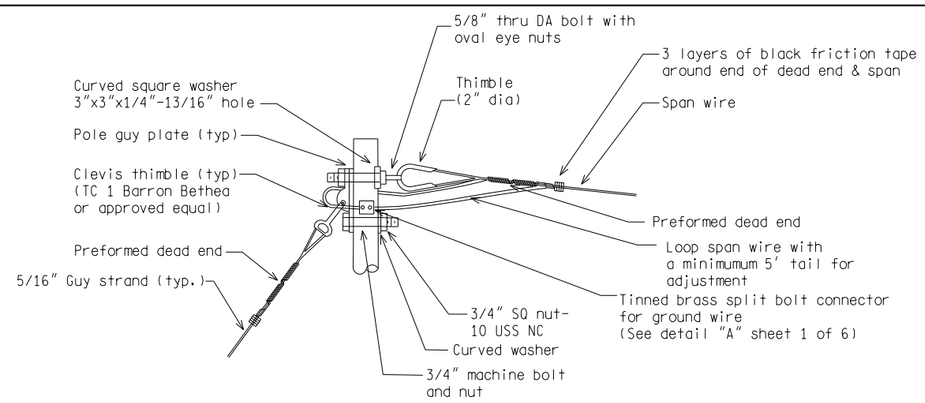
CABLING ON STEEL POLE

DETAIL "C"

SERVICE CABLE ON STEEL POLE

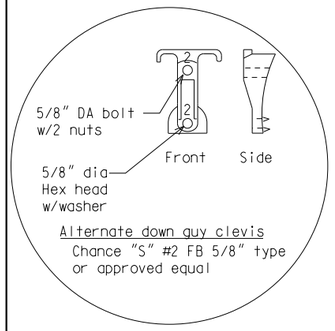
NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	(SPECIAL DETAIL) FHWA APPROVAL DATE		SIG-010-A	SHEET 3 of 7
File: PW:RD/TR/Signals/Web/Statewide SD/Final Rev. 10/25/16		PLAN DATE		

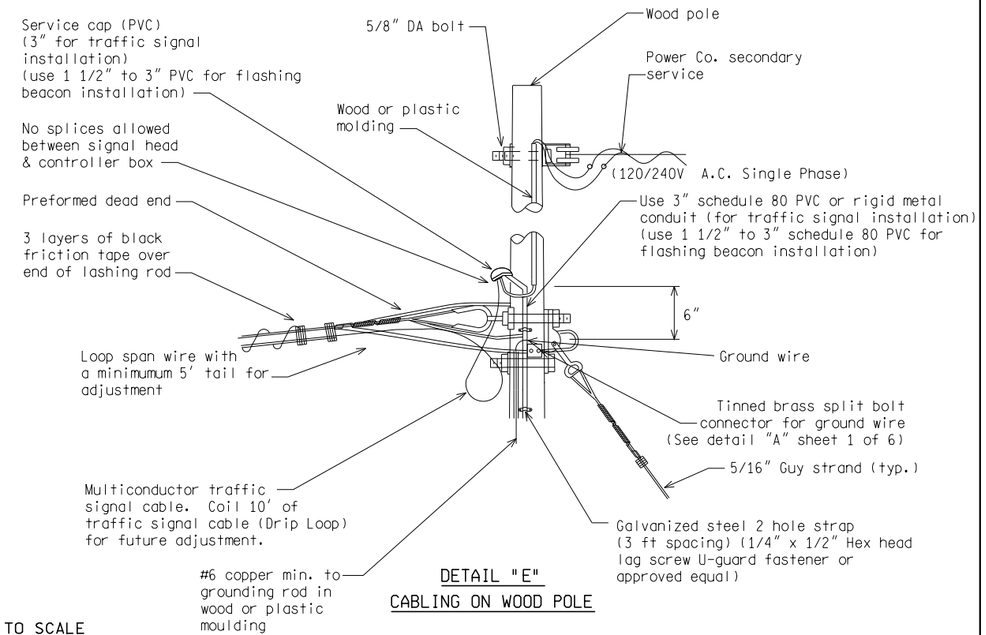


DETAIL "D"

SPAN WIRE POLE PLATE AND HARDWARE ON WOOD POLE



NOTE:
Porcelain strain insulator (if required) shall meet the codes and placement requirements of the local utility co.



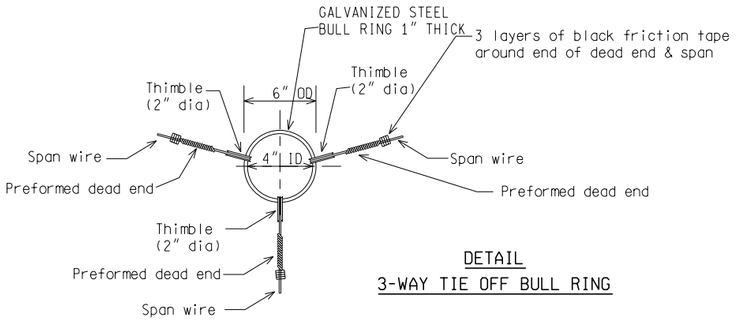
DETAIL "E"

CABLING ON WOOD POLE

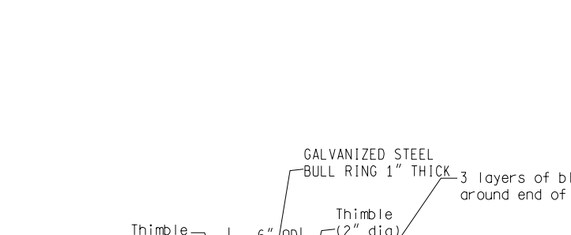
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MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	(SPECIAL DETAIL) FHWA APPROVAL DATE		SIG-010-A	SHEET 4 of 7
File: PW:RD/TR/Signals/Web/Statewide SD/Final Rev. 10/25/16		PLAN DATE		

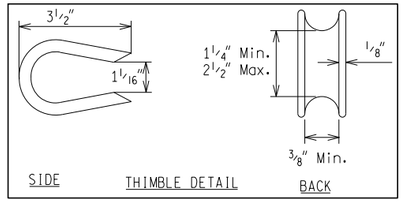
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NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION			DATE:	CS:		DRAWING	SHEET
										DESIGN UNIT:				
									FILE:	TSC:	JN:			178



DETAIL
3-WAY TIE OFF BULL RING

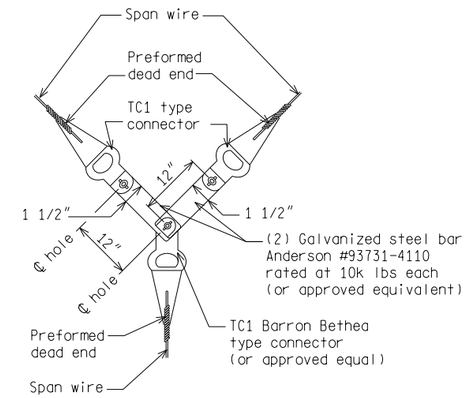


DETAIL COPPER JUMPER
3-WAY TIE OFF

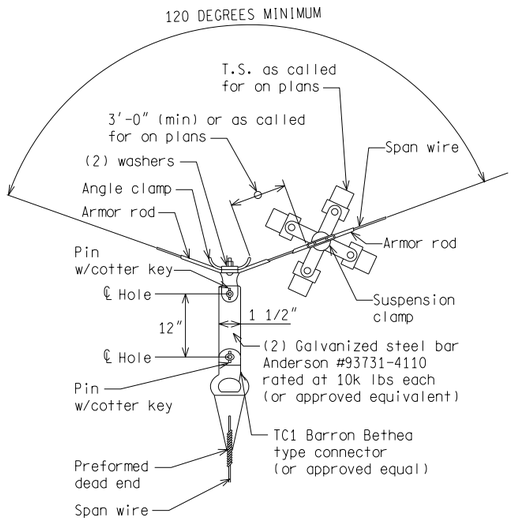


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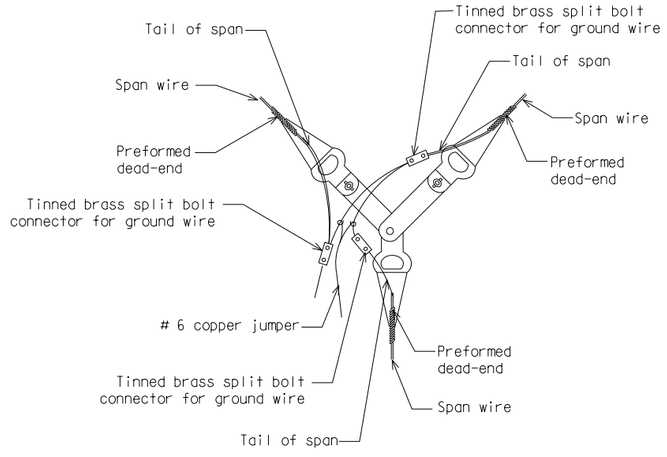
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File: PW:RD/TR/Signals/Web/Statewide SD/Final Rev. 10/25/16		PLAN DATE		



PULL-OFF CONNECTION DETAIL (ALTERNATE)
FOR 3-WAY SUSPENSION



PULL-OFF CONNECTION DETAIL (ALTERNATE)
FOR 3-WAY SUSPENSION

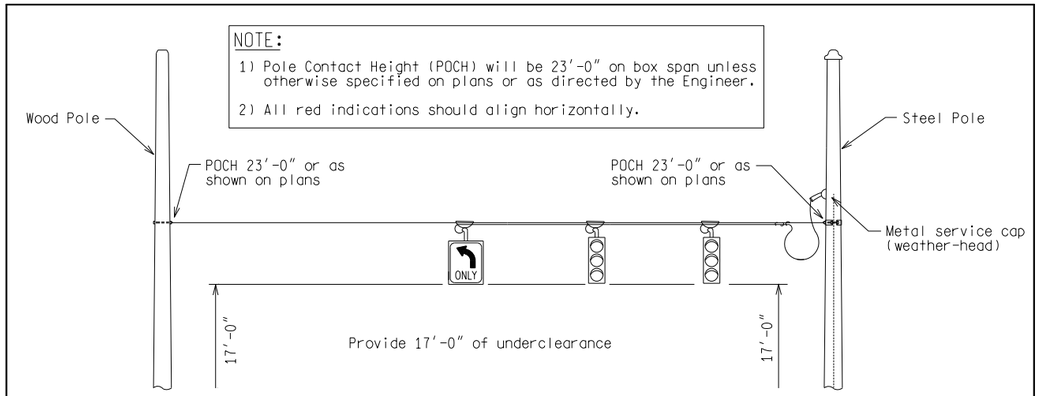


DETAIL COPPER JUMPER (ALTERNATE)
SPAN WIRE GROUNDING

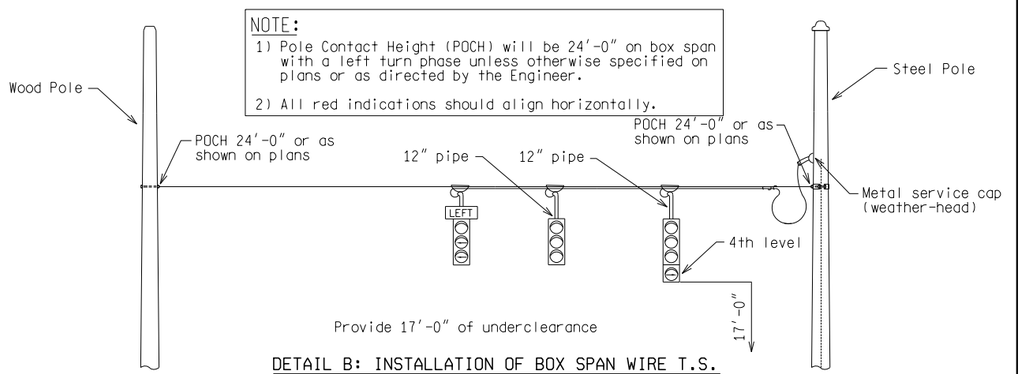
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File: PW:RD/TR/Signals/Web/Statewide SD/Final Rev. 10/25/16		PLAN DATE		

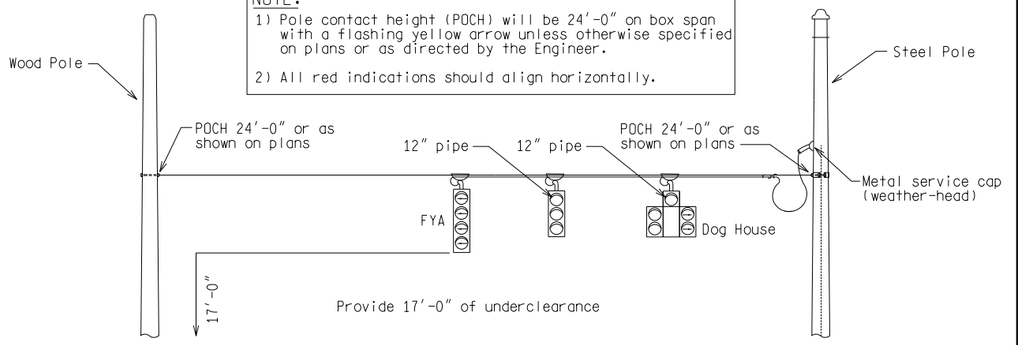
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									DESIGN UNIT:	JN:	
									FILE:	TSC:	179



DETAIL A: INSTALLATION OF BOX SPAN WIRE T.S. ON STEEL OR WOOD POLES



DETAIL B: INSTALLATION OF BOX SPAN WIRE T.S.
W/LT PHASE OR 4TH LEVEL ON STEEL OR WOOD POLES



DETAIL C: INSTALLATION OF BOX SPAN WIRE T.S.
FYA AND DOGHOUSE ON STEEL OR WOOD POLES

BOX SPAN WIRE T.S. ON STEEL OR WOOD POLES

For use on Oakland County roads only.

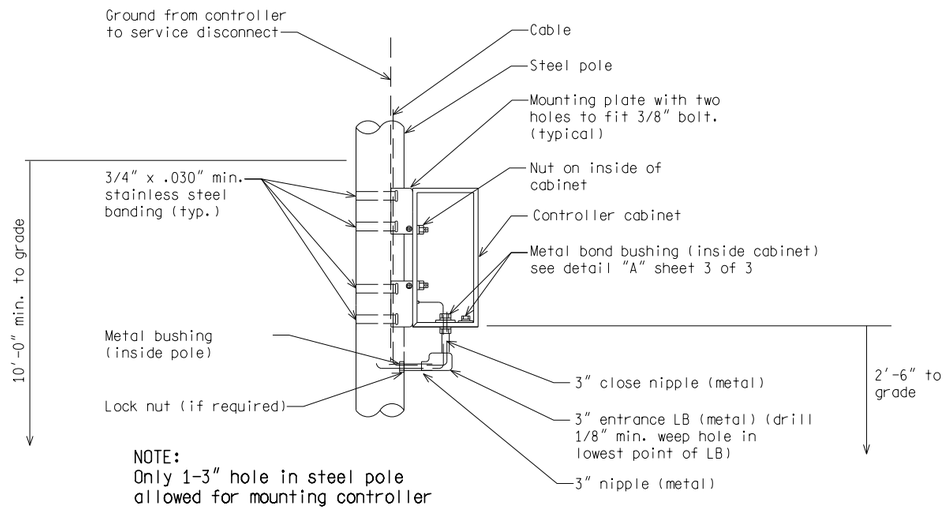
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MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	(SPECIAL DETAIL) FHWA APPROVAL DATE	PLAN DATE	SIG-010-A	SHEET 7 of 7
File: PW:RD/TR/Signals/Web/Statewide SD/Final Rev. 10/25/16				

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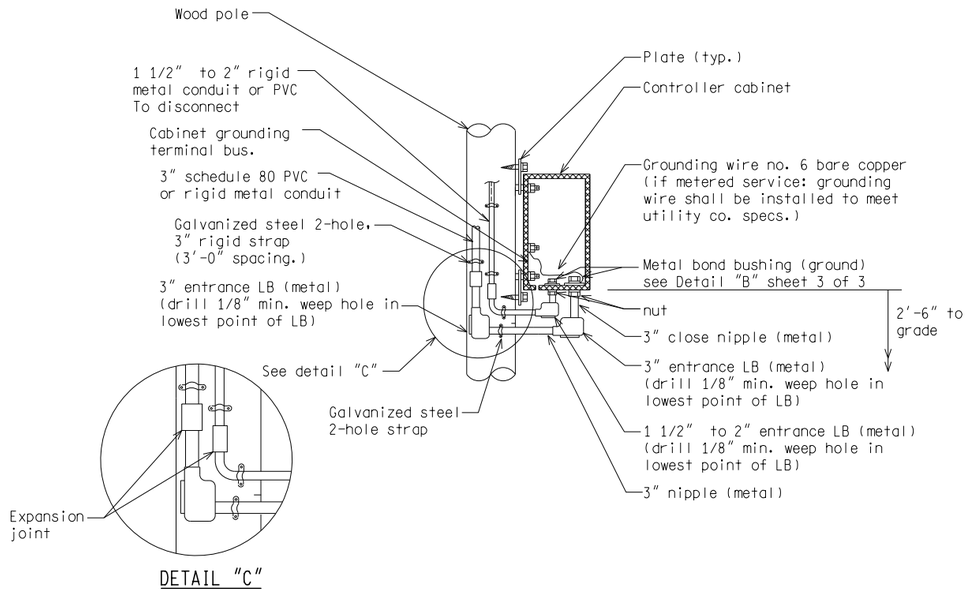
MDOT Michigan Department of Transportation

	DATE:	CS:		DRAWING	SHEET
	DESIGN UNIT:	JN:			180
FILE:	TSC:				



NOTE:
Only 1-3" hole in steel pole allowed for mounting controller

TRAFFIC SIGNAL CONTROLLER CABINET MOUNTED ON STEEL POLES



DETAIL "C"

TRAFFIC SIGNAL CONTROLLER CABINET MOUNTED ON WOOD POLES

NOT TO SCALE

File: PW:RD/T&S/Standards/Signals/mdot sig011a.dgn Rev. 02/17/15

MDOT Michigan Department of Transportation

PREPARED BY TRAFFIC AND SAFETY

DRAWN BY: DJF

CHECKED BY:

ENGINEER OF DELIVERY

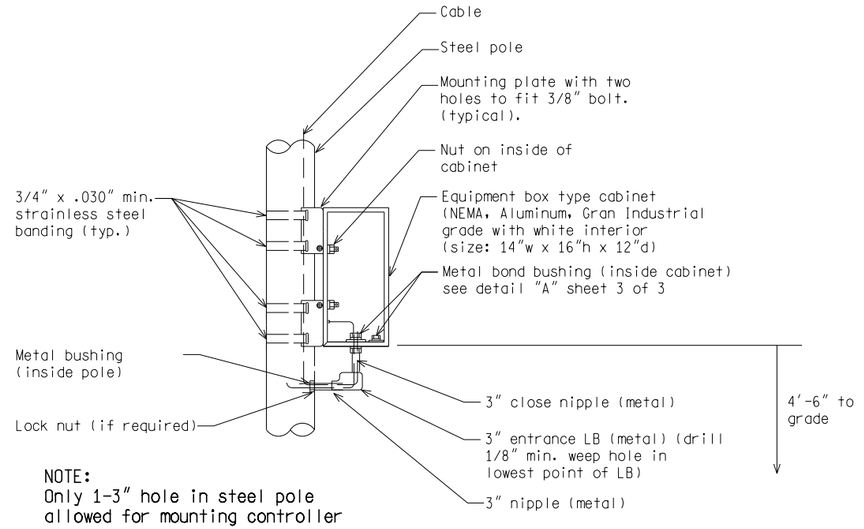
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(SPECIAL DETAIL) FHWA APPROVAL DATE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR

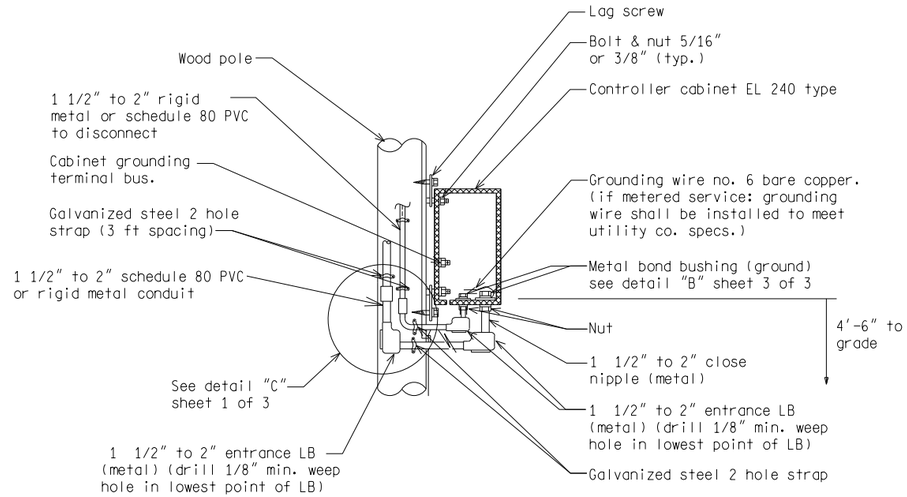
CONTROLLER CABINET MOUNTED ON STEEL OR WOOD POLES

PLAN DATE | SIG-011-A | SHEET 1 of 3



NOTE:
Only 1-3" hole in steel pole allowed for mounting controller

FLASHING BEACON CONTROLLER CABINET (EQUIPMENT BOX) MOUNTED ON STEEL POLES



FLASHING BEACON CONTROLLER CABINET (EL 240 TYPE OR EQUIVALENT) MOUNTED ON WOOD POLES

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN | (SPECIAL DETAIL) FHWA APPROVAL DATE

File:PW:RD/T&S/Standards/Signals/mdot sig011a.dgn Rev. 02/17/15

PLAN DATE | SIG-011-A | SHEET 2 of 3

AS-LET PLAN REVISIONS

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MDOT Michigan Department of Transportation

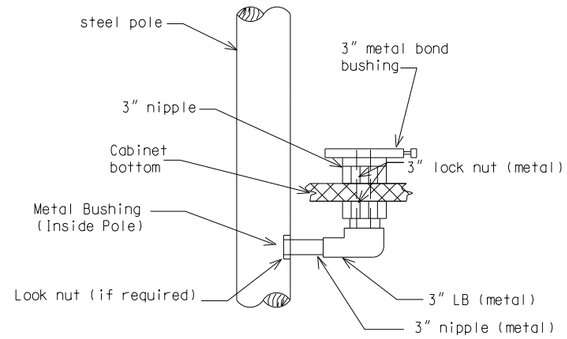
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DESIGN UNIT: FILPUS
TSC: ISHPEMING

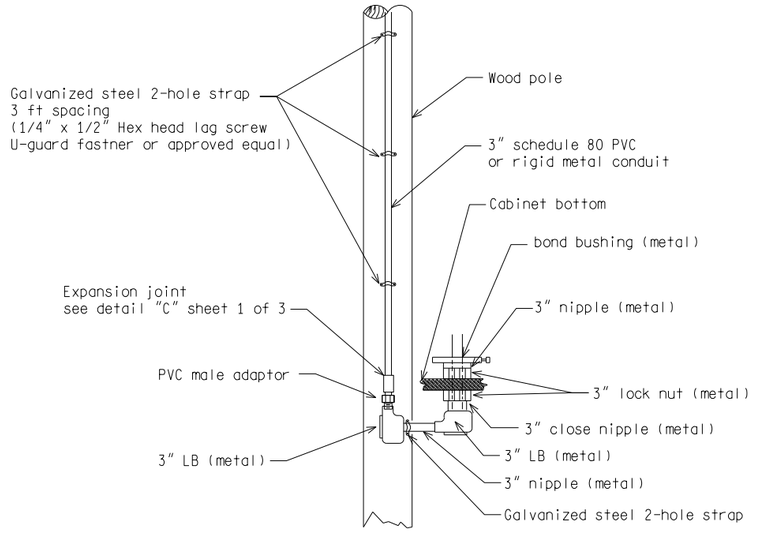
CS: 52042
JN: MQ17-025

DRAWING | SHEET

181



CONTROLLER CABINET MOUNTED ON STEEL POLE DETAIL "A"



CONTROLLER CABINET MOUNTED ON WOOD POLE DETAIL "B"

NOTE:
The distance between LB's as shown on this detail is for clarity of the drawing only. Actual distance between LB's shall be minimized as is practical to the installation.

NOTE:
If rigid metal conduit is used, the conduit must be bonded according to the current N.E.C.

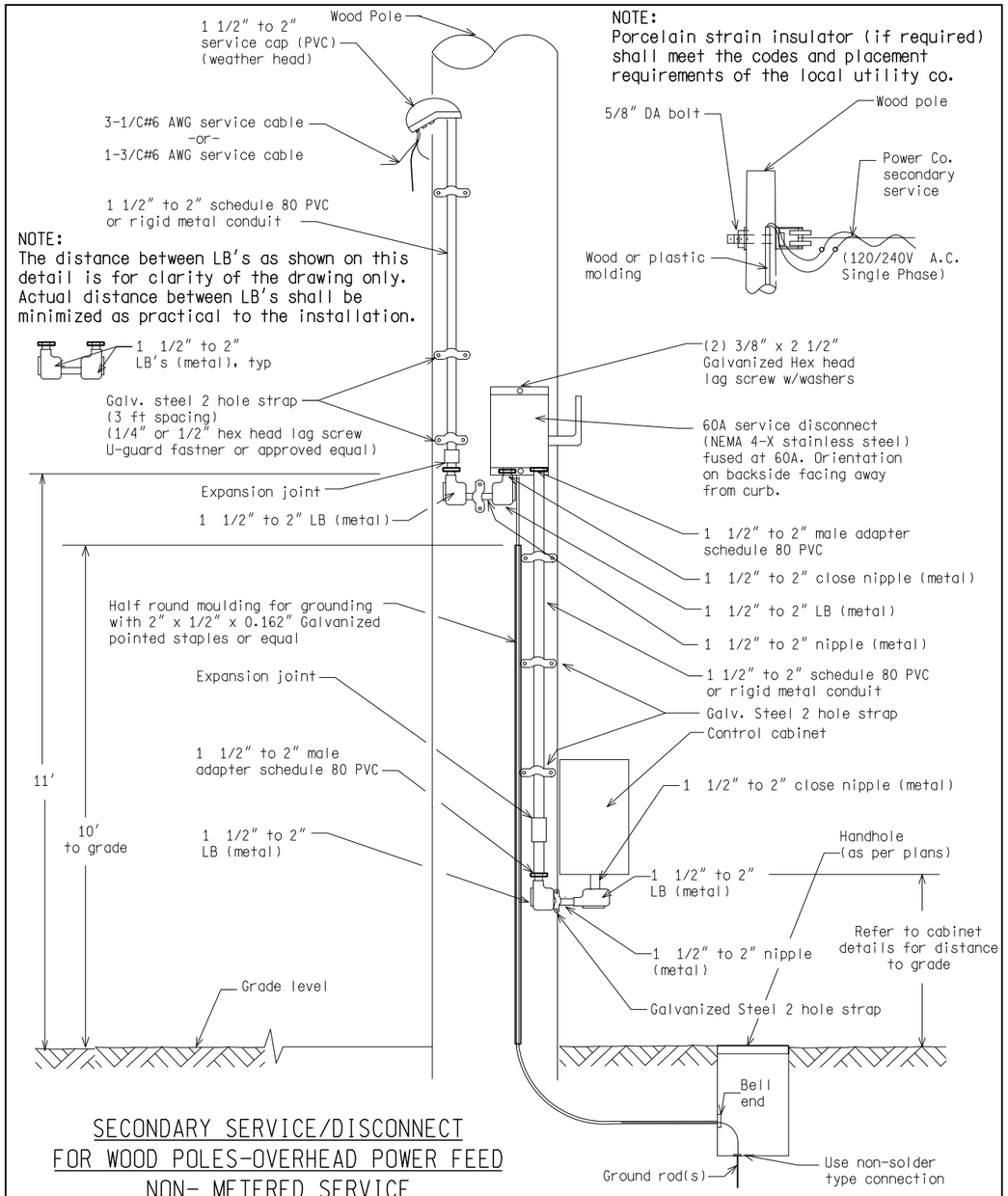
NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	(SPECIAL DETAIL) FHWA APPROVAL DATE	PLAN DATE	SIG-011-A	SHEET 3 of 3
File: PW:RD/T&S/Standards/Signals/mdot sig011a.dgn	Rev. 02/07/15			

AS-LET PLAN REVISIONS							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

MDOT Michigan Department of Transportation

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	DESIGN UNIT: FILPUS	JN: MQ17-025			182
FILE:	TSC: ISHPEMING				

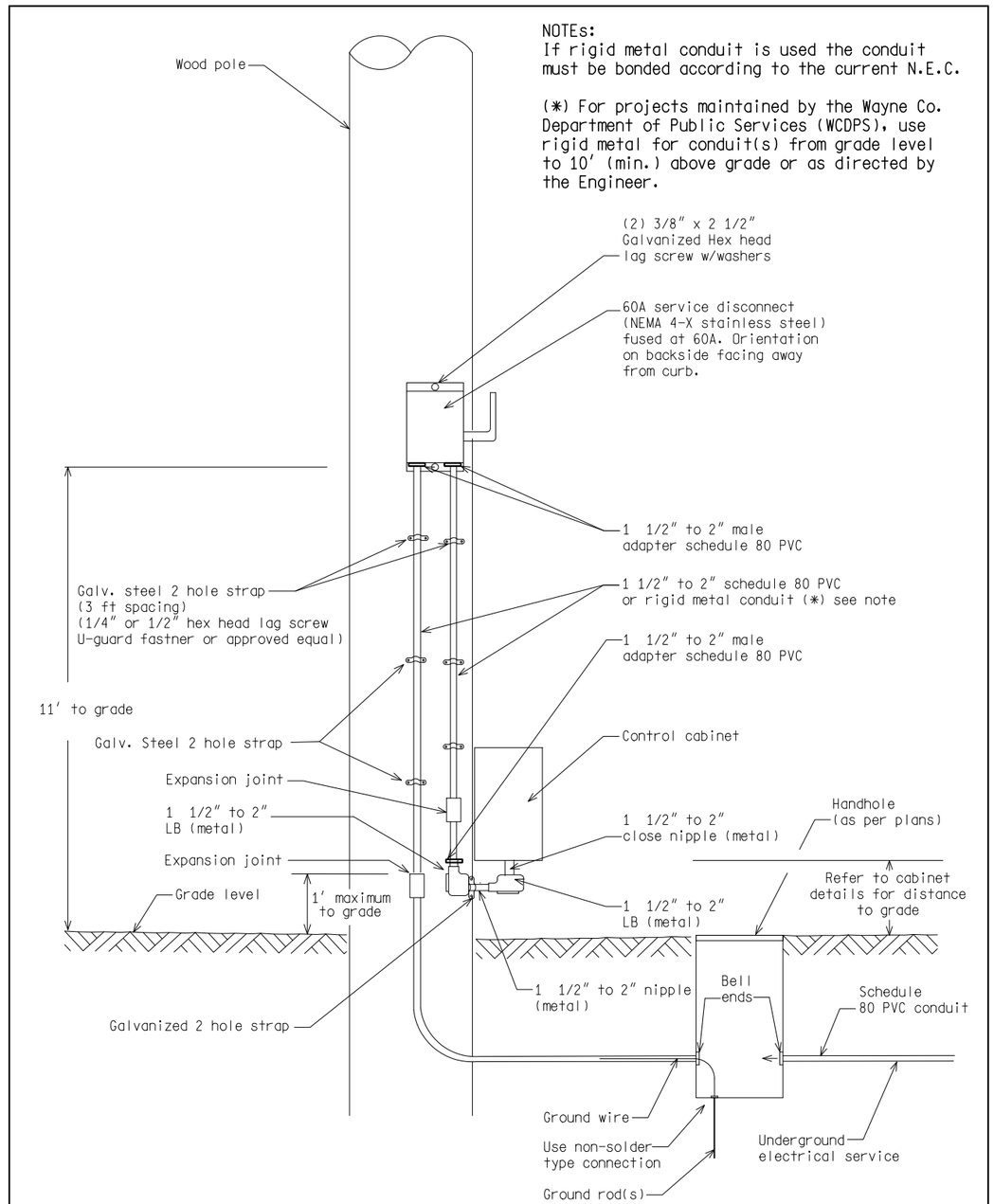


SECONDARY SERVICE/DISCONNECT FOR WOOD POLES-OVERHEAD POWER FEED NON- METERED SERVICE

NOT TO SCALE

File:PW:RD/TR/Signals/Web/Statewide SD/Final Rev. 06/19/12

MDOT Michigan Department of Transportation PREPARED BY TRAFFIC AND SAFETY DRAWN BY: DJF CHECKED BY:	ENGINEER OF DELIVERY ENGINEER OF DEVELOPMENT (SPECIAL DETAIL) FHWA APPROVAL DATE	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR SECONDARY SERVICE/DISCONNECT FOR WOOD POLES PLAN DATE: SIG-012-A SHEET 1 of 4



SECONDARY SERVICE/DISCONNECT FOR WOOD POLES-UNDERGROUND POWER FEED NON-METERED SERVICE

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	(SPECIAL DETAIL) FHWA APPROVAL DATE	PLAN DATE: SIG-012-A SHEET 2 of 4

File: PW:RD/TR/Signals/Web/Statewide SD/Final Rev. 06/19/12

02/10/2017 52042

AS-LET PLAN REVISIONS

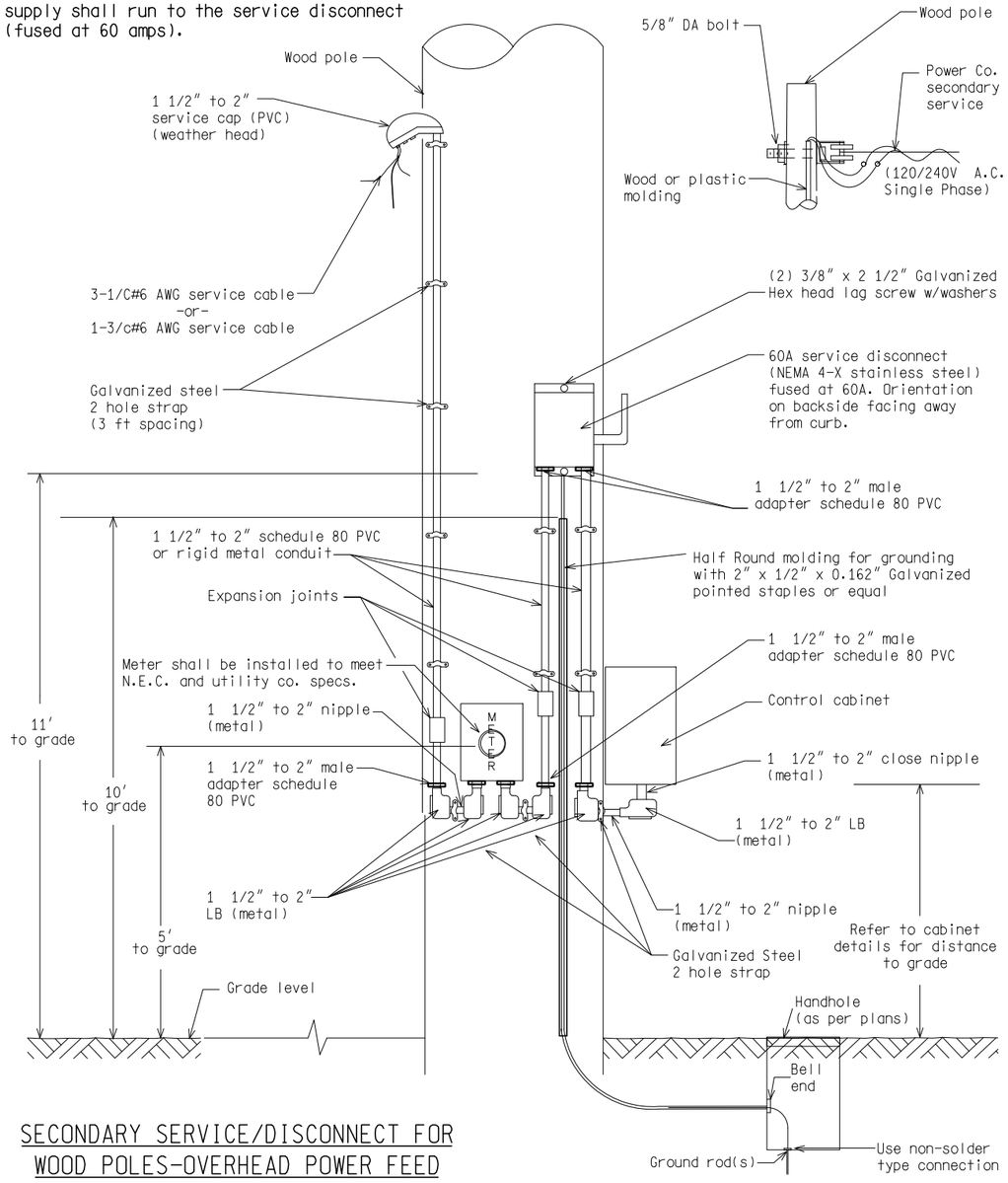
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

MDOT Michigan Department of Transportation

FILE:	DESIGNED: FILPUS DRAWN: SCHEMING CHECKED: TSC:	DATE: CS: MQ17-025 JN:		DRAWING SHEET 183

NOTE:
This detail is illustrated as a metered installation. If the plans call for an un-metered installation, then the meter shall be omitted and a direct electrical supply shall run to the service disconnect (fused at 60 amps).

NOTE:
Porcelain strain insulator (if required) shall meet the codes and placement requirements of the local utility co.

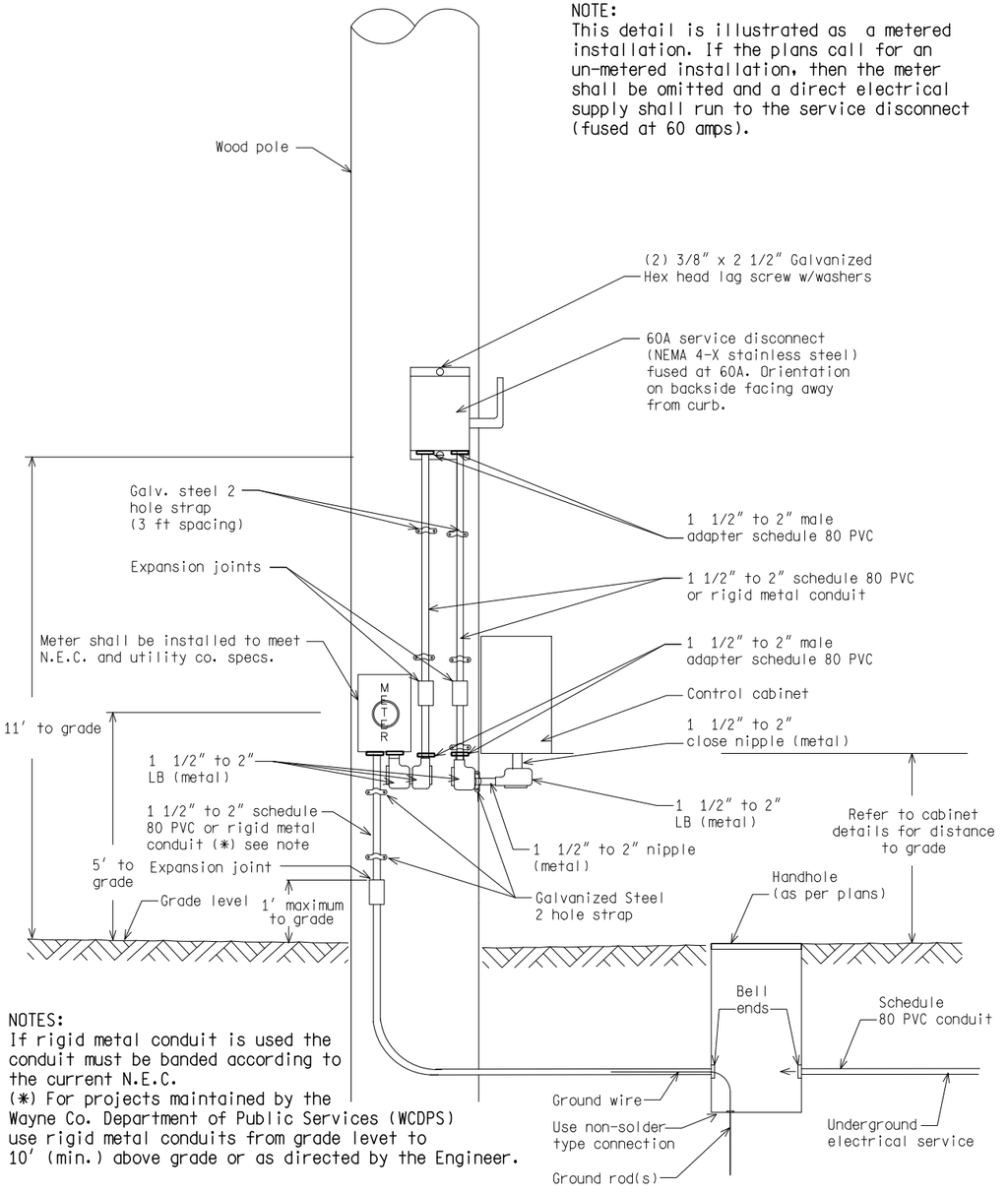


SECONDARY SERVICE/DISCONNECT FOR WOOD POLES-OVERHEAD POWER FEED METERED SERVICE

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	(SPECIAL DETAIL) FHWA APPROVAL DATE	PLAN DATE	SIG-012-A	SHEET 3 of 4
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NOTE:
This detail is illustrated as a metered installation. If the plans call for an un-metered installation, then the meter shall be omitted and a direct electrical supply shall run to the service disconnect (fused at 60 amps).



NOTES:
If rigid metal conduit is used the conduit must be banded according to the current N.E.C.
(*) For projects maintained by the Wayne Co. Department of Public Services (WCDPS) use rigid metal conduits from grade levet to 10' (min.) above grade or as directed by the Engineer.

SECONDARY SERVICE/DISCONNECT FOR WOOD POLES-UNDERGROUND POWER FEED METERED SERVICE

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	(SPECIAL DETAIL) FHWA APPROVAL DATE	PLAN DATE	SIG-012-A	SHEET 4 of 4
File:PW:RD/TR/Signals/Web/Statewide SD/Final Rev. 06/19/12				

02/10/2017

AS-LET PLAN REVISIONS							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

MDOT Michigan Department of Transportation

FILE:

DATE:

DESIGN UNIT: FILPUS

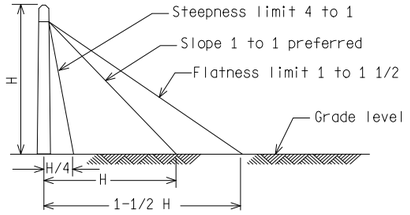
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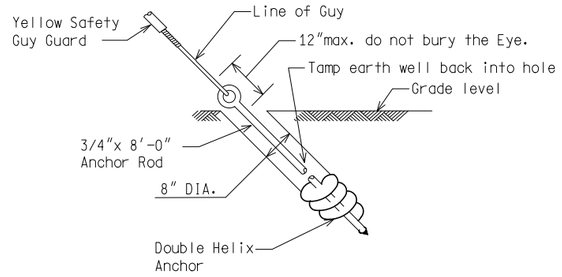
CS: 52042

JN: MQ17-025

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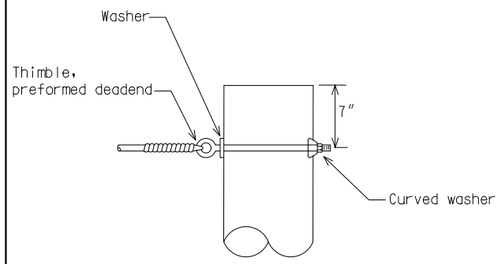
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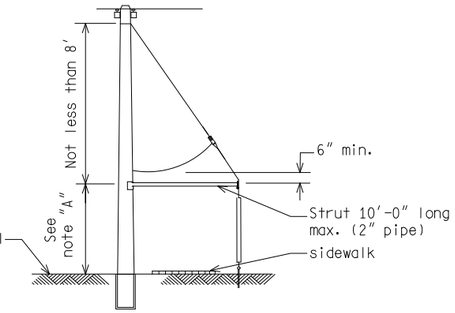


SLOPE LIMITS FOR ANCHOR GUYS

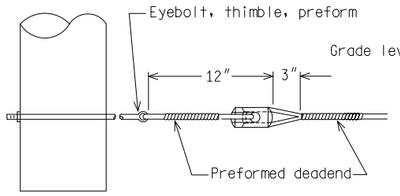
NOTE:
Use screw anchor or Double Helix anchor according to soil condition as directed by the Engineer.



POLE GUY

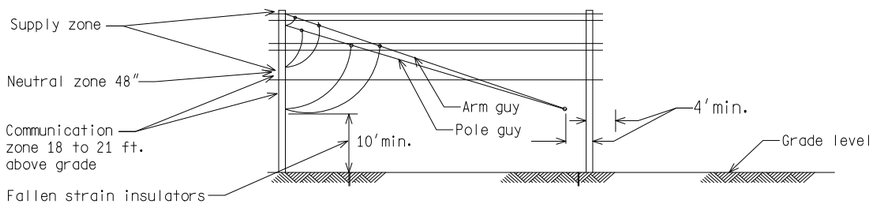


GUY STRUT



ARM GUY

NOTE: "A"
This dimension to be 10' unless otherwise specified.



STRAIN INSULATOR POSITIONS IN GUY WIRES

NOT TO SCALE

File: PW:RD/TR/Signals/Web/Statewide SD/Final Rev. 09/18/12

MDOT Michigan Department of Transportation

PREPARED BY
TRAFFIC AND SAFETY

DRAWN BY: DJF

CHECKED BY:

ENGINEER OF DELIVERY

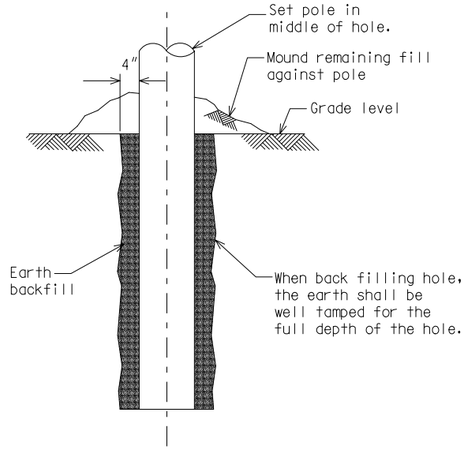
ENGINEER OF DEVELOPMENT

(SPECIAL DETAIL)
FHWA APPROVAL DATE

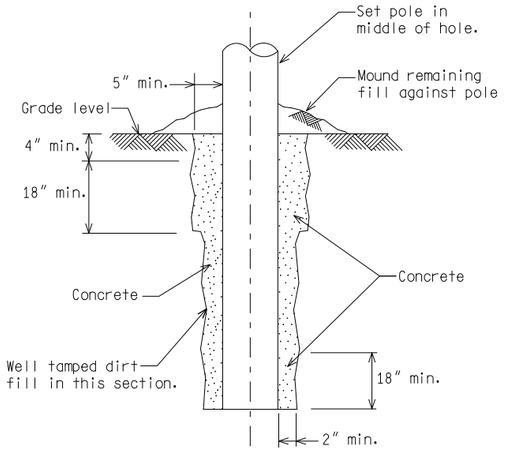
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR

WOOD POLE GUYS AND SETTING DEPTH

PLAN DATE | SIG-019-A | SHEET 1 of 2



WOOD POLE INSTALLATION



SELF SUPPORTING WOOD POLE IN CONCRETE

POLE HEIGHT	SETTING DEPTH
30'	6.0'
35'	6.0'
40'	6.0'
45'	6.5'
50'	7.0'
55'	7.5'
60'	8.0'

WOOD POLE SETTING DEPTHS

Reference Standard Specification for Construction Section 819.03

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN

(SPECIAL DETAIL)
FHWA APPROVAL DATE

File: Rev. 09/18/12

PLAN DATE | SIG-019-A | SHEET 2 of 2

AS-LET PLAN REVISIONS

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

MDOT Michigan Department of Transportation

02/10/2017

DATE: FILPUS

DESIGNED: SHEMING

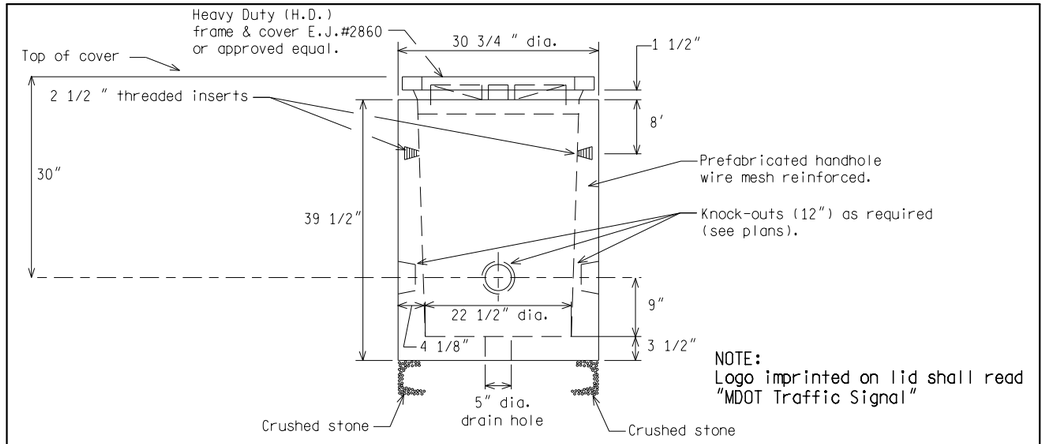
TSC:

FILE:

CS: 52042 ~~MQ17-025~~

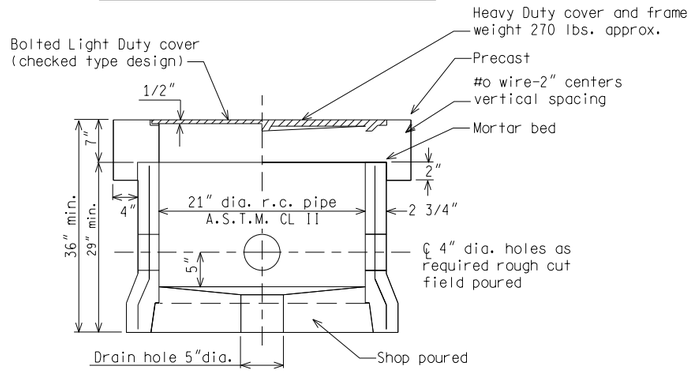
JN:

DRAWING | SHEET 185

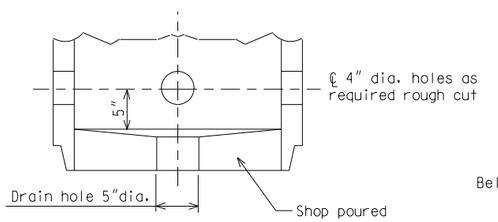


NOTE:
Logo imprinted on lid shall read "MDOT Traffic Signal"

PRECAST ROUND HANDHOLE WITH FLOOR

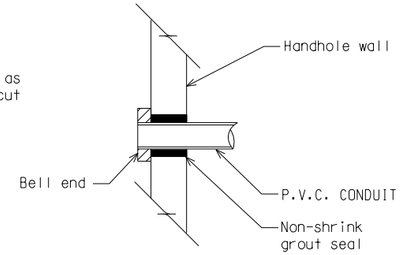


PRECAST CONCRETE HANDHOLE



USE THE OPPOSITE END OF PIPE

(All other dimensions same)



TYPICAL CONDUIT ENTRANCE AT HANDHOLE

NOT TO SCALE

File: PW:RD/T&S/Standards/Signals/mdot sig021a.dgn Rev. 04/15/14

MDOT Michigan Department of Transportation

PREPARED BY TRAFFIC AND SAFETY

DRAWN BY: DJF

CHECKED BY:

ENGINEER OF DELIVERY

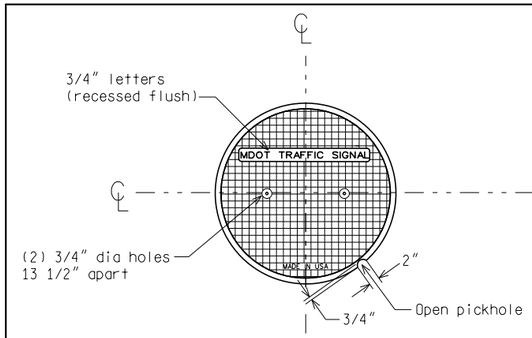
ENGINEER OF DEVELOPMENT

(SPECIAL DETAIL)
FHWA APPROVAL DATE

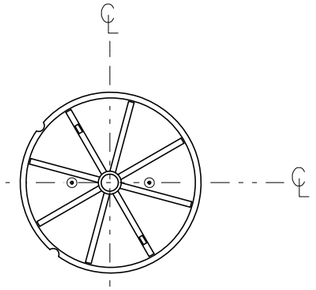
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR

HANDHOLE- PRECAST, POLYMER CONCRETE

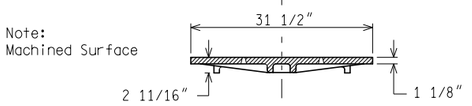
PLAN DATE | SIG-021-A | SHEET 1 of 6



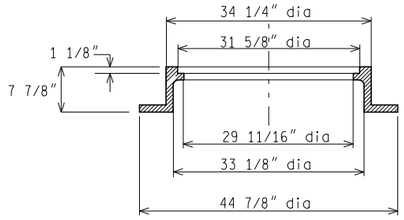
TOP VIEW OF COVER



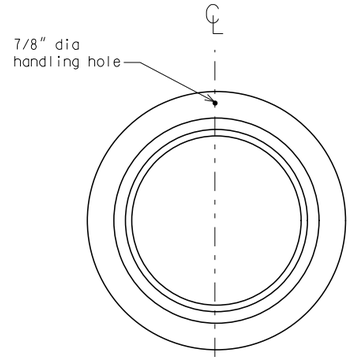
BOTTOM VIEW OF COVER



COVER SECTION



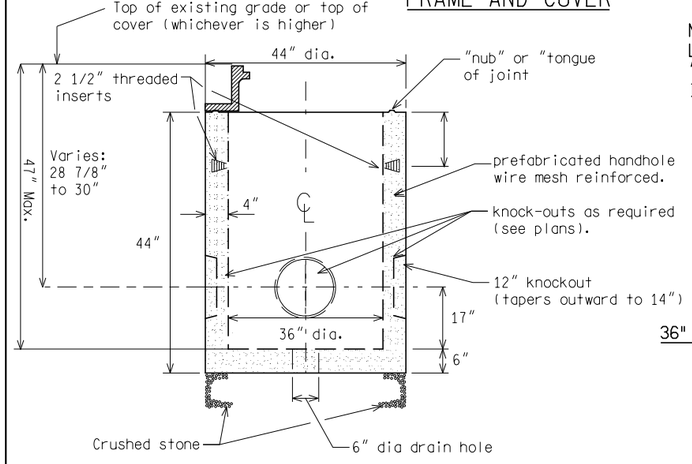
FRAME SECTION



TOP VIEW OF FRAME

The H. D. frame and cover shall be manufactured by East Jordan Iron Works, Model 1220 or approved equal.

FRAME AND COVER



NOTE:
Logo imprint may read "Traffic Signal" for non MDOT Installation

36" PRECAST ROUND HANDHOLE SECTION DETAIL

36" DIAMETER ROUND PRECAST CONCRETE HANDHOLE

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN

(SPECIAL DETAIL)
FHWA APPROVAL DATE

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AS-LET PLAN REVISIONS							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

MDOT Michigan Department of Transportation

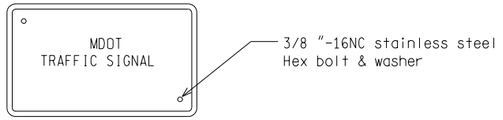
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DESIGN UNIT: FILPUS
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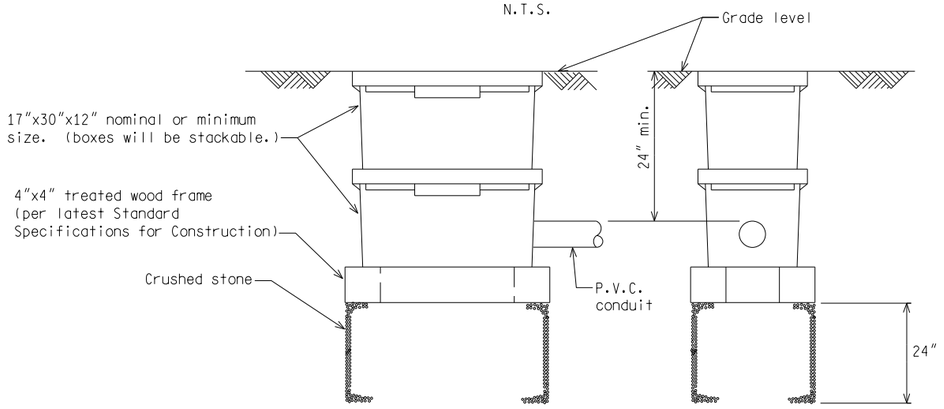
CS: 52042
JN: MQ17-025

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NOTE:
Logo imprint may read "Traffic Signal"
for non MDOT installations



COVER
N.T.S.



POLYMER CONCRETE HANDHOLE

NOTES PERTAIN TO PRECAST OR BRICK:

1) The material and workmanship shall be in accordance with the current M.D.O.T. Standard Specifications for Construction.

2) The contractor may construct the handhole structure of brick, cement, concrete, masonary, or of precast reinforced concrete.

3) All concrete masonary shall be grade 30M.

4) The inner surface of the handhole shall be smooth.

5) Heavy Duty covers shall be castings which meet the requirements of the current specifications for gray iron castings ASTM designation A48 and shall have a minimum strength as provided for Class No. 30 gray iron castings.

6) All castings shall be cleaned by sand blasting.

7) The seating face of the cover and the seat for the same on the frame if required, shall be ground or machined so that the cover shall have an even bearing on its seat to prevent rocking or tilting.

8) The castings shall be free of pouring faults, blow holes, cracks,and other imperfections. They shall be sound, true to form and thickness, clean and neatly finished and shall be coated with tar pitch varnish.

9) Light Duty cover shall be bolted to frame with not less than 2 countersunk Hex head bronze bolts.

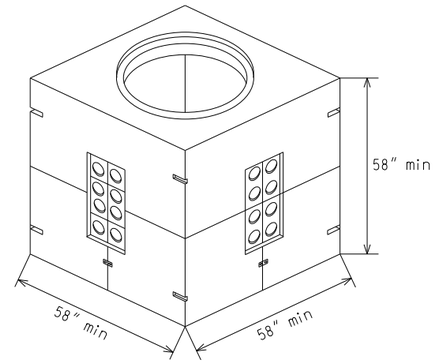
10) Precast handhole with Heavy Duty cover shall be set on a concrete slab similar to detail for brick handhole.

11) The Heavy Duty cover & frame shall be East Jordan Iron Works #8206 Neenah Foundry, #R-6662-HP for square cover or East Jordan Iron Works #2860 Type "A", Neenah Foundry #R-6052 D for circular cover or an approved equal.

12) Handhole shall be equipped with cable rack and hooks to train cable.

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	(SPECIAL DETAIL) FHWA APPROVAL DATE	PLAN DATE	SIG-021-A	SHEET 3 of 6
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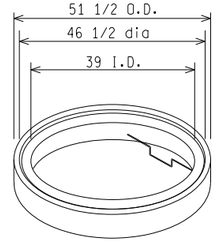


	Length	Width	Height
Inside	48	48	48
Outside	58	58	58
Recommended Hole size	82	82	--

	Min Thickness
Wall	5
Roof	5
Floor	5

	Min Weight lbs
Top	3300
Bottom	3850
Total	7150

NOTE:
Galvanized step is standard with
grade ring ASTM C478.



Dimensions	
A	Min Wt. (lbs)
6	440
9	650
12	860

GRADE RING WITH 39" I.D. &
46 1/2" RECESS

4' x 4' x 4' PRECAST CONCRETE HANDHOLE

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	(SPECIAL DETAIL) FHWA APPROVAL DATE	PLAN DATE	SIG-021-A	SHEET 4 of 6
File: PW:RD/T&S/Standards/Signals/mdot sig021a.dgn Rev. 04/15/14				

AS-LET PLAN REVISIONS							
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MDOT Michigan Department of Transportation

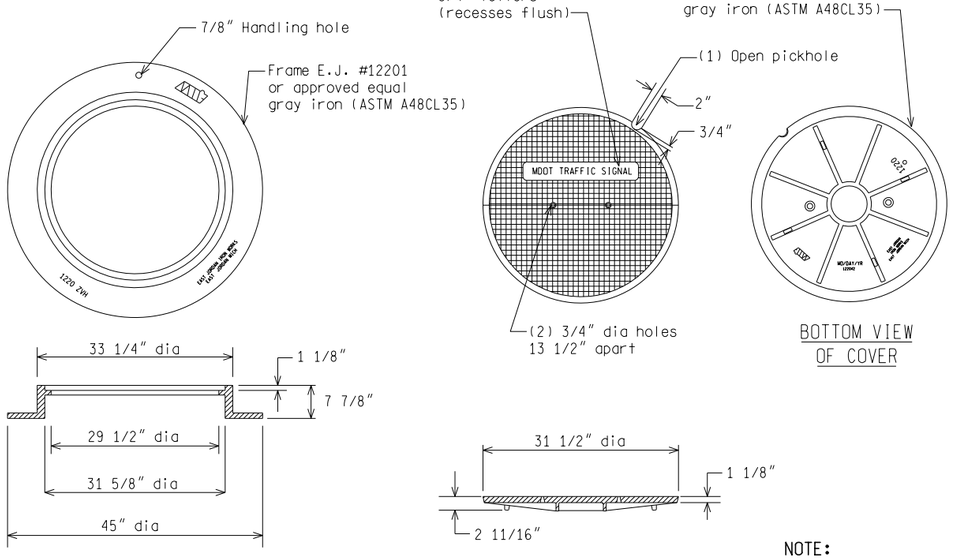
FILE:

DATE: 02/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025

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187

NOTE:
Logo imprint it on cover shall read "MDOT Traffic Signal" for MDOT installations



BOTTOM VIEW OF COVER

FRAME SECTION

NOTE:
Machined surface

COVER SECTION

NOTE:
Machined surface

MANHOLE FRAME (HEAVY DUTY)

Estimated weight 410 lbs

MANHOLE COVER (HEAVY DUTY)

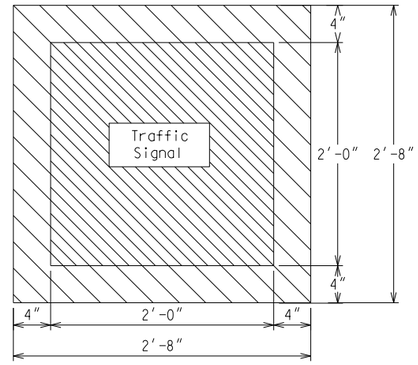
Estimated weight 245 lbs

4' x 4' x 4' PRECAST CONCRETE HANDHOLE

NOT TO SCALE

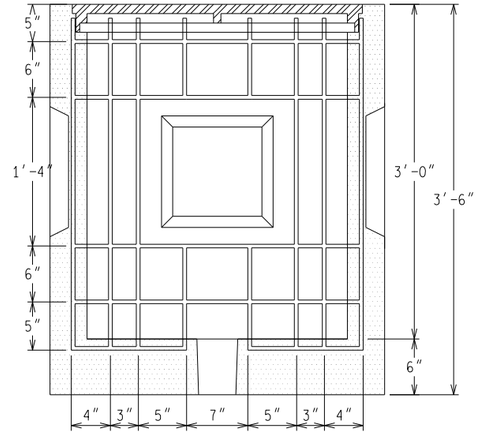
MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	(SPECIAL DETAIL) FHWA APPROVAL DATE	PLAN DATE	SIG-021-A	SHEET 5 of 6
File: PW:RD/T&S/Standards/Signals/mdot sig021a.dgn	Rev. 04/15/14			

Concrete: 4500 p.s.i. @ 28 days
Reinforcement: Grade 60 rebar
All bars are #4



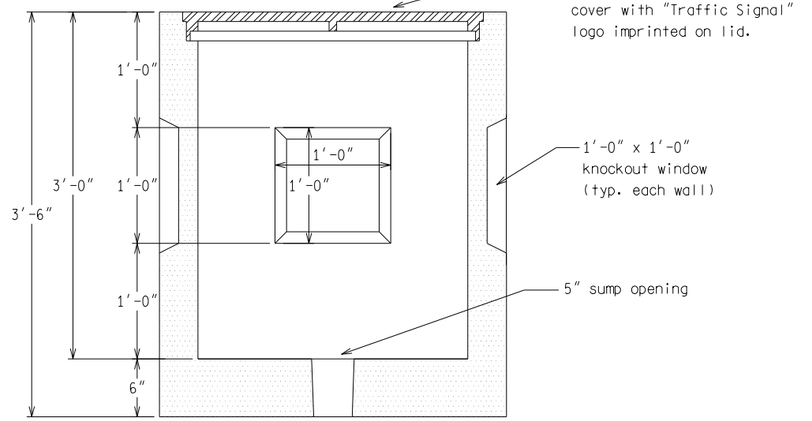
PLAN VIEW

With out frame & cover



SECTION VIEW

Typ. reinforcement all walls



SECTION VIEW

2' x 2' SQUARE x 3' HANDHOLE

For use on Oakland County roads only.

NOT TO SCALE

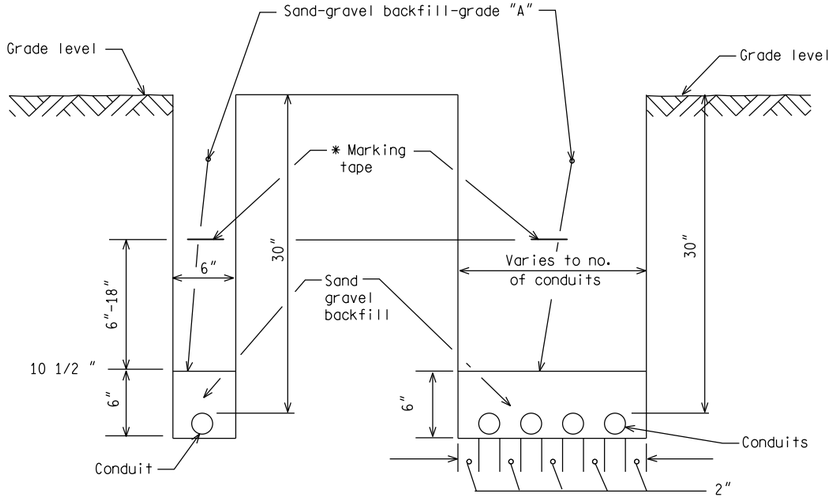
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File: PW:RD/T&S/Standards/Signals/mdot sig021a.dgn	Rev. 04/15/14			

AS-LET PLAN REVISIONS

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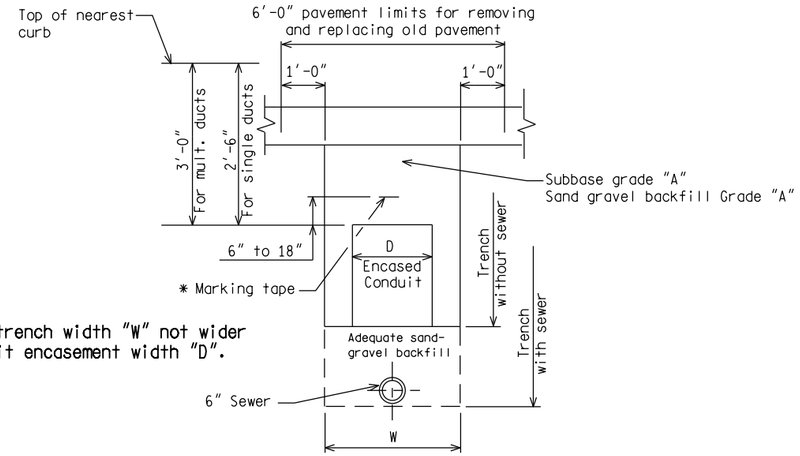
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	DESIGN UNIT: FILPUS	JN: MQ17-025		188
FILE:	TSC: ISHPEMING			



*NOTE:
Marking tape shall have proper logo as supplied by the Engineer and installed by the Contractor.

DIRECT BURIAL CONDUIT(S)/CABLE(S)



NOTE:
Preferred trench width "W" not wider than conduit encasement width "D".

TYPICAL SECTION OF TRENCH
ENCASED CONDUIT

NOT TO SCALE

File: PW:RD/T&S/Standards/Signals/mdot sig023a.dgn Rev. 11/25/08

MDOT Michigan Department of Transportation

PREPARED BY TRAFFIC AND SAFETY

DRAWN BY: DJF

CHECKED BY:

ENGINEER OF DELIVERY

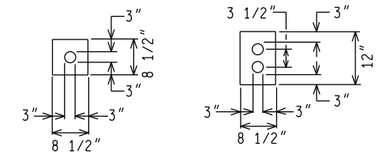
ENGINEER OF DEVELOPMENT

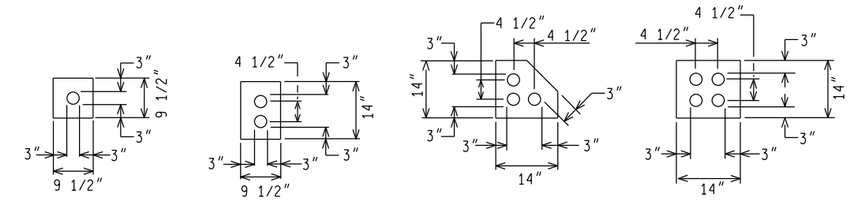
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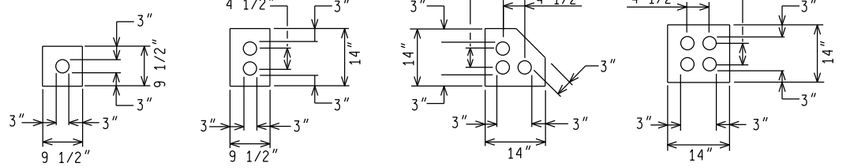
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR

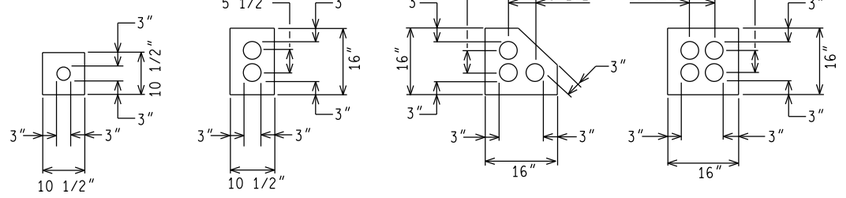
CONDUIT (DIRECT BURIAL/ENCASED)

PLAN DATE | SIG-023-A | SHEET 1 of 2









ENCASED CONDUIT SECTIONS

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN

(SPECIAL DETAIL) FHWA APPROVAL DATE

File: PW:RD/T&S/Standards/Signals/mdot sig023a.dgn Rev. 11/25/08

PLAN DATE | SIG-023-A | SHEET 2 of 2

AS-LET PLAN REVISIONS

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

MDOT Michigan Department of Transportation

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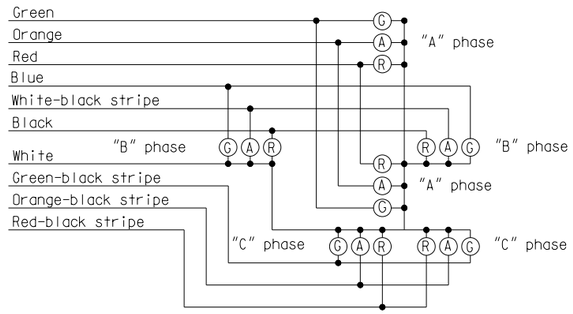
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FILPUS JN: ISHPEMING

52042 MQ17-025

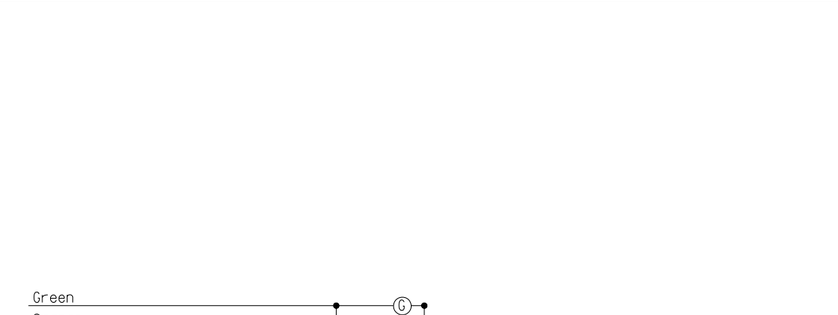
DRAWING | SHEET

189



COLOR CODE FOR WIRING CONNECTING TRAFFIC SIGNAL LAMPS

NOTE:No splices allowed between traffic signal head and controller.



COLOR CODE FOR WIRING CONNECTING PEDESTRIAN SIGNAL LAMPS
(WALKING PERSON - HAND SYMBOL)

NOT TO SCALE

File: PW:RD/T&S/Standards/Signals/mdot sig026a.dgn Rev. 02/17/15

PREPARED BY TRAFFIC AND SAFETY

DRAWN BY: DJF

CHECKED BY:

ENGINEER OF DELIVERY

ENGINEER OF DEVELOPMENT

(SPECIAL DETAIL)
FHWA APPROVAL DATE

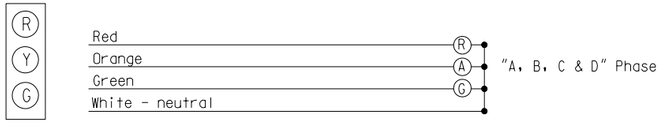
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR

COLOR CODE WIRING/ EQUIPMENT GROUNDING

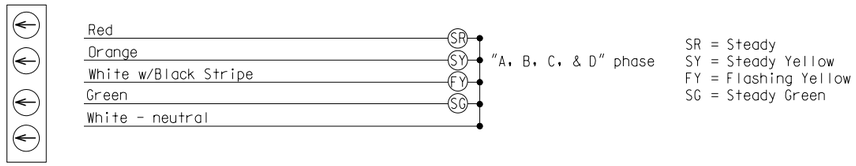
PLAN DATE

SIG-026-A

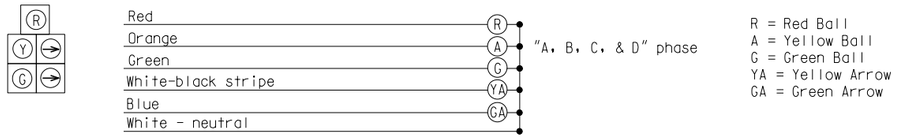
SHEET 1 of 6



STANDARD - 3 COLOR SIGNAL DISPLAY



FLASHING YELLOW ARROW (FYA) - 4 COLOR SIGNAL DISPLAY



DOG HOUSE W/RIGHT TURNS - 5 COLOR SIGNAL DISPLAY

COLOR CODE FOR WIRING CONNECTING TRAFFIC SIGNAL LAMPS

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN

(SPECIAL DETAIL)
FHWA APPROVAL DATE

File: PW:RD/T&S/Standards/Signals/mdot sig026a.dgn Rev. 02/17/15

PLAN DATE

SIG-026-A

SHEET 2 of 6

AS-LET PLAN REVISIONS

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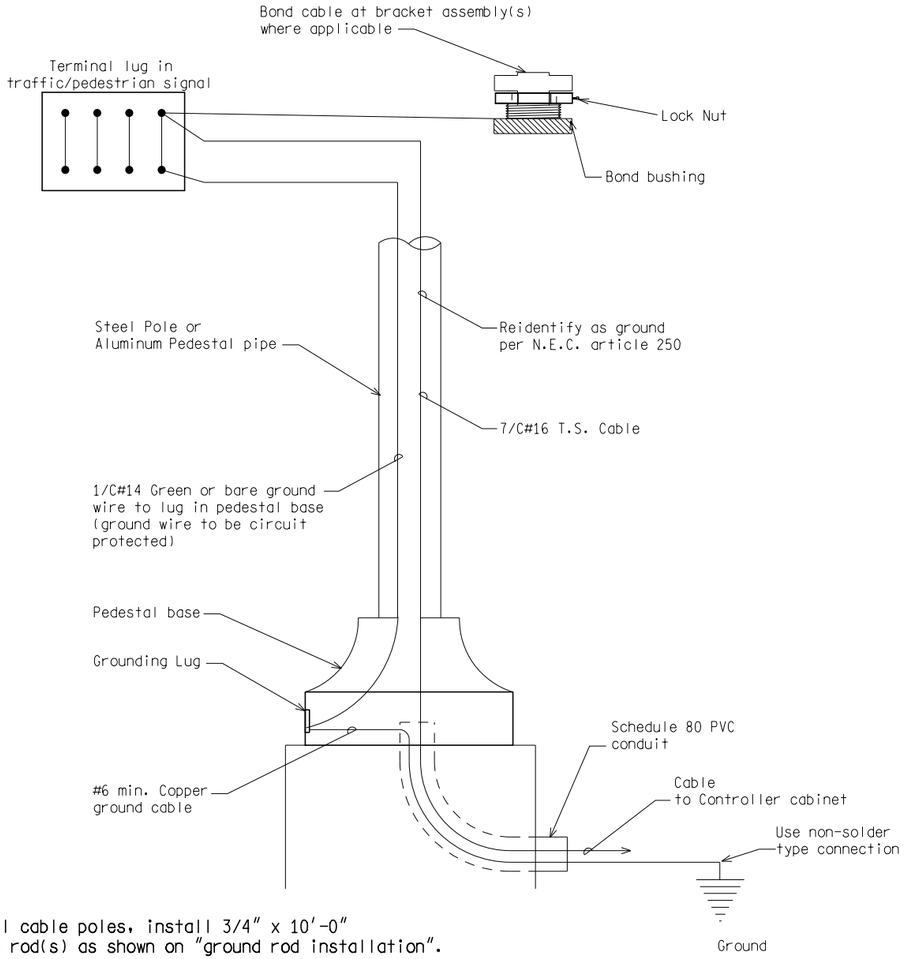
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DATE:02/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025

DRAWING | SHEET

190

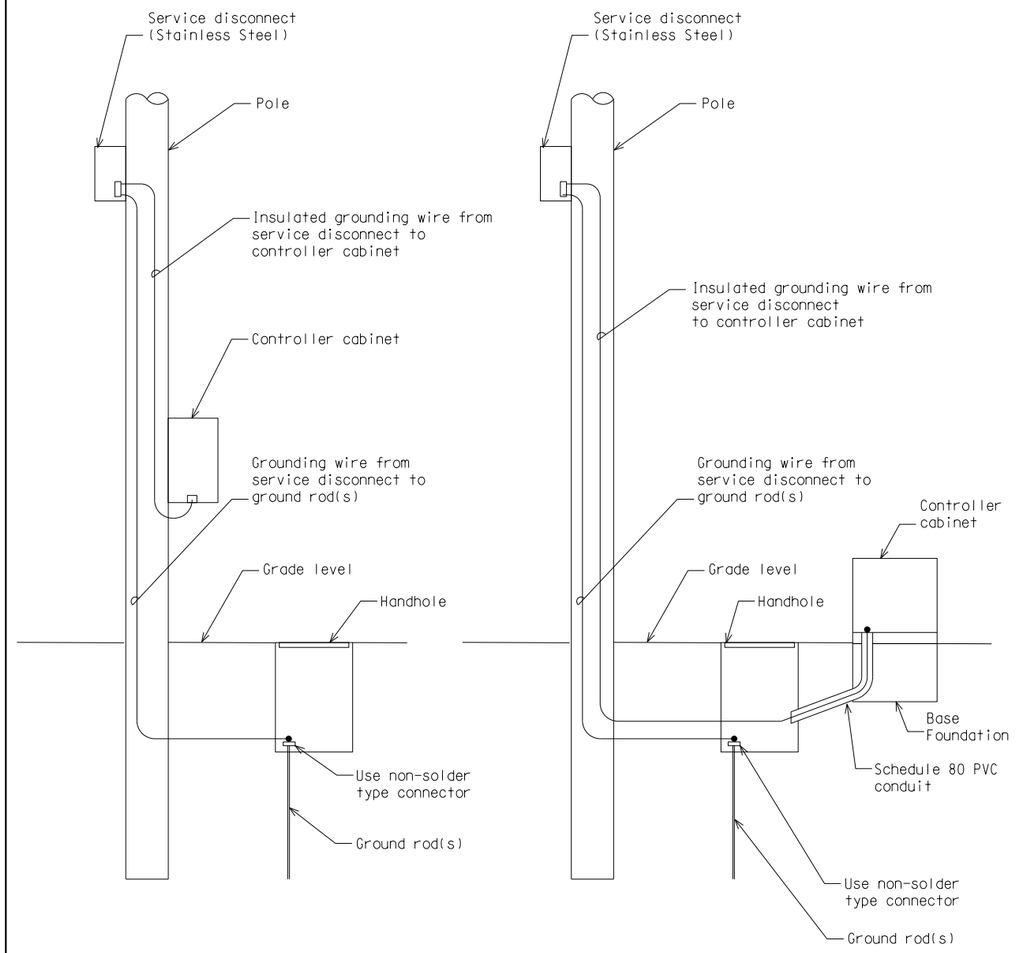


NOTE:
For all cable poles, install 3/4" x 10'-0"
ground rod(s) as shown on "ground rod installation".
Connect ground rod(s) with #6 min. copper wire to
messenger wire with non-solder type connection.

STEEL POLE/PEDESTAL GROUNDING DETAIL

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	(SPECIAL DETAIL) FHWA APPROVAL DATE			
File: PW:RD/T&S/Standards/Signals/mdot sig026a.dgn	Rev. 02/17/15	PLAN DATE	SIG-026-A	SHEET 3 of 6



GROUNDING

Install 3/4 " x 10'-0" copper clad ground rod(s) as required to provide less than 10 OHM resistance to ground.

Grounding wire #6 AWG min. bare copper grounding wire shall be installed to meet N.E.C. and utility company specs.

Ground wire from disconnect to ground rod to be in moulding (wood pole or post) or inside the pole (steel). Ground wire from disconnect to controller cabinet to be in conduit (wood pole, wood post, and steel pole).

CONTROLLER CABINET GROUNDING DETAIL

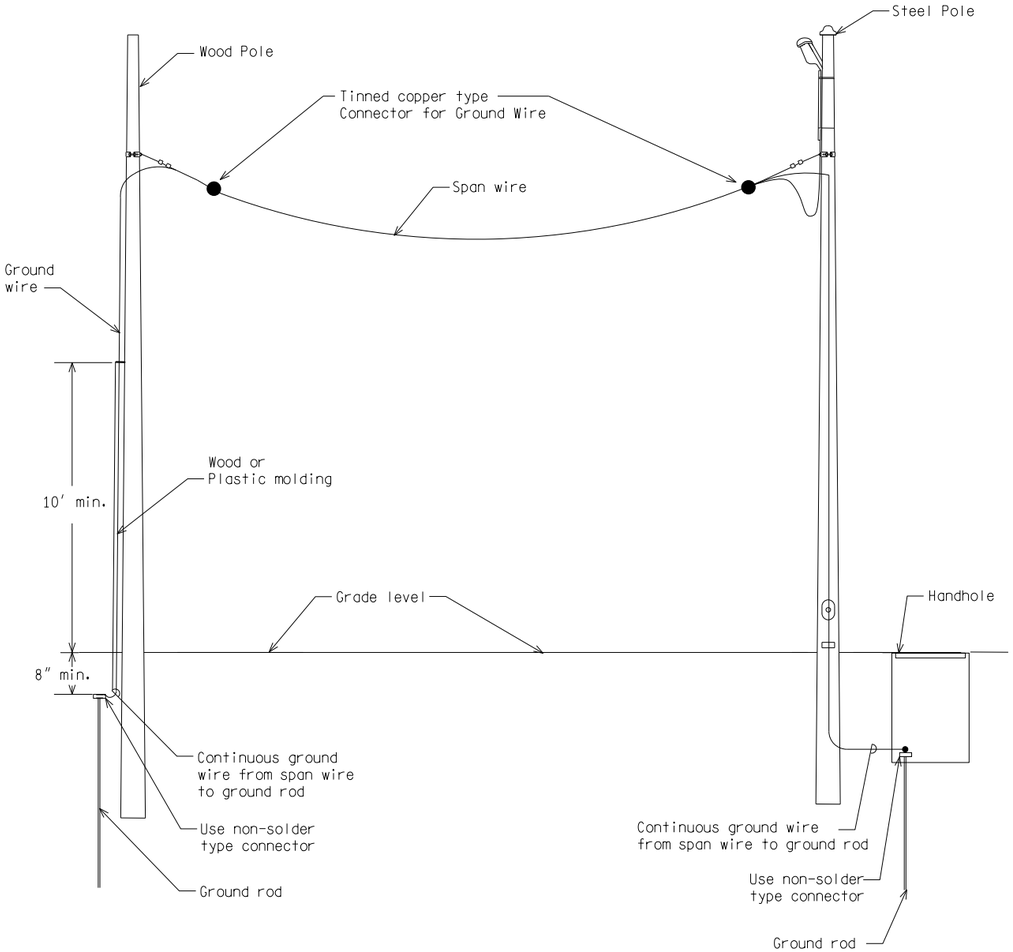
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AS-LET PLAN REVISIONS							
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MDOT Michigan Department of Transportation

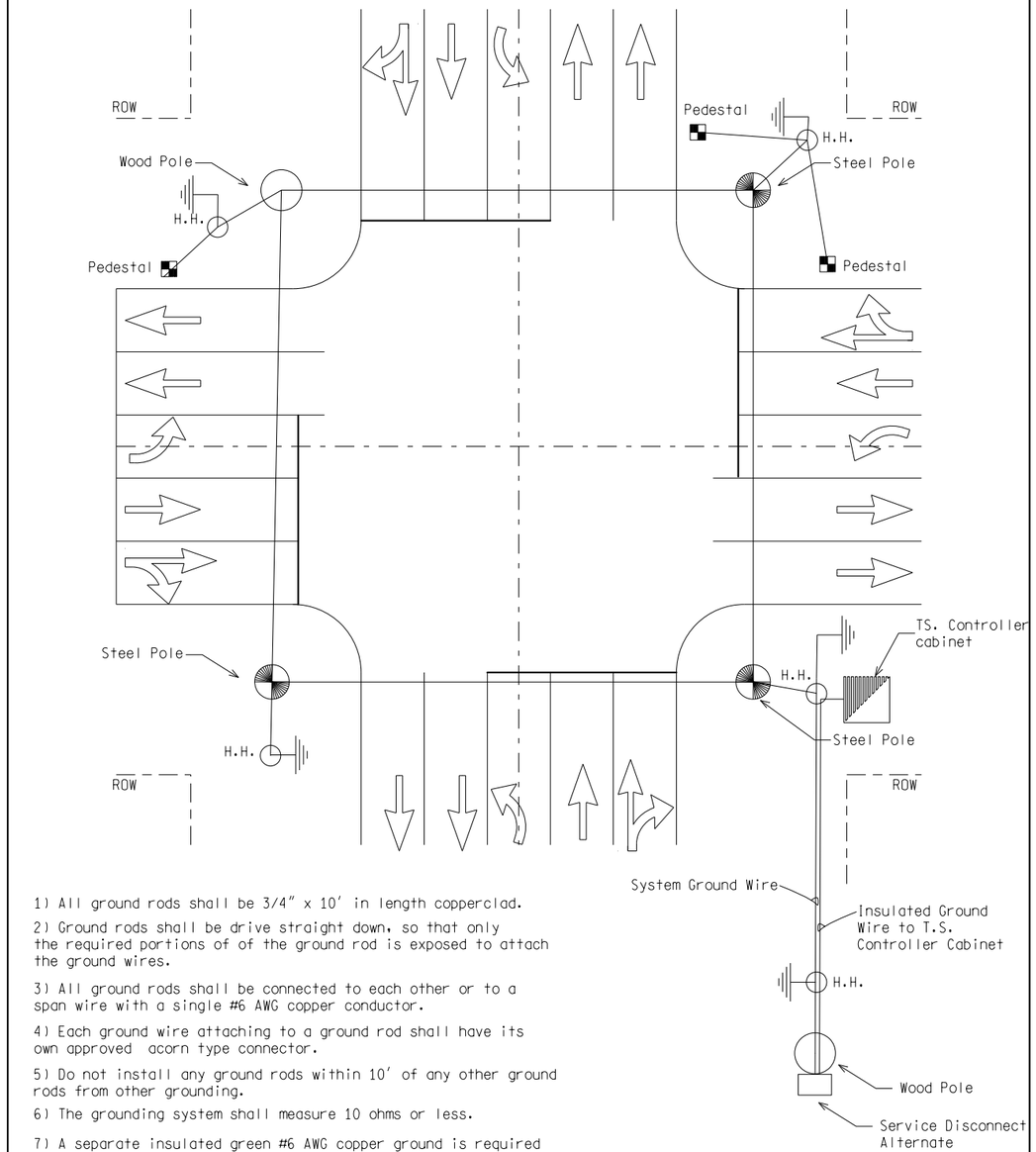
	DATE: 02/10/2017	CS: 52042		DRAWING	SHEET
	DESIGN UNIT: FILPUS	JN: MQ17-025			191
FILE:	TSC: ISHPEMING				



SPAN WIRE GROUNDING DETAIL

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	(SPECIAL DETAIL) FHWA APPROVAL DATE		SIG-026-A	SHEET 5 of 6
File: PW:RD/T&S/Standards/Signals/mdot sig026a.dgn Rev. 02/17/15		PLAN DATE		



1) All ground rods shall be 3/4″ x 10′ in length copperclad.

2) Ground rods shall be drive straight down, so that only the required portions of of the ground rod is exposed to attach the ground wires.

3) All ground rods shall be connected to each other or to a span wire with a single #6 AWG copper conductor.

4) Each ground wire attaching to a ground rod shall have its own approved acorn type connector.

5) Do not install any ground rods within 10′ of any other ground rods from other grounding.

6) The grounding system shall measure 10 ohms or less.

7) A separate insulated green #6 AWG copper ground is required from the service disconnect (safety switch) to the ground bussbar in the controller cabinet.

8) Ground rod for each steel pole, wood pole, pedestal and/or traffic signal controller cabinet shall be located in the adjacent handhole as indicated on the plans or as directed by the Engineer.

9) All metal bases must be connected to a ground rod with a #6 ground wire.

SYSTEM GROUNDING DETAL

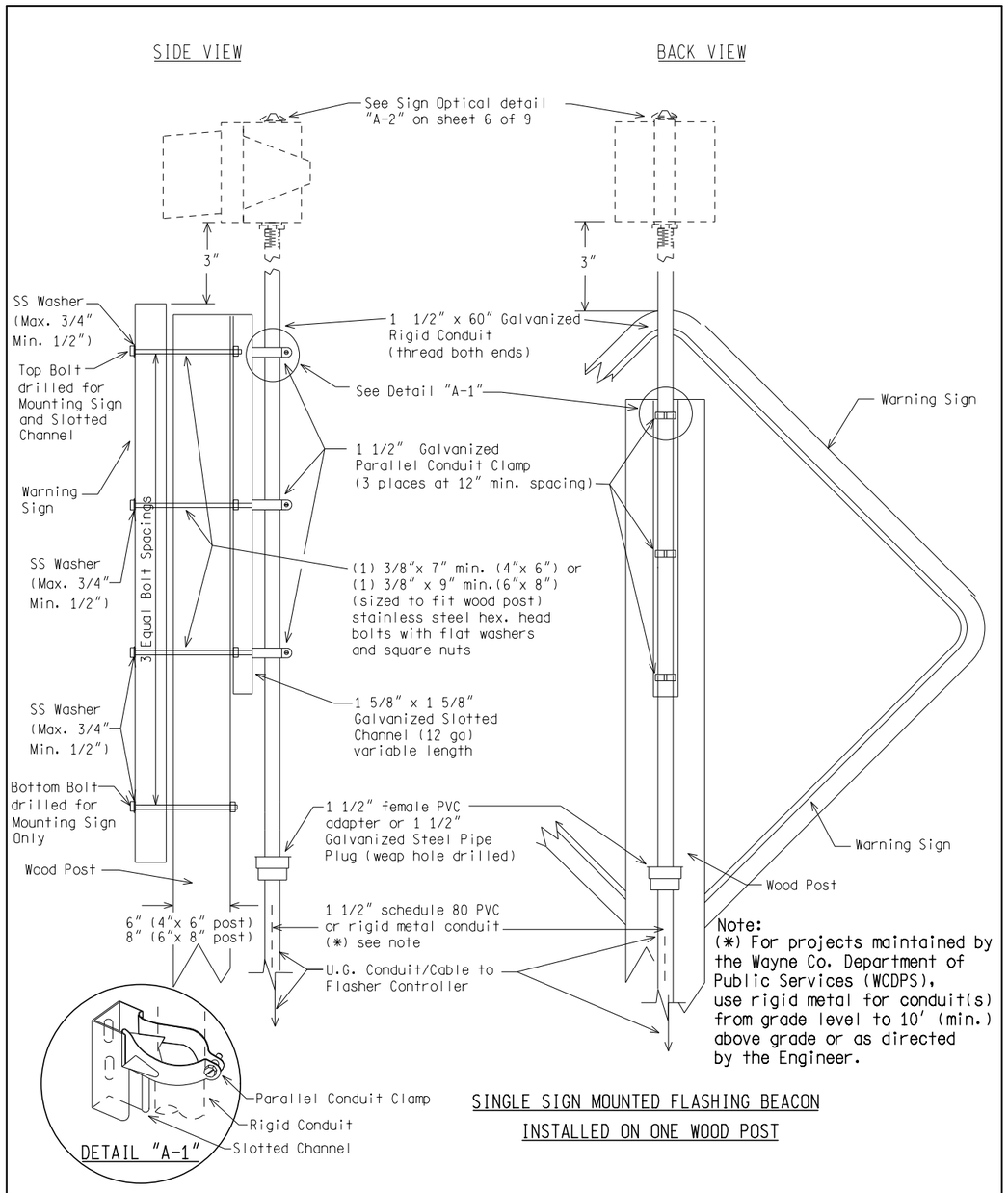
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File: PW:RD/T&S/Standards/Signals/mdot sig026a.dgn Rev. 02/17/15		PLAN DATE		

AS-LET PLAN REVISIONS							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

MDOT Michigan Department of Transportation

	DATE: 02/10/2017	CS: 52042		DRAWING	SHEET
	DESIGN UNIT: FILPUS	JN: MQ17-025			192
FILE:	TSC: ISHPEMING				



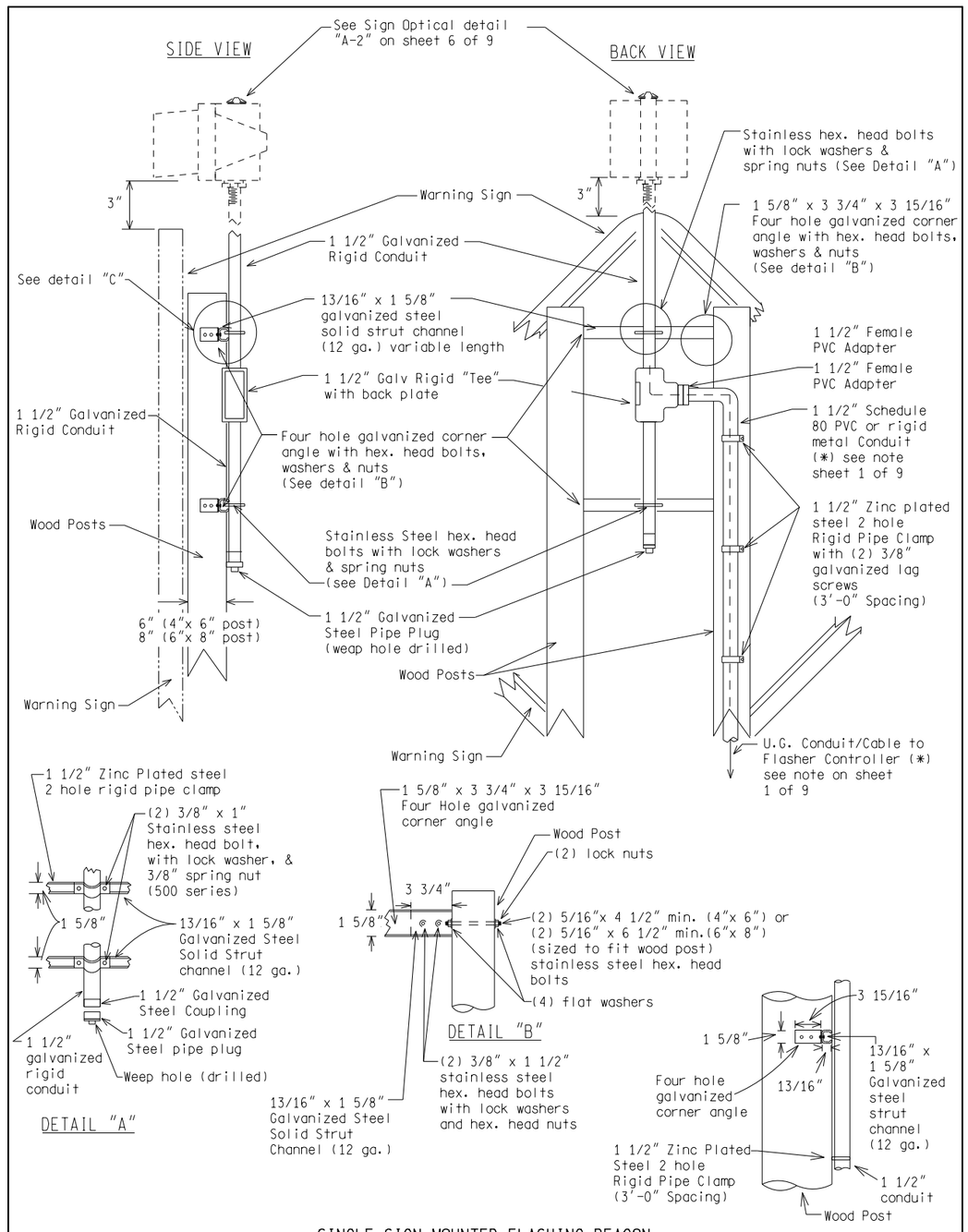
SINGLE SIGN MOUNTED FLASHING BEACON

INSTALLED ON ONE WOOD POST

NOT TO SCALE

File: PW:RD/TR/Signals/Web/Statewide SD/Final Rev. 10/21/14

MDOT Michigan Department of Transportation PREPARED BY TRAFFIC AND SAFETY DRAWN BY:DJF CHECKED BY:	ENGINEER OF DELIVERY ENGINEER OF DEVELOPMENT (SPECIAL DETAIL) FHWA APPROVAL DATE	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR SIGN MOUNTED BEACON PLAN DATE: SIG-027-A SHEET 1 of 9



SINGLE SIGN MOUNTED FLASHING BEACON

INSTALLED ON TWO WOOD POSTS

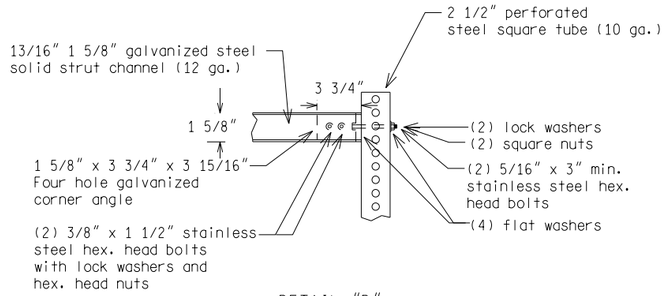
NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN File: PW:RD/TR/Signals/Web/Statewide SD/Final Rev. 10/21/14	(SPECIAL DETAIL) FHWA APPROVAL DATE	PLAN DATE: SIG-027-A SHEET 2 of 9

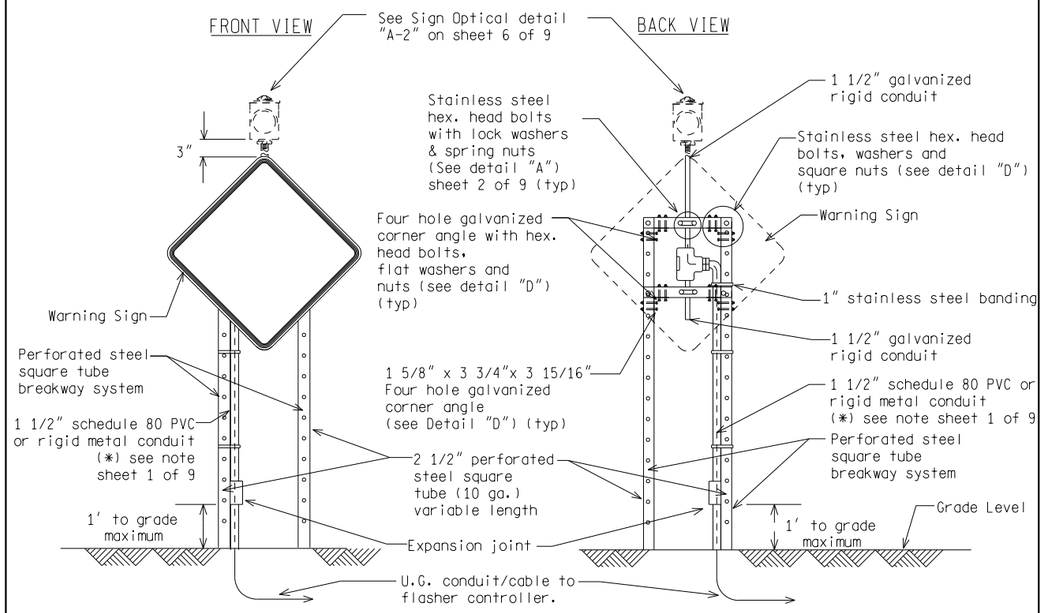
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MDOT Michigan Department of Transportation

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	DESIGN UNIT: FILPUS	JN: MQ17-025			193
FILE:	TSC: ISHPEMING				



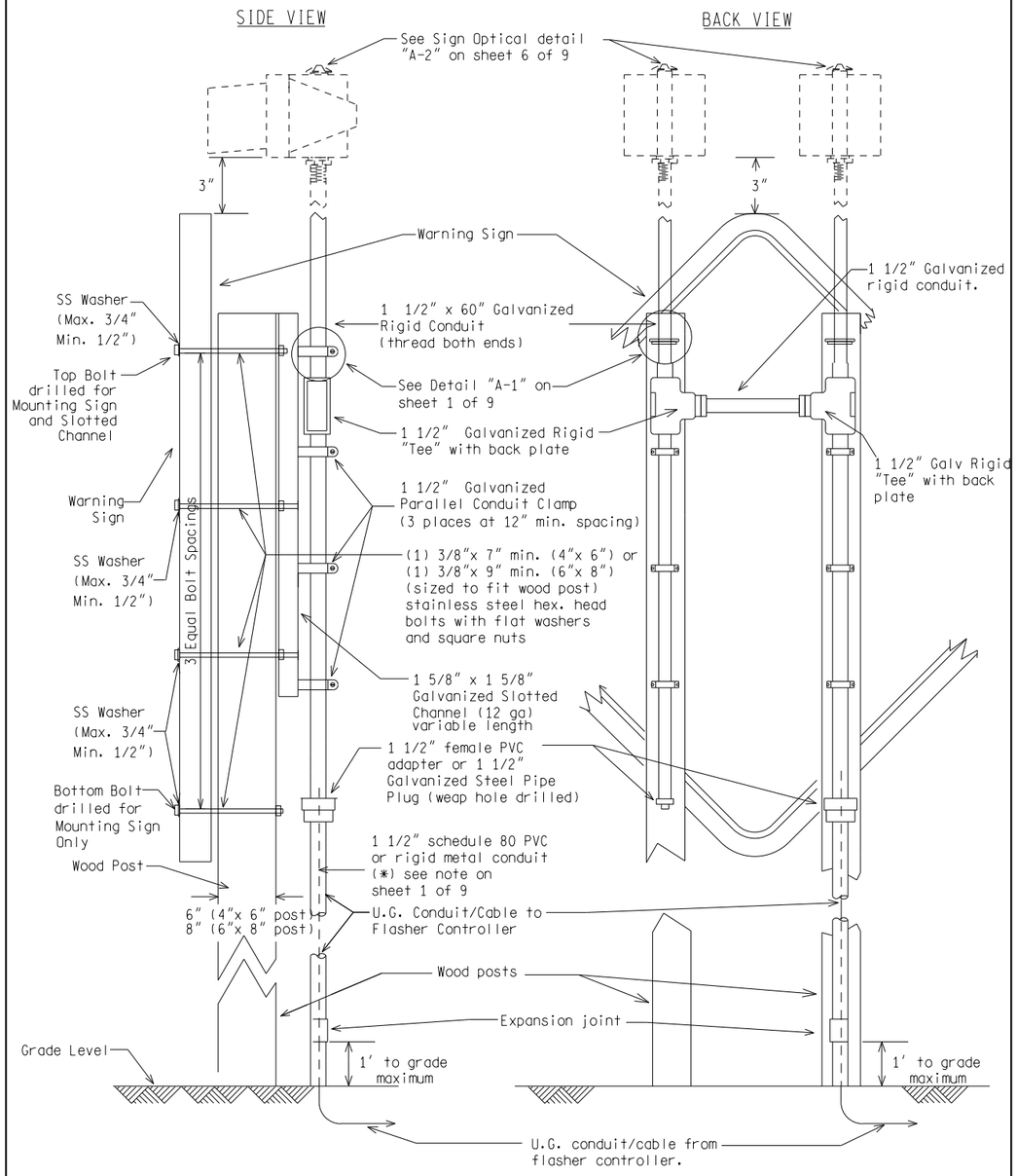
DETAIL "D"



SINGLE SIGN MOUNTED FLASHING BEACON
INSTALLED ON TWO STEEL POSTS
(PERFORATED STEEL SQUARE TUBE BREAKAWAY SYSTEM)

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	(SPECIAL DETAIL) FHWA APPROVAL DATE	PLAN DATE	SIG-027-A	SHEET 3 of 9
File:PW:RD/TR/Signals/Web/Statewide SD/Final Rev. 10/21/14				

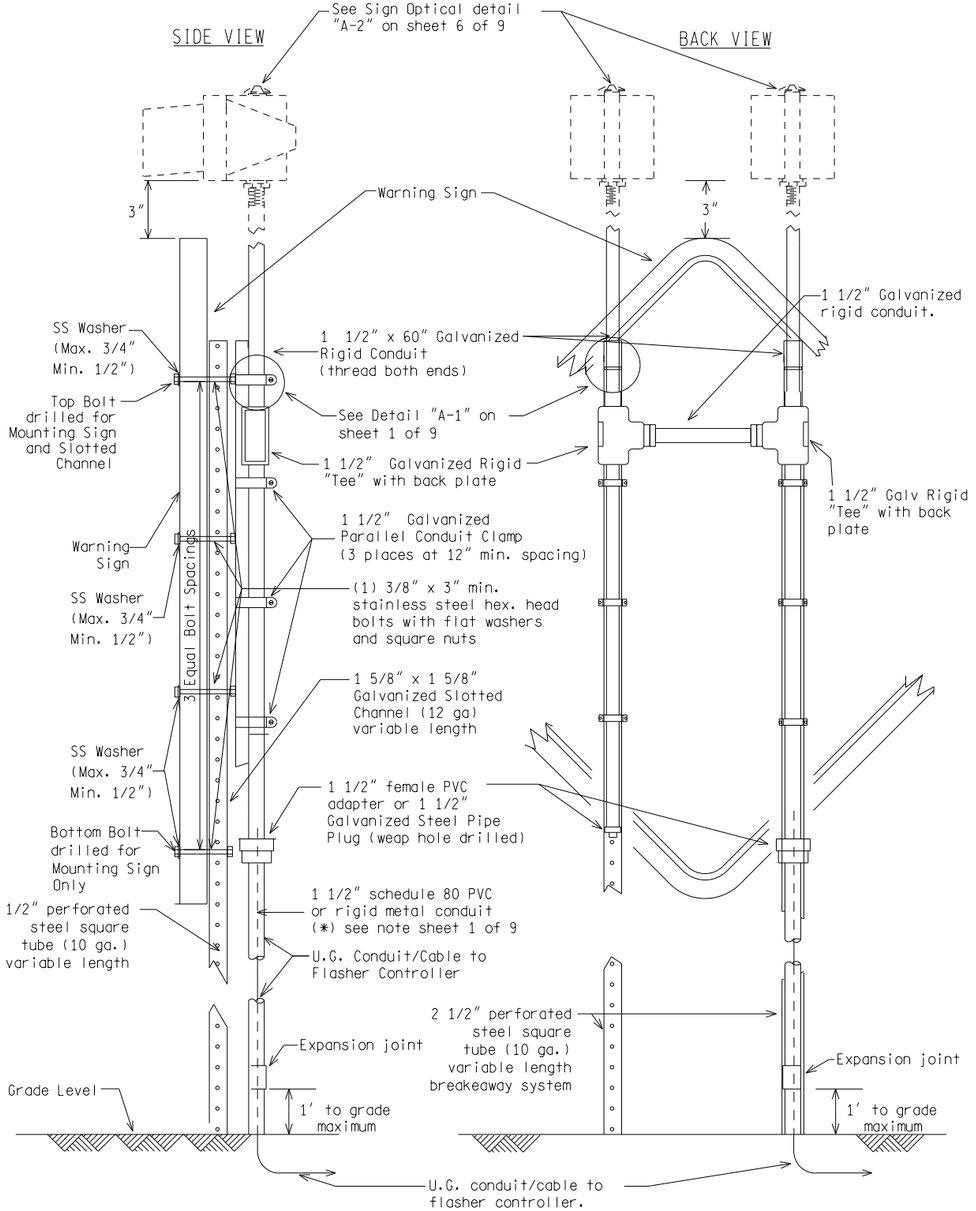


SIGN MOUNTED DUAL FLASHING BEACONS
INSTALLED ON TWO WOOD POSTS

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	(SPECIAL DETAIL) FHWA APPROVAL DATE	PLAN DATE	SIG-027-A	SHEET 4 of 9
File: PW:RD/TR/Signals/Web/Statewide SD/Final Rev. 10/21/14				

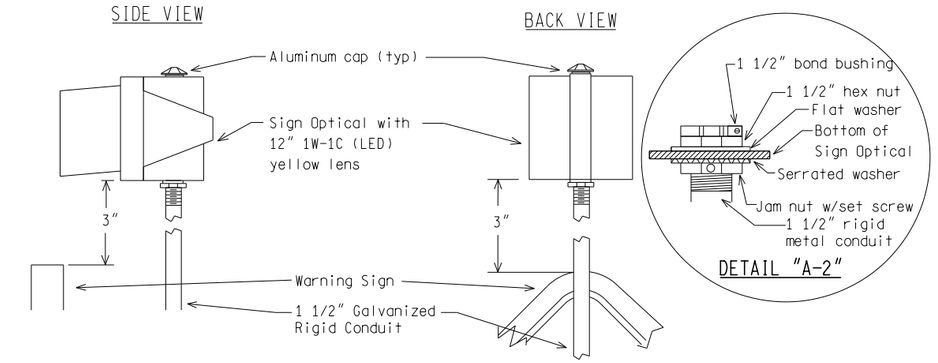
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NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION	MDOT Michigan Department of Transportation			
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									DESIGN UNIT: FILPUS	JN: MQ17-025	194
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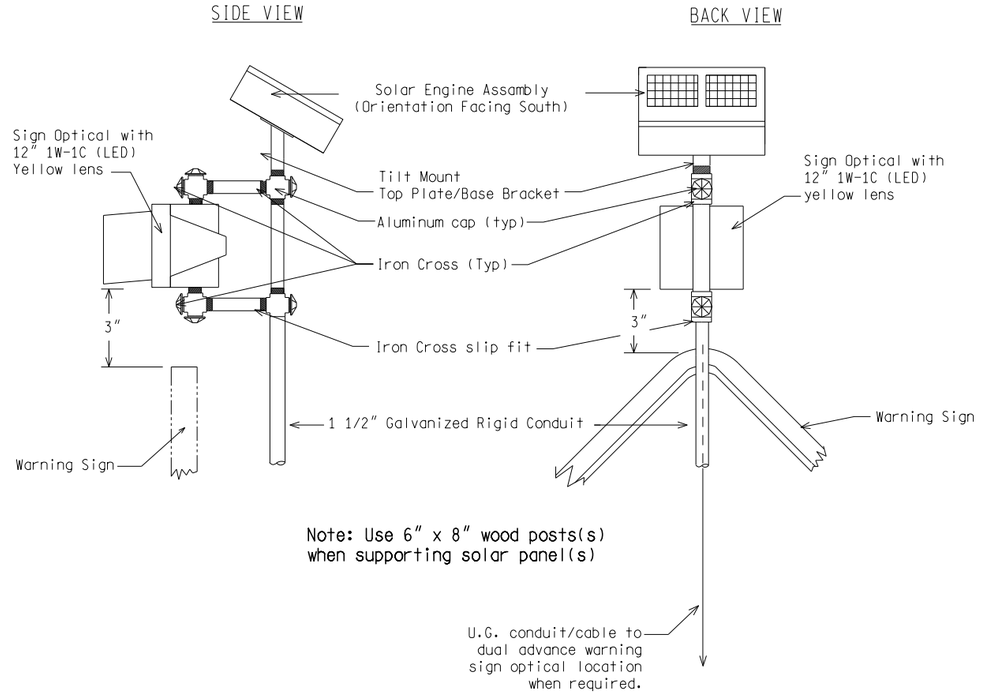
SIGN MOUNTED DUAL FLASHING BEACONS
INSTALLED ON TWO STEEL POSTS
(PERFORATED STEEL SQUARE TUBE BREAKAWAY SYSTEM

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	FHWA APPROVAL DATE	PLAN DATE	SIG-027-A	SHEET 5 of 9
File: PW:RD/TR/Signals/Web/Statewide SD/Final Rev. 10/21/14				



SIGN MOUNTED FLASHING BEACON



SIGN MOUNTED
FLASHING BEACON (ONE SOLAR ENGINE ASSEMBLY)

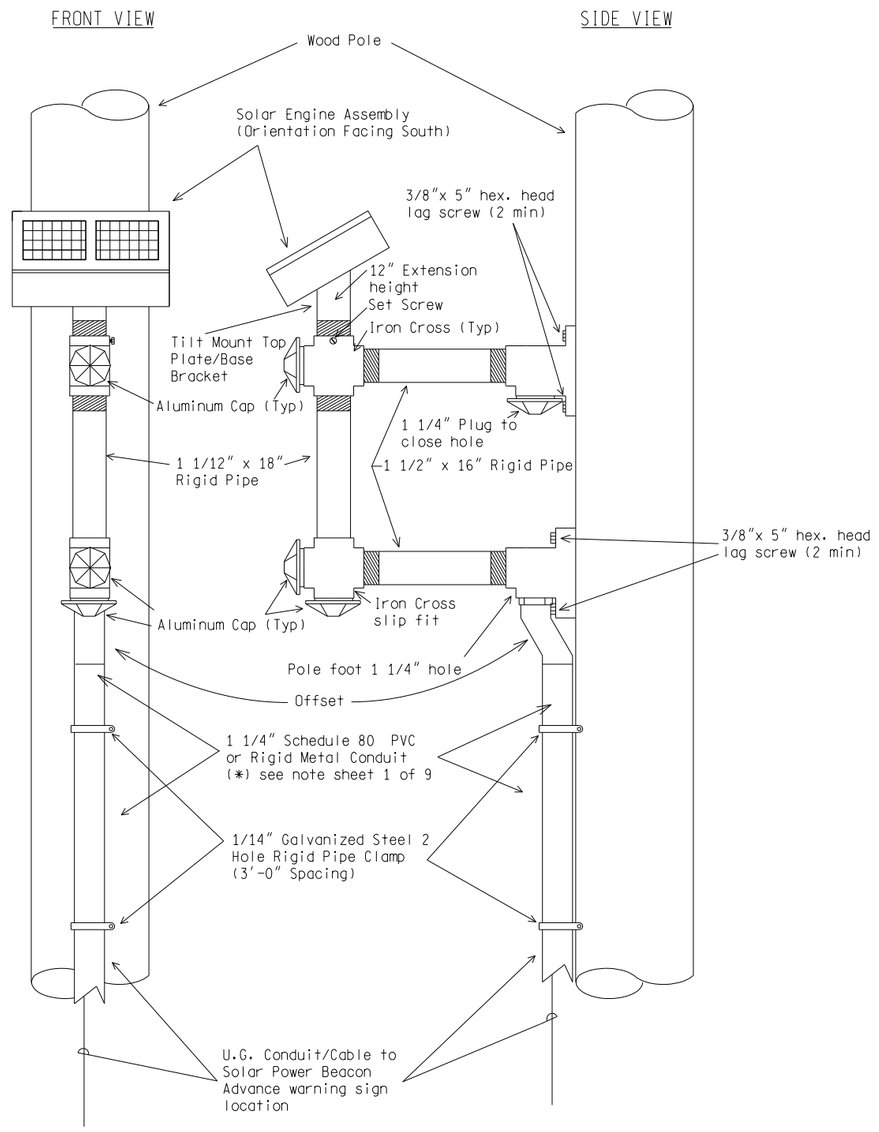
NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	(SPECIAL DETAIL) FHWA APPROVAL DATE	PLAN DATE	SIG-027-A	SHEET 6 of 9
File:PW:RD/TR/Signals/Web/Statewide SD/Final Rev. 10/21/14				

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MDOT Michigan Department of Transportation

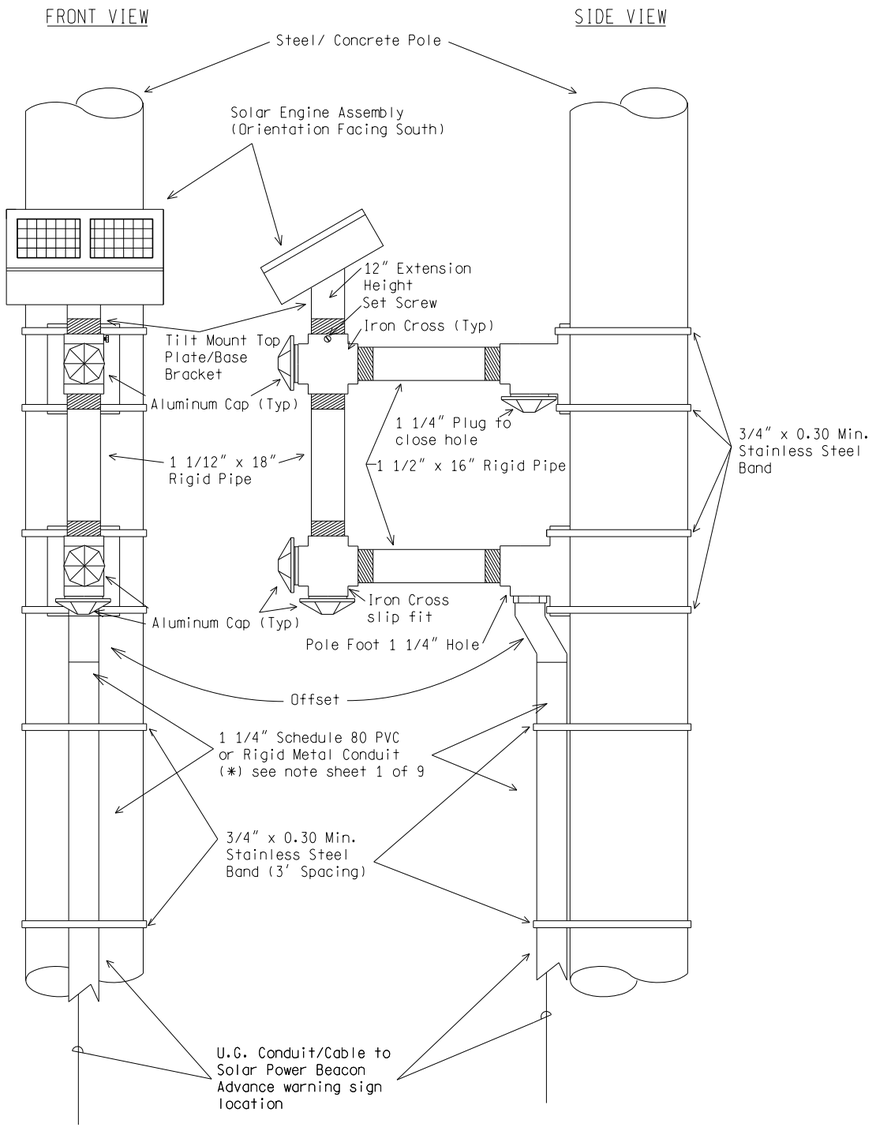
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FILE:	TSC: ISHPEMING			



SOLAR ENGINE ASSEMBLY MOUNTED WOOD POLE

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	FHWA APPROVAL DATE	PLAN DATE	SIG-027-A	SHEET 7 of 9
File: PW:RD/TR/Signals/Web/Statewide SD/Final Rev. 10/21/14				

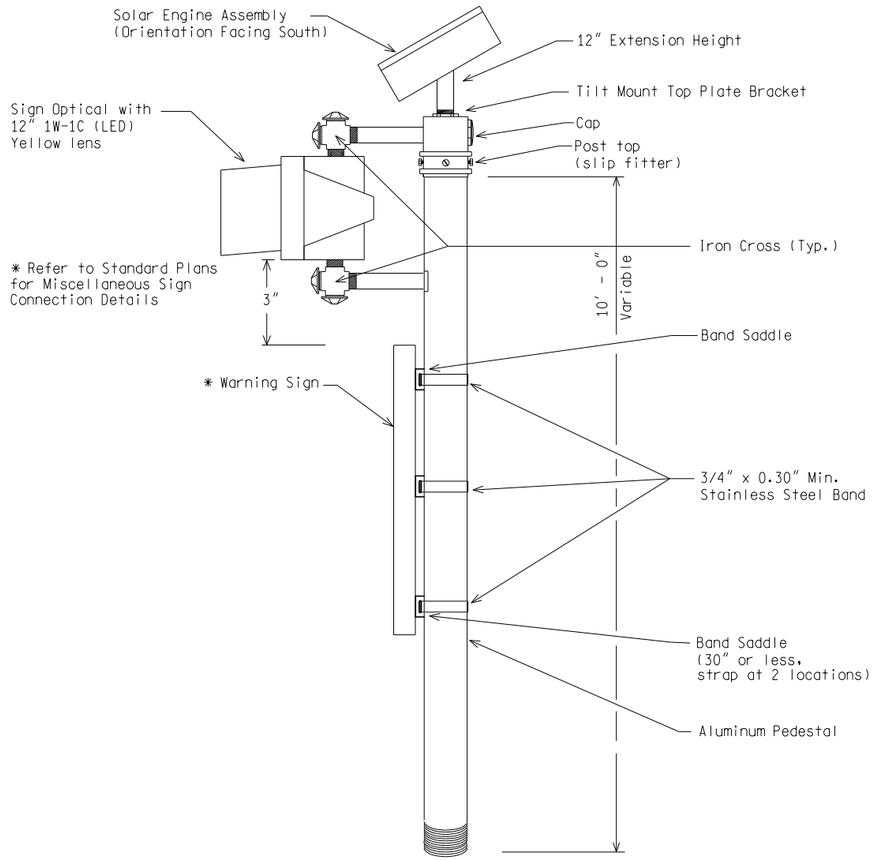


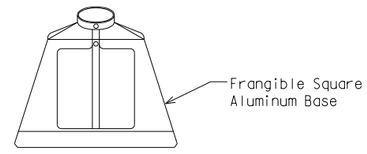
SOLAR ENGINE ASSEMBLY MOUNTED ON STEEL/CONCRETE POLE

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	(SPECIAL DETAIL) FHWA APPROVAL DATE	PLAN DATE	SIG-027-A	SHEET 8 of 9
File: PW:RD/TR/Signals/Web/Statewide SD/Final Rev. 10/21/14				

AS-LET PLAN REVISIONS											
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION		DATE: 02/10/2017	CS: 52042	DRAWING / SHEET
									DESIGN UNIT: FILPUS	JN: MQ17-025	196
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SQUARE ALUMINUM BASE

Note: Use pedestal collar for pedestal length greater than 14'

SOLAR ENGINE MOUNTED ON PEDESTAL

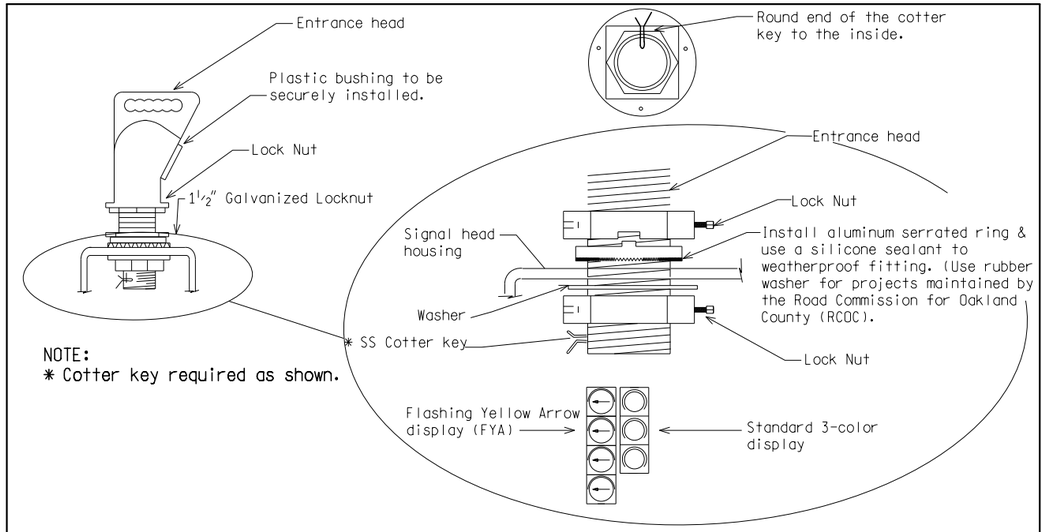
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AS-LET PLAN REVISIONS							
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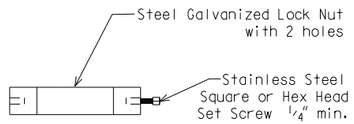
MDOT Michigan Department of Transportation

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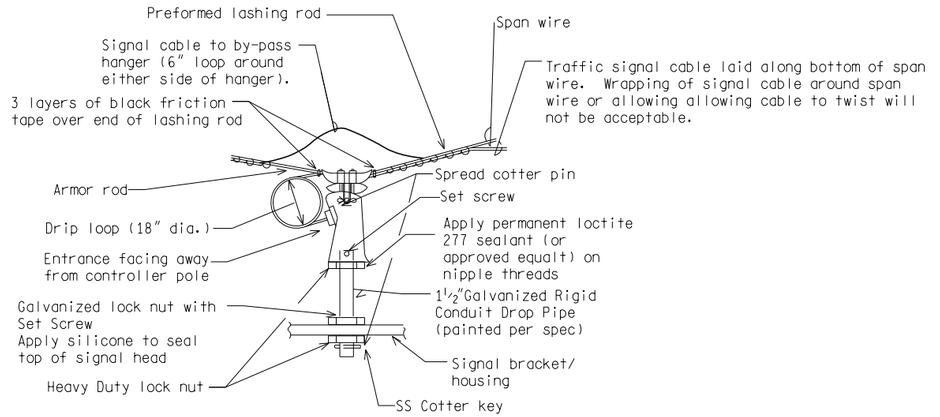


NOTE:
* Cotter key required as shown.

ONE-WAY TRAFFIC SIGNAL HEAD



OH SIGNAL LOCK NUT DETAIL



HANGER ATTACHMENT

NOT TO SCALE

File: PW:RD/TR/Signals/Web/Statewide SD/Final Rev. 02/18/14

MDOT Michigan Department of Transportation

PREPARED BY TRAFFIC AND SAFETY

DRAWN BY: DJF

CHECKED BY:

ENGINEER OF DELIVERY

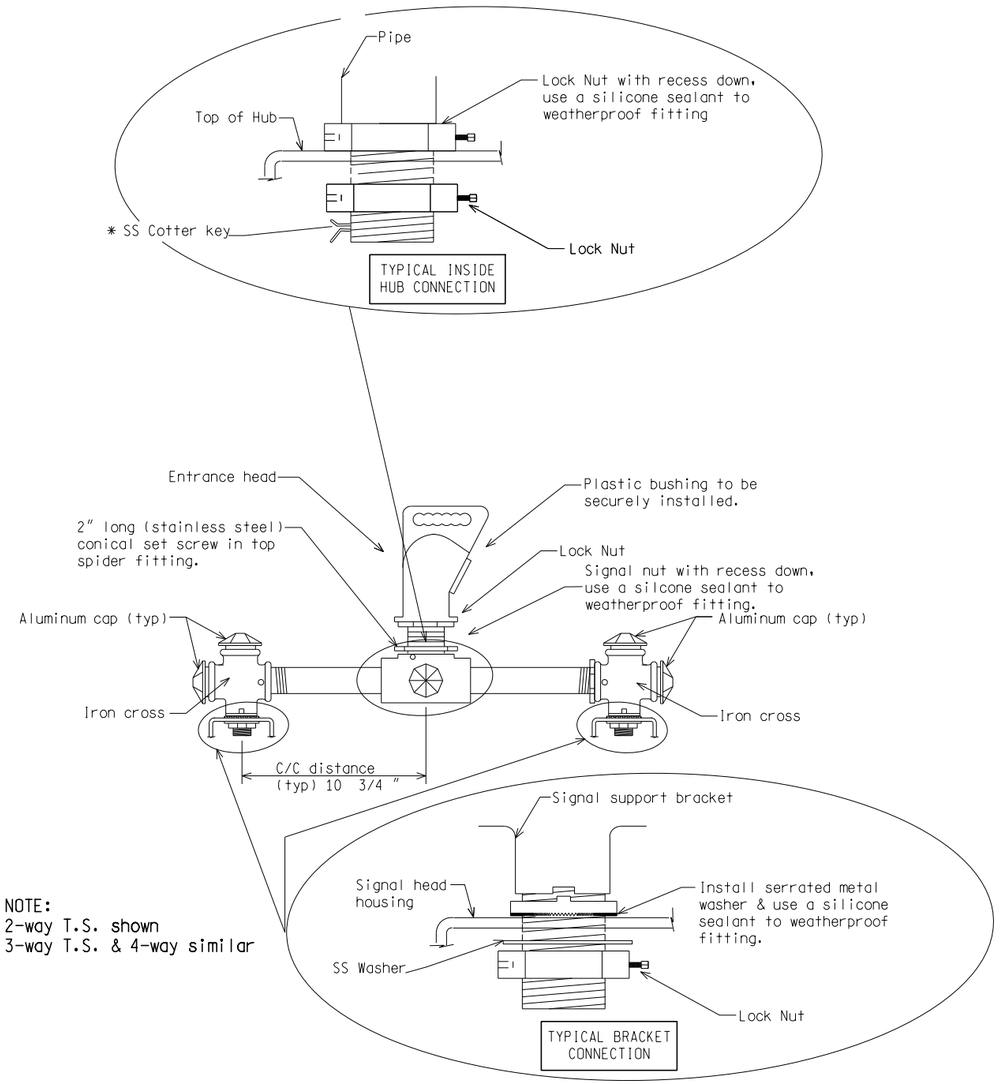
ENGINEER OF DEVELOPMENT

(SPECIAL DETAIL) FHWA APPROVAL DATE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR

SPAN WIRE MOUNTED T.S. BRACKET ASSEMBLY

PLAN DATE | SIG-030-A | SHEET 1 of 2



NOTE:
2-way T.S. shown
3-way T.S. & 4-way similar

MULTIPLE-WAY TRAFFIC SIGNAL HEAD(S)

NOTE:
1) Exterior surface of all mounting assemble located below span clamps, including stems, lock nuts, and related hardware must match the current FHWA Highway yellow color tolerance chart per the Standard Specifications for Construction.

2) Tolerance within ±⅛" for all bracketing.

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN | (SPECIAL DETAIL) FHWA APPROVAL DATE

File: Rev. 02/18/14

PLAN DATE | SIG-030-A | SHEET 2 of 2

AS-LET PLAN REVISIONS

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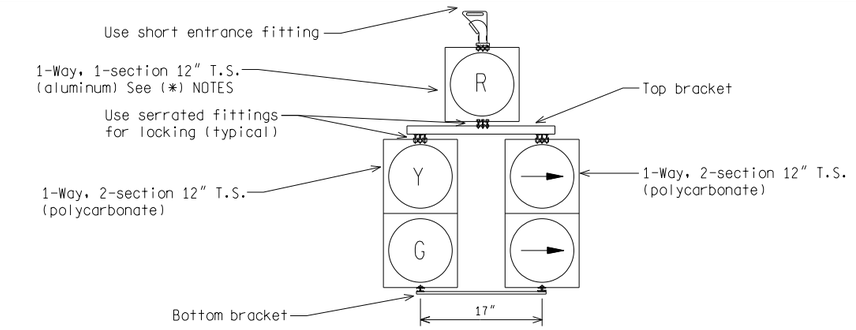
MDOT Michigan Department of Transportation

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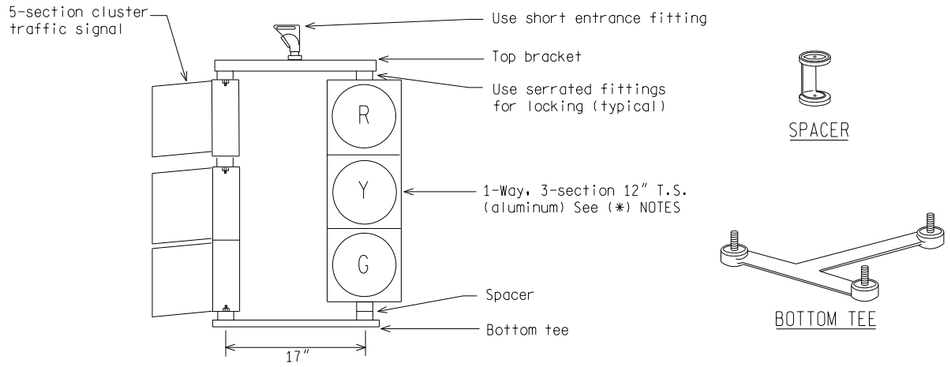
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CS: 52042
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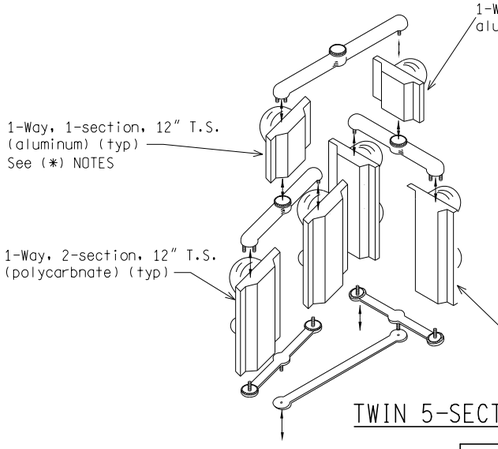
DRAWING | SHEET 198



5-SECTION CLUSTER (DOGHOUSE) TRAFFIC SIGNAL



COMBINATION 5-SECTION CLUSTER & 1-WAY T.S. (ALUMINUM)



(*) NOTES:

1) Traffic signals must conform to the current ITE publication "Vehicle Traffic Control Signal Heads."
2) Provide cast aluminum alloy housings with a 2" diam. hole top and bottom to receive 1 1/2" inch supporting pipe.
3) Provide a detachable, sheet aluminum visor (min. 0.057" thick), for each signal indication.
4) Provide twist on slots for visor mounting that are either in the visor or on the tabs formed on the visor.

TWIN 5-SECTION CLUSTER TRAFFIC SIGNAL

NOT TO SCALE

File: PW:RD/T&S/Standards/Signals/mdot sig030b.dgn Rev. 02/18/14

MDOT Michigan Department of Transportation

PREPARED BY TRAFFIC AND SAFETY

DRAWN BY: DJF

CHECKED BY:

ENGINEER OF DELIVERY

ENGINEER OF DEVELOPMENT

(SPECIAL DETAIL)

FHWA APPROVAL DATE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR

BRACKETING FOR 5-SECTION HEADS

PLAN DATE | SIG-030-B | SHEET 1 of 1

AS-LET PLAN REVISIONS

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

MDOT Michigan Department of Transportation

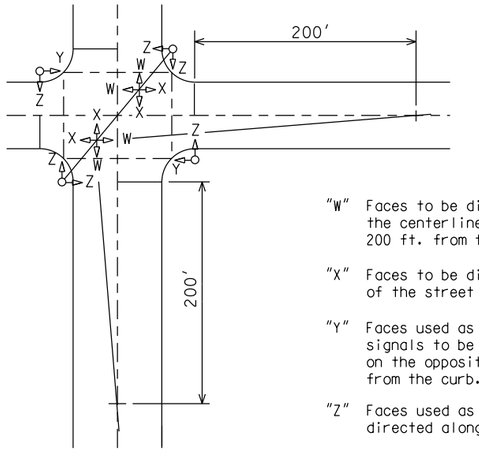
FILE:

DATE: 02/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025

DRAWING | SHEET

199



NOTE:
Where field conditions require deviation from these standards, Engineer will furnish specific directional setting for signals at time of installation.

"W" Faces to be directed to intersect a point on the centerline of the street they control 200 ft. from the stop bar.

"X" Faces to be directed parallel to the centerline of the street they control.

"Y" Faces used as starting signals with near side signals to be directed to intersect a point on the opposite stop bar approximately 4 ft. from the curb.

"Z" Faces used as pedestrian signals to be directed along crosswalks.

DIAGONAL SPAN WIRE STANDARD FOR DIRECTIONAL SETTINGS OF TRAFFIC SIGNALS

NOT TO SCALE

File: PW:RD/T&S/Standards/Signals/mdot sig030e.dgn Rev. 11/25/2008

MDOT Michigan Department of Transportation

PREPARED BY TRAFFIC AND SAFETY

DRAWN BY: DJF

CHECKED BY:

ENGINEER OF DELIVERY

ENGINEER OF DEVELOPMENT

(SPECIAL DETAIL)

FHWA APPROVAL DATE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR

ALIGNMENT OF TRAFFIC SIGNAL HEADS (DIAGONAL)

PLAN DATE

SIG-030-E

SHEET 1 of 1

AS-LET PLAN REVISIONS

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

MDOT Michigan Department of Transportation

FILE:

DESIGN UNIT: TSC:

DATE: 03/30/2017

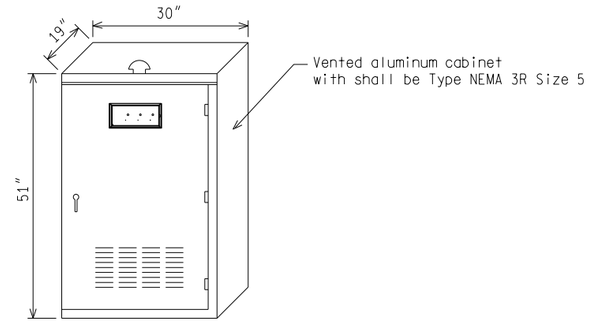
FILPUS
JN: ISHPEMING

52042

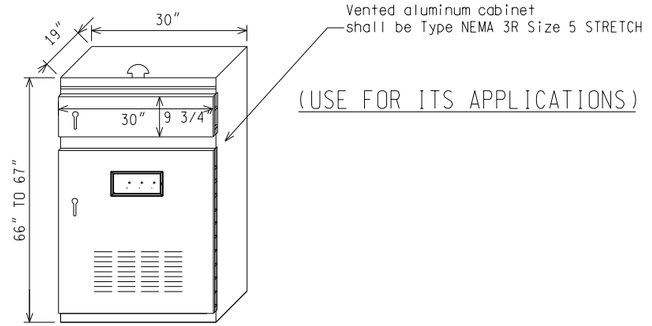
MQ17-025

DRAWING 200

SHEET



POLE MOUNTED TRAFFIC SIGNAL CONTROLLER CABINET



(USE FOR ITS APPLICATIONS)

POLE MOUNTED TRAFFIC SIGNAL ITS CONTROLLER CABINET (IF USED)

NOT TO SCALE

File: PW:RD/TR/Signals/Web/Statewide SD/Final Rev. 02/17/15

MDOT Michigan Department of Transportation

PREPARED BY
TRAFFIC AND SAFETY

DRAWN BY:

CHECKED BY:

ENGINEER OF DELIVERY

ENGINEER OF DEVELOPMENT
(SPECIAL DETAIL)
FHWA APPROVAL DATE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR

POLE MOUNTED T.S.
CONTROLLER CABINET/FOUNDATIONS

PLAN DATE

SIG-045-B

SHEET 1 of 1

AS-LET PLAN REVISIONS

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

MDOT Michigan Department of Transportation

FILE:

DATE: 02/10/2017

DESIGN UNIT: FILPUS

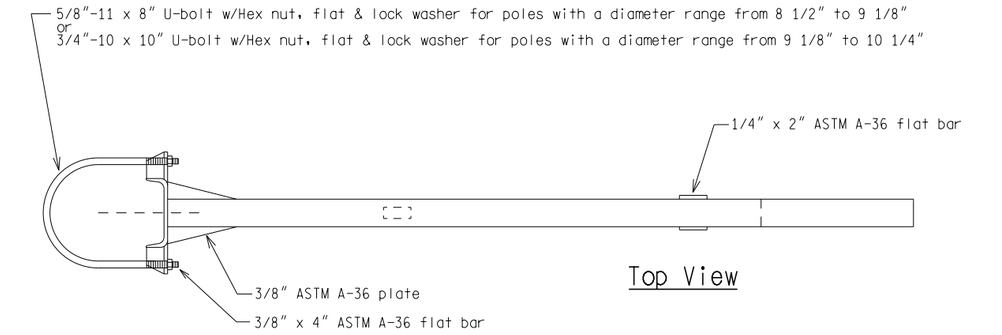
TSC: ISHPEMING

CS: 52042

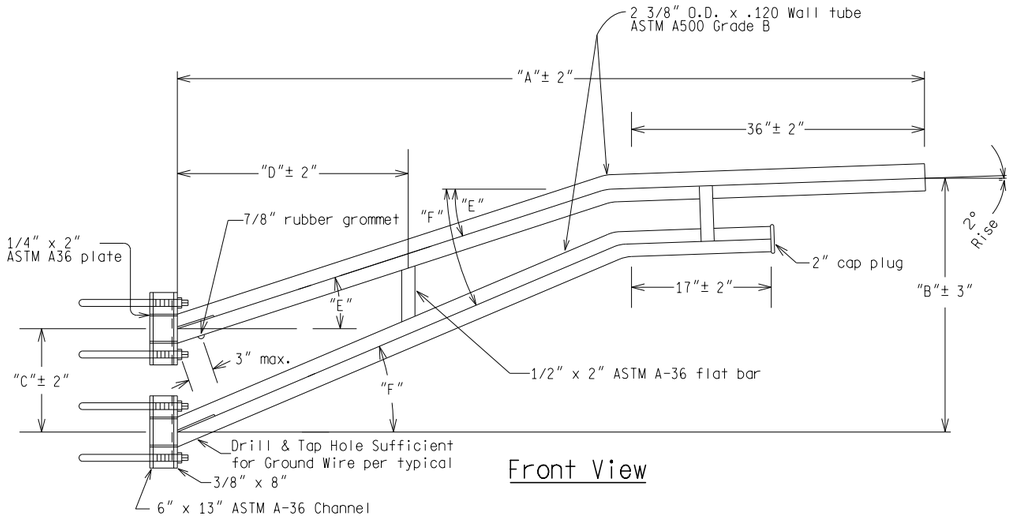
JN: MQ17-025

DRAWING

SHEET 201



Top View



Front View

Steel Pole Mount Truss Bracket Assembly

"Dimensions" Size Table

A	B	C	D	E	F
18'- 0"	81 3/4"	21 3/4"	84"	18°	23°
15'- 0"	66"	18"	66"	18°	23°
12'- 0"	50 3/8"	14 1/4"	54"	18°	23°
9'- 0"	36 3/4"	12"	36"	18°	23°
6'- 0"	23"	10"	18"	18°	27°

NOT TO SCALE

File: PW:RD/TR/Signals/Web/Statewide SD/Final Rev. 10/21/14

MDOT Michigan Department of Transportation

PREPARED BY TRAFFIC AND SAFETY

DRAWN BY: JAM

CHECKED BY:

ENGINEER OF DELIVERY

ENGINEER OF DEVELOPMENT

(SPECIAL DETAIL)

FHWA APPROVAL DATE

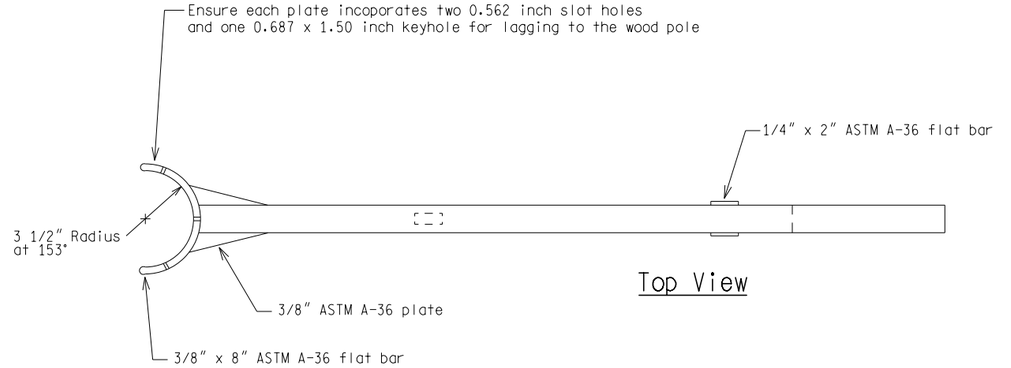
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR

STEEL TRUSS BRACKETS

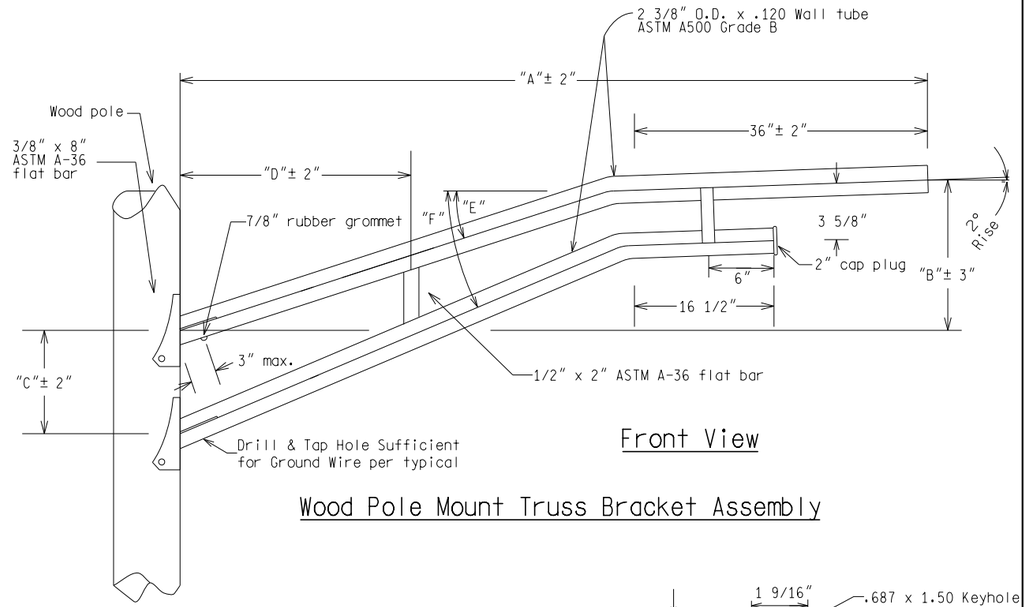
PLAN DATE

SIG-374-A

SHEET 1 of 3



Top View

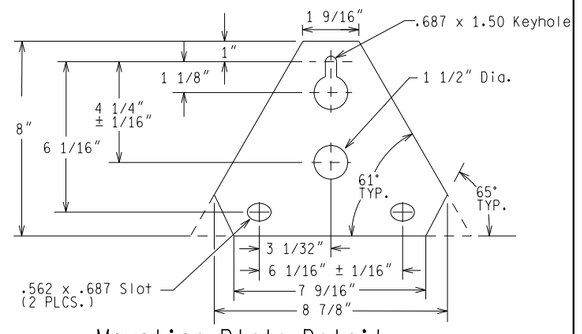


Front View

Wood Pole Mount Truss Bracket Assembly

"Dimensions" Size Table

A	B	C	D	E	F
15'- 0"	47 3/4"	18"	66"	18°	23°
12'- 0"	36"	14 3/8"	48"	18°	23°
9'- 0"	26 3/8"	12"	36"	18°	23°
6'- 0"	12 1/2"	8 1/2"	18"	18°	23°



Mounting Plate Detail

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN

FHWA APPROVAL DATE

File: PW:RD/TR/Signals/Web/Statewide SD/Final Rev. 10/21/14

PLAN DATE

SIG-374-A

SHEET 2 of 3

AS-LET PLAN REVISIONS

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

MDOT Michigan Department of Transportation

FILE:

DATE: 02/10/2017

DESIGN UNIT: FILPUS

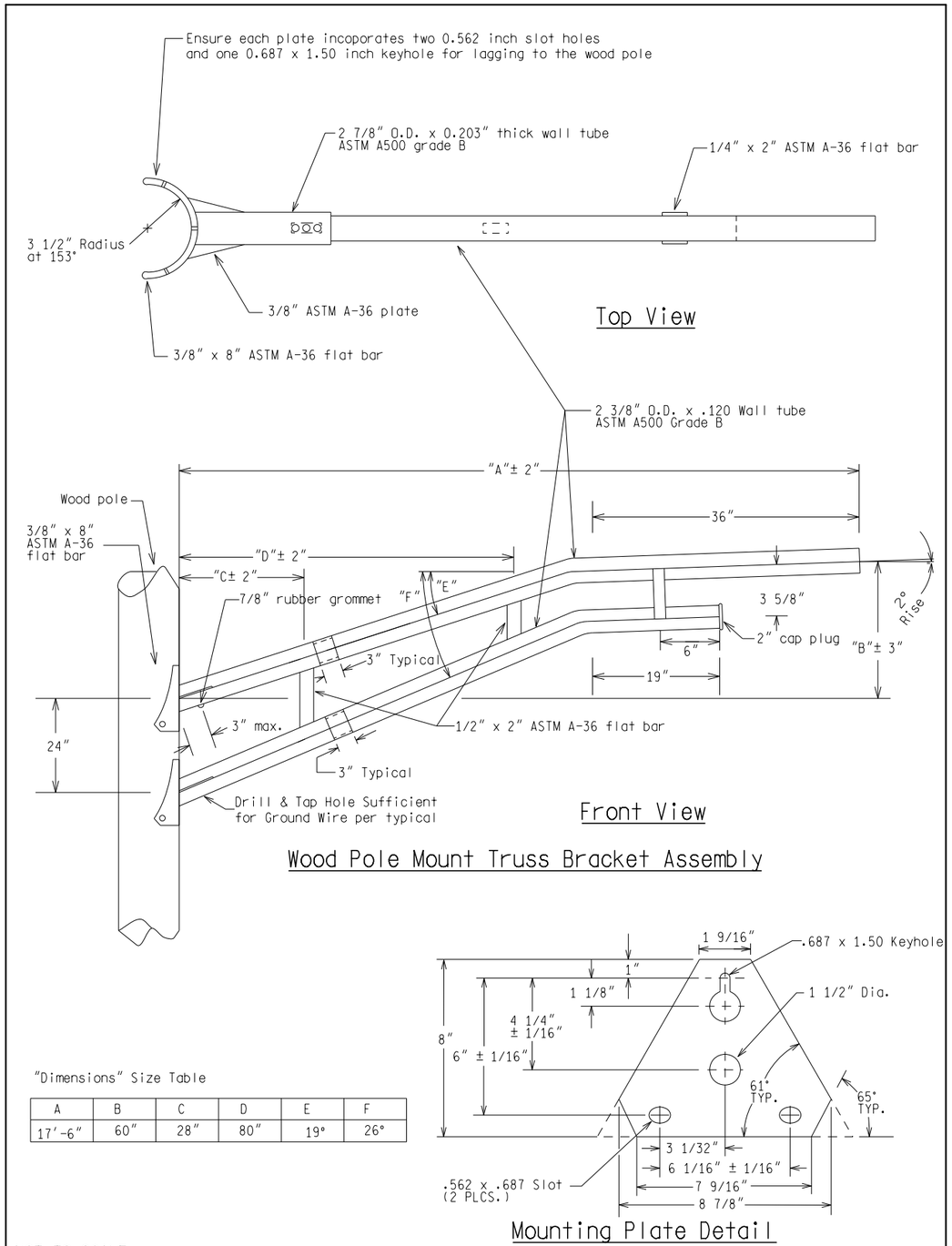
TSC: ISHPEMING

CS: 52042

JN: MQ17-025

DRAWING

SHEET 202



"Dimensions" Size Table

A	B	C	D	E	F
17'-6"	60"	28"	80"	19°	26°

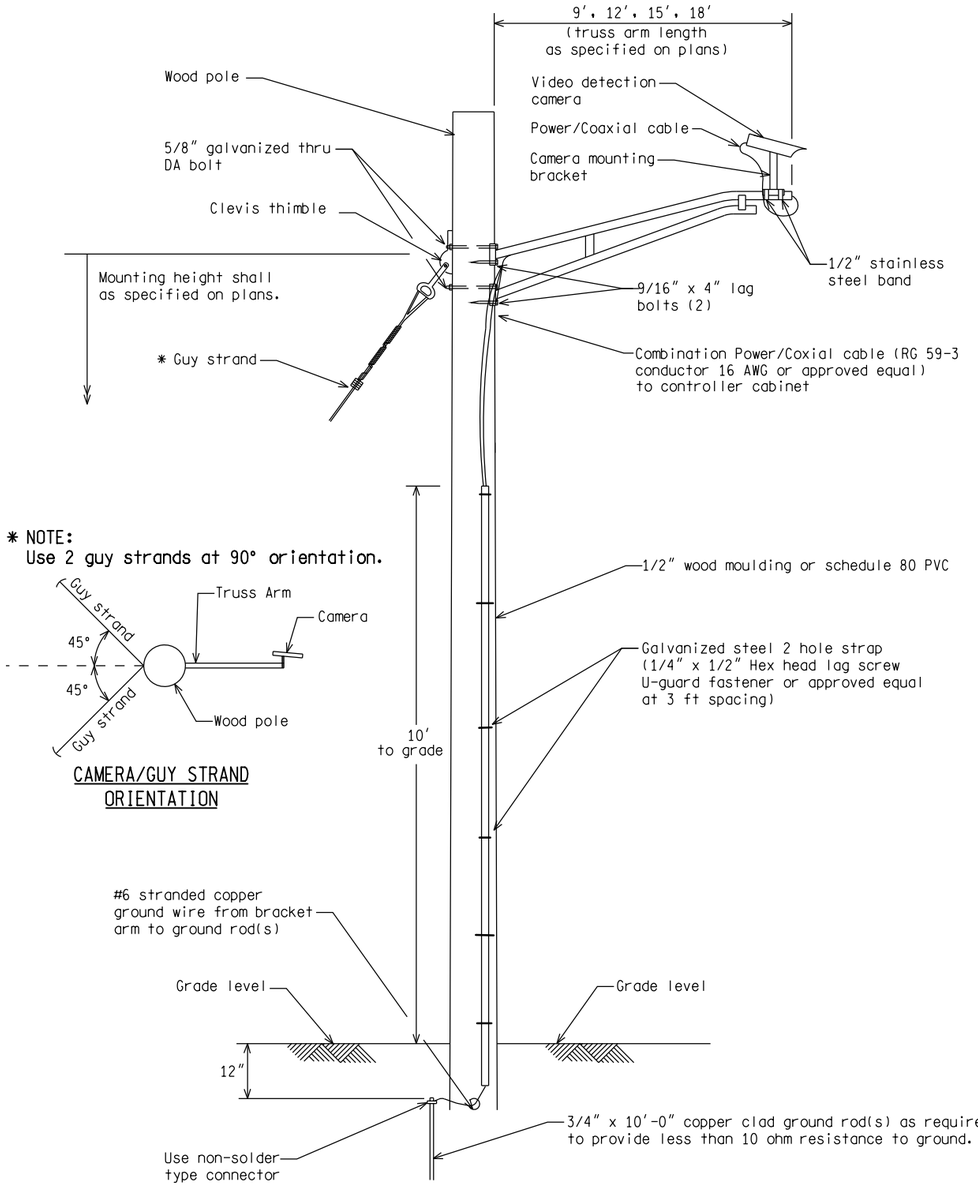
NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	FHWA APPROVAL DATE	PLAN DATE	SIG-374-A	SHEET 3 of 3
File: PW:RD/TR/Signals/Web/Statewide SD/Final Rev. 10/21/14				

AS-LET PLAN REVISIONS							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

MDOT Michigan Department of Transportation

	DATE: 02/10/2017	CS: 52042		DRAWING	SHEET
	DESIGN UNIT: FILPUS	JN: MQ17-025			203
FILE:	TSC: ISHPEMING				



BRACKET TRUSS ARM MOUNTED CAMERA (WOOD POLE)

NOT TO SCALE

File: PW:RD/T&S/Standards/Signals/mdot sig380a.dgn Rev. 01/18/11

MDOT Michigan Department of Transportation

PREPARED BY
TRAFFIC AND SAFETY

DRAWN BY: DJF

CHECKED BY:

ENGINEER OF DELIVERY

ENGINEER OF DEVELOPMENT

(SPECIAL DETAIL)
FHWA APPROVAL DATE

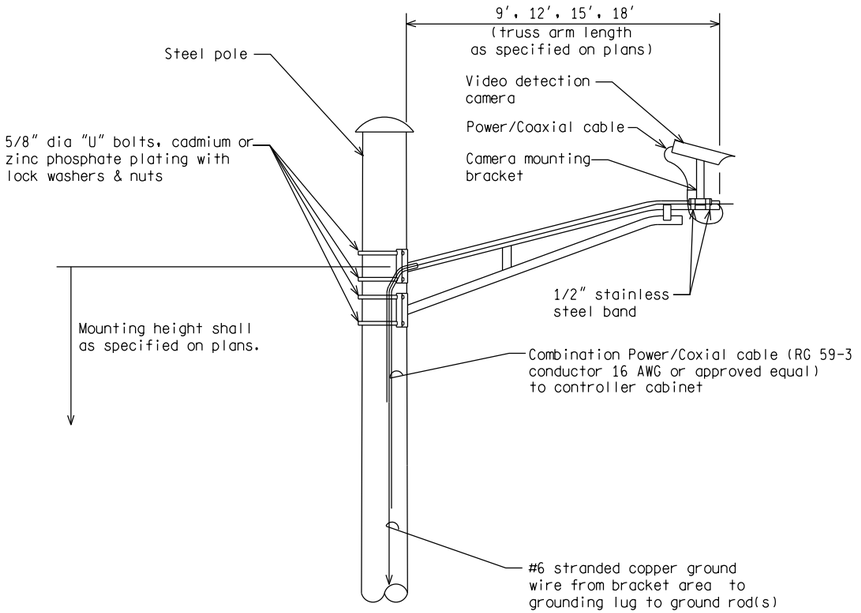
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR

VIDEO DETECTION CAMERA

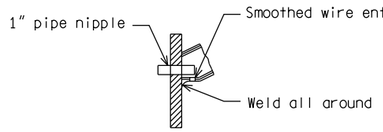
PLAN DATE

SIG-380-A

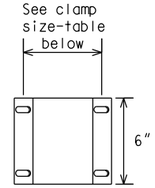
SHEET
1 of 2



BRACKET TRUSS ARM MOUNTED CAMERA (STEEL POLE)



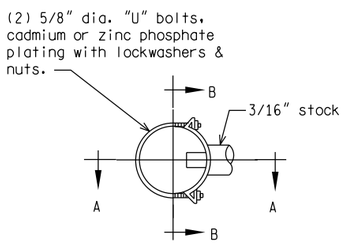
SECTION "A-A"



SECTION "B-B"

CLAMP SIZE TABLE

TYPE	POLE DIAMETER
A	3.6"- 4.5"
B	6.1"- 6.9"



DETAIL "F"

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN

(SPECIAL DETAIL)
FHWA APPROVAL DATE

File: PW:RD/T&S/Standards/Signals/mdot sig380a.dgn Rev. 01/18/11

PLAN DATE

SIG-380-A

SHEET
2 of 2

AS-LET PLAN REVISIONS

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

MDOT Michigan Department of Transportation

FILE:

DESIGN UNIT: TSC: ISHPEMING

DATE: 12/20/2017

CS: FILPUS

JN: MQ17-025

52042

DRAWING

SHEET 204

CLIENT: DLZ	LOG OF BORING NUMBER US41-01
PROJECT NAME: Marquette Hospital Transportation Improvement	ENGINEER GEI Consultants of Michigan, P.C.

LOCATION: Marquette, MI

SURFACE ELEVATION (ft) 728.6

DEPTH (FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	% PASSING #200 SIEVE	UNCONFINED COMPRESSIVE STRENGTH TONS/FT2 (1 2 3 4 5) / PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%) (10 20 30 40 50) / STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)
						Driller reported 4 inches of asphalt.		
		1	SS			0.3 FILL: fine sand – trace silt – brown – medium dense – moist (SP)		16
	780	2	SS					21
5		3	SS					21
		4	SS			8.0 Fine sand – trace to some silt and fine to coarse gravel – brown – medium dense – moist (SP-SM)		17
10						10.0 Boring advanced to 8 feet with hollow stem auger. Boring backfilled with 3/8" chipped bentonite and soil cuttings and patched with cold patch asphalt.		
	770							
15								

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: Dry *Photoionization Detector (PID) Reading in parts per million*	BORING STARTED 6/9/2016	GEI OFFICE Marquette, MI	
	BORING COMPLETED 6/9/2016	ENTERED BY ABY	APPROVED BY CRA
NORTHING 641941.2 EASTING 26142842.1	RIG/FOREMAN 7822 DT / NK (Trimedia)	GEI PROJECT NO. 1606920	PAGE NO. 1 OF 1

CLIENT: DLZ	LOG OF BORING NUMBER US41-02
PROJECT NAME: Marquette Hospital Transportation Improvement	ENGINEER GEI Consultants of Michigan, P.C.

LOCATION: Marquette, MI

SURFACE ELEVATION (ft) 720.6

DEPTH (FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	% PASSING #200 SIEVE	UNCONFINED COMPRESSIVE STRENGTH TONS/FT2 (1 2 3 4 5) / PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%) (10 20 30 40 50) / STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)
	720					10 inches of Portland cement concrete with reinforcing steel within middle third.		
		1	SS			0.8 FILL: fine sand – trace silt – brown – medium dense to dense – moist (SP)		25
		2	SS					43
5		3	SS			5.5 FILL: fine to medium sand – trace silt and fine to coarse gravel – brown – loose – moist (SP)		4
		4	SS			8.0 Silty fine sand – trace root fibers – black – wet (SM/Buried Topsoil)		7
10						8.6 Fine to medium sand – trace silt – brown – loose – wet (SP)		
	710					10.0 Boring advanced to 8 feet with hollow stem auger. Boring backfilled with 3/8" chipped bentonite and soil cuttings and patched with concrete.		
15								

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 8.0ft WS *Photoionization Detector (PID) Reading in parts per million*	BORING STARTED 6/10/2016	GEI OFFICE Marquette, MI	
	BORING COMPLETED 6/10/2016	ENTERED BY ABY	APPROVED BY CRA
NORTHING 641875.4 EASTING 26143082.1	RIG/FOREMAN 7822 DT / NK (Trimedia)	GEI PROJECT NO. 1606920	PAGE NO. 1 OF 1

CLIENT: DLZ	LOG OF BORING NUMBER US41-03
PROJECT NAME: Marquette Hospital Transportation Improvement	ENGINEER GEI Consultants of Michigan, P.C.

LOCATION: Marquette, MI

SURFACE ELEVATION (ft) 712.3

DEPTH (FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	% PASSING #200 SIEVE	UNCONFINED COMPRESSIVE STRENGTH TONS/FT2 (1 2 3 4 5) / PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%) (10 20 30 40 50) / STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)
						Driller reported 4 inches of asphalt.		
		1	SS			0.4 FILL: fine sand – trace silt and fine to coarse gravel – brown – medium dense to loose – moist to wet (SP)		15
	710	2	SS					14
5		3	SS					9
		4	SS					4
10						10.0 Boring advanced to 8 feet with hollow stem auger. Boring backfilled with 3/8" chipped bentonite and soil cuttings and patched with cold patch asphalt.		
	700							
15								

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 9.5ft WS *Photoionization Detector (PID) Reading in parts per million*	BORING STARTED 6/10/2016	GEI OFFICE Marquette, MI	
	BORING COMPLETED 6/10/2016	ENTERED BY ABY	APPROVED BY CRA
NORTHING 641794.2 EASTING 26143320.5	RIG/FOREMAN 7822 DT / NK (Trimedia)	GEI PROJECT NO. 1606920	PAGE NO. 1 OF 1

MIDWEST BORING LOG 1606920 MARQUETTE HOSPITAL.GPJ GEI DATA TEMPLATE.GDT 7/22/16

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

NO SCALE

FILE: 6553_BORING001.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

SOIL DATA
US41/M-28/GROVE/7TH ROUNABOUT CONSTRUCTION
CITY OF MARQUETTE, MICHIGAN

DRAWING: US41 BOR 001
SHEET: SECT 1 205

CLIENT: DLZ

PROJECT NAME: Marquette Hospital Transportation Improvement

LOG OF BORING NUMBER US41-04

ENGINEER GEI Consultants of Michigan, P.C.

LOCATION: Marquette, MI

SURFACE ELEVATION (ft) 701.7

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL
	1	SS			Driller reported topsoil.
700					0.5 FILL: fine to medium sand – trace silt and fine to coarse gravel – frequent silt pockets – brown – loose – moist (SP)
	2	SS			2.5 FILL: fine to medium sand – trace to some silt – trace fine to coarse gravel – dark brown – medium dense – moist (SP-SM)
5	3	SS			5.0 Silty fine to coarse sand – frequent root fibers and wood pieces – dark brown to black – loose – moist (SM/Buried Topsoil)
	4	SS			8.0 Organic silt – some wood – gray and black – medium dense – moist to wet (OL)
10 690	5	SS			10.0 Silt – trace fine sand – brown – medium dense – wet (ML)
					13.5 Silty fine sand – brown – very dense to dense – wet (SM) HOSPITAL DR PROP PRECAST 3-SIDED ARCH CULVERT BOTT/FTG EL 687.35
15	6	SS			
	7	SS			
20 680					20.0 Boring advanced to 18 feet with hollow stem auger. Boring backfilled with 3/8" chipped bentonite and soil cuttings.

UNCONFINED COMPRESSIVE STRENGTH TONS/FT2: 1 2 3 4 5

PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%): 10 20 30 40 50

% PASSING #200 SIEVE

STANDARD PENETRATION BLOWS/FT: 10 20 30 40 50 60

9, 11, 4, 14, 27, 50, 36

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 9ft WS *Photoionization Detector (PID) Reading in parts per million*	BORING STARTED 6/14/2016	GEI OFFICE Marquette, MI	
	BORING COMPLETED 6/14/2016	ENTERED BY ABY	APPROVED BY CRA
NORTHING 641675.8 EASTING 26143792.9	RIG/FOREMAN 7822 DT / NK (Trimedia)	GEI PROJECT NO. 1606920	PAGE NO. 1 OF 1

MIDWEST BORING LOG 1606920 MARQUETTE HOSPITAL.GPJ GEI DATA TEMPLATE.GDT 7/22/16

CLIENT: DLZ

PROJECT NAME: Marquette Hospital Transportation Improvement

LOG OF BORING NUMBER US41-05

ENGINEER GEI Consultants of Michigan, P.C.

LOCATION: Marquette, MI

SURFACE ELEVATION (ft) 696.7

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL
	1	SS			Driller reported topsoil.
					0.3 Silt – trace clay, fine sand, and fine to coarse gravel – light brown to gray – medium dense to dense – moist (ML)
	2	SS			HOSPITAL DR PROP PRECAST TRIPLE BOX CULVERT BOTT/CULVERT EL 696.33 (INLET)
5					HOSPITAL DR PROP PRECAST TRIPLE BOX CULVERT BOTT/CULVERT BEDDING MAT'L EL 695.33 (INLET)
	3	SS			HOSPITAL DR PROP PRECAST TRIPLE BOX CULVERT BOTT/CULVERT EL 693.33 (OUTLET)
690					HOSPITAL DR PROP PRECAST TRIPLE BOX CULVERT BOTT/CULVERT BEDDING MAT'L EL 692.33 (OUTLET)
	4	SS			
10	5	SS			9.5 Fine sandy silt – trace clay and fine to coarse gravel – brown – dense – moist (ML)
					12.0 Silty fine sand – brown – dense – moist to wet (SM)
15	6	SS			
680					17.0 Fine sandy silt – trace fine to coarse gravel – brown – dense – wet (ML)
	7	SS			
20					20.0 Boring advanced to 18 feet with hollow stem auger. Boring backfilled with 3/8" chipped bentonite and soil cuttings.

UNCONFINED COMPRESSIVE STRENGTH TONS/FT2: 1 2 3 4 5

PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%): 10 20 30 40 50

% PASSING #200 SIEVE

STANDARD PENETRATION BLOWS/FT: 10 20 30 40 50 60

23, 46, 40, 37, 38, 52, 44

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 13ft WD *Photoionization Detector (PID) Reading in parts per million*	BORING STARTED 6/14/2016	GEI OFFICE Marquette, MI	
	BORING COMPLETED 6/14/2016	ENTERED BY ABY	APPROVED BY CRA
NORTHING 641719.0 EASTING 26143859.6	RIG/FOREMAN 7822 DT / NK (Trimedia)	GEI PROJECT NO. 1606920	PAGE NO. 1 OF 1

MIDWEST BORING LOG 1606920 MARQUETTE HOSPITAL.GPJ GEI DATA TEMPLATE.GDT 7/22/16

CLIENT: DLZ

PROJECT NAME: Marquette Hospital Transportation Improvement

LOG OF BORING NUMBER US41-06

ENGINEER GEI Consultants of Michigan, P.C.

LOCATION: Marquette, MI

SURFACE ELEVATION (ft) 700.2

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL
700					Driller reported 6 inches of asphalt.
	1	SS			0.5 FILL: fine to medium sand – trace silt and fine to coarse gravel – brown – medium dense – moist to wet (SP)
	2	SS			
5	3	SS			
	4	SS			8.5 Silty fine to medium sand – some fine to coarse gravel – trace root fibers – black – medium dense – wet (SM/Buried Topsoil)
10 690	5	SS			9.5 Fine to medium sand – trace to some silt and fine to coarse gravel – gray – medium dense to loose – wet (SP-SM)
	6	SS			
15					15.0 Boring advanced to 13 feet with hollow stem auger. Boring backfilled with 3/8" chipped bentonite and soil cuttings and patched with cold patch asphalt.

UNCONFINED COMPRESSIVE STRENGTH TONS/FT2: 1 2 3 4 5

PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%): 10 20 30 40 50

% PASSING #200 SIEVE

STANDARD PENETRATION BLOWS/FT: 10 20 30 40 50 60

17, 28, 18, 29, 12, 8

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 7.5ft WS *Photoionization Detector (PID) Reading in parts per million*	BORING STARTED 6/9/2016	GEI OFFICE Marquette, MI	
	BORING COMPLETED 6/9/2016	ENTERED BY ABY	APPROVED BY CRA
NORTHING 641455.9 EASTING 26143936.7	RIG/FOREMAN 7822 DT / NK (Trimedia)	GEI PROJECT NO. 1606920	PAGE NO. 1 OF 1

MIDWEST BORING LOG 1606920 MARQUETTE HOSPITAL.GPJ GEI DATA TEMPLATE.GDT 7/22/16

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

NO SCALE

DATE: 2/10/2017
DESIGN UNIT: FILPUS
FILE: 6553_BORING002.dgn
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

SOIL DATA
US41/M-28/GROVE/7TH ROUNABOUT CONSTRUCTION
CITY OF MARQUETTE, MICHIGAN

DRAWING: US41 BOR 002
SHEET: SECT 1 206

CLIENT: DLZ

PROJECT NAME: Marquette Hospital Transportation Improvement

LOG OF BORING NUMBER US41-07

ENGINEER GEI Consultants of Michigan, P.C.

LOCATION: Marquette, MI

SURFACE ELEVATION (ft) 698.0

DEPTH (FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	% PASSING #200 SIEVE	UNCONFINED COMPRESSIVE STRENGTH TONS/FT2 (1 2 3 4 5) / PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%) (10 20 30 40 50) / STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)
						10 inches of Portland cement concrete with reinforcing steel located within middle third.		
		1	SS			0.8 FILL: fine sand – trace silt and fine to coarse gravel – brown – dense to medium dense – moist to wet (SP)		38
		2	SS					15
5		3	SS					21
	690	4	SS			8.0 Silty fine sand – trace root fibers – black – very loose – wet (SM/Buried Topsoil)		6
						9.0 Fine sand – trace to some silt – trace fine to coarse gravel – brown – loose – wet (SP-SM)		
10						10.0 Boring advanced to 8 feet with hollow stem auger. Boring backfilled with 3/8" chipped bentonite and soil cuttings and patched with concrete.		
15								
	680							

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 6.5ft WS *Photoionization Detector (PID) Reading in parts per million*	BORING STARTED 6/9/2016	GEI OFFICE Marquette, MI	
	BORING COMPLETED 6/9/2016	ENTERED BY ABY	APPROVED BY CRA
NORTHING 641214.9 / EASTING 26144154.9	RIG/FOREMAN 7822 DT / NK (Trimedia)	GEI PROJECT NO. 1606920	PAGE NO. 1 OF 1

MIDWEST BORING LOG 1606920 MARQUETTE HOSPITAL.GPJ GEI DATA TEMPLATE.GDT 7/22/16

CLIENT: DLZ

PROJECT NAME: Marquette Hospital Transportation Improvement

LOG OF BORING NUMBER US41-08

ENGINEER GEI Consultants of Michigan, P.C.

LOCATION: Marquette, MI

SURFACE ELEVATION (ft) 697.2

DEPTH (FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	% PASSING #200 SIEVE	UNCONFINED COMPRESSIVE STRENGTH TONS/FT2 (1 2 3 4 5) / PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%) (10 20 30 40 50) / STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)
						Driller reported 4 inches of asphalt.		
		1	SS			0.4 FILL: fine to medium sand – trace silt and fine to coarse gravel – brown – medium dense – moist (SP)		13
		2	SS			3.0 Fine to medium sand – trace silt and fine to coarse gravel – brown – medium dense – moist to wet (SP)		25
5		3	SS					22
	690	4	SS					16
10						10.0 Boring advanced to 8 feet with hollow stem auger. Boring backfilled with 3/8" chipped bentonite and soil cuttings and patched with cold patch asphalt.		
15								
	680							

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 8.0ft WS *Photoionization Detector (PID) Reading in parts per million*	BORING STARTED 6/10/2016	GEI OFFICE Marquette, MI	
	BORING COMPLETED 6/10/2016	ENTERED BY ABY	APPROVED BY CRA
NORTHING 641128.6 / EASTING 26144202.4	RIG/FOREMAN 7822 DT / NK (Trimedia)	GEI PROJECT NO. 1606920	PAGE NO. 1 OF 1

MIDWEST BORING LOG 1606920 MARQUETTE HOSPITAL.GPJ GEI DATA TEMPLATE.GDT 7/22/16

CLIENT: DLZ

PROJECT NAME: Marquette Hospital Transportation Improvement

LOG OF BORING NUMBER US41-09

ENGINEER GEI Consultants of Michigan, P.C.

LOCATION: Marquette, MI

SURFACE ELEVATION (ft) 694.1

DEPTH (FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	% PASSING #200 SIEVE	UNCONFINED COMPRESSIVE STRENGTH TONS/FT2 (1 2 3 4 5) / PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%) (10 20 30 40 50) / STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)
						9 inches of Portland cement concrete with reinforcing steel located within middle third.		
		1	SS			0.8 FILL: fine sand – trace silt – brown – medium dense to dense – moist (SP)		23
		2	SS					40
	690	3	SS			5.0 Fine to medium sand – trace silt and fine to coarse gravel – brown – medium dense to very loose – moist to wet (SP)		22
5		4	SS					29
		5	SS					3
10		6	SS					4
	680					15.0 Boring advanced to 13 feet with hollow stem auger. Boring backfilled with 3/8" chipped bentonite and soil cuttings and patched with concrete.		
15								

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 9.0ft WS *Photoionization Detector (PID) Reading in parts per million*	BORING STARTED 6/10/2016	GEI OFFICE Marquette, MI	
	BORING COMPLETED 6/10/2016	ENTERED BY ABY	APPROVED BY CRA
NORTHING 640689.4 / EASTING 26144583.5	RIG/FOREMAN 7822 DT / NK (Trimedia)	GEI PROJECT NO. 1606920	PAGE NO. 1 OF 1

MIDWEST BORING LOG 1606920 MARQUETTE HOSPITAL.GPJ GEI DATA TEMPLATE.GDT 7/22/16

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

NO SCALE

FILE: 6553_BORING003.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

SOIL DATA
US41/M-28/GROVE/7TH ROUNABOUT CONSTRUCTION
CITY OF MARQUETTE, MICHIGAN

DRAWING: US41 BOR 003
SHEET: SECT 1 207

CLIENT: DLZ

LOG OF BORING NUMBER US41-10

PROJECT NAME: Marquette Hospital Transportation Improvement

ENGINEER GEI Consultants of Michigan, P.C.

LOCATION: Marquette, MI

SURFACE ELEVATION (ft) 691.8

SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	% PASSING #200 SIEVE	STANDARD PENETRATION BLOWS/FT
				Driller reported 6 inches of asphalt.		
1	SS			0.5 FILL: fine to medium sand – trace silt and fine gravel – brown – medium dense – moist (SP)		14
2	SS			3.0 POSSIBLE FILL: fine sand – trace silt – brown – very loose – moist to wet (SP)		4
3	SS					WOH
4	SS					WOH
				10.0 Boring advanced to 8 feet with hollow stem auger. Boring backfilled with 3/8" chipped bentonite and soil cuttings and patched with cold patch asphalt.		

UNCONFINED COMPRESSIVE STRENGTH TONS/FT2: 1 2 3 4 5

PLASTIC LIMIT (%) | WATER CONTENT (%) | LIQUID LIMIT (%): 10 20 30 40 50

STANDARD PENETRATION BLOWS/FT: 10 20 30 40 50 60

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 3.8ft WS *Photoionization Detector (PID) Reading in parts per million*	BORING STARTED 6/9/2016	GEI OFFICE Marquette, MI	
	BORING COMPLETED 6/9/2016	ENTERED BY ABY	APPROVED BY CRA
NORTHING 640668.4	EASTING 26144644.4	RIG/FOREMAN 7822 DT / NK (Trimedia)	GEI PROJECT NO. 1606920
			PAGE NO. 1 OF 1

CLIENT: DLZ

LOG OF BORING NUMBER US41-11

PROJECT NAME: Marquette Hospital Transportation Improvement

ENGINEER GEI Consultants of Michigan, P.C.

LOCATION: Marquette, MI

SURFACE ELEVATION (ft) 692.9

SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	% PASSING #200 SIEVE	STANDARD PENETRATION BLOWS/FT
				Driller reported 6 inches of asphalt.		
1	SS			0.5 FILL: fine sand – trace silt – brown – medium dense – moist (SP)		15
2	SS					17
3	SS			5.5 Fine to medium sand – trace silt and fine to coarse gravel – brown – medium dense – moist to wet (SP)		24
4	SS					19
				10.0 Boring advanced to 8 feet with hollow stem auger. Boring backfilled with 3/8" chipped bentonite and soil cuttings and patched with cold patch asphalt.		

UNCONFINED COMPRESSIVE STRENGTH TONS/FT2: 1 2 3 4 5

PLASTIC LIMIT (%) | WATER CONTENT (%) | LIQUID LIMIT (%): 10 20 30 40 50

STANDARD PENETRATION BLOWS/FT: 10 20 30 40 50 60

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 6.5ft WS *Photoionization Detector (PID) Reading in parts per million*	BORING STARTED 6/10/2016	GEI OFFICE Marquette, MI	
	BORING COMPLETED 6/10/2016	ENTERED BY ABY	APPROVED BY CRA
NORTHING 640568.1	EASTING 26144677.2	RIG/FOREMAN 7822 DT / NK (Trimedia)	GEI PROJECT NO. 1606920
			PAGE NO. 1 OF 1

CLIENT: DLZ

LOG OF BORING NUMBER US41-12

PROJECT NAME: Marquette Hospital Transportation Improvement

ENGINEER GEI Consultants of Michigan, P.C.

LOCATION: Marquette, MI

SURFACE ELEVATION (ft) 690.2

SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	% PASSING #200 SIEVE	STANDARD PENETRATION BLOWS/FT
				8 1/2 inches of Portland cement concrete with reinforcing steel located within middle third.		
1	SS			0.7 FILL: fine sand – trace silt and fine to coarse gravel – brown – dense – moist (SP)		31
2	SS					36
3	SS			5.5 Fine to medium sand – trace silt and fine to coarse gravel – brown – medium dense – moist to wet (SP)		25
4	SS					10
				10.0 Boring advanced to 8 feet with hollow stem auger. Boring backfilled with 3/8" chipped bentonite and soil cuttings and patched with concrete.		

UNCONFINED COMPRESSIVE STRENGTH TONS/FT2: 1 2 3 4 5

PLASTIC LIMIT (%) | WATER CONTENT (%) | LIQUID LIMIT (%): 10 20 30 40 50

STANDARD PENETRATION BLOWS/FT: 10 20 30 40 50 60

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 6.0ft WS *Photoionization Detector (PID) Reading in parts per million*	BORING STARTED 6/9/2016	GEI OFFICE Marquette, MI	
	BORING COMPLETED 6/9/2016	ENTERED BY ABY	APPROVED BY CRA
NORTHING 640502.8	EASTING 26144806.3	RIG/FOREMAN 7822 DT / NK (Trimedia)	GEI PROJECT NO. 1606920
			PAGE NO. 1 OF 1

MIDWEST BORING LOG 1606920 MARQUETTE HOSPITAL.GPJ GEI DATA TEMPLATE.GDT 7/22/16

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

NO SCALE

FILE: 6553_BORING004.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

SOIL DATA
US41/M-28/GROVE/7TH ROUNABOUT CONSTRUCTION
CITY OF MARQUETTE, MICHIGAN

DRAWING: US41 BOR 004
SHEET: SECT 1 208

CLIENT: DLZ

PROJECT NAME: Marquette Hospital Transportation Improvement

LOG OF BORING NUMBER US41-13

ENGINEER GEI Consultants of Michigan, P.C.

LOCATION: Marquette, MI

SURFACE ELEVATION (ft) 726.0

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	% PASSING #200 SIEVE	UNCONFINED COMPRESSIVE STRENGTH TONS/FT2 (1 2 3 4 5) / PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%) (10 20 30 40 50) / STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)
					Driller reported 4 inches of asphalt.		
	1	SS			0.3 FILL: fine sand - trace silt - brown - medium dense to dense - moist (SP)		18
	2	SS					31
5 / 720	3	SS			5.5 FILL: fine to medium sand - trace silt and fine to coarse gravel - brown - loose - moist (SP)		9
	4	SS					7
10					10.0 Boring advanced to 8 feet with hollow stem auger. Boring backfilled with 3/8" chipped bentonite and soil cuttings and patched with cold patch asphalt.		
15 / 710							

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: Dry	BORING STARTED 6/13/2016	GEI OFFICE Marquette, MI	
Photoionization Detector (PID) Reading in parts per million	BORING COMPLETED 6/13/2016	ENTERED BY ABY	APPROVED BY CRA
NORTHING 641832.1 / EASTING 26142868.9	RIG/FOREMAN 7822 DT / NK (Trimedia)	GEI PROJECT NO. 1606920	PAGE NO. 1 OF 1

MIDWEST BORING LOG 1606920 MARQUETTE HOSPITAL.GPJ GEI DATA TEMPLATE.GDT 7/22/16

CLIENT: DLZ

PROJECT NAME: Marquette Hospital Transportation Improvement

LOG OF BORING NUMBER US41-14

ENGINEER GEI Consultants of Michigan, P.C.

LOCATION: Marquette, MI

SURFACE ELEVATION (ft) 713.5

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	% PASSING #200 SIEVE	UNCONFINED COMPRESSIVE STRENGTH TONS/FT2 (1 2 3 4 5) / PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%) (10 20 30 40 50) / STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)
					9 inches of Portland cement concrete with reinforcing steel located within middle third.		
	1	SS			0.8 FILL: fine sand - trace silt - brown - medium dense - moist (SP)		21
710 / 5	2	SS					23
	3	SS			5.5 Silt - trace fine sand - light brown - medium dense - moist (ML)		26
	4	SS			7.5 Fine sand - trace silt - brown - moist (SP)		40
10					8.5 Silt - trace to some fine sand - brown - dense - moist (ML)		
					10.0 Boring advanced to 8 feet with hollow stem auger. Boring backfilled with 3/8" chipped bentonite and soil cuttings and patched with concrete.		
700 / 15							

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: Dry	BORING STARTED 6/13/2016	GEI OFFICE Marquette, MI	
Photoionization Detector (PID) Reading in parts per million	BORING COMPLETED 6/13/2016	ENTERED BY ABY	APPROVED BY CRA
NORTHING 641758.6 / EASTING 26143234.8	RIG/FOREMAN 7822 DT / NK (Trimedia)	GEI PROJECT NO. 1606920	PAGE NO. 1 OF 1

MIDWEST BORING LOG 1606920 MARQUETTE HOSPITAL.GPJ GEI DATA TEMPLATE.GDT 7/22/16

CLIENT: DLZ

PROJECT NAME: Marquette Hospital Transportation Improvement

LOG OF BORING NUMBER US41-15

ENGINEER GEI Consultants of Michigan, P.C.

LOCATION: Marquette, MI

SURFACE ELEVATION (ft) 708.9

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	% PASSING #200 SIEVE	UNCONFINED COMPRESSIVE STRENGTH TONS/FT2 (1 2 3 4 5) / PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%) (10 20 30 40 50) / STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)
					Driller reported 4 inches of asphalt.		
	1	SS			0.3 FILL: gravelly fine to coarse sand - trace to some silt - brown - medium dense - moist (SP-SM)		16
	2	SS			1.3 FILL: fine sand - trace silt and fine to coarse gravel - brown - medium dense - moist (SP)		16
5	3	SS			5.5 Fine to medium sand - trace silt and fine to coarse gravel - brown - medium dense - moist (SP)		10
700	4	SS					10
10					10.0 Boring advanced to 8 feet with hollow stem auger. Boring backfilled with 3/8" chipped bentonite and soil cuttings and patched with cold patch asphalt.		
15							
690							

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 6.0ft WS	BORING STARTED 6/14/2016	GEI OFFICE Marquette, MI	
Photoionization Detector (PID) Reading in parts per million	BORING COMPLETED 6/14/2016	ENTERED BY ABY	APPROVED BY CRA
NORTHING 641708.9 / EASTING 26143414.9	RIG/FOREMAN 7822 DT / NK (Trimedia)	GEI PROJECT NO. 1606920	PAGE NO. 1 OF 1

MIDWEST BORING LOG 1606920 MARQUETTE HOSPITAL.GPJ GEI DATA TEMPLATE.GDT 7/22/16

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

NO SCALE

FILE: 6553_BORING005.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

SOIL DATA
US41/M-28/GROVE/7TH ROUNABOUT CONSTRUCTION
CITY OF MARQUETTE, MICHIGAN

DRAWING: US41 BOR 005

SHEET: SECT 1 209

CLIENT: DLZ

PROJECT NAME: Marquette Hospital Transportation Improvement

LOG OF BORING NUMBER US41-16

ENGINEER: GEI Consultants of Michigan, P.C.

LOCATION: Marquette, MI

SURFACE ELEVATION (ft) 697.9

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	% PASSING #200 SIEVE	UNCONFINED COMPRESSIVE STRENGTH TONS/FT2 (1 2 3 4 5) / PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%) (10 20 30 40 50) / STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)
					Driller reported topsoil.		
	1	SS			0.3 FILL: fine to medium sand – trace to some silt – trace fine to coarse gravel – dark brown – loose to medium dense – moist (SP-SM)		7
	2	SS					14
5	3	SS			5.0 Fine to medium sand – trace silt and fine to coarse gravel – brown – medium dense to loose – wet (SP)		12
690	4	SS					6
10	5	SS			9.5 Silt – some fine sand – trace clay – very loose – wet (ML)		4
	6	SS			12.0 Fine to medium sand – trace to some silt – trace fine to coarse gravel – occasional silty sand seams and layers – brown – very loose – wet (SP-SM)		1
15					15.0 Boring advanced to 13 feet with hollow stem auger. Boring backfilled with 3/8" chipped bentonite and soil cuttings.		
680							

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 5.0ft WS *Photoionization Detector (PID) Reading in parts per million*	BORING STARTED 6/13/2016	GEI OFFICE Marquette, MI	
	BORING COMPLETED 6/13/2016	ENTERED BY ABY	APPROVED BY CRA
NORTHING 641448.4 / EASTING 26143764.6	RIG/FOREMAN 7822 DT / NK (Trimedia)	GEI PROJECT NO. 1606920	PAGE NO. 1 OF 1

MIDWEST BORING LOG 1606920 MARQUETTE HOSPITAL.GPJ GEI DATA TEMPLATE.GDT 7/22/16

CLIENT: DLZ

PROJECT NAME: Marquette Hospital Transportation Improvement

LOG OF BORING NUMBER US41-17

ENGINEER: GEI Consultants of Michigan, P.C.

LOCATION: Marquette, MI

SURFACE ELEVATION (ft) 697.9

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	% PASSING #200 SIEVE	UNCONFINED COMPRESSIVE STRENGTH TONS/FT2 (1 2 3 4 5) / PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%) (10 20 30 40 50) / STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)
					Driller reported topsoil.		
	1	SS			0.5 FILL: fine to medium sand – trace silt and fine to coarse gravel – brown – loose – moist (SP)		6
	2	SS					5
5	3	SS			5.5 Silty fine sand – trace root fibers – black – very loose – moist (SM/Buried Topsoil)		44
690	4	SS			7.0 Fine to medium sand – trace to some silt and wood pieces – trace fine to coarse gravel – brown and dark brown – medium dense – moist to wet (SP-SM)		11
10	5	SS			9.5 Fine to medium sand – trace silt and fine to coarse gravel – brown – very loose – wet (SP)		4
	6	SS					1
15					15.0 Boring advanced to 13 feet with hollow stem auger. Boring backfilled with 3/8" chipped bentonite and soil cuttings.		
680							

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 7.5ft WS *Photoionization Detector (PID) Reading in parts per million*	BORING STARTED 5/14/2016	GEI OFFICE Marquette, MI	
	BORING COMPLETED 6/14/2016	ENTERED BY ABY	APPROVED BY CRA
NORTHING 641466.4 / EASTING 26143851.6	RIG/FOREMAN 7822 DT / NK (Trimedia)	GEI PROJECT NO. 1606920	PAGE NO. 1 OF 1

MIDWEST BORING LOG 1606920 MARQUETTE HOSPITAL.GPJ GEI DATA TEMPLATE.GDT 7/22/16

CLIENT: DLZ

PROJECT NAME: Marquette Hospital Transportation Improvement

LOG OF BORING NUMBER US41-18

ENGINEER: GEI Consultants of Michigan, P.C.

LOCATION: Marquette, MI

SURFACE ELEVATION (ft) 696.5

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	% PASSING #200 SIEVE	UNCONFINED COMPRESSIVE STRENGTH TONS/FT2 (1 2 3 4 5) / PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%) (10 20 30 40 50) / STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)
					Driller reported 5 inches of asphalt.		
	1	SS			0.4 FILL: fine sand – trace silt – brown – medium dense – moist (SP)		24
	2	SS					18
					4.5 Silty fine sand – black – moist (SM/Buried Topsoil)		
5					5.5 Fine to medium sand – trace silt and fine to coarse gravel – brown – medium dense – moist to wet (SP)		10
690	3	SS					13
	4	SS					
10					10.0 Boring advanced to 8 feet with hollow stem auger. Boring backfilled with 3/8" chipped bentonite and soil cuttings and patched with cold patch asphalt.		
15							
680							

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 6.0ft WS *Photoionization Detector (PID) Reading in parts per million*	BORING STARTED 6/13/2016	GEI OFFICE Marquette, MI	
	BORING COMPLETED 6/13/2016	ENTERED BY ABY	APPROVED BY CRA
NORTHING 641282.9 / EASTING 26143970.0	RIG/FOREMAN 7822 DT / NK (Trimedia)	GEI PROJECT NO. 1606920	PAGE NO. 1 OF 1

MIDWEST BORING LOG 1606920 MARQUETTE HOSPITAL.GPJ GEI DATA TEMPLATE.GDT 7/22/16

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

NO SCALE

FILE: 6553_BORING006.dgn

DATE: 2/10/2017

DESIGN UNIT: FILPUS

TSC: ISHPEMING

CS: 52042

JN: MQ17-025

MDOT PERMIT 043179-16

SOIL DATA

US41/M-28/GROVE/7TH ROUNABOUT CONSTRUCTION

CITY OF MARQUETTE, MICHIGAN

DRAWING: US41 BOR 006

SHEET: SECT 1 210

CLIENT: DLZ

PROJECT NAME: Marquette Hospital Transportation Improvement

LOG OF BORING NUMBER US41-19

ENGINEER GEI Consultants of Michigan, P.C.

LOCATION: Marquette, MI

SURFACE ELEVATION (ft) 697.4

DEPTH (FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	% PASSING #200 SIEVE	UNCONFINED COMPRESSIVE STRENGTH TONS/FT2 (1 2 3 4 5)	PLASTIC LIMIT (%)	WATER CONTENT (%)	LIQUID LIMIT (%) (10 20 30 40 50)	STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)
						9 inches of Portland Cement concrete with reinforcing steel located within middle third.						
		1	SS			0.8 FILL: gravelly fine to coarse sand – trace to some silt – brown – medium dense – moist (SP-SM)						25
						1.3 FILL: fine sand – trace silt – brown – medium dense to dense – moist (SP)						
5		2	SS									43
	690	3	SS									31
		4	SS									15
						9.5 Silt – trace to some fine sand – trace root fibers – black and gray – medium dense – moist (ML/Buried Topsoil)						
10						10.0 Boring advanced to 8 feet with hollow stem auger. Boring backfilled with 3/8" chipped bentonite and soil cuttings and patched with concrete.						
15	680											

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: Dry *Photoionization Detector (PID) Reading in parts per million*	BORING STARTED 6/14/2016	GEI OFFICE Marquette, MI	
	BORING COMPLETED 6/14/2016	ENTERED BY ABY	APPROVED BY CRA
NORTHING 641066.1 EASTING 26144189.6	RIG/FOREMAN 7822 DT / NK (Trimedia)	GEI PROJECT NO. 1606920	PAGE NO. 1 OF 1

CLIENT: DLZ

PROJECT NAME: Marquette Hospital Transportation Improvement

LOG OF BORING NUMBER US41-20

ENGINEER GEI Consultants of Michigan, P.C.

LOCATION: Marquette, MI

SURFACE ELEVATION (ft) 697.0

DEPTH (FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	% PASSING #200 SIEVE	UNCONFINED COMPRESSIVE STRENGTH TONS/FT2 (1 2 3 4 5)	PLASTIC LIMIT (%)	WATER CONTENT (%)	LIQUID LIMIT (%) (10 20 30 40 50)	STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)
						9 1/2 inches of Portland cement concrete with reinforcing steel located within middle third.						
		1	SS			0.8 FILL: gravelly fine to coarse sand – trace silt – brown – medium dense – moist (SP)						29
						1.4 FILL: fine sand – trace silt and fine to coarse gravel – brown – medium dense to dense – moist to wet (SP)						
5		2	SS									33
	690	3	SS									32
		4	SS			8.0 Fine to medium sand – trace to some silt and fine to coarse gravel – brownish gray – medium dense to loose – wet (SP-SM)						15
		5	SS									5
10												
15	680					15.0 Boring advanced to 13 feet with hollow stem auger. Boring backfilled with 3/8" chipped bentonite and soil cuttings and patched with concrete.						

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 7.5ft WS *Photoionization Detector (PID) Reading in parts per million*	BORING STARTED 6/14/2016	GEI OFFICE Marquette, MI	
	BORING COMPLETED 6/14/2016	ENTERED BY ABY	APPROVED BY CRA
NORTHING 640959.0 EASTING 26144277.8	RIG/FOREMAN 7822 DT / NK (Trimedia)	GEI PROJECT NO. 1606920	PAGE NO. 1 OF 1

CLIENT: DLZ

PROJECT NAME: Marquette Hospital Transportation Improvement

LOG OF BORING NUMBER US41-21

ENGINEER GEI Consultants of Michigan, P.C.

LOCATION: Marquette, MI

SURFACE ELEVATION (ft) 695.1

DEPTH (FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	% PASSING #200 SIEVE	UNCONFINED COMPRESSIVE STRENGTH TONS/FT2 (1 2 3 4 5)	PLASTIC LIMIT (%)	WATER CONTENT (%)	LIQUID LIMIT (%) (10 20 30 40 50)	STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)
						Driller reported 4 inches of asphalt.						
		1	SS			0.3 FILL: fine sand – trace silt and fine to coarse gravel – brown – medium dense to dense – moist (SP)						16
		2	SS									30
5	690	3	SS			5.5 Silty fine to medium sand – trace clay and fine to coarse gravel – brown – medium dense to dense – moist (SM)						12
		4	SS									40
10						10.0 Boring advanced to 8 feet with hollow stem auger. Boring backfilled with 3/8" chipped bentonite and soil cuttings and patched with cold patch asphalt.						
15	680											

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: Dry *Photoionization Detector (PID) Reading in parts per million*	BORING STARTED 6/13/2016	GEI OFFICE Marquette, MI	
	BORING COMPLETED 6/13/2016	ENTERED BY ABY	APPROVED BY CRA
NORTHING 640598.0 EASTING 26144567.5	RIG/FOREMAN 7822 DT / NK (Trimedia)	GEI PROJECT NO. 1606920	PAGE NO. 1 OF 1

MIDWEST BORING LOG 1606920 MARQUETTE HOSPITAL.GPJ GEI DATA TEMPLATE.GDT 7/22/16

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

NO SCALE

DATE: 2/10/2017
DESIGN UNIT: FILPUS
FILE: 6553_BORING007.dgn
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

SOIL DATA
US41/M-28/GROVE/7TH ROUNABOUT CONSTRUCTION
CITY OF MARQUETTE, MICHIGAN

DRAWING: US41 BOR 007
SHEET: SECT 1 211

CLIENT: DLZ

PROJECT NAME: Marquette Hospital Transportation Improvement

LOG OF BORING NUMBER US41-22

ENGINEER GEI Consultants of Michigan, P.C.

LOCATION: Marquette, MI

SURFACE ELEVATION (ft) 692.2

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	% PASSING #200 SIEVE	UNCONFINED COMPRESSIVE STRENGTH TONS/FT2 (1 2 3 4 5) / PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%) (10 20 30 40 50) / STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)
					9 inches of Portland cement concrete with reinforcing steel located within middle third.		
	1	SS			0.8 FILL: fine sand – trace silt – brown – dense to medium dense – moist (SP)		36
690	2	SS					46
5	3	SS					22
	4	SS			9.0 Fine to medium sand – trace to some silt and topsoil – brown and dark brown – loose – moist (SP-SM)		7
10					10.0 Boring advanced to 8 feet with hollow stem auger. Boring backfilled with 3/8" chipped bentonite and soil cuttings and patched with concrete.		
680							
15							

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: Dry *Photoionization Detector (PID) Reading in parts per million*	BORING STARTED 6/13/2016	GEI OFFICE Marquette, MI	
	BORING COMPLETED 6/13/2016	ENTERED BY ABY	APPROVED BY CRA
NORTHING 640449.3 / EASTING 26144776.4	RIG/FOREMAN 7822 DT / NK (Trimedia)	GEI PROJECT NO. 1606920	PAGE NO. 1 OF 1

CLIENT: DLZ

PROJECT NAME: Marquette Hospital Transportation Improvement

LOG OF BORING NUMBER US41-23

ENGINEER GEI Consultants of Michigan, P.C.

LOCATION: Marquette, MI

SURFACE ELEVATION (ft) 700.2

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	% PASSING #200 SIEVE	UNCONFINED COMPRESSIVE STRENGTH TONS/FT2 (1 2 3 4 5) / PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%) (10 20 30 40 50) / STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)
700					Driller reported 5 inches of asphalt.		
	1	SS			0.4 FILL: fine sand – trace silt – brown – medium dense – moist (SP)		9
	2	SS			1.2 FILL: fine to medium sand – trace to some silt – dark brown – medium dense to very loose – moist to wet (SP-SM)		18
5	3	SS					1
							●44
	4	SS			7.0 Silty fine to medium sand – trace fine to coarse gravel and root fibers – black – very loose – wet (SM/Buried Topsoil)		
					8.5 Silty fine to coarse sand – trace to some fine to coarse gravel – dark brown – medium dense – wet (SM)		10
10 680					10.0 Boring advanced to 8 feet with hollow stem auger. Boring backfilled with 3/8" chipped bentonite and soil cuttings and patched with cold patch asphalt.		
15							

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 6.5ft WS *Photoionization Detector (PID) Reading in parts per million*	BORING STARTED 6/15/2016	GEI OFFICE Marquette, MI	
	BORING COMPLETED 6/15/2016	ENTERED BY ABY	APPROVED BY CRA
NORTHING 640661.6 / EASTING 26144224.6	RIG/FOREMAN 7822 DT / NK (Trimedia)	GEI PROJECT NO. 1606920	PAGE NO. 1 OF 1

CLIENT: DLZ

PROJECT NAME: Marquette Hospital Transportation Improvement

LOG OF BORING NUMBER US41-24

ENGINEER GEI Consultants of Michigan, P.C.

LOCATION: Marquette, MI

SURFACE ELEVATION (ft) 693.1

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	% PASSING #200 SIEVE	UNCONFINED COMPRESSIVE STRENGTH TONS/FT2 (1 2 3 4 5) / PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%) (10 20 30 40 50) / STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)
					Driller reported topsoil.		
	1	SS			0.2 FILL: fine sand – trace silt and fine to coarse gravel – brown – medium dense – moist (SP)		11
690	2	SS			2.0 FILL: fine to medium sand – trace to some silt, fine to coarse gravel and wood – brown and dark brown – medium dense to loose – moist to wet (SP-SM)		12
5	3	SS					5
	4	SS			8.0 Fine to coarse sand – trace to some silt – trace fine to coarse gravel – brown – medium dense – wet (SP-SM)		13
	5	SS			10.0 Silty fine to medium sand – trace fine to coarse gravel – brown – medium dense – wet (SM)		13
10					12.0 Gravelly fine to coarse sand – trace to some silt – brown – loose – wet (SP-SM)		8
680	6	SS					
15					15.0 Boring advanced to 13 feet with hollow stem auger. Boring backfilled with 3/8" chipped bentonite and soil cuttings.		

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 5.0ft WS *Photoionization Detector (PID) Reading in parts per million*	BORING STARTED 6/15/2016	GEI OFFICE Marquette, MI	
	BORING COMPLETED 6/15/2016	ENTERED BY ABY	APPROVED BY CRA
NORTHING 640792.5 / EASTING 26144292.4	RIG/FOREMAN 7822 DT / NK (Trimedia)	GEI PROJECT NO. 1606920	PAGE NO. 1 OF 1

MIDWEST BORING LOG 1606920 MARQUETTE HOSPITAL.GPJ GEI DATA TEMPLATE.GDT 7/22/16

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

NO SCALE

FILE: 6553_BORING008.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: M017-025
MDOT PERMIT 043179-16

SOIL DATA
US41/M-28/GROVE/7TH ROUNABOUT CONSTRUCTION
CITY OF MARQUETTE, MICHIGAN

DRAWING: US41 BOR 008
SHEET: SECT 1 212

CLIENT: DLZ

PROJECT NAME: Marquette Hospital Transportation Improvement

LOG OF BORING NUMBER US41-25

ENGINEER GEI Consultants of Michigan, P.C.

LOCATION: Marquette, MI

SURFACE ELEVATION (ft) 695.7

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE / RECOVERY	DESCRIPTION OF MATERIAL	% PASSING #200 SIEVE	UNCONFINED COMPRESSIVE STRENGTH TONS/FT2 (1 2 3 4 5) / PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%) (10 20 30 40 50) / STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)
				9 inches of Portland cement concrete with reinforcing steel located within middle third.		
	1	SS		0.8 FILL: fine sand – trace silt and fine to coarse gravel – brown – dense to loose – moist (SP)		34
	2	SS				38
5 / 690	3	SS				7, 22, 216
	4	SS		7.5 Wood – black – moist (Pt)		
				8.0 Fine to medium sand – trace to some silt and fine to coarse gravel – brown – medium dense – wet (SP-SM)		
10				10.0 Boring advanced to 8 feet with hollow stem auger. Boring backfilled with 3/8" chipped bentonite and soil cuttings and patched with concrete.		
15 / 680						

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 8.0ft WS *Photoionization Detector (PID) Reading in parts per million*	BORING STARTED 6/15/2016	GEI OFFICE Marquette, MI	
	BORING COMPLETED 6/15/2016	ENTERED BY ABY	APPROVED BY CRA
NORTHING 640816.2 EASTING 26144423.4	RIG/FOREMAN 7822 DT / NK (Trimedia)	GEI PROJECT NO. 1606920	PAGE NO. 1 OF 1

CLIENT: DLZ

PROJECT NAME: Marquette Hospital Transportation Improvement

LOG OF BORING NUMBER US41-26

ENGINEER GEI Consultants of Michigan, P.C.

LOCATION: Marquette, MI

SURFACE ELEVATION (ft) 695.3

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE / RECOVERY	DESCRIPTION OF MATERIAL	% PASSING #200 SIEVE	UNCONFINED COMPRESSIVE STRENGTH TONS/FT2 (1 2 3 4 5) / PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%) (10 20 30 40 50) / STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)
				Driller reported 4 inches of topsoil.		
	1	SS		0.3 FILL: fine to medium sand – trace to some silt and fine to coarse gravel – frequent asphalt pieces – brown – loose – moist (SP-SM)		5
	2	SS		3.5 FILL: fine sand – trace silt – brown – loose – moist (SP)		7
5 / 690	3	SS		6.0 FILL: fine to medium sand – trace to some silt – brown – very loose – moist to wet (SP-SM)		WOH
	4	SS				1
10	5	SS		GROVE/7TH STREET PROP PRECAST BOX CULVERT BOTT/CULVERT EL 682.08 (INLET) GROVE/7TH STREET PROP PRECAST BOX CULVERT INLET BOTT/CULVERT BEDDING MAT'L & OUTLET BOTT/CULVERT EL 681.08		4
15 / 680	6	SS		13.0 Fine to medium sand – trace silt and fine to coarse gravel – brown – loose to very dense – wet (SP-SM) GROVE/7TH STREET INLET BOTT WINGWALL/FTG EL 681.00 GROVE/7TH STREET PROP PRECAST BOX CULVERT BOTT/CULVERT BEDDING MAT'L EL 680.08 (OUTLET) GROVE/7TH STREET INLET BOTT WINGWALL/FTG EL 681.00		7
	7	SS				15

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 9.0ft WS *Photoionization Detector (PID) Reading in parts per million*	BORING STARTED 6/15/2016	GEI OFFICE Marquette, MI	
	BORING COMPLETED 6/15/2016	ENTERED BY ABY	APPROVED BY CRA
NORTHING 640848.3 EASTING 26144533.0	RIG/FOREMAN 7822 DT / NK (Trimedia)	GEI PROJECT NO. 1606920	PAGE NO. 1 OF 2

CLIENT: DLZ

PROJECT NAME: Marquette Hospital Transportation Improvement

LOG OF BORING NUMBER US41-26

ENGINEER GEI Consultants of Michigan, P.C.

LOCATION: Marquette, MI

SURFACE ELEVATION (ft) 695.3

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE / RECOVERY	DESCRIPTION OF MATERIAL	% PASSING #200 SIEVE	UNCONFINED COMPRESSIVE STRENGTH TONS/FT2 (1 2 3 4 5) / PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%) (10 20 30 40 50) / STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)
	8	SS				61
25 / 670				25.0 Boring advanced to 23 feet with hollow stem auger. Boring backfilled with 3/8" chipped bentonite and soil cuttings.		
30						
35 / 660						

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 9.0ft WS *Photoionization Detector (PID) Reading in parts per million*	BORING STARTED 6/15/2016	GEI OFFICE Marquette, MI	
	BORING COMPLETED 6/15/2016	ENTERED BY ABY	APPROVED BY CRA
NORTHING 640848.3 EASTING 26144533.0	RIG/FOREMAN 7822 DT / NK (Trimedia)	GEI PROJECT NO. 1606920	PAGE NO. 2 OF 2

MIDWEST BORING LOG 1606920 MARQUETTE HOSPITAL.GPJ GEI DATA TEMPLATE.GDT 7/22/16

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

NO SCALE

DATE: 2/10/2017
DESIGN UNIT: FILPUS
FILE: 6553_BORING009.dgn
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

SOIL DATA
US41/M-28/GROVE/7TH ROUNABOUT CONSTRUCTION
CITY OF MARQUETTE, MICHIGAN

DRAWING: US41 BOR 009

SHEET: SECT 1 213

CLIENT: DLZ

PROJECT NAME: Marquette Hospital Transportation Improvement

LOG OF BORING NUMBER US41-27

ENGINEER GEI Consultants of Michigan, P.C.

LOCATION: Marquette, MI

SURFACE ELEVATION (ft) 709.8

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	% PASSING #200 SIEVE	UNCONFINED COMPRESSIVE STRENGTH TONS/FT2 (1 2 3 4 5) / PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%) (10 20 30 40 50) / STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)
					Driller reported 4 inches of asphalt.		
	1	SS			0.3 FILL: fine sand – trace to some silt – trace fine to coarse gravel – brown and dark brown – medium dense – moist (SP-SM)		16
	2	SS			1.5 Fine sand – trace silt and fine to coarse gravel – brown – loose – moist (SP)		7
5	3	SS			5.5 Fine to coarse sand – trace to some silt and fine to coarse gravel – brown – medium dense – moist (SP-SM)		13
	4	SS					12
700 10					10.0 Boring advanced to 8 feet with hollow stem auger. Boring backfilled with 3/8" chipped bentonite and soil cuttings and patched with cold patch asphalt.		
15							
690							

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: Dry *Photoionization Detector (PID) Reading in parts per million*	BORING STARTED 6/15/2016	GEI OFFICE Marquette, MI	
	BORING COMPLETED 6/15/2016	ENTERED BY ABY	APPROVED BY CRA
NORTHING 641010.2 / EASTING 26144674.4	RIG/FOREMAN 7822 DT / NK (Trimedia)	GEI PROJECT NO. 1606920	PAGE NO. 1 OF 1

MIDWEST BORING LOG 1606920 MARQUETTE HOSPITAL.GPJ GEI DATA TEMPLATE.GDT 7/22/16

CLIENT: DLZ

PROJECT NAME: Marquette Hospital Transportation Improvement

LOG OF BORING NUMBER US41-X-1

ENGINEER GEI Consultants of Michigan, P.C.

LOCATION: Marquette, MI

SURFACE ELEVATION (ft) 767.9

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	% PASSING #200 SIEVE	UNCONFINED COMPRESSIVE STRENGTH TONS/FT2 (1 2 3 4 5) / PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%) (10 20 30 40 50) / STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)
					9 1/2 inches of portland cement concrete with reinforcing steel in middle third.		
	1	SS			0.8 FILL: fine to medium sand – trace silt and fine to coarse gravel – brown – medium dense to very loose – moist (SP)		14
	2	SS					7
5	3	SS					5
760	4	SS					2
10					10.0 Boring advanced to 8 feet with hollow stem auger. Boring backfilled with 3/8" chipped bentonite and soil cuttings and patched with cold patch asphalt.		
15							
750							

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: Dry *Photoionization Detector (PID) Reading in parts per million*	BORING STARTED 6/10/2016	GEI OFFICE Marquette, MI	
	BORING COMPLETED 6/10/2016	ENTERED BY ABY	APPROVED BY CRA
NORTHING 642062.3 / EASTING 26141641.2	RIG/FOREMAN 7822 DT / NK (Trimedia)	GEI PROJECT NO. 1606920	PAGE NO. 1 OF 1

MIDWEST BORING LOG 1606920 MARQUETTE HOSPITAL.GPJ GEI DATA TEMPLATE.GDT 7/22/16

CLIENT: DLZ

PROJECT NAME: Marquette Hospital Transportation Improvement

LOG OF BORING NUMBER US41-X-2

ENGINEER GEI Consultants of Michigan, P.C.

LOCATION: Marquette, MI

SURFACE ELEVATION (ft) 744.2

DEPTH (FT) / ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	% PASSING #200 SIEVE	UNCONFINED COMPRESSIVE STRENGTH TONS/FT2 (1 2 3 4 5) / PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%) (10 20 30 40 50) / STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)
					Driller reported topsoil.		
	1	SS			0.5 FILL: fine to medium sand – trace silt and fine to coarse gravel – brown – medium dense – moist (SP)		11
740	2	SS					16
5	3	SS					12
	4	SS					11
10					10.0 Boring advanced to 8 feet with hollow stem auger. Boring backfilled with 3/8" chipped bentonite and soil cuttings and patched with cold patch asphalt.		
750							
15							

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: Dry *Photoionization Detector (PID) Reading in parts per million*	BORING STARTED 6/10/2016	GEI OFFICE Marquette, MI	
	BORING COMPLETED 6/10/2016	ENTERED BY ABY	APPROVED BY CRA
NORTHING 641969.3 / EASTING 26142288.8	RIG/FOREMAN 7822 DT / NK (Trimedia)	GEI PROJECT NO. 1606920	PAGE NO. 1 OF 1

MIDWEST BORING LOG 1606920 MARQUETTE HOSPITAL.GPJ GEI DATA TEMPLATE.GDT 7/22/16

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

NO SCALE

FILE: 6553_BORING010.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

SOIL DATA
US41/M-28/GROVE/7TH ROUNABOUT CONSTRUCTION
CITY OF MARQUETTE, MICHIGAN

DRAWING: US41 BOR 010

SHEET: SECT 1 214

CLIENT: DLZ

LOG OF BORING NUMBER US41-X-3

PROJECT NAME: Marquette Hospital Transportation Improvement

ENGINEER GEI Consultants of Michigan, P.C.

LOCATION: Marquette, MI

SURFACE ELEVATION (ft) 679.7

SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL
				Driller reported 6 inches of asphalt.
1	SS			0.5 FILL: fine sand – trace silt – brown – medium dense to dense – moist (SP)
2	SS			
3	SS			5.0 Fine to medium sand – trace silt and fine to coarse gravel – brown – medium dense – moist to wet (SP)
4	SS			
				10.0 Boring advanced to 8 feet with hollow stem auger. Boring backfilled with 3/8" chipped bentonite and soil cuttings and patched with cold patch asphalt.

UNCONFINED COMPRESSIVE STRENGTH TONS/FT2 (1 2 3 4 5)

PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%) (10 20 30 40 50)

% PASSING #200 SIEVE

STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)

17, 38, 27, 23

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 8.0ft WS *Photoionization Detector (PID) Reading in parts per million*	BORING STARTED 6/10/2016	GEI OFFICE Marquette, MI	
	BORING COMPLETED 6/10/2016	ENTERED BY ABY	APPROVED BY CRA
NORTHING 640216.8 EASTING 26145786.7	RIG/FOREMAN 7822 DT / NK (Trimedia)	GEI PROJECT NO. 1606920	PAGE NO. 1 OF 1

MIDWEST BORING LOG 1606920 MARQUETTE HOSPITAL.GPJ GEI DATA TEMPLATE.GDT 7/22/16

CLIENT: DLZ

LOG OF BORING NUMBER US41-X-4

PROJECT NAME: Marquette Hospital Transportation Improvement

ENGINEER GEI Consultants of Michigan, P.C.

LOCATION: Marquette, MI

SURFACE ELEVATION (ft) 677.0

SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL
				Driller reported 5 inches of asphalt.
1	SS			0.4 FILL: gravelly fine to coarse sand – trace to some silt – brown – medium dense – moist (SP-SM)
2	SS			1.0 FILL: fine sand – trace silt – brown – medium dense – moist (SP)
3	SS			5.5 Fine to medium sand – trace silt and fine to coarse gravel – brown – dense to medium dense – moist to wet (SP)
4	SS			
				10.0 Boring advanced to 8 feet with hollow stem auger. Boring backfilled with 3/8" chipped bentonite and soil cuttings and patched with cold patch asphalt.

UNCONFINED COMPRESSIVE STRENGTH TONS/FT2 (1 2 3 4 5)

PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%) (10 20 30 40 50)

% PASSING #200 SIEVE

STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)

15, 27, 38, 25

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 6.0ft WS *Photoionization Detector (PID) Reading in parts per million*	BORING STARTED 6/14/2016	GEI OFFICE Marquette, MI	
	BORING COMPLETED 6/14/2016	ENTERED BY ABY	APPROVED BY CRA
NORTHING 640198.9 EASTING 26146016.5	RIG/FOREMAN 7822 DT / NK (Trimedia)	GEI PROJECT NO. 1606920	PAGE NO. 1 OF 1

MIDWEST BORING LOG 1606920 MARQUETTE HOSPITAL.GPJ GEI DATA TEMPLATE.GDT 7/22/16

CLIENT: DLZ

LOG OF BORING NUMBER B-100

PROJECT NAME: Marquette Hospital

ENGINEER GEI Consultants of Michigan, P.C.

LOCATION: Marquette, Michigan

SURFACE ELEVATION (ft) 694.7

SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL
				Driller reported 5" of asphalt.
1	SS			0.5 FILL: fine to medium sand – trace to some fine to coarse gravel – trace silt – brown – loose – moist to wet (SP)
2	SS			
3	SS			
4	SS			
5	SS			
5A	SS			10.5 Fine sand – some silt – trace to some peat and topsoil – dark brown – loose – wet (SP-SM)
6	SS			12.5 Fine to coarse sand – some fine to coarse gravel – trace to some silt – brown – medium dense – wet (SP-SM)
7	SS			14.5 Fine sand – trace silt and gravel – brown – medium dense – wet (SP)
				17.5 Silty fine to medium sand – trace to some fine to coarse gravel – brown – very dense – wet (SM)
8	SS			
				23.0 Fine to medium sand – some fine to coarse gravel – trace silt – brown – very dense – wet (SP)
9	SS			

UNCONFINED COMPRESSIVE STRENGTH TONS/FT2 (1 2 3 4 5)

PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%) (10 20 30 40 50)

% PASSING #200 SIEVE

STANDARD PENETRATION BLOWS/FT (10 20 30 40 50 60)

12, 7, 5, 4, 4, 24, 20, 63, 56

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 7' WS; 8.1' Before Casing *Photoionization Detector (PID) Reading in parts per million*	BORING STARTED 11/30/2016	GEI OFFICE Marquette, MI	
	BORING COMPLETED 11/30/2016	ENTERED BY ABY	APPROVED BY CRA
NORTHING 640881.0 EASTING 26144495.4	RIG/FOREMAN B-61 / JC/IH	GEI PROJECT NO. 1606920	PAGE NO. 1 OF 2

MIDWEST BORING LOG 1606920_MDT HOSPITAL TRANSPORTATION & LOGS.GPJ GEI DATA TEMPLATE.GDT 1/26/17

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

NO SCALE

FILE: 6553_BORING011.dgn

DATE: 2/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025
MDOT PERMIT 043179-16

SOIL DATA
US41/M-28/GROVE/7TH ROUNABOUT CONSTRUCTION
CITY OF MARQUETTE, MICHIGAN

DRAWING: US41 BOR 011
SHEET: SECT 1 215

CLIENT: DLZ

PROJECT NAME: Marquette Hospital

LOG OF BORING NUMBER B-100

ENGINEER GEI Consultants of Michigan, P.C.

LOCATION: Marquette, Michigan

SURFACE ELEVATION (ft) 694.7

DEPTH (FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL
		10	SS			
35	660	11	SS			33.0 Silty fine to medium sand – trace to some clay – trace fine to coarse gravel – brown – extremely dense – wet (SM)
		12	SS			
40						40.0 End of boring. Advanced to 10 feet with solid-stem auger. Advanced from 10 to 38.5 feet with rock bit and drilling fluid. HW casing driven to 12.5 feet. Boring backfilled with 3/8" chipped bentonite and soil cuttings and patched with cold patch asphalt.
45	650					
50						
55	640					

% PASSING #200 SIEVE

UNCONFINED COMPRESSIVE STRENGTH TONS/FT2: 1 2 3 4 5

PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%): 10 20 30 40 50

STANDARD PENETRATION BLOWS/FT: 10 20 30 40 50 60

56 92 106

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 7' WS; 8.1' Before Casing *Photoionization Detector (PID) Reading in parts per million*	BORING STARTED 11/30/2016	GEI OFFICE Marquette, MI	
	BORING COMPLETED 11/30/2016	ENTERED BY ABY	APPROVED BY CRA
NORTHING 640881.0 EASTING 26144495.4	RIG/FOREMAN B-61 / JC/IH	GEI PROJECT NO. 1606920	PAGE NO. 2 OF 2

MIDWEST BORING LOG 1606920_MDT HOSPITAL TRANSPORTATION B LOGS.GPJ GEI DATA TEMPLATE.GDT 1/26/17

CLIENT: DLZ

PROJECT NAME: Marquette Hospital

LOG OF BORING NUMBER B-101

ENGINEER GEI Consultants of Michigan, P.C.

LOCATION: Marquette, Michigan

SURFACE ELEVATION (ft) 702.4

DEPTH (FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL
		1	SS			FILL: fine to medium sand – trace to some fine to coarse gravel – trace silt – brown – medium dense – moist (SP)
	700	1A	SS			
		2	SS			
5		3	SS			7.0 Fine sand – trace silt and fine to coarse gravel – light brown – medium dense to loose – moist to wet (SP-SM)
		4	SS			
10	690	5	SS			
		6	SS			
15						18.0 Silty fine sand – dense – wet (SM)
		7	SS			
20	680					
						23.0 Silty fine sand – trace clay – brown – dense to extremely dense – wet (SM)
25		8	SS			

% PASSING #200 SIEVE

UNCONFINED COMPRESSIVE STRENGTH TONS/FT2: 1 2 3 4 5

PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%): 10 20 30 40 50

STANDARD PENETRATION BLOWS/FT: 10 20 30 40 50 60

12 16 19 13 5 32 43

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 10' WS; 10.3 Before Casing *Photoionization Detector (PID) Reading in parts per million*	BORING STARTED 11/30/2016	GEI OFFICE Marquette, MI	
	BORING COMPLETED 12/1/2016	ENTERED BY ABY	APPROVED BY CRA
NORTHING 641639.3 EASTING 26143885.7	RIG/FOREMAN B-61 / JC/IH	GEI PROJECT NO. 1606920	PAGE NO. 1 OF 2

MIDWEST BORING LOG 1606920_MDT HOSPITAL TRANSPORTATION B LOGS.GPJ GEI DATA TEMPLATE.GDT 1/26/17

CLIENT: DLZ

PROJECT NAME: Marquette Hospital

LOG OF BORING NUMBER B-101

ENGINEER GEI Consultants of Michigan, P.C.

LOCATION: Marquette, Michigan

SURFACE ELEVATION (ft) 702.4

DEPTH (FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL
		9	SS			
	670					
35		10	SS			
		11	SS			
40						40.0 End of boring. Advanced to 10 feet with solid-stem auger. Advanced from 10 to 38.5 feet with rock bit and drilling fluid. HW casing driven to 8.5 feet. Boring backfilled with 3/8" chipped bentonite and soil cuttings.
	660					
45						
50						
	650					
55						

% PASSING #200 SIEVE

UNCONFINED COMPRESSIVE STRENGTH TONS/FT2: 1 2 3 4 5

PLASTIC LIMIT (%) / WATER CONTENT (%) / LIQUID LIMIT (%): 10 20 30 40 50

STANDARD PENETRATION BLOWS/FT: 10 20 30 40 50 60

92 19 42

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: 10' WS; 10.3 Before Casing *Photoionization Detector (PID) Reading in parts per million*	BORING STARTED 11/30/2016	GEI OFFICE Marquette, MI	
	BORING COMPLETED 12/1/2016	ENTERED BY ABY	APPROVED BY CRA
NORTHING 641639.3 EASTING 26143885.7	RIG/FOREMAN B-61 / JC/IH	GEI PROJECT NO. 1606920	PAGE NO. 2 OF 2

MIDWEST BORING LOG 1606920_MDT HOSPITAL TRANSPORTATION B LOGS.GPJ GEI DATA TEMPLATE.GDT 1/26/17

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE:)

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

DLZ

CITY OF MARQUETTE
CITY ENGINEER'S OFFICE
300 W BARAGA AVENUE
MARQUETTE, MI 49855
PH. (906)228-0440

NO SCALE

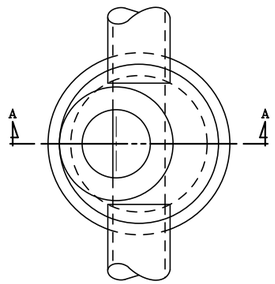
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DATE: 2/10/2017
DESIGN UNIT: FILPUS
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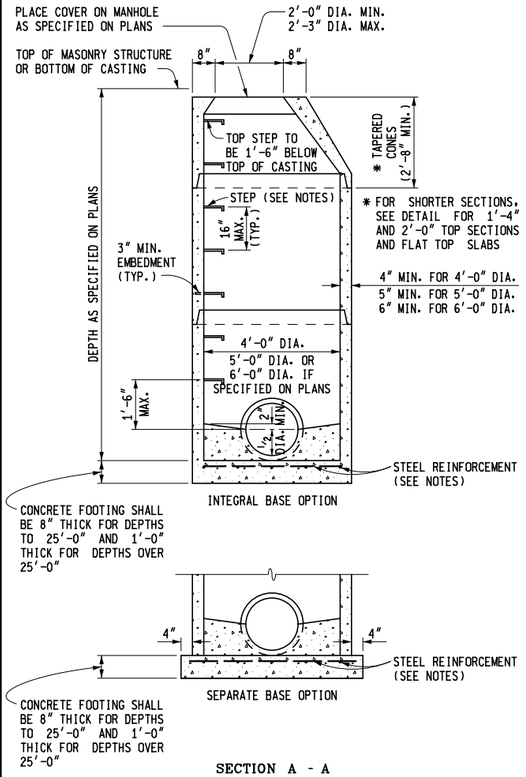
CS: 52042
JN: M017-025
MDOT PERMIT 043179-16

SOIL DATA
US41/M-28/GROVE/7TH ROUNABOUT CONSTRUCTION
CITY OF MARQUETTE, MICHIGAN

DRAWING: US41 BOR 012
SHEET: SECT 1 216



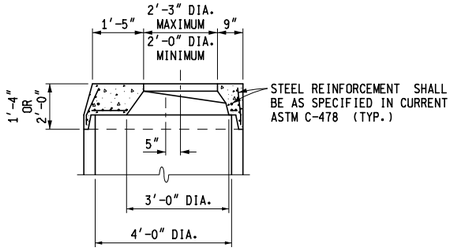
PLAN VIEW



SECTION A - A

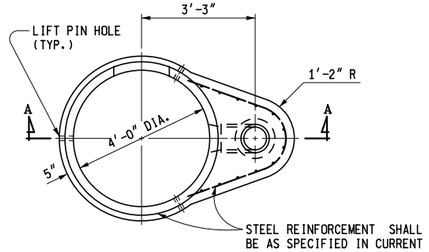
TYPICAL MANHOLE

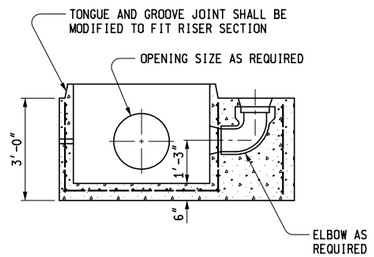
PRECAST REINFORCED CONCRETE SHOWN
OTHER OPTIONS INCLUDE CONCRETE BLOCK, BRICK, OR CAST-IN-PLACE WALL SECTIONS
SEE TYPICAL WALL SECTIONS FOR WALL THICKNESS



DETAIL FOR 1'-4" & 2'-0" TOP SECTIONS

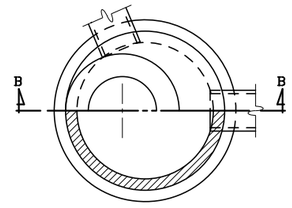
SHAPE MAY VARY FROM DETAIL SHOWN BUT MUST COMPLY WITH ASTM C-478 AND JOINTS SHALL BE COMPATIBLE WITH THE RISER



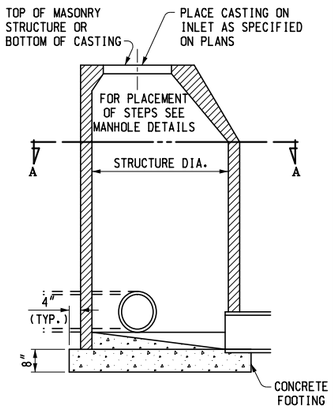


SECTION A - A

TYPICAL PRECAST REINFORCED BOTTOM SECTION FOR DROP MANHOLE

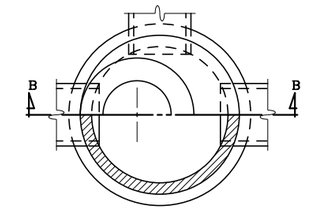


HALF SECTION A - A

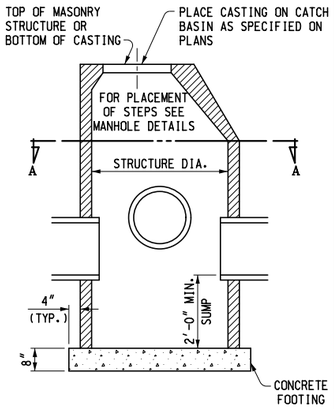


SEE MANHOLE DETAILS FOR SIZE AND BASE OPTIONS
SECTION B - B

INLET

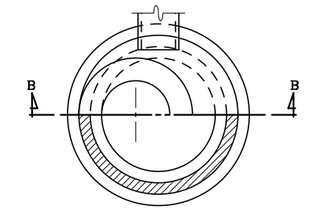


HALF SECTION A - A

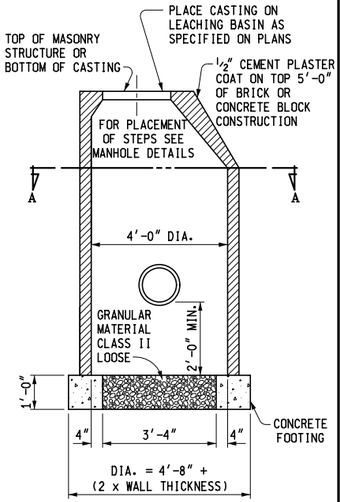


SEE MANHOLE DETAILS FOR SIZE AND BASE OPTIONS
SECTION B - B

CATCH BASIN

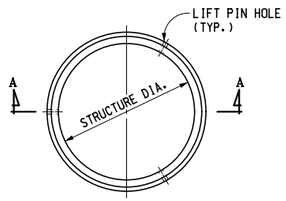


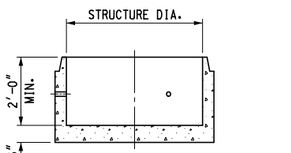
HALF SECTION A - A



SEE MANHOLE DETAILS FOR BASE OPTIONS
SECTION B - B

LEACHING BASIN

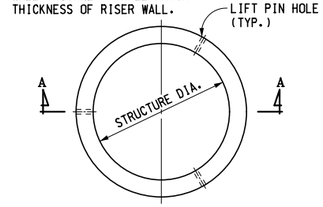


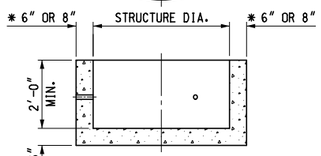


SECTION A - A
SEE MANHOLE DETAILS FOR SIZE AND BASE OPTIONS

PRECAST SUMP FOR PRECAST RISERS

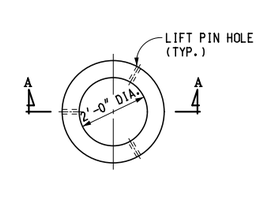
* WALL THICKNESS SHALL MATCH THICKNESS OF RISER WALL.

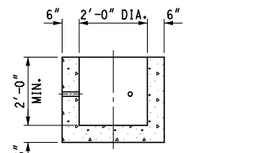




SECTION A - A
SEE TYPICAL BRICK AND BLOCK SECTION FOR SIZE AND BASE OPTIONS

PRECAST SUMP FOR BRICK OR BLOCK CONSTRUCTION





SECTION A - A

PRECAST SUMP FOR 2'-0" DIA. STRUCTURES

DEPARTMENT DIRECTOR
Kirk T. Steudle

PREPARED BY DESIGN DIVISION

APPROVED BY: _____ DIRECTOR, BUREAU OF FIELD SERVICES

APPROVED BY: _____ DIRECTOR, BUREAU OF DEVELOPMENT

DRAWN BY: B.L.T.

CHECKED BY: W.K.P.

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

DRAINAGE STRUCTURES

F.H.W.A. APPROVAL	6-15-2016 PLAN DATE	R-1-G	SHEET 1 OF 9

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

DRAINAGE STRUCTURES

F.H.W.A. APPROVAL	6-15-2016 PLAN DATE	R-1-G	SHEET 2 OF 9

AS-LET PLAN REVISIONS

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

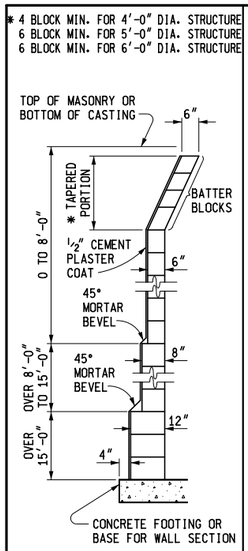
VERT. (FT) 0
HORZ. (FT) 0

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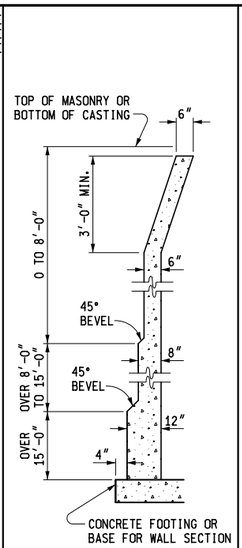
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JN: M-Q17-025

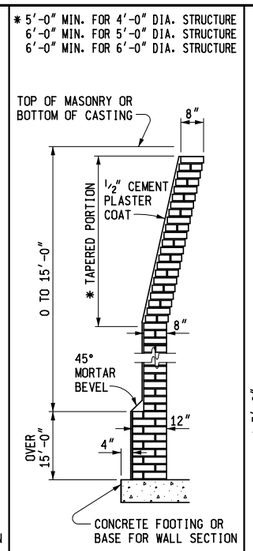
DRAWING
SHEET 217



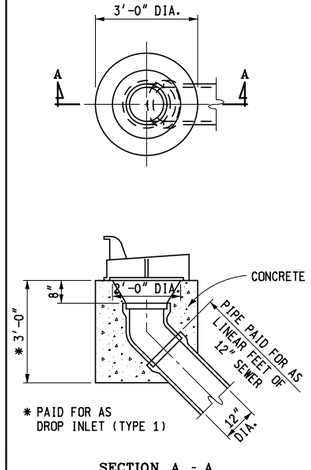
TYPICAL CONCRETE BLOCK WALL SECTION



TYPICAL CAST-IN-PLACE CONCRETE WALL SECTION

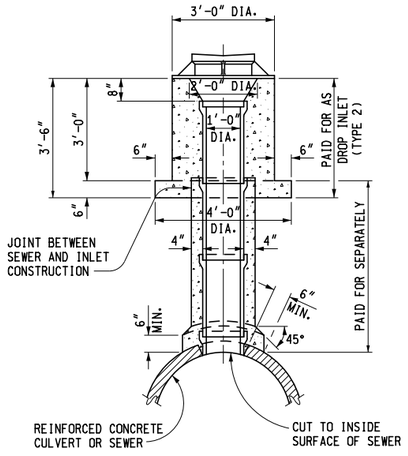


TYPICAL BRICK WALL SECTION



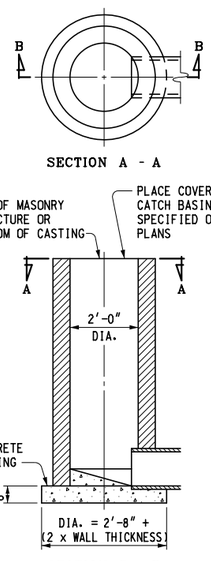
SECTION A - A

DROP INLET (TYPE 1)

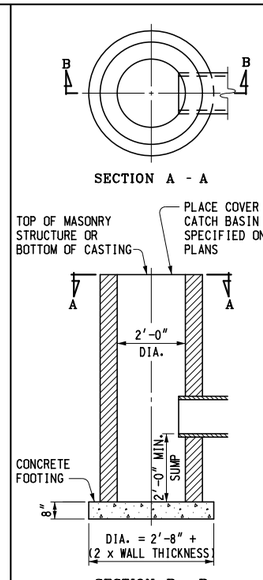


BACKFILL SHALL BE PLACED TO BOTTOM OF INLET AND COMPACTED BEFORE CONSTRUCTING THE INLET

DROP INLET (TYPE 2)



INLET

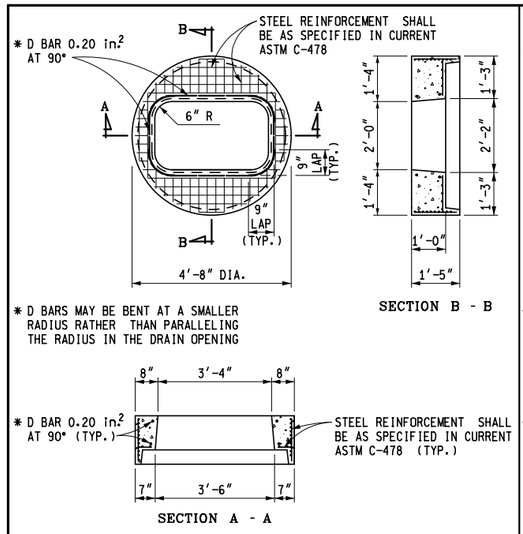


CATCH BASIN

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

DRAINAGE STRUCTURES

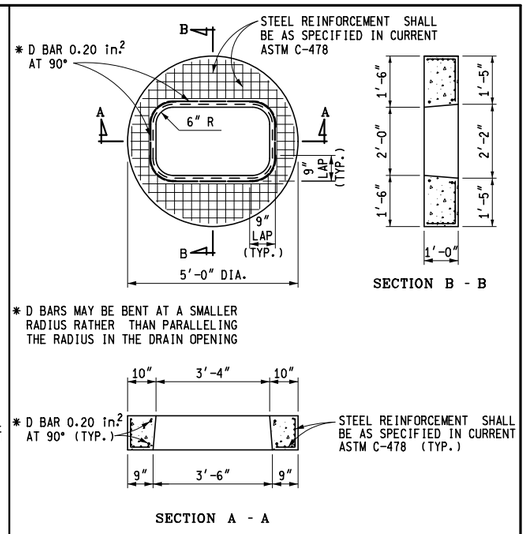
F.H.W.A. APPROVAL	6-15-2016 PLAN DATE	R-1-G	SHEET 3 OF 9



SECTION B - B

SECTION A - A

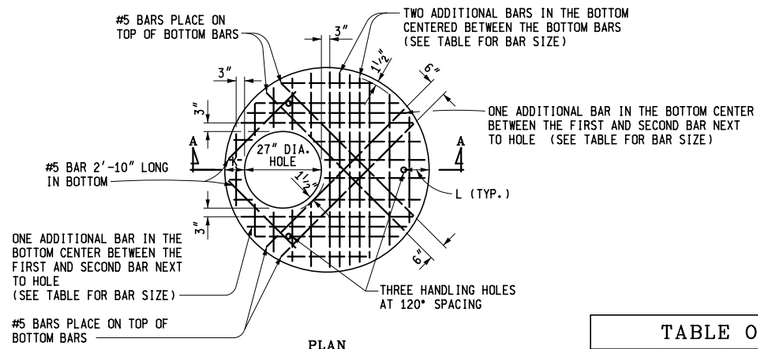
PRECAST FLAT SLAB TOP FOR PRECAST CONCRETE STRUCTURE, 2' x 4' CASTING



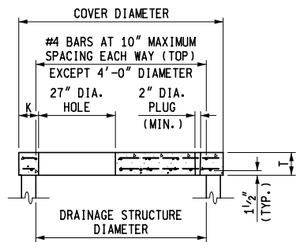
SECTION B - B

SECTION A - A

PRECAST FLAT SLAB TOP FOR MASONRY STRUCTURE, 2' x 4' CASTING



PLAN
(SHOWING BOTTOM LAYER OF REINFORCEMENT)



SECTION A - A

TABLE OF DIMENSIONS					
STRUCTURE DIAMETER	COVER DIAMETER	T	K	L	BAR MAXIMUM SPACING (BOTTOM EACH WAY)
* 4'-0"	58"	6"	6"	8"	#5 AT 6"
5'-0"	72"	8"	7"	9"	#5 AT 7"
6'-0"	86"	8"	8"	10"	#5 AT 6"
7'-0"	101 1/2"	12"	8 3/4"	11"	#5 AT 5"
8'-0"	114"	12"	9"	11"	#6 AT 6"
9'-0"	128"	12"	10"	12"	#5 AT 6"
10'-0"	140"	12"	10"	13"	#5 AT 6"

* ONLY BOTTOM LAYERS OF STEEL NECESSARY

PRECAST REINFORCED CONCRETE FLAT SLAB TOP

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

DRAINAGE STRUCTURES

F.H.W.A. APPROVAL	6-15-2016 PLAN DATE	R-1-G	SHEET 4 OF 9

AS-LET PLAN REVISIONS							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

MDOT Michigan Department of Transportation

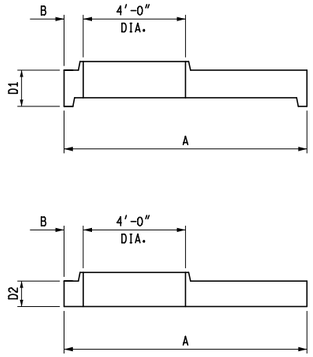
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DESIGN UNIT: FILPUS
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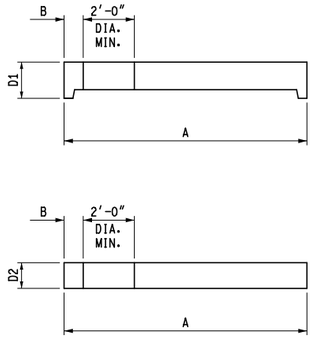
CS: 52042
JN: M-Q17-025

DRAWING
SHEET 218



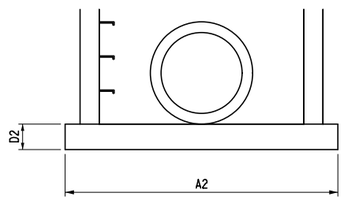
PRECAST REDUCER CAP

REDUCER CAP DIMENSIONS				
STRUCTURE DIAMETER	CAP DIAMETER "A"	B	CAP DEPTH "D1"	CAP DEPTH "D2"
7′-0″	101½″	8¾″	1′-5″	12″
8′-0″	114″	9″	1′-5″	12″
9′-0″	128″	10″	1′-5″	12″
10′-0″	140″	10″	1′-6″	12″



PRECAST FLAT SLAB TOP

FLAT SLAB TOP DIMENSIONS				
STRUCTURE DIAMETER	COVER DIAMETER "A"	B	COVER DEPTH "D1"	COVER DEPTH "D2"
7′-0″	101½″	8¾″	1′-5″	12″
8′-0″	114″	9″	1′-5″	12″
9′-0″	128″	10″	1′-5″	12″
10′-0″	140″	10″	1′-6″	12″



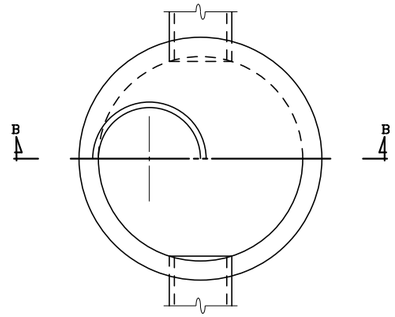
SEPARATE BASE OPTION

BASE AND RISER DIMENSIONS					
STRUCTURE DIAMETER	BASE DIAMETER "A1"	BASE DIAMETER "A2"	MIN. WALL THICKNESS "T"	BASE DEPTH "D1"	BASE DEPTH "D2"
7′-0″	101½″	108″	7″	8″	12″
8′-0″	114″	128″	8″	8″	12″
9′-0″	128″	140″	9″	8″	12″
10′-0″	140″	154″	10″	8″	12″

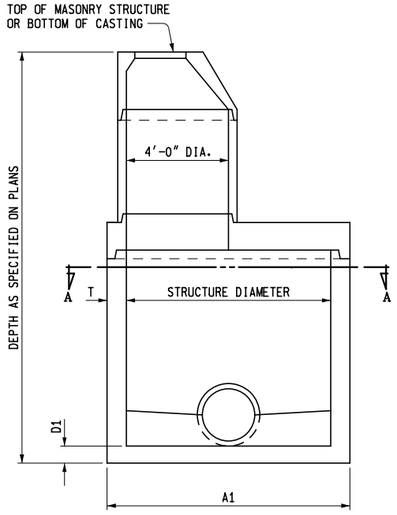
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

DRAINAGE STRUCTURES

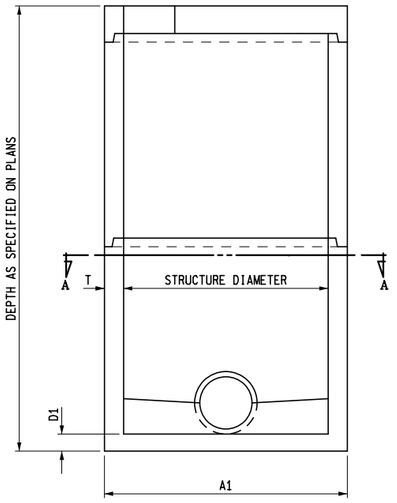
F.H.W.A. APPROVAL	6-15-2016 PLAN DATE	R-1-G	SHEET 5 OF 9



HALF SECTION A - A



SECTION B - B
SHOWING REDUCER CAP



SECTION B - B
SHOWING FLAT SLAB TOP

PRECAST MANHOLE

MICHIGAN DEPARTMENT OF TRANSPORTATION
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AS-LET PLAN REVISIONS							
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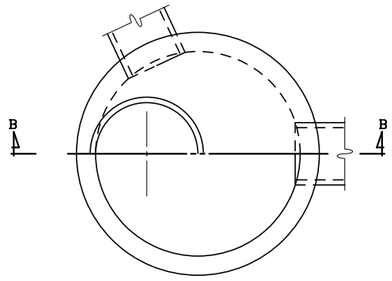
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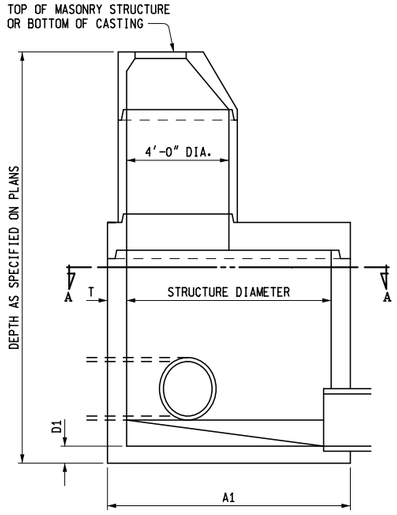
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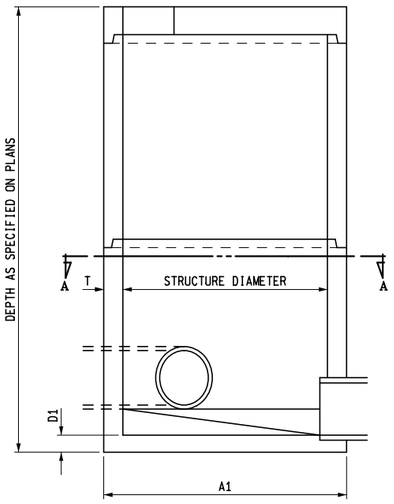
DRAWING | SHEET
219



HALF SECTION A - A

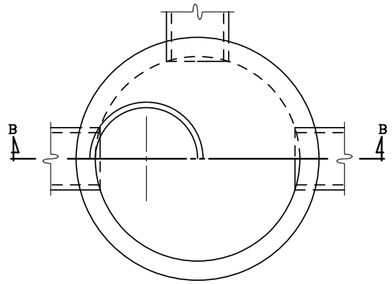


SECTION B - B
SHOWING REDUCER CAP

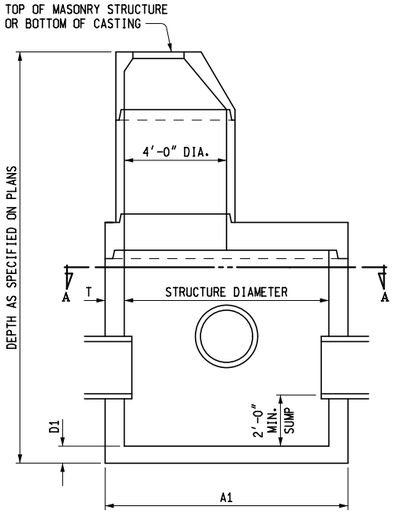


SECTION B - B
SHOWING FLAT SLAB TOP

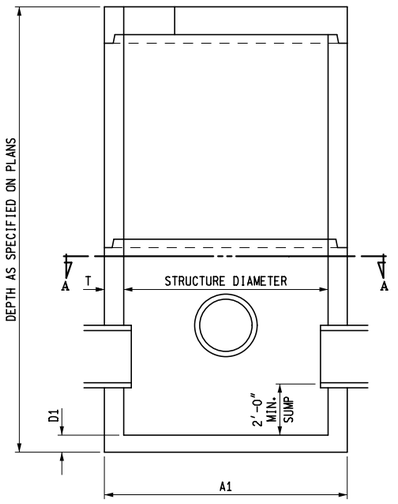
PRECAST INLET



HALF SECTION A - A

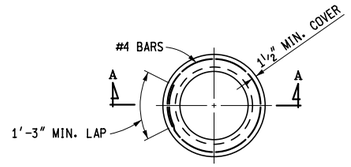


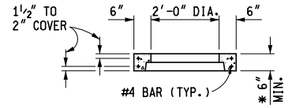
SECTION B - B
SHOWING REDUCER CAP



SECTION B - B
SHOWING FLAT SLAB TOP

PRECAST CATCH BASIN





SECTION A - A

* WHEN RISER TONGUE LENGTH IS GREATER THAN 3", USE 2 TIMES THE TONGUE LENGTH.

NOTE: PRECAST RISER SHALL FULLY ENGAGE THE TONGUE OF THE RISER PIPE.

PRECAST RISER RING

(FOR 2'-0" DIAMETER STRUCTURE)

NOTES:

THE DRAINAGE STRUCTURE COVERS ALLOWED FOR USE ON THESE DRAINAGE STRUCTURES ARE SPECIFIED IN SUBSEQUENT STANDARD PLANS AND ARE INTERCHANGEABLE ON ANY STRUCTURE.

THE TOPS OF MASONRY STRUCTURES SHALL BE SUFFICIENTLY LOW TO PERMIT PROPER ADJUSTMENT OF COVER TO GRADE USING MORTAR OR BRICK AS DIRECTED BY THE ENGINEER.

PREMIUM JOINTS ARE REQUIRED ON ALL SANITARY MANHOLES. SEE ASTM DESIGNATION C-923.

GRANULAR MATERIAL CLASS III SHALL BE USED IN BACKFILLING AROUND ALL STRUCTURES THAT FALL WITHIN THE 1:1 INFLUENCE LINES FROM THE EDGE OF PAVEMENT OR BACK OF CURB.

STEPS FOR DRAINAGE STRUCTURES SHALL BE OF AN APPROVED DESIGN AND MADE FROM CAST IRON, ALUMINUM, OR PLASTIC COATED STEEL. RUNGS SHALL BE A MINIMUM OF 10" IN CLEAR LENGTH, DESIGNED TO PREVENT THE FOOT FROM SLIPPING OFF THE END. THE MINIMUM HORIZONTAL PULL OUT LOAD SHALL BE 400 LBS. THE MINIMUM VERTICAL LOAD SHALL BE 800 LBS.

THE BELL SHALL BE REMOVED FOR THE FIRST LENGTH OF OUTLET PIPE PROJECTING THROUGH THE WALL OF THE MANHOLE.

PRECAST CONCRETE SECTIONS, SUMPS, AND FLAT TOP SLABS SHALL BE BUILT ACCORDING TO CURRENT ASTM C-478 AND ACCORDING TO DETAILS SPECIFIED ON THIS PLAN. PRECAST REINFORCED CONCRETE FLAT TOP SLAB SHALL BE MARKED TO SHOW LOCATION OF REINFORCEMENT. THE WALLS OF THE PRECAST UNITS MAY HAVE A SLIGHT TAPER TO ALLOW FOR FORM REMOVAL. PRECAST CONCRETE 2'-0" DIAMETER DRAINAGE STRUCTURES SHALL HAVE A MINIMUM 3" WALL THICKNESS WITH A 6" MINIMUM BEARING SURFACE ON TOP. SEE PRECAST RISER RING FOR 2'-0" DIAMETER STRUCTURE.

THE MAXIMUM INSIDE DIAMETER OF PIPES ENTERING OR LEAVING PRECAST DRAINAGE STRUCTURES SHALL BE 2'-0" LESS THAN THE INSIDE DIAMETER OF THE DRAINAGE STRUCTURE. A PIPE LEAVING A 2'-0" DIAMETER DRAINAGE STRUCTURE IS ALLOWED TO HAVE 1'-0" INSIDE DIAMETER OR LESS.

THE NUMBER OF PIPE OPENINGS IN A RISER SHALL BE DETERMINED BY THE DESIGNER. SPACING BETWEEN OPENINGS SHALL BE 1'-0" MINIMUM. OPENINGS MAY BE CONSTRUCTED BY CASTING OR SCRIBING IN PRECAST STRUCTURES DURING FABRICATION OR BY CORING THE CURED CONCRETE.

PRECAST CONCRETE FOOTINGS OR BASES SHALL BE REINFORCED WITH #4 BARS SPACED AT 1'-0" BOTH WAYS OR WITH TWO LAYERS OF WELDED WIRE FABRIC OF EQUIVALENT CROSS SECTIONAL AREA LAID AT RIGHT ANGLES AND WIRED TOGETHER. REINFORCEMENT SHALL BE PLACED IN TOP OF FOOTING AND SHALL BE MARKED.

PRECAST CONCRETE FOOTINGS SHALL BE SUPPORTED BY A COMPACTED 6" GRANULAR SUBBASE.

THE MINIMUM WALL THICKNESS FOR ALL 2'-0", 4'-0", 5'-0", AND 6'-0" DRAINAGE STRUCTURES USING CONCRETE BLOCK, BRICK, OR CAST-IN-PLACE CONCRETE SHALL BE AS SPECIFIED IN TYPICAL WALL SECTIONS.

THE CONICAL SECTION OF MANHOLES OR CATCH BASINS CONSTRUCTED OF BLOCK OR BRICK SHALL BE SHROUDED WITH GEOTEXTILE FABRIC TO A MINIMUM DEPTH OF 5'-0" OR THROUGH THE FROST ZONE. ENOUGH GEOTEXTILE MATERIAL SHALL BE LEFT ON THE TOP (8" OR MORE) TO ROLL OVER THE TOP OF THE CONE.

PREFORMED HIGH DENSITY POLYSTYRENE FILLER PIECES WAY BE USED TO CHANNEL FLOW IN THE BOTTOM OF MANHOLES PROVIDED THEY HAVE AT LEAST 2" OF CONCRETE COVER. THE USE OF THIS MATERIAL FOR CHANNEL FLOW IS RESTRICTED TO MANHOLES WHERE THE BOTTOM SECTION IS NOT SUBJECT TO FREEZING. THE USE OF THIS MATERIAL MUST BE APPROVED BY THE ENGINEER.

MICHIGAN DEPARTMENT OF TRANSPORTATION
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F.H.W.A. APPROVAL	6-15-2016 PLAN DATE	R-1-G	SHEET 9 OF 9

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BUREAU OF DEVELOPMENT STANDARD PLAN FOR

F.H.W.A. APPROVAL	PLAN DATE		SHEET OF

AS-LET PLAN REVISIONS

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

MDOT Michigan Department of Transportation

0 VERT. (FT)
0 HORZ. (FT)

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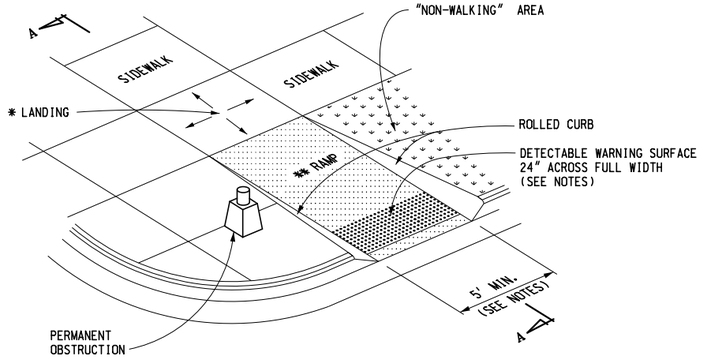
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JN: M-Q17-025

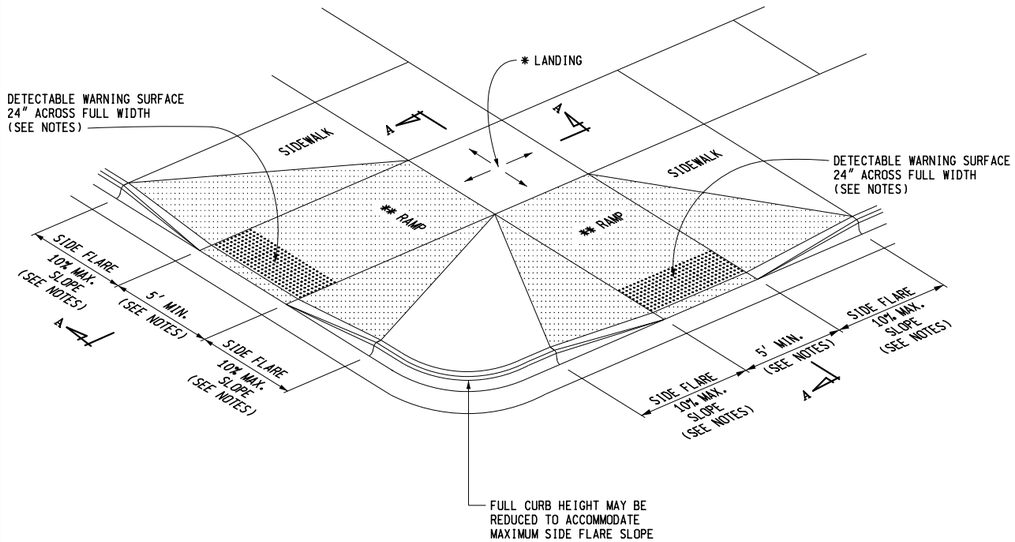
DRAWING | SHEET
221

* MAXIMUM LANDING SLOPE IS 2.0% IN EACH DIRECTION OF TRAVEL. MINIMUM DIMENSIONS 5′ x 5′. SEE NOTES.

** MAXIMUM RAMP CROSS SLOPE IS 2.0%, RUNNING SLOPE 5% – 7% (8.3% MAXIMUM). SEE NOTES.



SIDEWALK RAMP TYPE R
(ROLLED SIDES)



SIDEWALK RAMP TYPE F
(FLARED SIDES, TWO RAMPS SHOWN)

MDOT Michigan Department of Transportation

PREPARED BY DESIGN DIVISION

DRAWN BY: B.L.T.

CHECKED BY: W.K.P.

DEPARTMENT DIRECTOR
Kirk T. Steudle

APPROVED BY: _____
DIRECTOR, BUREAU OF FIELD SERVICES

APPROVED BY: _____
DIRECTOR, BUREAU OF DEVELOPMENT

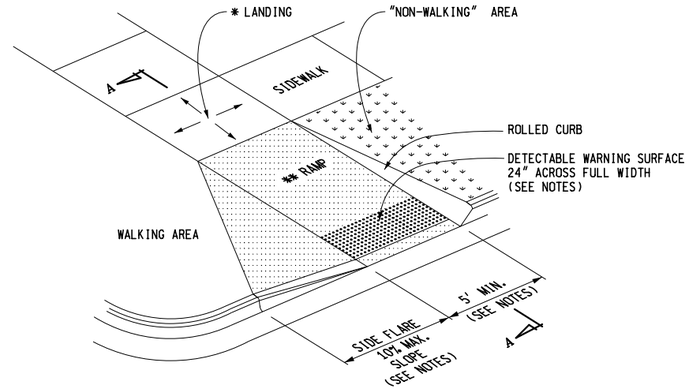
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

SIDEWALK RAMP AND DETECTABLE WARNING DETAILS

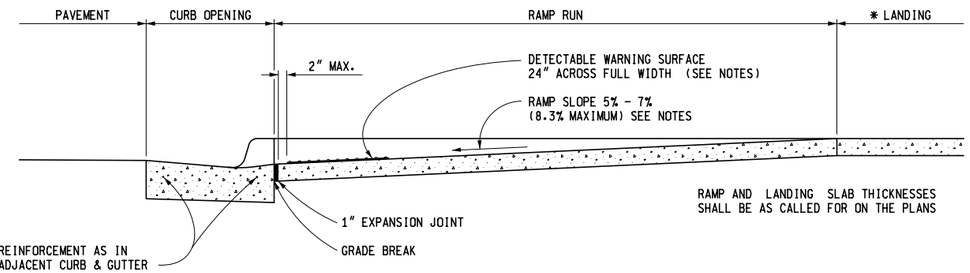
F.H.W.A. APPROVAL	3-15-2016 PLAN DATE	R-28-J	SHEET 1 OF 7

* MAXIMUM LANDING SLOPE IS 2.0% IN EACH DIRECTION OF TRAVEL. MINIMUM DIMENSIONS 5′ x 5′. SEE NOTES.

** MAXIMUM RAMP CROSS SLOPE IS 2.0%, RUNNING SLOPE 5% – 7% (8.3% MAXIMUM). SEE NOTES.

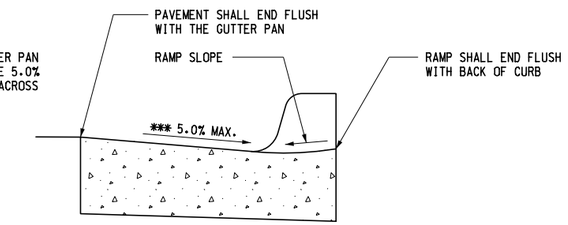


SIDEWALK RAMP TYPE RF
(ROLLED / FLARED SIDES)



SECTION A-A

*** TRANSITION ADJACENT GUTTER PAN CROSS SECTION TO PROVIDE 5.0% MAXIMUM COUNTER SLOPE ACROSS THE RAMP OPENING.



SECTION THROUGH CURB OPENING
(TYPICAL ALL RAMP TYPES)

MICHIGAN DEPARTMENT OF TRANSPORTATION
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AS-LET PLAN REVISIONS

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

MDOT Michigan Department of Transportation

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HORZ. (FT) 0

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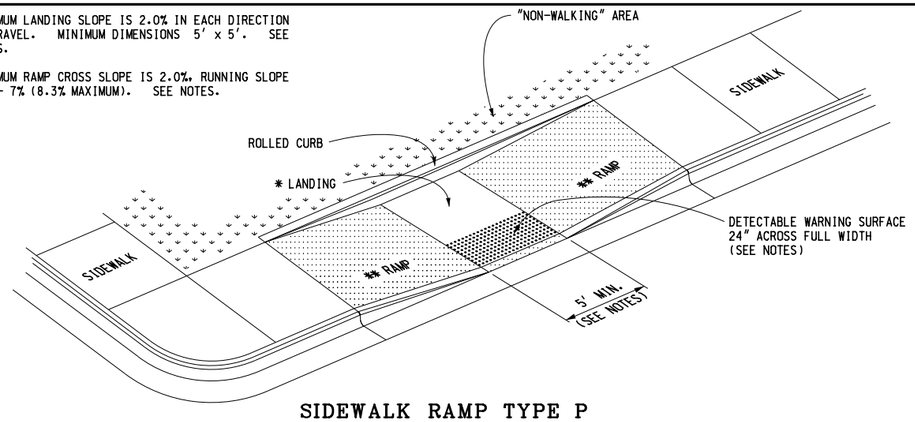
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TSC: ISHPEMING

CS: 52042
JN: MQ17-025

DRAWING	SHEET
	222

* MAXIMUM LANDING SLOPE IS 2.0% IN EACH DIRECTION OF TRAVEL. MINIMUM DIMENSIONS 5′ x 5′. SEE NOTES.

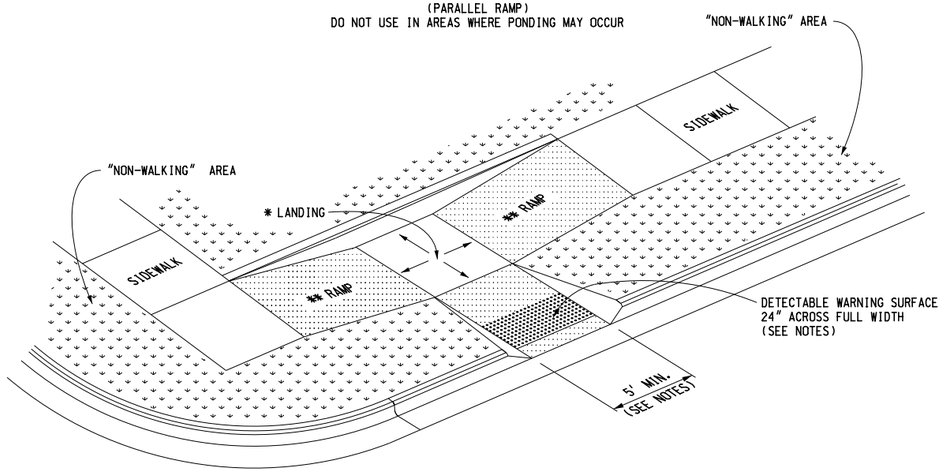
** MAXIMUM RAMP CROSS SLOPE IS 2.0%, RUNNING SLOPE 5% – 7% (8.3% MAXIMUM). SEE NOTES.



SIDEWALK RAMP TYPE P

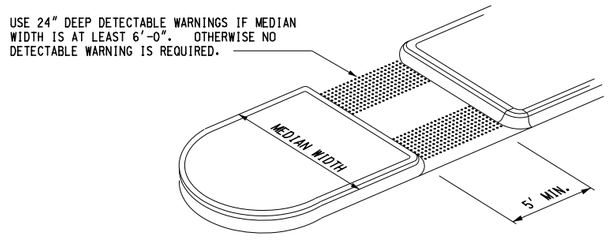
(PARALLEL RAMP)

DO NOT USE IN AREAS WHERE PONDING MAY OCCUR



SIDEWALK RAMP TYPE C

(COMBINATION RAMP)



SIDEWALK RAMP TYPE M

(MEDIAN ISLAND)

MICHIGAN DEPARTMENT OF TRANSPORTATION

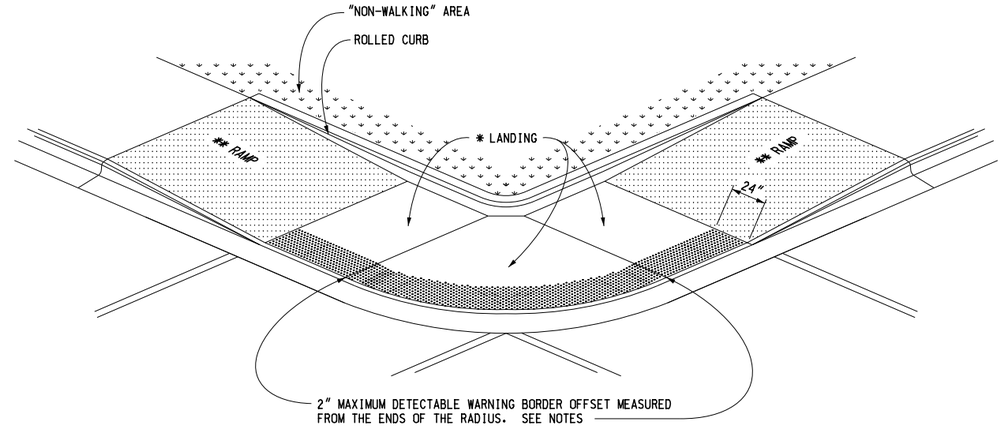
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SIDEWALK RAMP AND DETECTABLE WARNING DETAILS

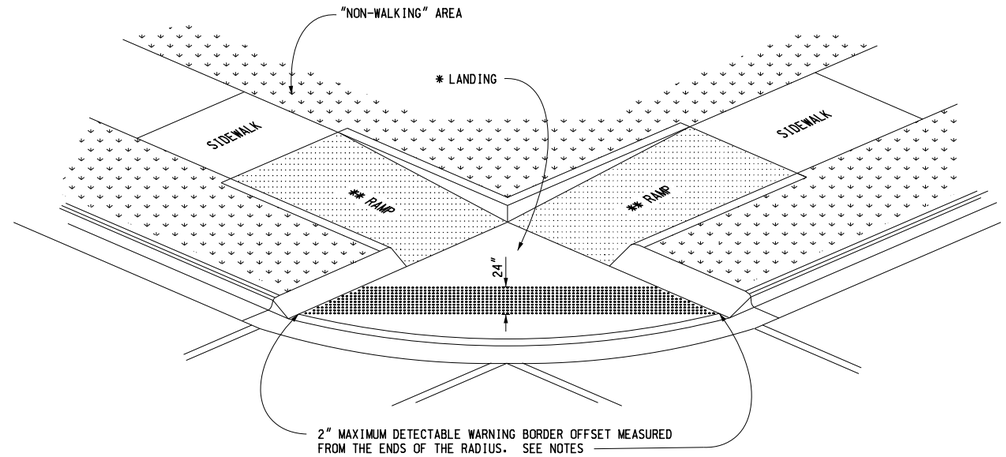
F.H.W.A. APPROVAL	3-15-2016 PLAN DATE	R-28-J	SHEET 3 OF 7

* MAXIMUM LANDING SLOPE IS 2.0% IN EACH DIRECTION OF TRAVEL. MINIMUM DIMENSIONS 5′ x 5′. SEE NOTES.

** MAXIMUM RAMP CROSS SLOPE IS 2.0%, RUNNING SLOPE 5% – 7% (8.3% MAXIMUM). SEE NOTES.



(RADIAL DETECTABLE WARNING SHOWN)



(TANGENT DETECTABLE WARNING SHOWN)

SIDEWALK RAMP TYPE D

(DEPRESSED CORNER)

USE ONLY WHEN INDEPENDENT DIRECTIONAL RAMPS CAN NOT BE CONSTRUCTED FOR EACH CROSSING DIRECTION

MICHIGAN DEPARTMENT OF TRANSPORTATION

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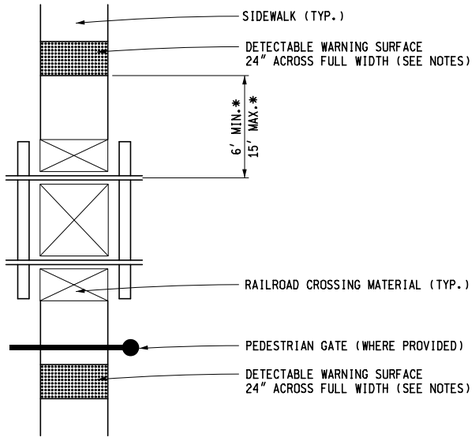
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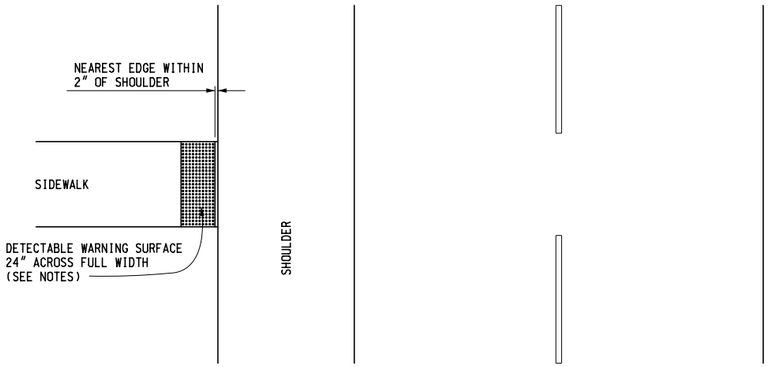
DRAWING

SHEET 223

* THE DETECTABLE WARNING SURFACE SHALL BE LOCATED SO THAT THE EDGE NEAREST THE RAIL CROSSING IS 6′ MINIMUM AND 15′ MAXIMUM FROM THE CENTERLINE OF THE NEAREST RAIL. DO NOT PLACE DETECTABLE WARNING ON RAILROAD CROSSING MATERIAL.



DETECTABLE WARNING AT RAILROAD CROSSING

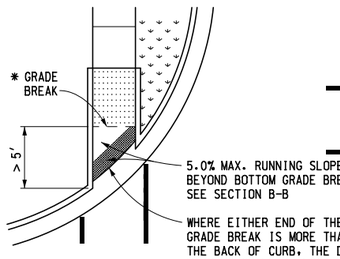


DETECTABLE WARNING AT FLUSH SHOULDER OR ROADWAY

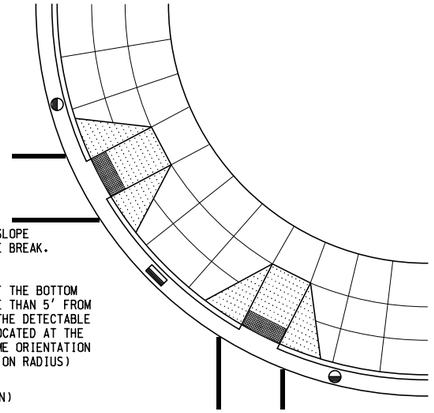
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SIDEWALK RAMP LOCATED IN RADIUS (TYPE R SHOWN)
(GRADE BREAK GREATER THAN 5′)

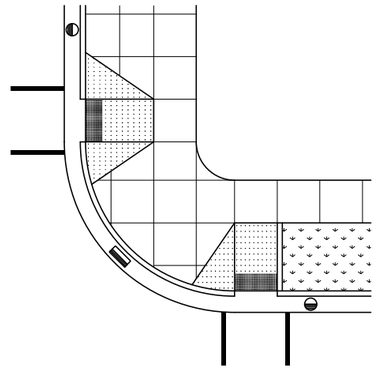


SIDEWALK RAMP PERPENDICULAR TO RADIAL CURB (TYPE F SHOWN)

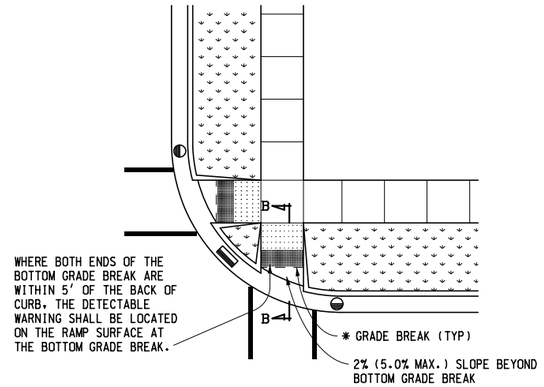
(USE WITH RADIAL CURB WHEN THE CROSSWALK AND SIDEWALK RAMP ARE NOT ALIGNED)

LEGEND

- SLOPED SURFACE
- DETECTABLE WARNING
- "NON-WALKING" AREA
- CROSSWALK MARKING
- PREFERRED LOCATION OF DRAINAGE INLET (TYP.)
- ALTERNATE LOCATION OF DRAINAGE INLET (TYP.)



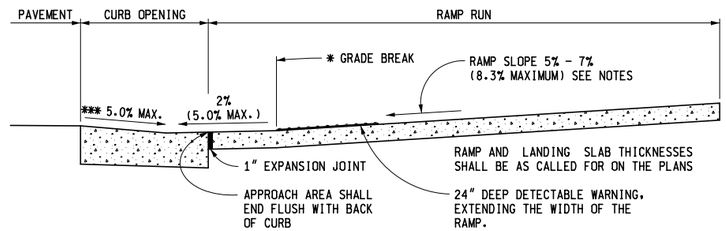
SIDEWALK RAMP PERPENDICULAR TO TANGENT CURB
(TYPE F AND TYPE RF SHOWN)



SIDEWALK RAMP LOCATED IN RADIUS (TYPE R SHOWN)
(GRADE BREAK LESS THAN 5′)

* GRADE BREAKS AT THE TOP AND BOTTOM OF CURB RAMPS SHALL BE PERPENDICULAR TO THE DIRECTION OF TRAVEL.

*** TRANSITION ADJACENT GUTTER PAN CROSS SECTION TO PROVIDE 5.0% MAXIMUM COUNTER SLOPE ACROSS THE RAMP OPENING.



SECTION B-B

SIDEWALK RAMP ORIENTATION

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

SIDEWALK RAMP AND DETECTABLE WARNING DETAILS

F.H.W.A. APPROVAL	3-15-2016 PLAN DATE	R-28-J	SHEET 6 OF 7

AS-LET PLAN REVISIONS

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

MDOT Michigan Department of Transportation

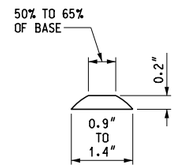
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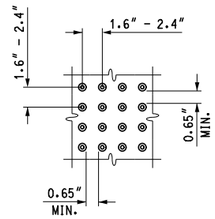
DATE: 02/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025

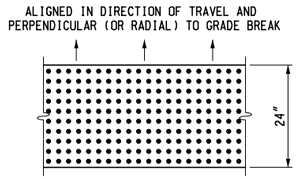
DRAWING
SHEET 224



DOME SECTION



DOME SPACING



DOME ALIGNMENT

DETECTABLE WARNING DETAILS

NOTES:

DETAILS SPECIFIED ON THIS PLAN APPLY TO ALL CONSTRUCTION, RECONSTRUCTION, OR ALTERATION OF STREETS, CURBS, OR SIDEWALKS IN THE PUBLIC RIGHT OF WAY.

SIDEWALK RAMPS ARE TO BE LOCATED AS SPECIFIED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

RAMPS SHALL BE PROVIDED AT ALL CORNERS OF AN INTERSECTION WHERE THERE IS EXISTING OR PROPOSED SIDEWALK AND CURB. RAMPS SHALL ALSO BE PROVIDED AT MARKED AND/OR SIGNALIZED MID-BLOCK CROSSINGS.

SURFACE TEXTURE OF THE RAMP SHALL BE THAT OBTAINED BY A COARSE BROOMING, TRANSVERSE TO THE RUNNING SLOPE.

SIDEWALK SHALL BE RAMPED WHERE THE DRIVEWAY CURB IS EXTENDED ACROSS THE WALK.

CARE SHALL BE TAKEN TO ASSURE A UNIFORM GRADE ON THE RAMP. WHERE CONDITIONS PERMIT, IT IS DESIRABLE THAT THE SLOPE OF THE RAMP BE IN ONLY ONE DIRECTION, PARALLEL TO THE DIRECTION OF TRAVEL.

RAMP WIDTH SHALL BE INCREASED, IF NECESSARY, TO ACCOMMODATE SIDEWALK SNOW REMOVAL EQUIPMENT NORMALLY USED BY THE MUNICIPALITY.

WHEN 5′ MINIMUM WIDTHS ARE NOT FEASIBLE, RAMP WIDTH MAY BE REDUCED TO NOT LESS THAN 4′ AND LANDINGS TO NOT LESS THAN 4′ x 4′.

DETECTABLE WARNING SURFACE COVERAGE IS 24″ MINIMUM IN THE DIRECTION OF RAMP/PATH TRAVEL AND THE FULL WIDTH OF THE RAMP/PATH OPENING EXCLUDING CURBED OR FLARED CURB TRANSITION AREAS. A BORDER OFFSET NOT GREATER THAN 2″ MEASURED ALONG THE EDGES OF THE DETECTABLE WARNING IS ALLOWABLE. FOR RADIAL CURB THE OFFSET IS MEASURED FROM THE ENDS OF THE RADIUS.

FOR NEW ROADWAY CONSTRUCTION, THE RAMP CROSS SLOPE MAY NOT EXCEED 2.0%. FOR ALTERATIONS TO EXISTING ROADWAYS, THE CROSS SLOPE MAY BE TRANSITIONED TO MEET AN EXISTING ROADWAY GRADE. THE CROSS SLOPE TRANSITION SHALL BE APPLIED UNIFORMLY OVER THE FULL LENGTH OF THE RAMP.

THE MAXIMUM RUNNING SLOPE OF 8.3% IS RELATIVE TO A FLAT (0%) REFERENCE. HOWEVER, IT SHALL NOT REQUIRE ANY RAMP OR SERIES OF RAMPS TO EXCEED 15 FEET IN LENGTH.

DRAINAGE STRUCTURES SHOULD NOT BE PLACED IN LINE WITH RAMPS. THE LOCATION OF THE RAMP SHOULD TAKE PRECEDENCE OVER THE LOCATION OF THE DRAINAGE STRUCTURE. WHERE EXISTING DRAINAGE STRUCTURES ARE LOCATED IN THE RAMP PATH OF TRAVEL, USE A MANUFACTURER'S ADA COMPLIANT GRATE. OPENINGS SHALL NOT BE GREATER THAN $\frac{1}{2}$″. ELONGATED OPENINGS SHALL BE PLACED SO THAT THE LONG DIMENSION IS PERPENDICULAR TO THE DOMINANT DIRECTION OF TRAVEL.

TRANSITION THE GUTTER PAN CROSS SECTION SUCH THAT THE COUNTER SLOPE IN THE DIRECTION OF RAMP TRAVEL IS NOT GREATER THAN 5.0%. MAINTAIN THE NORMAL GUTTER PAN CROSS SECTION ACROSS DRAINAGE STRUCTURES.

THE TOP OF THE JOINT FILLER FOR ALL RAMP TYPES SHALL BE FLUSH WITH THE ADJACENT CONCRETE.

CROSSWALK AND STOP LINE MARKINGS, IF USED, SHALL BE SO LOCATED AS TO STOP TRAFFIC SHORT OF RAMP CROSSINGS. SPECIFIC DETAILS FOR MARKING APPLICATIONS ARE GIVEN IN THE "MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES".

FLARED SIDES WITH A SLOPE OF 10% MAXIMUM, MEASURED ALONG THE ROADSIDE CURB LINE, SHALL BE PROVIDED WHERE AN UNOBSTRUCTED CIRCULATION PATH LATERALLY CROSSES THE SIDEWALK RAMP. FLARED SIDES ARE NOT REQUIRED WHERE THE RAMP IS BORDERED BY LANDSCAPING, UNPAVED SURFACE OR PERMANENT FIXED OBJECTS. WHERE THEY ARE NOT REQUIRED, FLARED SIDES CAN BE CONSIDERED IN ORDER TO AVOID SHARP CURB RETURNS AT RAMP OPENINGS.

DETECTABLE WARNING PLATES MUST BE INSTALLED USING FABRICATED OR FIELD CUT UNITS CAST AND/OR ANCHORED IN THE PAVEMENT TO RESIST SHIFTING OR HEAVING.

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

SIDEWALK RAMP AND DETECTABLE WARNING DETAILS

F.H.W.A. APPROVAL	3-15-2016 PLAN DATE	R-28-J	SHEET 7 OF 7

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

F.H.W.A. APPROVAL	PLAN DATE		SHEET OF

AS-LET PLAN REVISIONS

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

MDOT Michigan Department of Transportation

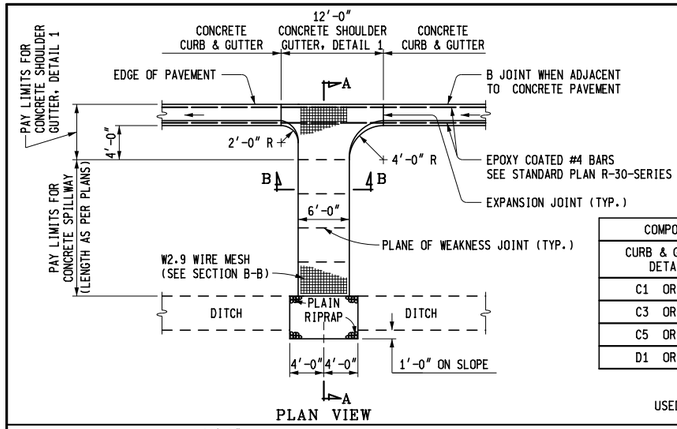
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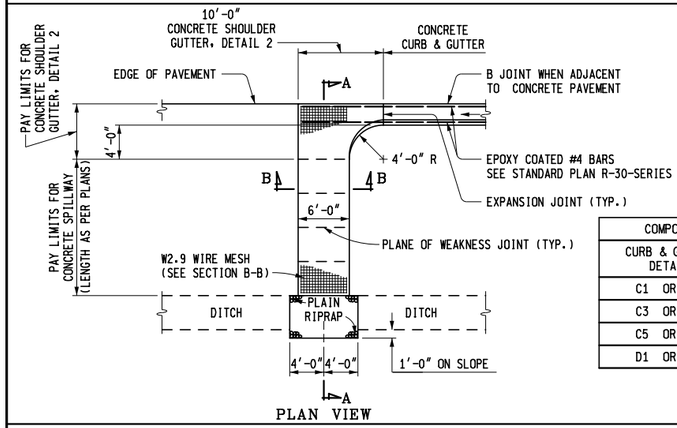
CS: 52042
JN: MQ17-025

DRAWING	SHEET
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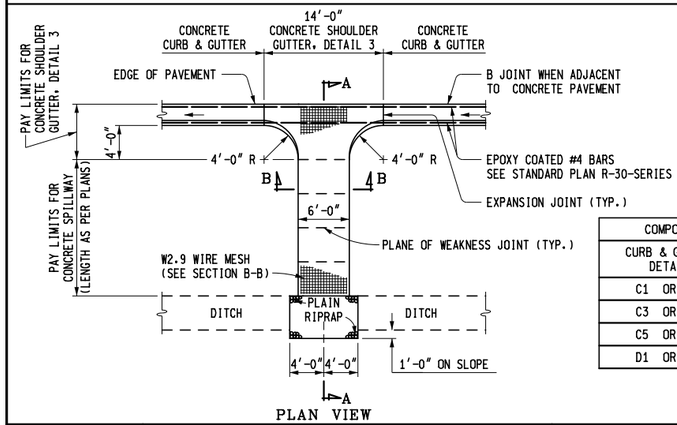
COMPONENTS OF CONCRETE SHOULDER GUTTER, DETAIL 1		
CURB & GUTTER DETAIL	STEEL REINFORCEMENT LBS	CONCRETE CYD
C1 OR C2	39	1.5
C3 OR C4	39	1.7
C5 OR C6	39	1.8
D1 OR D2	39	1.8

DETAIL 1
USED AS INTERMEDIATE OPENING IN CURB & GUTTER



COMPONENTS OF CONCRETE SHOULDER GUTTER, DETAIL 2		
CURB & GUTTER DETAIL	STEEL REINFORCEMENT LBS	CONCRETE CYD
C1 OR C2	36	1.4
C3 OR C4	36	1.5
C5 OR C6	36	1.7
D1 OR D2	36	1.6

DETAIL 2
USED AT END OF CURB



COMPONENTS OF CONCRETE SHOULDER GUTTER, DETAIL 3		
CURB & GUTTER DETAIL	STEEL REINFORCEMENT LBS	CONCRETE CYD
C1 OR C2	41	1.7
C3 OR C4	41	1.9
C5 OR C6	41	2.1
D1 OR D2	41	2.1

DETAIL 3
USED AT LOW POINT IN GUTTER LINE

MDOT Michigan Department of Transportation

PREPARED BY DESIGN DIVISION

DRAWN BY: B.L.T.

CHECKED BY: W.K.P.

DEPARTMENT DIRECTOR
Kirk T. Steudle

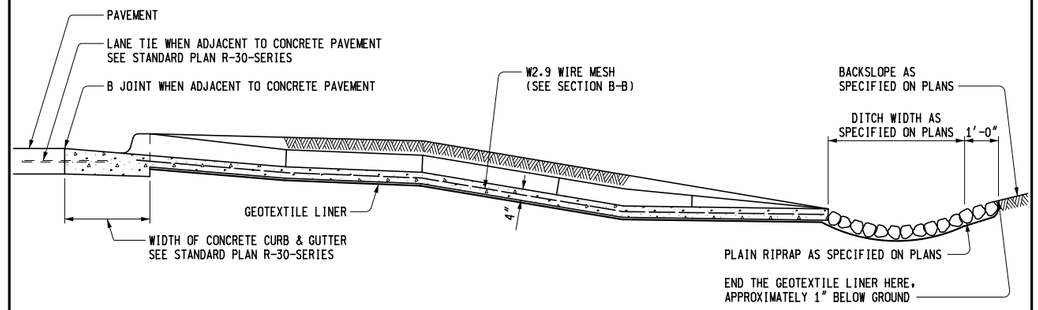
APPROVED BY: _____
DIRECTOR, BUREAU OF FIELD SERVICES

APPROVED BY: _____
DIRECTOR, BUREAU OF DEVELOPMENT

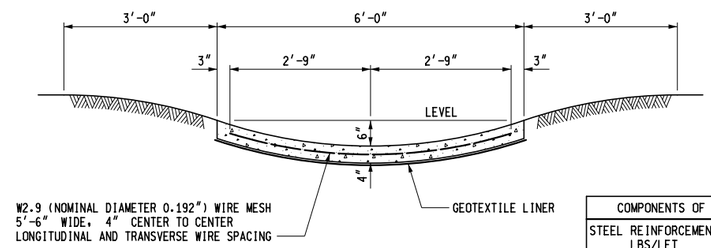
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

CONCRETE SHOULDER GUTTER AND SPILLWAY

F.H.W.A. APPROVAL	10-28-2016 PLAN DATE	R-35-D	SHEET 1 OF 2



SECTION A - A



COMPONENTS OF CONCRETE SPILLWAY	
STEEL REINFORCEMENT LBS/LFT	CONCRETE CYD/LFT
3.56	0.074

SECTION B - B

NOTES:

A GRADUAL UNIFORM TRANSITION SHALL BE MADE FROM THE STANDARD CONCRETE CURB AND GUTTER TO THE CONCRETE SPILLWAY.

PLANE OF WEAKNESS JOINT SPACING SHALL BE AT UNIFORM INTERVALS OF APPROXIMATELY 4′-0″.

THE SPILLWAY SHOULDERS AND FORESLOPES WILL BE UNDERLAID WITH GEOTEXTILE LINER FROM THE BACK SIDE OF CURB TO THE FAR END OF THE PLAIN RIPRAP INCLUDING THE ENTIRE FOOTPRINT OF THE PLAIN RIPRAP.

WHEN USING SPILLWAYS IN OTHER AREAS, SUCH AS BACKSLOPES, THE GEOTEXTILE LINER SHALL UNDERLAY THE FULL LENGTH OF THE SPILLWAY AND THE ENTIRE FOOTPRINT OF THE PLAIN RIPRAP. THE GEOTEXTILE LINER SHALL HAVE A MINIMUM WIDTH EQUAL TO THE WIDTH OF THE SPILLWAY.

THE SPILLWAY SHALL BE GIVEN A TRANSVERSE COARSE BROOM FINISH.

WHILE CONCRETE SPILLWAY IS SHOWN ON THE FORESLOPE, IT MAY BE USED ON THE BACKSLOPE, AS SPECIFIED ON THE PLANS. CONCRETE SHOULDER GUTTER WOULD BE CORRESPONDINGLY OMITTED.

THE CURB AND GUTTER SHALL BE ALIGNED WITH THE BEAM GUARDRAIL AS SPECIFIED ON STANDARD PLAN R-67-SERIES. THE LOCATION OF GUARDRAIL POSTS SHOULD BE DETERMINED PRIOR TO LOCATING THE SPILLWAY OR DOWNSPOUT HEADER.

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

CONCRETE SHOULDER GUTTER AND SPILLWAY

F.H.W.A. APPROVAL	10-28-2016 PLAN DATE	R-35-D	SHEET 2 OF 2

AS-LET PLAN REVISIONS

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

MDOT Michigan Department of Transportation

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0 HORZ. (FT)

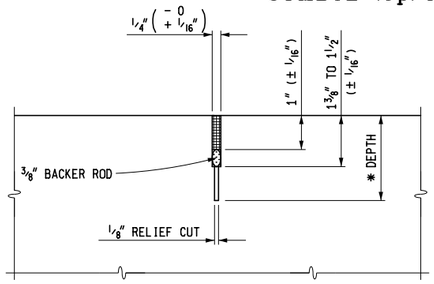
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DATE: 02/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025

DRAWING | SHEET
226

SYMBOL (Cp) AND (C3p)

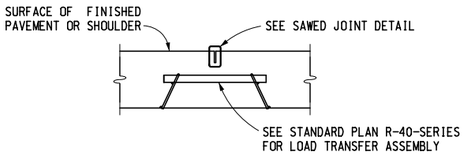


SYMBOL	LOAD TRANSFER	JOINT USE
(Cp)	YES	PAVEMENT
(C3p)	NO	SHOULDER

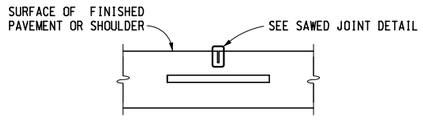
SAWED JOINT DETAIL

SAWED JOINT SEALED WITH LOW MODULUS HOT-POURED RUBBER-ASPHALT TYPE JOINT SEALING COMPOUND.

* DEPTH OF RELIEF CUT FOR JOINT (Cp) AND (C3p) SHALL BE 1/4 THE SLAB THICKNESS FOR PAVEMENTS LESS THAN OR EQUAL TO 7" IN THICKNESS AND 1/3 THE SLAB THICKNESS FOR PAVEMENTS GREATER THAN 7" THICK.



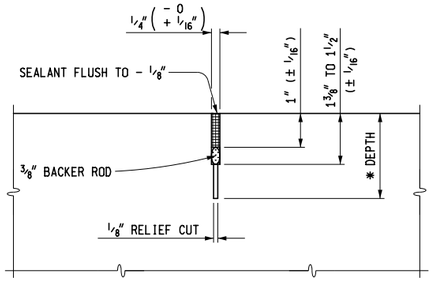
LOAD TRANSFER ASSEMBLY METHOD



DOWEL BAR INSERTER METHOD

TRANSVERSE CONTRACTION JOINT

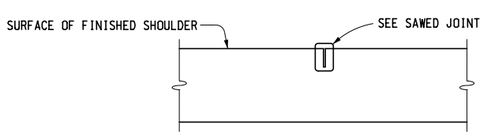
SYMBOL (W)



SAWED JOINT DETAIL

SAWED JOINT SEALED WITH LOW MODULUS HOT-POURED RUBBER-ASPHALT TYPE JOINT SEALING COMPOUND.

* DEPTH OF RELIEF CUT FOR JOINT 1/4 THE SLAB THICKNESS.



TRANSVERSE AND INTERSECTION PLANE OF WEAKNESS JOINTS

MDOT Michigan Department of Transportation

PREPARED BY DESIGN DIVISION

DRAWN BY: B.L.T.

CHECKED BY: W.K.P.

DEPARTMENT DIRECTOR
Kirk T. Steudle

APPROVED BY: _____ ENGINEER OF DELIVERY

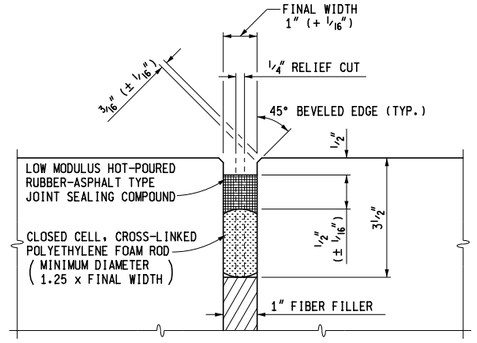
APPROVED BY: _____ ENGINEER OF DEVELOPMENT

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

TRANSVERSE PAVEMENT JOINTS
(PLAIN CONCRETE PAVEMENT)

F.H.W.A. APPROVAL	PLAN DATE		SHEET
	7-13-2016	R-39-J	1 OF 5

SYMBOL (E2) AND (E4)



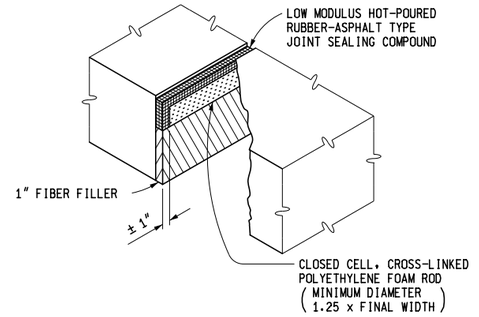
SAWED JOINT DETAIL

SAWED JOINT SEALED WITH LOW MODULUS HOT-POURED RUBBER-ASPHALT TYPE JOINT SEALING COMPOUND.

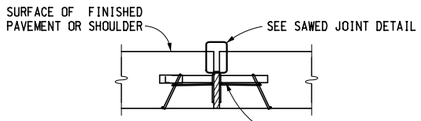
NOTE:

THE FINAL WIDTH OF THE GROOVE SHALL BE 1" + 1/16" PLUS ANY INCREASE OR MINUS ANY DECREASE IN THE WIDTH OF THE RELIEF CUT. THE FINAL SAW CUT SHALL BE TO THE TOP OF THE FIBER FILLER WITH A MINIMUM DEPTH AS SHOWN AND SHALL BE CENTERED OVER THE FIBER FILLER WITH A HORIZONTAL TOLERANCE OF 1/4". FIBER FILLER FOR EXPANSION JOINTS IN CONCRETE SHOULDERS SHALL BE FREE OF HOLES OR OTHER DEFECTS AND TRIMMED TO FIT SHOULDER CONFIGURATIONS.

SYMBOL	LOAD TRANSFER ASSEMBLY	JOINT USE
(E2)	YES	PAVEMENT
(E4)	NO	SHOULDER



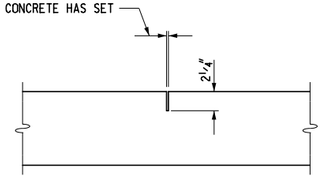
OUTSIDE EDGE TREATMENT



TRANSVERSE EXPANSION JOINT

SYMBOL (U)

1/8" SAWED JOINT OR A FORMED JOINT MADE BY PLACING 1/4" HARDBOARD OR OTHER APPROVED MATERIAL FLUSH WITH THE SURFACE OF THE CONCRETE BASE COURSE AND TRUE TO POSITION AND LINE BEFORE THE CONCRETE HAS SET



TRANSVERSE PLANE OF WEAKNESS JOINTS IN CONCRETE BASE COURSE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

TRANSVERSE PAVEMENT JOINTS
(PLAIN CONCRETE PAVEMENT)

F.H.W.A. APPROVAL	PLAN DATE		SHEET
	7-13-2016	R-39-J	2 OF 5

AS-LET PLAN REVISIONS							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

MDOT Michigan Department of Transportation

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HORZ. (FT) 0

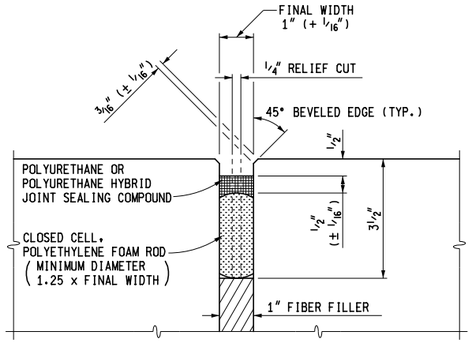
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DRAWING	SHEET
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SYMBOL (E3)



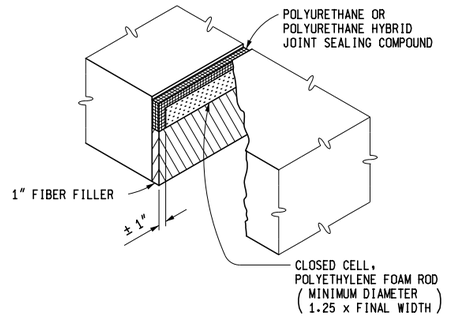
SAWED JOINT DETAIL

SAWED JOINT SEALED WITH POLYURETHANE OR POLYURETHANE HYBRID JOINT SEALING COMPOUND.

NOTE:

THE FINAL WIDTH OF THE GROOVE SHALL BE 1" + 1/16" PLUS ANY INCREASE OR MINUS ANY DECREASE IN THE WIDTH OF THE RELIEF CUT. THE FINAL SAW CUT SHALL BE TO THE TOP OF THE FIBER FILLER WITH A MINIMUM DEPTH AS SHOWN AND SHALL BE CENTERED OVER THE FIBER FILLER WITH A HORIZONTAL TOLERANCE OF 1/4". FIBER FILLER FOR EXPANSION JOINTS IN CONCRETE SHOULDERS SHALL BE FREE OF HOLES OR OTHER DEFECTS AND TRIMMED TO FIT SHOULDER CONFIGURATIONS.

SYMBOL	LOAD TRANSFER ASSEMBLY	JOINT USE
(E3)	NO	PAVEMENT & SHOULDER



OUTSIDE EDGE TREATMENT

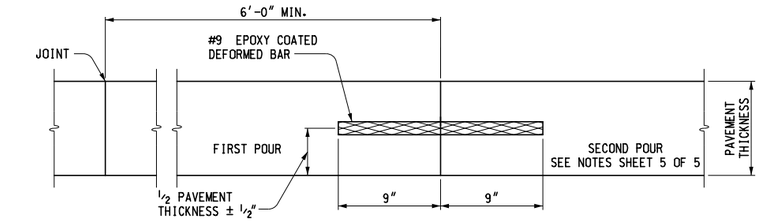
TRANSVERSE EXPANSION JOINT

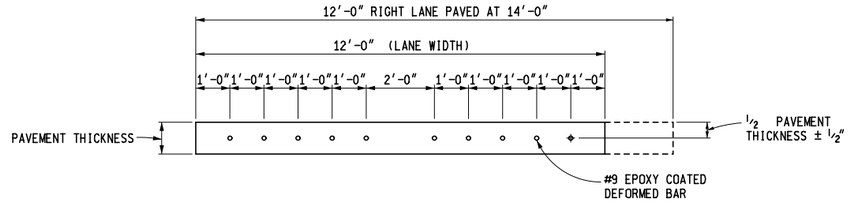
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

TRANSVERSE PAVEMENT JOINTS
(PLAIN CONCRETE PAVEMENT)

F.H.W.A. APPROVAL	7-13-2016 PLAN DATE	R-39-J	SHEET 3 OF 5

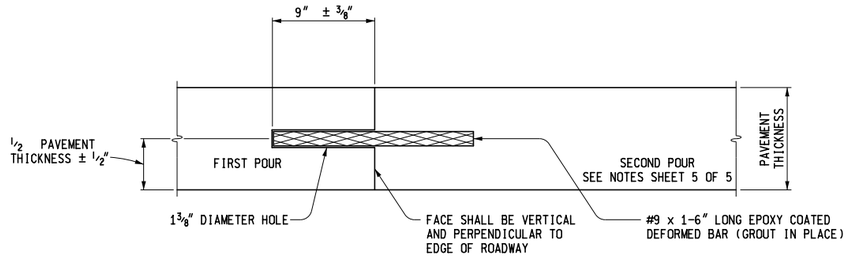
SYMBOL (H)

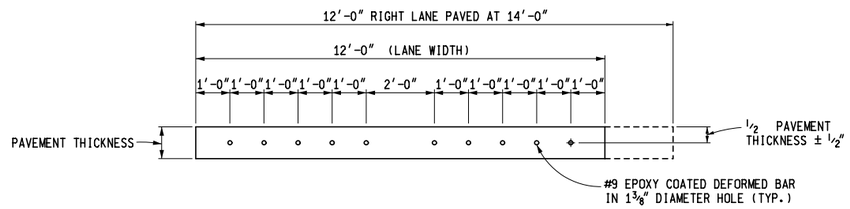




DEFORMED BAR SPACING

TRANSVERSE END OF POUR JOINT (SPLIT HEADER METHOD)





DEFORMED BAR SPACING

NOTE: THE HOLE SPACING MAY BE ADJUSTED 1" HORIZONTALLY, RAISED 1/2", OR LOWERED 1" FROM THE ABOVE LOCATIONS TO AVOID DRILLING INTO THE REINFORCEMENT.

TRANSVERSE END OF POUR JOINT (DRILLED IN METHOD)

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

TRANSVERSE PAVEMENT JOINTS
(PLAIN CONCRETE PAVEMENT)

F.H.W.A. APPROVAL	7-13-2016 PLAN DATE	R-39-J	SHEET 4 OF 5

AS-LET PLAN REVISIONS							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

MDOT Michigan Department of Transportation

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HORZ. (FT) 0

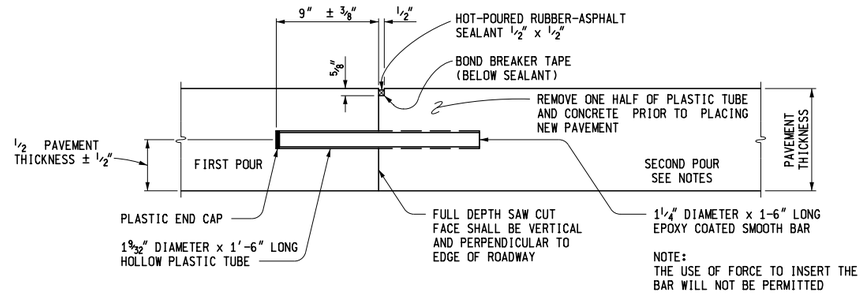
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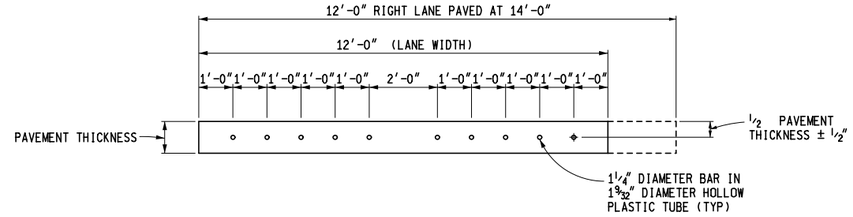
DATE: 02/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025

DRAWING
SHEET 228

SYMBOL (H)





DEFORMED BAR SPACING

TRANSVERSE END OF POUR JOINT (PLASTIC TUBE METHOD)

NOTES:

LOAD TRANSFER ASSEMBLIES ARE DETAILED ON THE CURRENT STANDARD PLAN R-40-SERIES.

TRANSVERSE JOINTS SHALL BE SPACED ACCORDING TO THE CURRENT STANDARD PLAN R-43-SERIES.

A TRANSVERSE END OF POUR JOINT (DRILLED IN METHOD) SYMBOL (H), SHALL BE CONSTRUCTED WHEN IT IS ANTICIPATED THAT THE SECOND POUR WILL BE DELAYED 7 DAYS OR LONGER.

A TRANSVERSE END OF POUR JOINT (SPLIT HEADER METHOD) OR (PLASTIC TUBE METHOD) SHALL BE USED AT THE END OF THE DAY'S POUR OR WHEN THERE IS AN UNAVOIDABLE INTERRUPTION OF THE WORK FOR MORE THAN ONE-HALF HOUR AND LESS THAN 7 DAYS. THE JOINT SHALL BE CONSTRUCTED ACCORDING TO TRANSVERSE END OF POUR JOINT (SPLIT HEADER METHOD) OR (PLASTIC TUBE METHOD), SYMBOL (H).

THE EXPANSION JOINT MATERIAL IN THE SHOULDERS SHALL BE SUPPORTED BY ONE OF THE FOLLOWING METHODS:

1. A CONTINUOUS SUPPORT WIRE, AS SPECIFIED FOR EXPANSION LOAD TRANSFERS ASSEMBLIES, AS DETAILED ON STANDARD PLAN R-40-SERIES, SHALL BE USED ON EACH SIDE OF EXPANSION MATERIAL. THIS WIRE SHALL BE EQUIPPED WITH STAKES AND STAKE POCKETS TO RIGIDLY HOLD THE EXPANSION MATERIAL IN PLACE DURING CONCRETE PLACEMENT. STAKES SHALL BE AS SPECIFIED ON STANDARD PLAN R-40-SERIES, SPACED NOT MORE THAN 2'-0" APART.
2. "U" OR "J" SHAPE STAPLES OF W8 WIRE (0.319" NOMINAL DIAMETER) SHALL BE SPACED ON 2'-0" CENTERS EACH SIDE OF THE EXPANSION MATERIAL. EACH VERTICAL LEG OF THE STAPLE SHALL BE AT LEAST 1'-3" LONG.
3. OTHER EQUIVALENT METHODS MAY BE USED WHEN APPROVED BY THE ENGINEER.

JOINTS SHALL NOT BE SEALED IN CONCRETE BASE COURSE.

WHEN CONCRETE SHOULDERS ARE CAST SEPARATELY FROM MAINLINE CONCRETE PAVEMENT, A KEYWAY MAY BE USED TO FACILITATE THE PLACING OF LANE TIES. WHEN A KEYWAY GROOVE IS USED, IT SHALL BE CONTINUOUS AND UNIFORM.

THE LOCATION OF TRANSVERSE JOINTS IN CONCRETE SHOULDERS SHALL MATCH THE LOCATION OF ADJACENT TRANSVERSE PAVEMENT JOINTS. CORRESPONDING TRANSVERSE CONCRETE SHOULDER AND PAVEMENT JOINTS SHALL BE (C3p) SHOULDER WITH (Cp) PAVEMENT, (E4) SHOULDER WITH (E2) PAVEMENT, AND (E3) BEING THE SAME IN BOTH SHOULDER AND PAVEMENT.

DEFORMED BARS FOR TRANSVERSE END OF POUR JOINTS (DRILLED IN METHOD) SHALL BE GROUTED INTO EXISTING PAVEMENT WITH A GROUT SELECTED FROM THE PREQUALIFIED MATERIALS LISTED IN THE DEPARTMENT'S "MATERIALS SOURCE GUIDE" UNDER ADHESIVE SYSTEMS FOR GROUTING DOWEL BARS AND TIE BARS FOR FULL-DEPTH PAVEMENT REPAIRS.

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

TRANSVERSE PAVEMENT JOINTS
(PLAIN CONCRETE PAVEMENT)

F.H.W.A. APPROVAL	PLAN DATE	R-39-J	SHEET 5 OF 5
	7-13-2016		

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

F.H.W.A. APPROVAL	PLAN DATE		SHEET OF

AS-LET PLAN REVISIONS

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

MDOT Michigan Department of Transportation

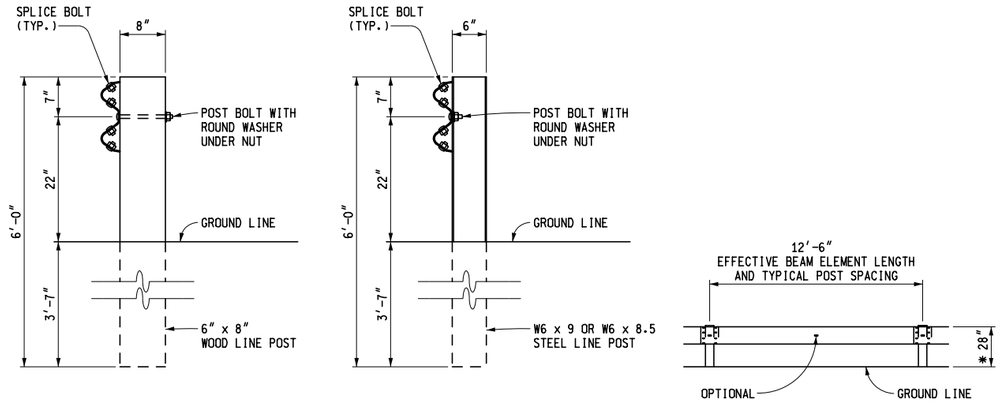
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FILE:

DATE: 02/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025

DRAWING
SHEET 229

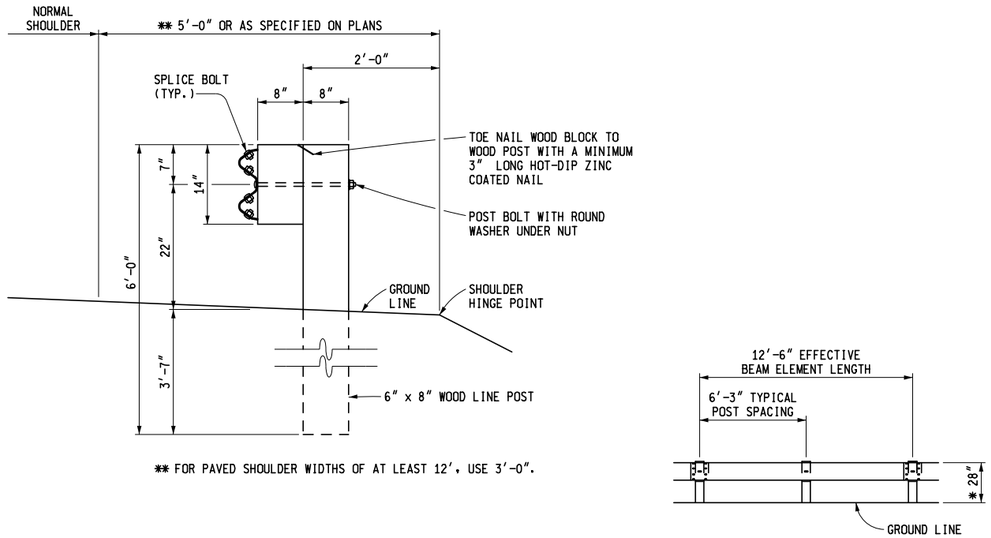


WOOD POST STEEL POST

ELEVATION SHOWING POST SPACING

✱ SEE NOTES FOR GUARDRAIL IN CONJUNCTION WITH CURB

GUARDRAIL, TYPE A



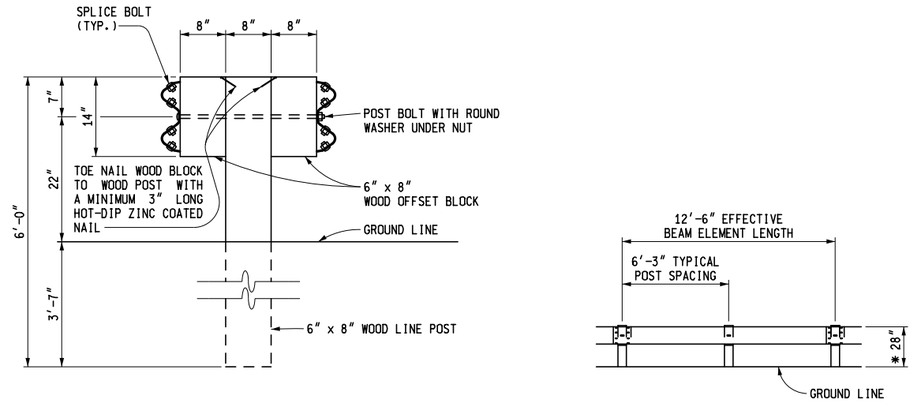
✱✱ FOR PAVED SHOULDER WIDTHS OF AT LEAST 12′, USE 3′-0″.

ELEVATION SHOWING POST SPACING

✱ SEE NOTES FOR GUARDRAIL IN CONJUNCTION WITH CURB

GUARDRAIL, TYPE B
(WOOD POST)

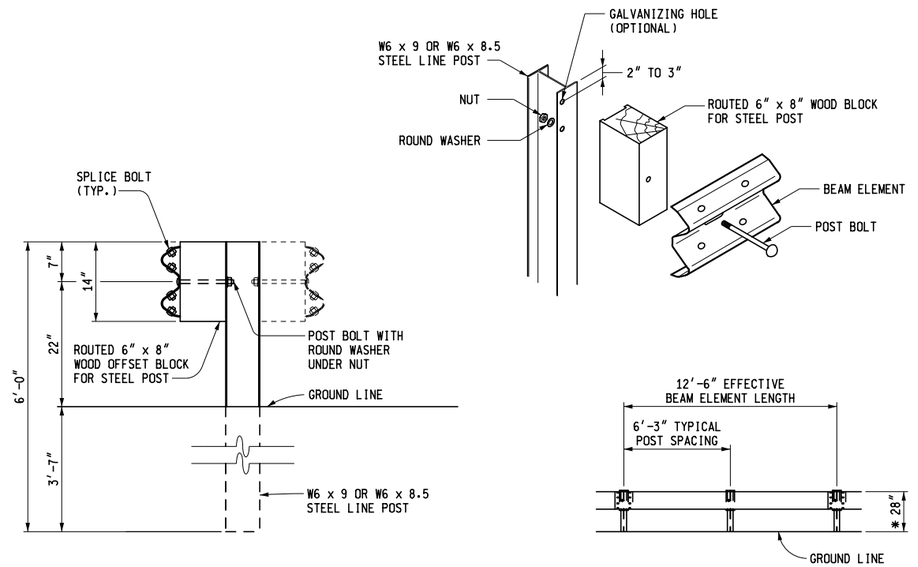
MDOT Michigan Department of Transportation PREPARED BY DESIGN DIVISION DRAWN BY: B.L.T. CHECKED BY: W.K.P.	DEPARTMENT DIRECTOR Kirk T. Steudle APPROVED BY: _____ DIRECTOR, BUREAU OF FIELD SERVICES APPROVED BY: _____ DIRECTOR, BUREAU OF DEVELOPMENT	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN FOR GUARDRAIL, TYPES A, B, BD, T, TD, MGS-8, & MGS-8D	
		F.H.W.A. APPROVAL	4-22-2016 PLAN DATE	R-60-J	SHEET 1 OF 16



ELEVATION SHOWING POST SPACING

✱ SEE NOTES FOR GUARDRAIL IN CONJUNCTION WITH CURB

GUARDRAIL, TYPE BD
(WOOD POST)



ELEVATION SHOWING POST SPACING

✱ SEE NOTES FOR GUARDRAIL IN CONJUNCTION WITH CURB

GUARDRAIL, TYPE B (OR BD)
(STEEL POST)

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN FOR GUARDRAIL, TYPES A, B, BD, T, TD, MGS-8, & MGS-8D			
F.H.W.A. APPROVAL	4-22-2016 PLAN DATE	R-60-J	SHEET 2 OF 16

AS-LET PLAN REVISIONS							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

MDOT Michigan Department of Transportation

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HORZ. (FT) 0

FILE:

DATE: 02/10/2017

DESIGN UNIT: FILPUS

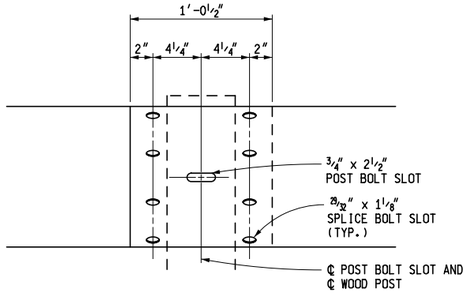
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CS: 52042

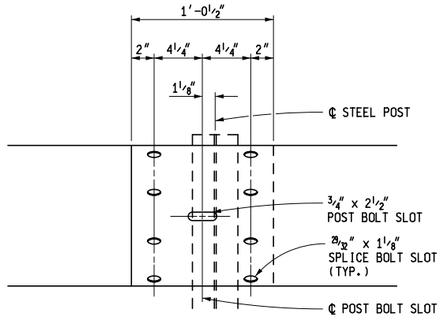
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DRAWING

SHEET 230

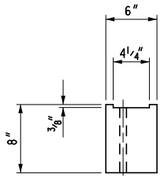


WOOD POST

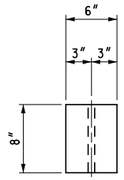


STEEL POST

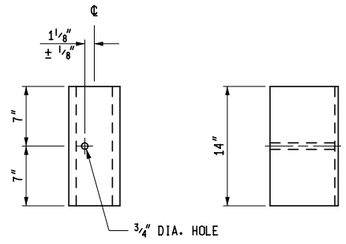
BEAM ELEMENT SPLICE DETAILS



TOP

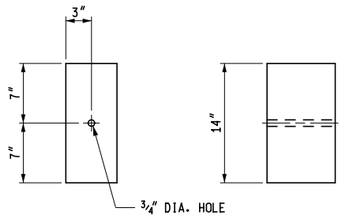


TOP



FRONT SIDE

FOR USE ON STEEL POSTS



FRONT SIDE

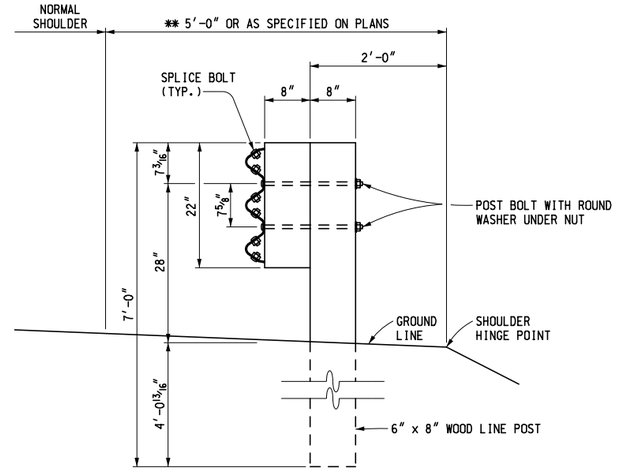
FOR USE ON WOOD POSTS
(SEE NOTES ON SHEET 16 OF 16)

WOOD OFFSET BLOCKS FOR GUARDRAIL, TYPE B AND TYPE BD

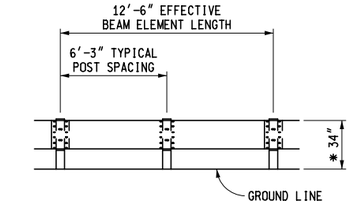
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

GUARDRAIL, TYPES A, B, BD, T, TD, MGS-8, & MGS-8D

F.H.W.A. APPROVAL	4-22-2016 PLAN DATE	R-60-J	SHEET 3 OF 16

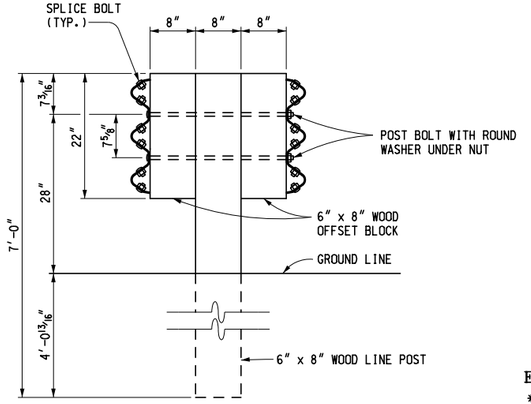


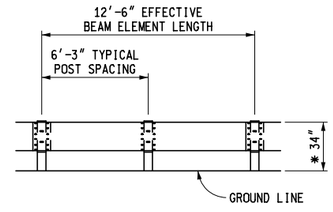
** FOR PAVED SHOULDER WIDTHS OF AT LEAST 12′, USE 3′-0″.



ELEVATION SHOWING POST SPACING
* SEE NOTES FOR GUARDRAIL IN CONJUNCTION WITH CURB

GUARDRAIL, TYPE T
(WOOD POST)





ELEVATION SHOWING POST SPACING
* SEE NOTES FOR GUARDRAIL IN CONJUNCTION WITH CURB

GUARDRAIL, TYPE TD
(WOOD POST)

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

GUARDRAIL, TYPES A, B, BD, T, TD, MGS-8, & MGS-8D

F.H.W.A. APPROVAL	4-22-2016 PLAN DATE	R-60-J	SHEET 4 OF 16

AS-LET PLAN REVISIONS							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

MDOT Michigan Department of Transportation

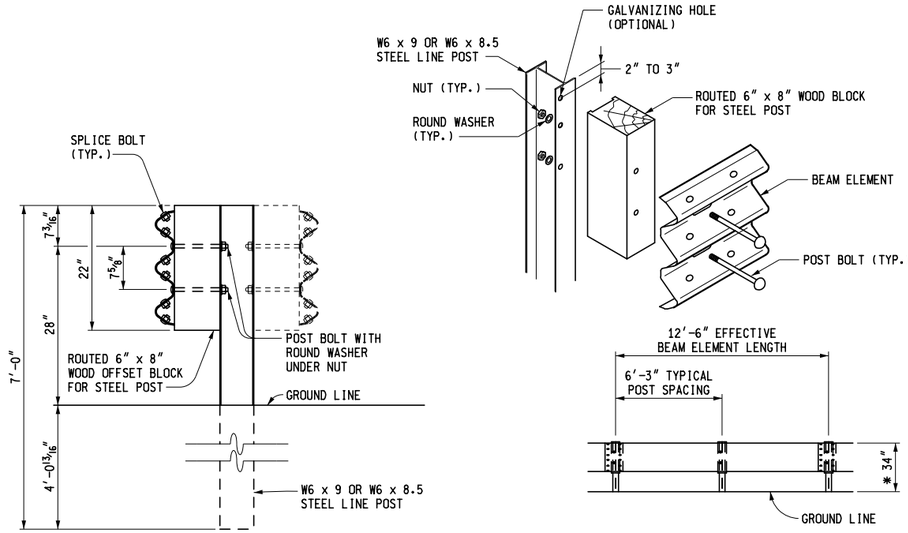
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CS: 52042
JN: MQ17-025

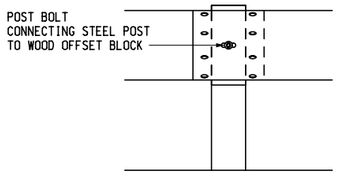
DRAWING | SHEET
231



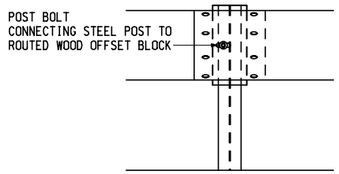
ELEVATION SHOWING POST SPACING

* SEE NOTES FOR GUARDRAIL IN CONJUNCTION WITH CURB

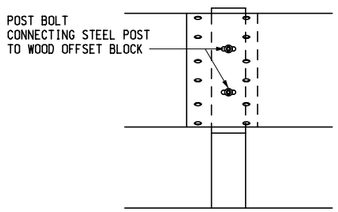
GUARDRAIL, TYPE T OR TD
(STEEL POST)



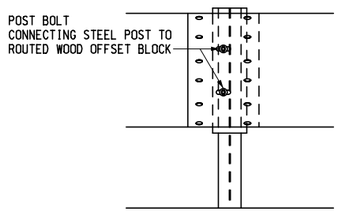
GUARDRAIL, TYPE B
WOOD POST



GUARDRAIL, TYPE B
STEEL POST



GUARDRAIL, TYPE T
WOOD POST



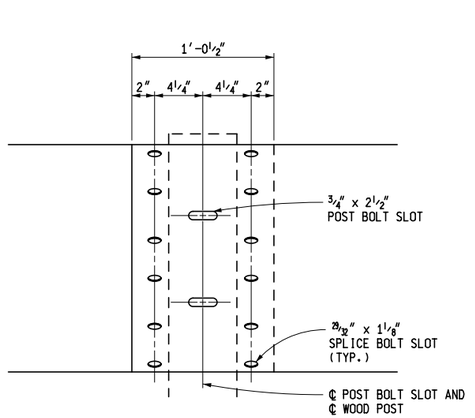
GUARDRAIL, TYPE T
STEEL POST

BLOCK AND POST CONNECTION DETAILS

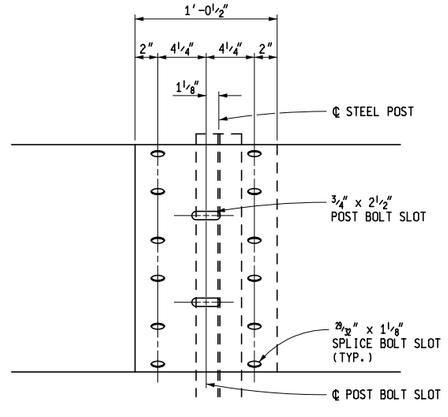
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

GUARDRAIL, TYPES A, B, BD, T, TD, MGS-8, & MGS-8D

F.H.W.A. APPROVAL	4-22-2016 PLAN DATE	R-60-J	SHEET 5 OF 16

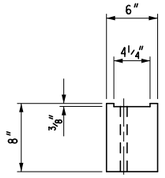


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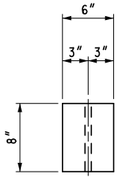


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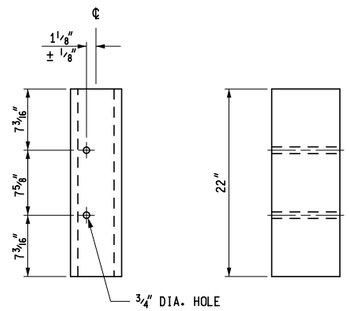
THRIE BEAM ELEMENT SPLICE DETAILS



TOP

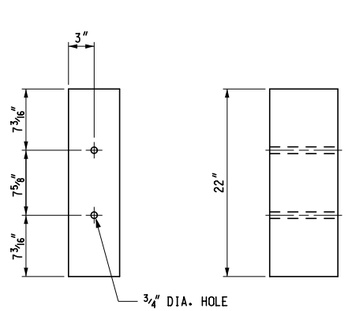


TOP



FRONT SIDE

FOR USE ON STEEL POSTS



FRONT SIDE

FOR USE ON WOOD POSTS
(SEE NOTES ON SHEET 16 OF 16)

WOOD OFFSET BLOCKS FOR GUARDRAIL, TYPE T AND TYPE TD

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

GUARDRAIL, TYPES A, B, BD, T, TD, MGS-8, & MGS-8D

F.H.W.A. APPROVAL	4-22-2016 PLAN DATE	R-60-J	SHEET 6 OF 16

AS-LET PLAN REVISIONS

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

MDOT Michigan Department of Transportation

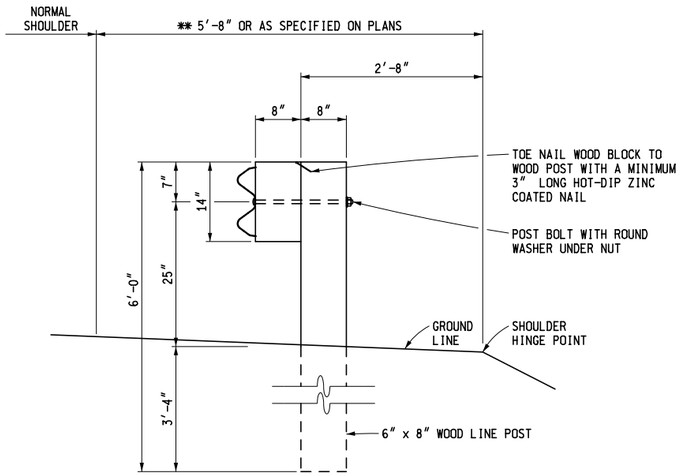
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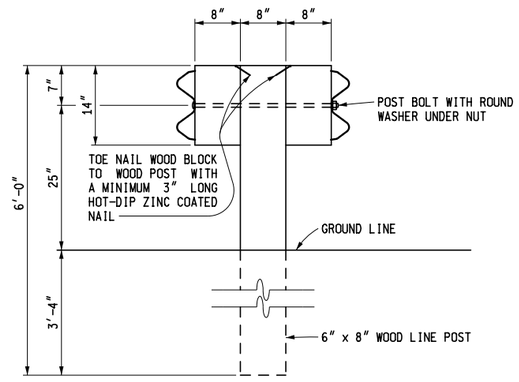
CS: 52042
JN: MQ17-025

DRAWING
SHEET 232



** FOR PAVED SHOULDER WIDTHS OF AT LEAST 12′, USE 3′-8″.

GUARDRAIL, TYPE MGS-8
(WOOD POST)



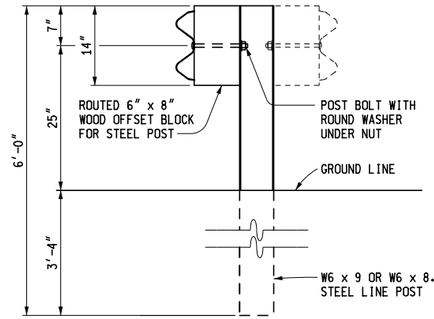
** FOR PAVED SHOULDER WIDTHS OF AT LEAST 12′, USE 3′-0″.

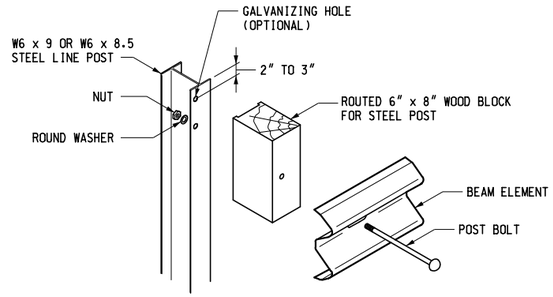
GUARDRAIL, TYPE MGS-8D
(WOOD POST)

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

GUARDRAIL, TYPES A, B, BD, T, TD, MGS-8, & MGS-8D

F.H.W.A. APPROVAL	4-22-2016 PLAN DATE	R-60-J	SHEET 7 OF 16





GUARDRAIL, TYPE MGS-8 (OR MGS-8D)
(STEEL POST)

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

GUARDRAIL, TYPES A, B, BD, T, TD, MGS-8, & MGS-8D

F.H.W.A. APPROVAL	4-22-2016 PLAN DATE	R-60-J	SHEET 8 OF 16

AS-LET PLAN REVISIONS

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

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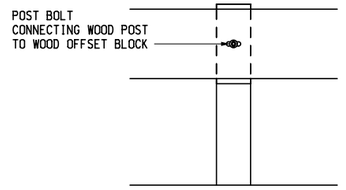
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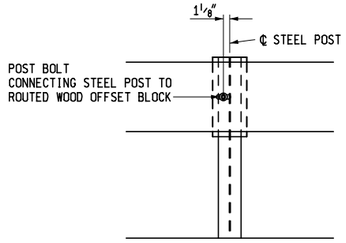
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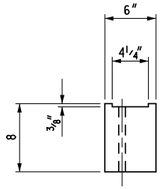


WOOD POST

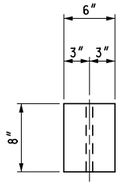


STEEL POST

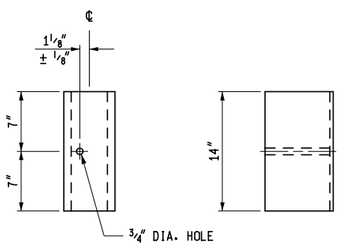
BLOCK AND POST CONNECTION DETAILS



TOP

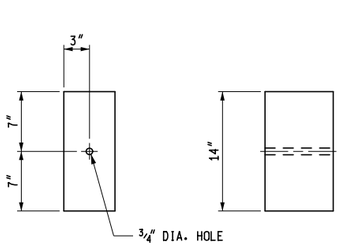


TOP



FRONT SIDE

FOR USE ON STEEL POSTS



FRONT SIDE

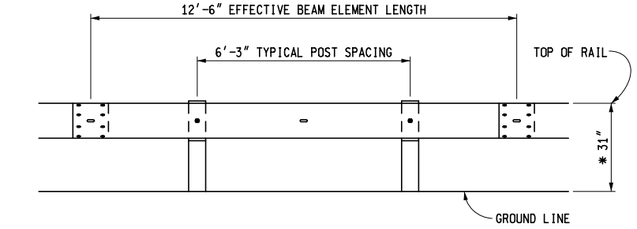
FOR USE ON WOOD POSTS
(SEE NOTES ON SHEET 16 OF 16)

WOOD OFFSET BLOCKS FOR GUARDRAIL, TYPE MGS-8 AND TYPE MGS-8D

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

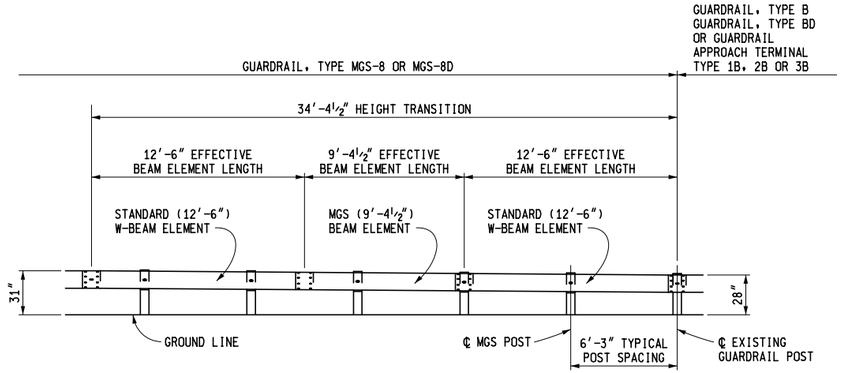
GUARDRAIL, TYPES A, B, BD, T, TD, MGS-8, & MGS-8D

F.H.W.A. APPROVAL	4-22-2016 PLAN DATE	R-60-J	SHEET 9 OF 16

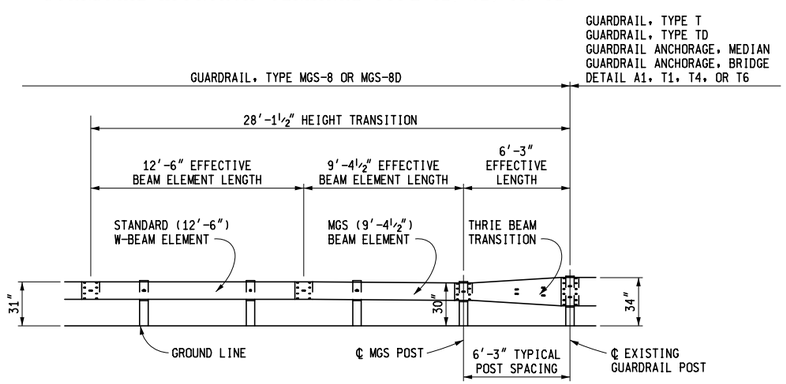


ELEVATION SHOWING POST SPACING FOR GUARDRAIL, TYPE MGS-8 OR MGS-8D

* SEE NOTES FOR GUARDRAIL IN CONJUNCTION WITH CURB



ELEVATION SHOWING POST SPACING CONNECTING GUARDRAIL, TYPE MGS-8 OR MGS-8D TO GUARDRAIL, TYPE B, GUARDRAIL, TYPE BD, OR GUARDRAIL APPROACH TERMINAL TYPE 1B, 2B, OR 3B



ELEVATION SHOWING POST SPACING CONNECTING GUARDRAIL, TYPE MGS-8 OR MGS-8D TO GUARDRAIL, TYPE T, GUARDRAIL, TYPE TD, GUARDRAIL ANCHORAGE, MEDIAN, GUARDRAIL ANCHORAGE, BRIDGE DETAIL A1, T1, T4 OR T6

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

GUARDRAIL, TYPES A, B, BD, T, TD, MGS-8, & MGS-8D

F.H.W.A. APPROVAL	4-22-2016 PLAN DATE	R-60-J	SHEET 10 OF 16

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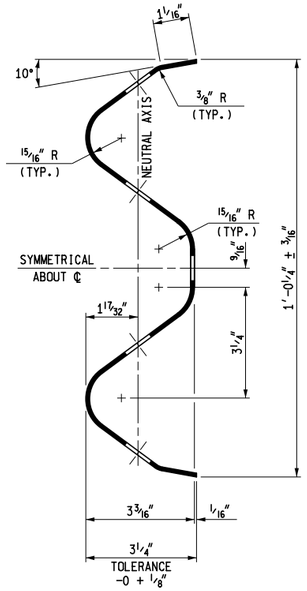
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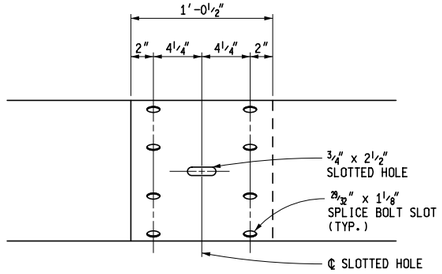
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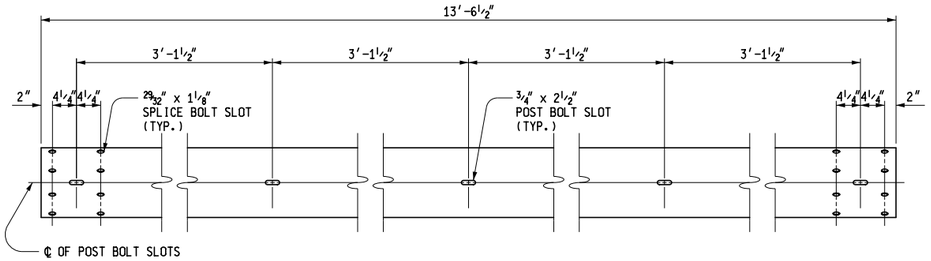
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SHEET 234



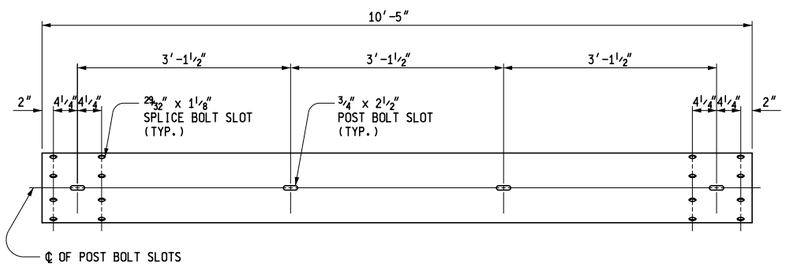
SECTION THROUGH BEAM ELEMENT



BEAM ELEMENT SPLICE DETAILS



FRONT ELEVATION OF BEAM ELEMENT

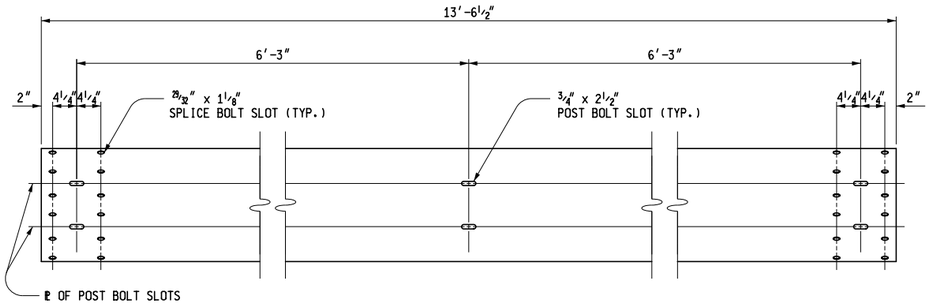


FRONT ELEVATION OF MGS (9'-4 1/2") BEAM ELEMENT

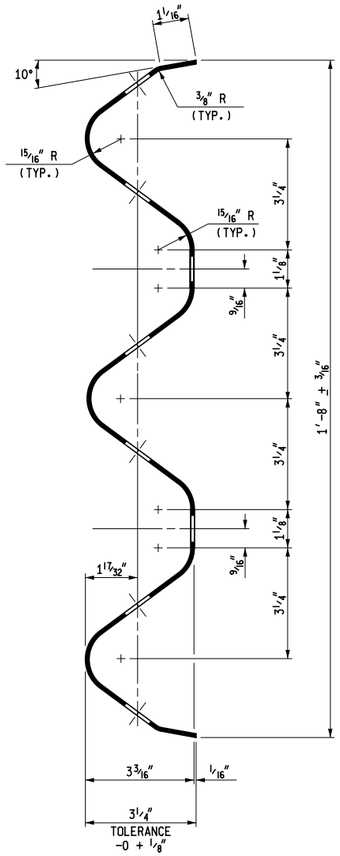
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

GUARDRAIL, TYPES A, B, BD, T, TD, MGS-8, & MGS-8D

F.H.W.A. APPROVAL	4-22-2016 PLAN DATE	R-60-J	SHEET 11 OF 16



FRONT ELEVATION OF THRIE BEAM ELEMENT



SECTION THROUGH THRIE BEAM ELEMENT
(FOR GUARDRAIL, TYPE T AND TD)

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

GUARDRAIL, TYPES A, B, BD, T, TD, MGS-8, & MGS-8D

F.H.W.A. APPROVAL	4-22-2016 PLAN DATE	R-60-J	SHEET 12 OF 16

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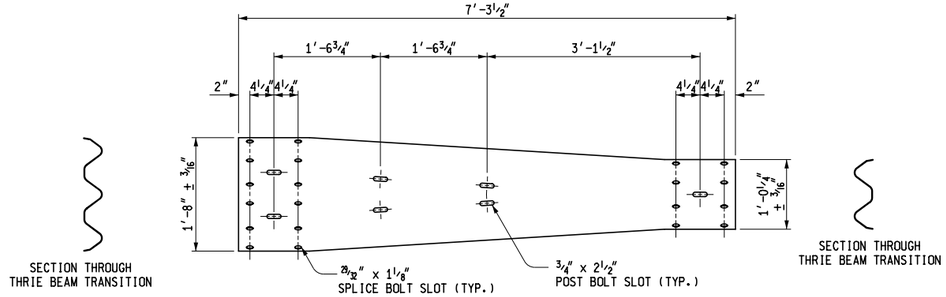
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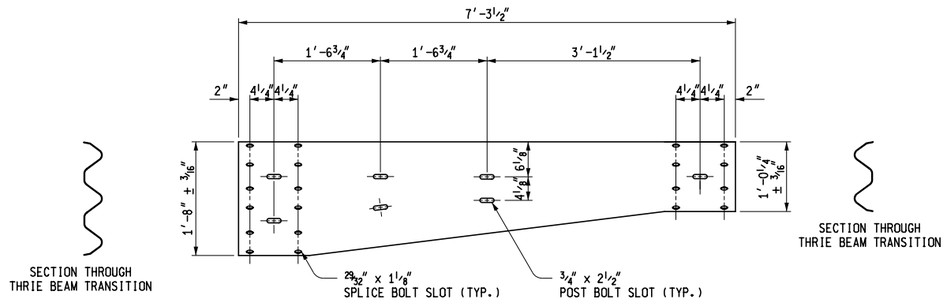
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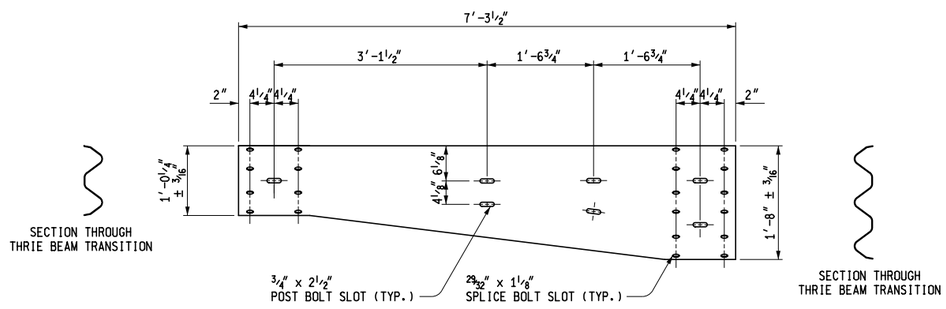
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THRIE BEAM TRANSITION





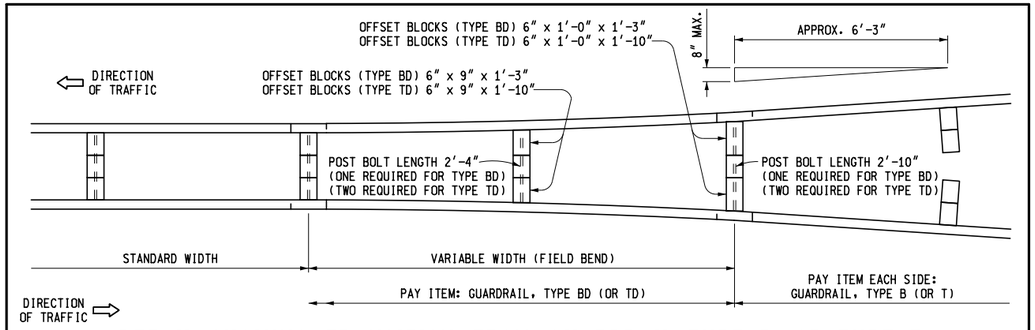
ASYMMETRICAL THRIE BEAM TRANSITIONS

NOTE: ASYMMETRICAL TRANSITION TYPE WILL VARY BY LOCATION DEPENDING ON GUARDRAIL LAYOUT

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

GUARDRAIL, TYPES A, B, BD, T, TD, MGS-8, & MGS-8D

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DETAIL SHOWING TRANSITION FROM GUARDRAIL, TYPE B (OR TYPE T) TO GUARDRAIL, TYPE BD (OR TYPE TD)

POST BOLTS, SPLICE BOLTS AND WASHERS AT BEAM ELEMENT SPLICE POSTS AND AT INTERMEDIATE POSTS

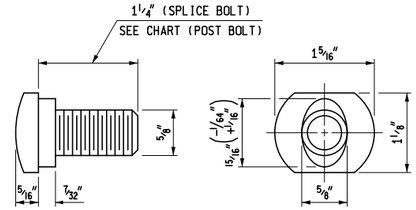
GUARDRAIL TYPE	POST	OFFSET BLOCK	POST BOLTS NO. REQ'D	POST BOLTS LENGTH	SPLICE BOLTS (1¼″ LONG) (NO. REQ'D)		WASHERS (ROUND) (NO. REQ'D)
A	WOOD	N/A	1	9½″	8	NOT NEEDED AT INTERMEDIATE POSTS	1
	STEEL	N/A	1	2″			1
B	WOOD	WOOD	1	18″	8		1
	STEEL	WOOD	1	9½″			1
BD	WOOD	WOOD	1	*26½″	16		——
	STEEL	WOOD	2	9½″			2
T	WOOD	WOOD	2	18″	12		2
	STEEL	WOOD	2	9½″			2
TD	WOOD	WOOD	2	*26½″	24		——
	STEEL	WOOD	4	9½″			4

THRIE BEAM TRANSITIONS REQUIRE 20 SPLICE BOLTS EACH (12 ON TYPE T END AND 8 ON TYPE B END).

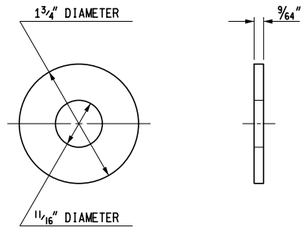
* EXCEPT AS SPECIFIED ON DETAIL SHOWING TRANSITION FROM GUARDRAIL, TYPE B (OR TYPE T) TO GUARDRAIL, TYPE BD (OR TYPE TD). POST BOLTS SHALL NOT EXTEND MORE THAN ½″ BEYOND NUT.

MINIMUM POST BOLT THREAD LENGTH

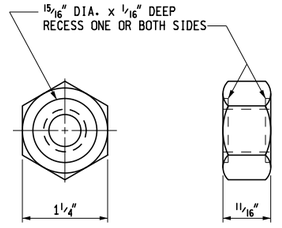
BOLT LENGTH	MINIMUM THREAD LENGTH
9½″	1¾″
18″	2½″
26½″	3″



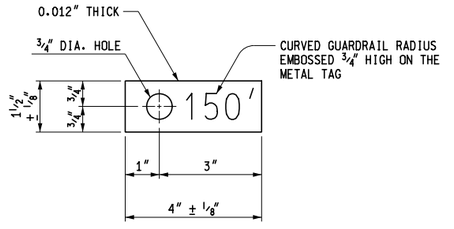
SPLICE BOLT AND POST BOLT



ROUND WASHER



NUT



METAL TAG

FOR CURVED GUARDRAIL WITH RADIUS OF 150′ OR LESS

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

GUARDRAIL, TYPES A, B, BD, T, TD, MGS-8, & MGS-8D

F.H.W.A. APPROVAL	4-22-2016 PLAN DATE	R-60-J	SHEET 14 OF 16

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NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

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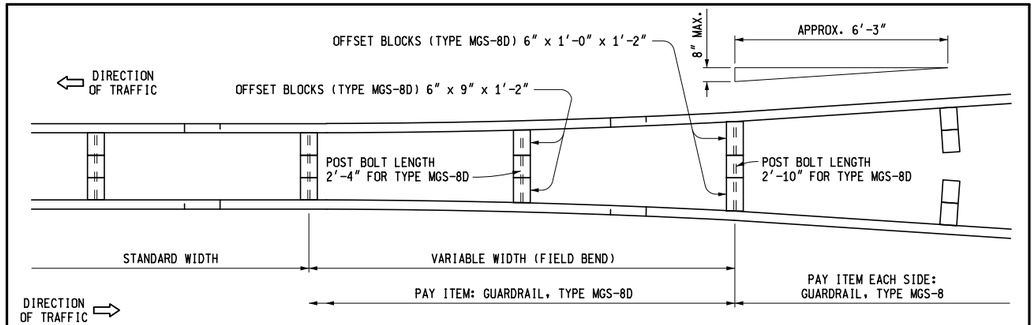
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JN: MQ17-025

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DETAIL SHOWING TRANSITION FROM GUARDRAIL, TYPE MGS-8 TO GUARDRAIL, TYPE MGS-8D

POST BOLTS, SPLICE BOLTS AND WASHERS AT BEAM ELEMENT SPLICE POSTS AND AT INTERMEDIATE POSTS						
GUARDRAIL TYPE	POST	OFFSET BLOCK	POST BOLTS		SPLICE BOLTS	WASHERS
			NO. REQ'D	LENGTH	(1¼″ LONG) (NO. REQ'D)	(ROUND) (NO. REQ'D)
MGS-8	WOOD	WOOD	1	18″	8	1
	STEEL	WOOD	1	9½″		1
MGS-8D	WOOD	WOOD	1	*26½″	16	———
	STEEL	WOOD	2	9½″		2

THRIE BEAM TRANSITIONS REQUIRE 20 SPLICE BOLTS EACH (12 ON TYPE T END AND 8 ON TYPE MGS END).

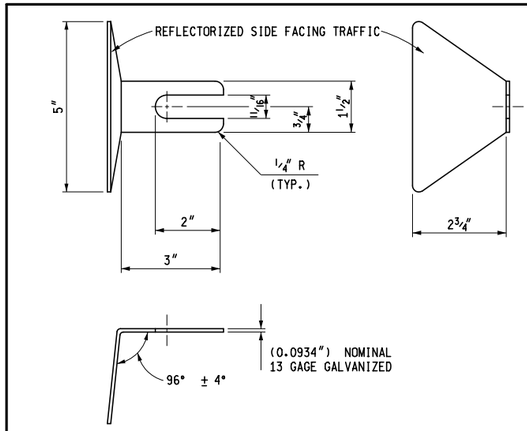
* EXCEPT AS SPECIFIED ON DETAIL SHOWING TRANSITION FROM GUARDRAIL, TYPE MGS-8 TO GUARDRAIL, TYPE MGS-8D POST BOLTS SHALL NOT EXTEND MORE THAN ½″ BEYOND NUT.

MINIMUM POST BOLT THREAD LENGTH	
BOLT LENGTH	MINIMUM THREAD LENGTH
9½″	1¾″
18″	2½″
26½″	3″

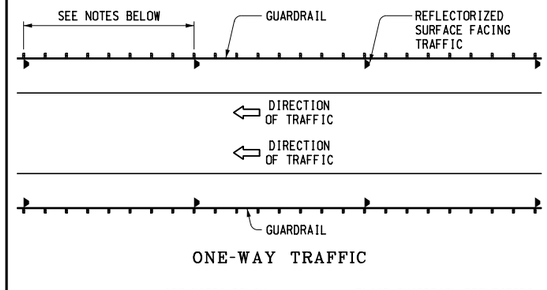
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

GUARDRAIL, TYPES A, B, BD, T, TD, MGS-8, & MGS-8D

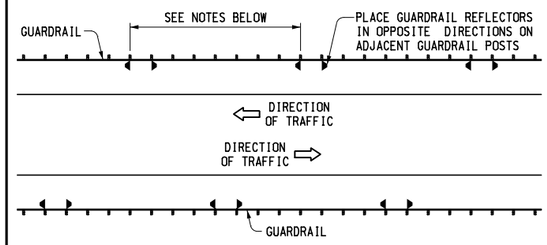
F.H.W.A. APPROVAL	4-22-2016 PLAN DATE	R-60-J	SHEET 15 OF 16



GUARDRAIL REFLECTOR



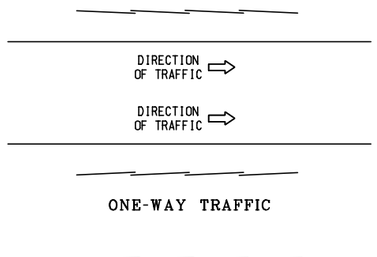
ONE-WAY TRAFFIC



TWO-WAY TRAFFIC
PLACEMENT OF GUARDRAIL REFLECTORS

NOTES GOVERNING THE USE OF GUARDRAIL REFLECTORS

1. GUARDRAIL REFLECTORS SHALL BE USED ON ALL STANDARD GUARDRAIL RUNS, REGARDLESS OF ROADWAY LIGHTING.
2. GUARDRAIL REFLECTORS ARE TO BE SPACED AT THE FOLLOWING INTERVALS:
   a) 50′-0″ ON TANGENT SECTIONS AND CURVES WITH A RADIUS OF 1150′ OR MORE.
   b) 25′-0″ ON CURVES WITH A RADIUS LESS THAN 1150′.
3. FOR GUARDRAIL REFLECTOR PLACEMENT ON APPROACH TERMINALS, SEE THE APPROPRIATE GUARDRAIL APPROACH TERMINAL STANDARD PLAN.
4. A GUARDRAIL REFLECTOR IS TO BE PLACED ON THE SECOND POST FROM THE GUARDRAIL DEPARTING TERMINAL.
5. ON GUARDRAIL, TYPE T AND TYPE TD GUARDRAIL REFLECTORS ARE TO BE PLACED ON THE UPPER POST BOLT.
6. GUARDRAIL REFLECTORS SHALL MATCH COLOR OF EDGE LINE.



TWO-WAY TRAFFIC
DIRECTION OF RAIL LAP

NOTES:

DETAILS SPECIFIED ON THIS STANDARD ARE ACCORDING TO THE AASHTO-AGC-ARTBA JOINT COMMITTEE, TASK FORCE 13 PUBLICATION TITLED "A GUIDE TO STANDARDIZED HIGHWAY BARRIER HARDWARE."

BEAM ELEMENTS SHALL BE SHOP BENT TO PLAN RADIUS FOR CURVE RADII 150′ OR LESS. A TAG IDENTIFYING THE CURVATURE OF THE SHOP BENT SECTION WILL BE REQUIRED FOR EACH CURVED ELEMENT.

SEE STANDARD PLAN R-61-SERIES, R-62-SERIES OR R-63-SERIES FOR GUARDRAIL APPROACH TERMINALS, STANDARD PLAN R-66-SERIES FOR GUARDRAIL DEPARTING TERMINALS AND STANDARD PLAN R-67-SERIES FOR GUARDRAIL ANCHORAGE, BRIDGE.

WHEN THE PLANS SPECIFY GUARDRAIL (TYPE B OR T) TO BE PLACED ON THE SHOULDER HINGE POINT, RATHER THAN AS SPECIFIED ON THIS PLAN, 8′-0″ POSTS SHALL BE PROVIDED, WITH THE ADDITIONAL LENGTH EMBEDDED FOR ADDED STABILITY. (NOT NECESSARY WHEN THE SLOPE IS REASONABLY LEVEL BEYOND THE SHOULDER HINGE POINT, AS DETERMINED BY THE ENGINEER.)

WHEN THE PLANS SPECIFY GUARDRAIL TYPE MGS-8 TO BE PLACED ON THE SHOULDER HINGE POINT, RATHER THAN AS SPECIFIED ON THIS PLAN, 9′-0″ POSTS SHALL BE PROVIDED, WITH THE ADDITIONAL LENGTH EMBEDDED FOR ADDED STABILITY. (NOT NECESSARY WHEN THE SLOPE IS REASONABLY LEVEL BEYOND THE SHOULDER HINGE POINT, AS DETERMINED BY THE ENGINEER.)

WOOD POSTS WITH ½″ BEVELS AT THE TOP MAY BE USED IN LIEU OF WOOD POSTS WITHOUT BEVELS SPECIFIED. THE LENGTH, WIDTH AND DEPTH OF THE POST SHALL BE AS SPECIFIED ON THIS STANDARD AND THE POST BOLT HOLES SHALL BE LOCATED TO ENSURE PROPER RAIL HEIGHT.

WOOD OFFSET BLOCKS WITH ½″ BEVELS AT THE TOP AND BOTTOM OR A 1″ BEVELED TOP MAY BE USED IN LIEU OF WOOD BLOCKS WITHOUT BEVELS SPECIFIED. THE LENGTH (FRONT AND BACK FACE), WIDTH AND DEPTH OF THE BLOCK SHALL BE AS SPECIFIED ON THIS STANDARD AND THE POST BOLT HOLES SHALL BE LOCATED TO ENSURE PROPER RAIL HEIGHT AND COMPATIBILITY WITH POST HOLES.

WHEN THE FACE OF GUARDRAIL IS PLACED FLUSH WITH FACE OF CURB, THE RAIL HEIGHT SHOULD BE MEASURED FROM THE FRONT EDGE OF THE GUTTER PAN, WHICH IS THE POINT ON THE GUTTER PAN THAT IS CLOSEST TO THE EDGE OF THE TRAVELED LANE. WHEN THE FACE OF THE GUARDRAIL PANEL IS LOCATED BEHIND THE CURB THE RAIL HEIGHT SHOULD BE MEASURED FROM THE GROUND JUST IN FRONT OF THE GUARDRAIL.

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

GUARDRAIL, TYPES A, B, BD, T, TD, MGS-8, & MGS-8D

F.H.W.A. APPROVAL	4-22-2016 PLAN DATE	R-60-J	SHEET 16 OF 16

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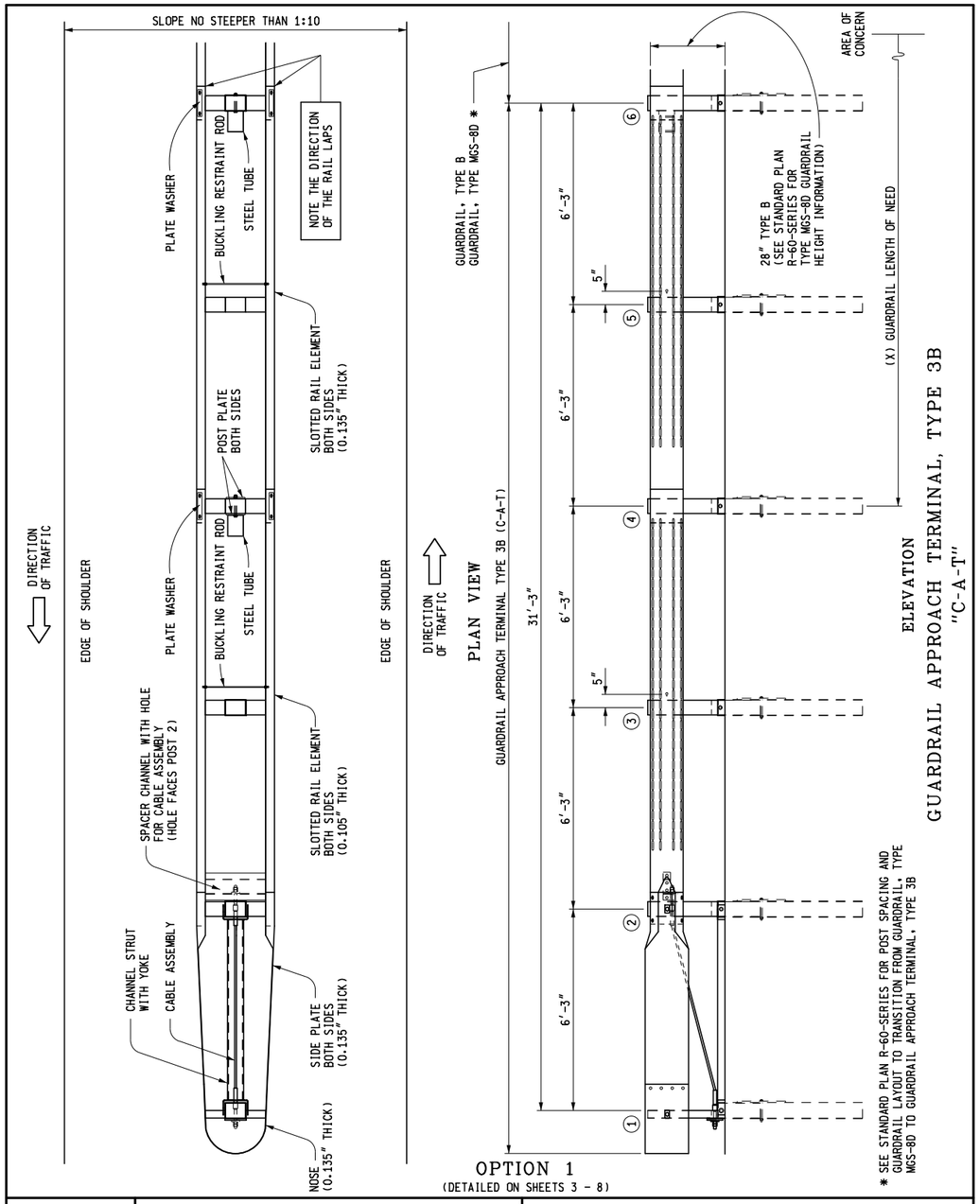
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DATE: 02/10/2017
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JN: MQ17-025

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GUARDRAIL APPROACH TERMINAL, TYPE 3B "C-A-T"

DEPARTMENT DIRECTOR
Kirk T. Steudle

PREPARED BY DESIGN DIVISION

DRAWN BY: B.L.T.

CHECKED BY: W.K.P.

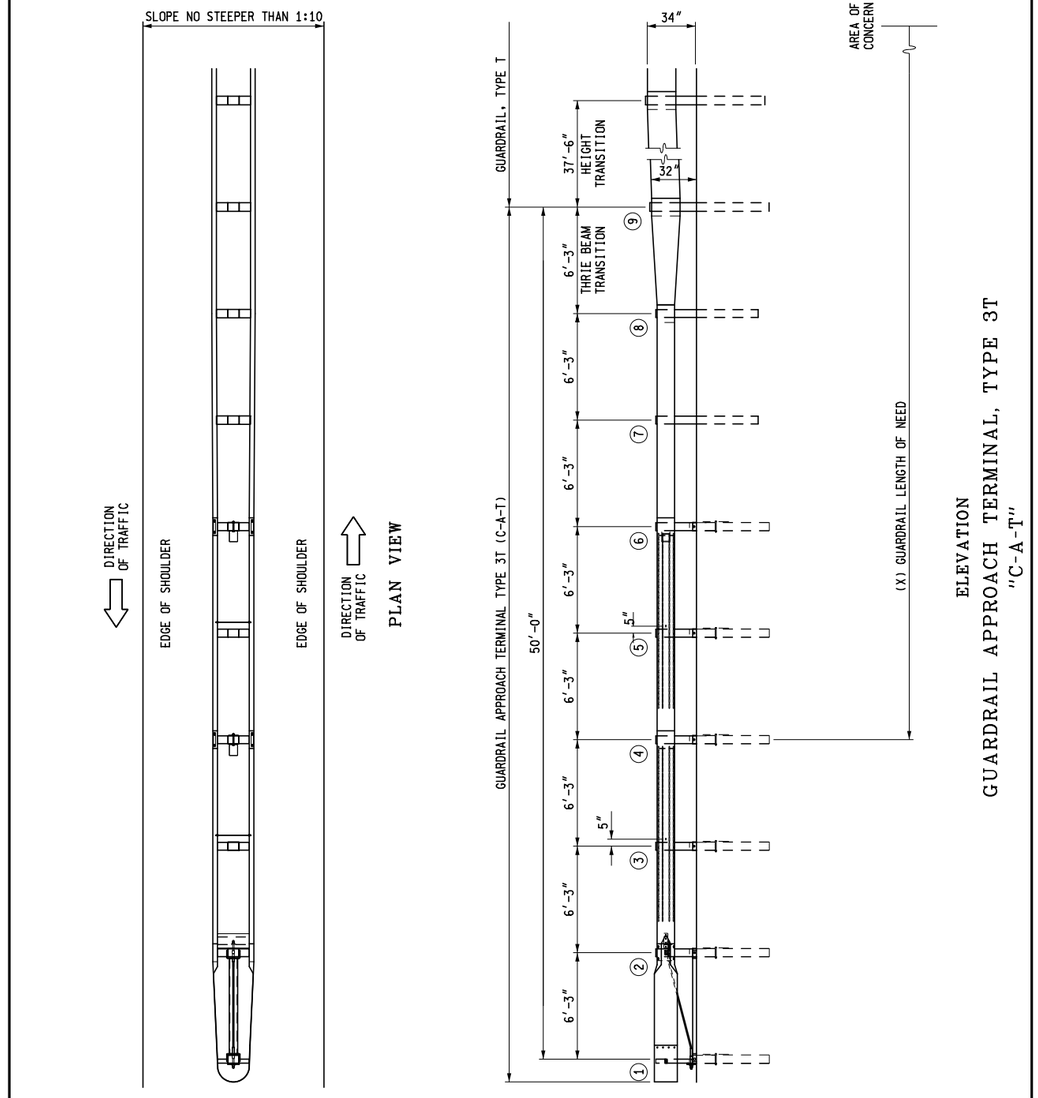
APPROVED BY: _____
DIRECTOR, BUREAU OF FIELD SERVICES

APPROVED BY: _____
DIRECTOR, BUREAU OF DEVELOPMENT

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

GUARDRAIL APPROACH TERMINAL, TYPE 3B & 3T

F.H.W.A. APPROVAL	3-15-2016 PLAN DATE	R-63-C	SHEET 1 OF 16



GUARDRAIL APPROACH TERMINAL, TYPE 3T "C-A-T"

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

GUARDRAIL APPROACH TERMINAL, TYPE 3B & 3T

F.H.W.A. APPROVAL	3-15-2016 PLAN DATE	R-63-C	SHEET 2 OF 16

AS-LET PLAN REVISIONS							
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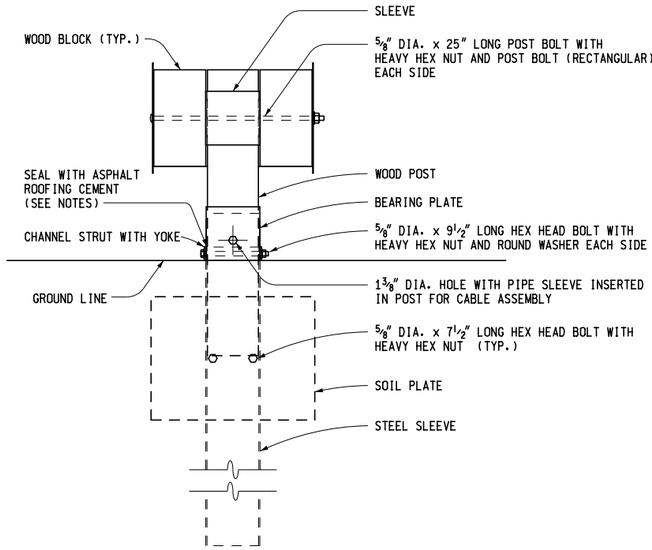
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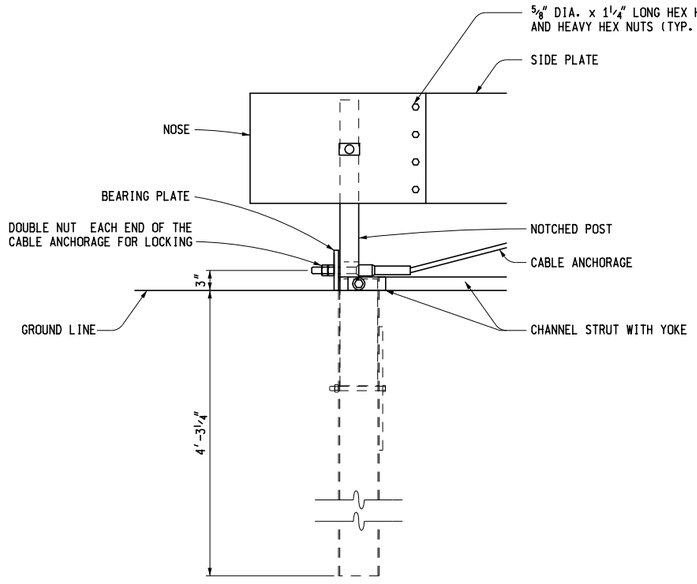
DATE: 02/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025

DRAWING | SHEET
238



SIDE



ELEVATION

POST 1 DETAILS

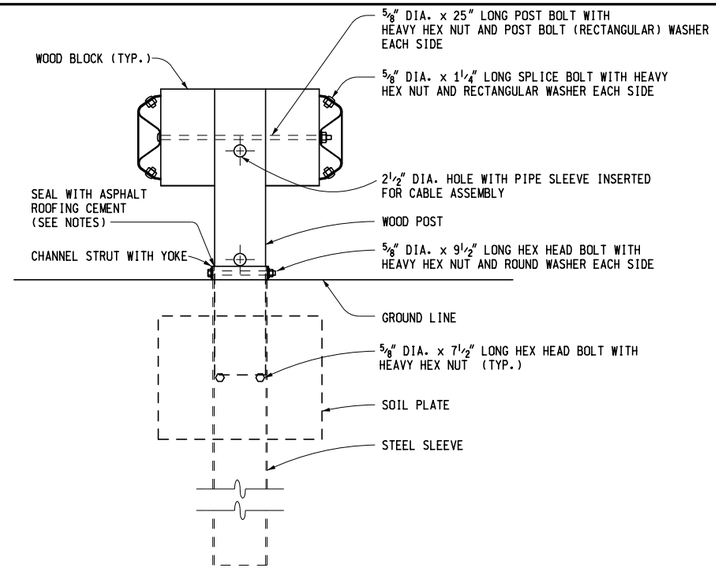
(C-A-T)

MICHIGAN DEPARTMENT OF TRANSPORTATION

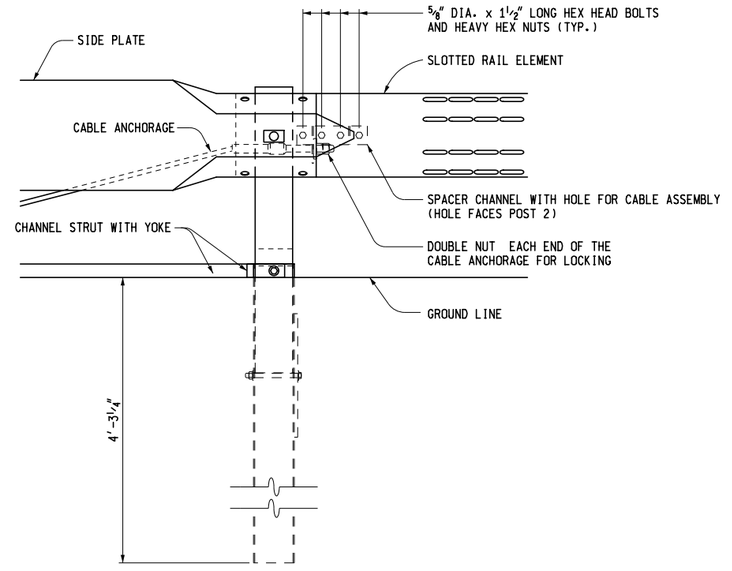
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

GUARDRAIL APPROACH TERMINAL, TYPE 3B & 3T

F.H.W.A. APPROVAL	3-15-2016 PLAN DATE	R-63-C	SHEET 3 OF 16



SIDE



ELEVATION

POST 2 DETAILS

(C-A-T)

MICHIGAN DEPARTMENT OF TRANSPORTATION

BUREAU OF DEVELOPMENT STANDARD PLAN FOR

GUARDRAIL APPROACH TERMINAL, TYPE 3B & 3T

F.H.W.A. APPROVAL	3-15-2016 PLAN DATE	R-63-C	SHEET 4 OF 16

AS-LET PLAN REVISIONS

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

MDOT Michigan Department of Transportation

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DATE: 02/10/2017

DESIGN UNIT: FILPUS

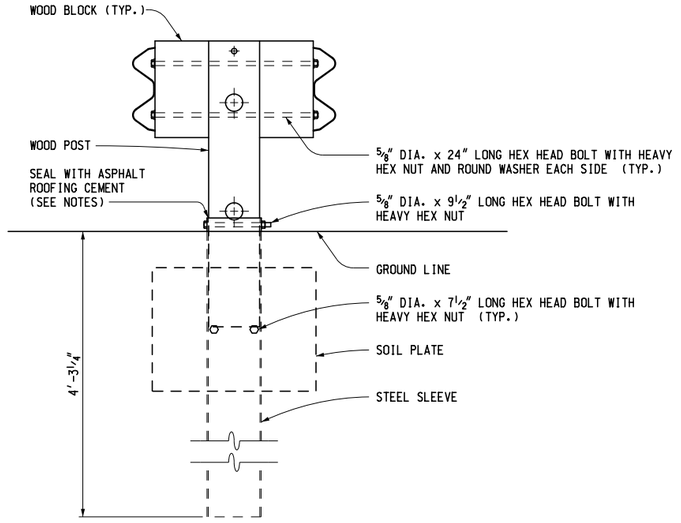
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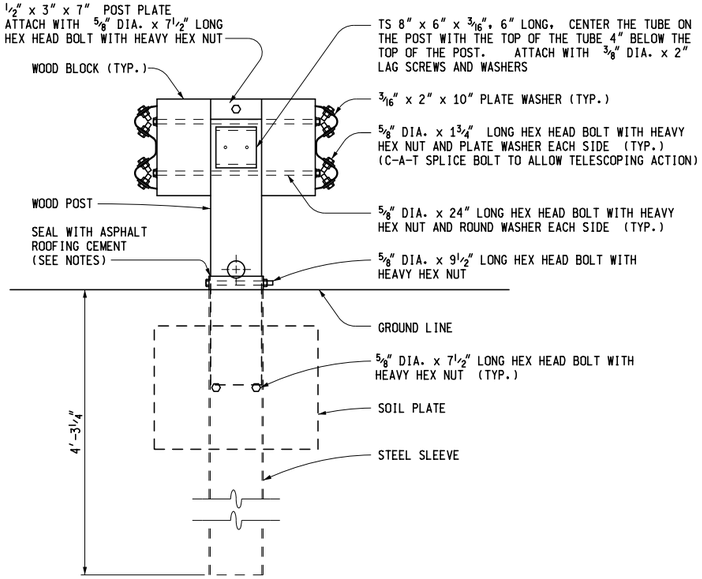
DRAWING

SHEET 239



POST 3 AND 5 DETAIL
(C-A-T)

C-A-T SPLICE BOLT
C-A-T SPLICE BOLTS REQUIRED TO ALLOW TELESCOPING ACTION

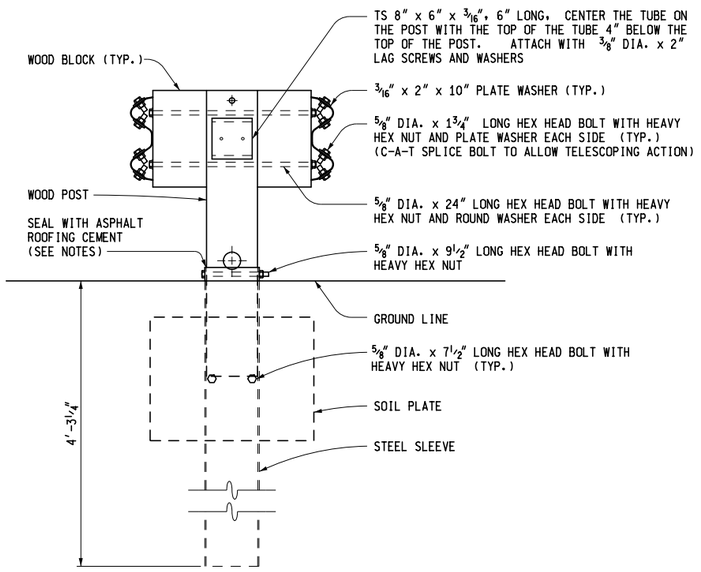


POST 4 DETAIL
(C-A-T)

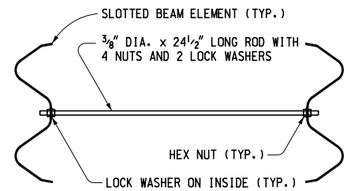
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

GUARDRAIL APPROACH TERMINAL, TYPE 3B & 3T

F.H.W.A. APPROVAL	3-15-2016 PLAN DATE	R-63-C	SHEET 5 OF 16



POST 6 DETAIL
(C-A-T)



BUCKLING RESTRAINT ROD DETAIL
(C-A-T)

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

GUARDRAIL APPROACH TERMINAL, TYPE 3B & 3T

F.H.W.A. APPROVAL	3-15-2016 PLAN DATE	R-63-C	SHEET 6 OF 16

AS-LET PLAN REVISIONS

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

MDOT Michigan Department of Transportation

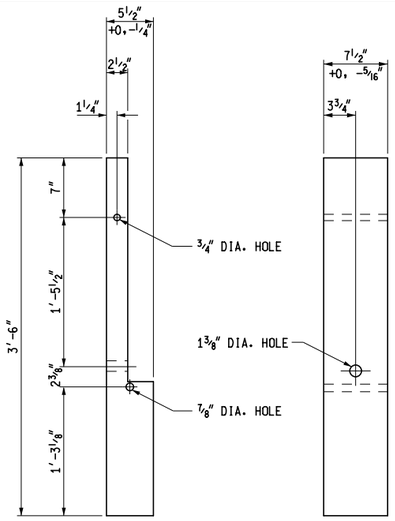
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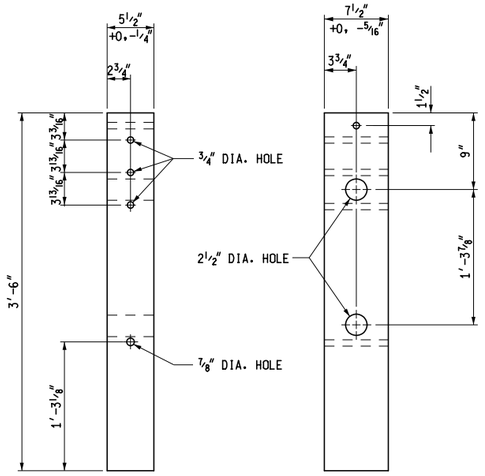
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DESIGN UNIT: FILPUS
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CS: 52042
JN: MQ17-025

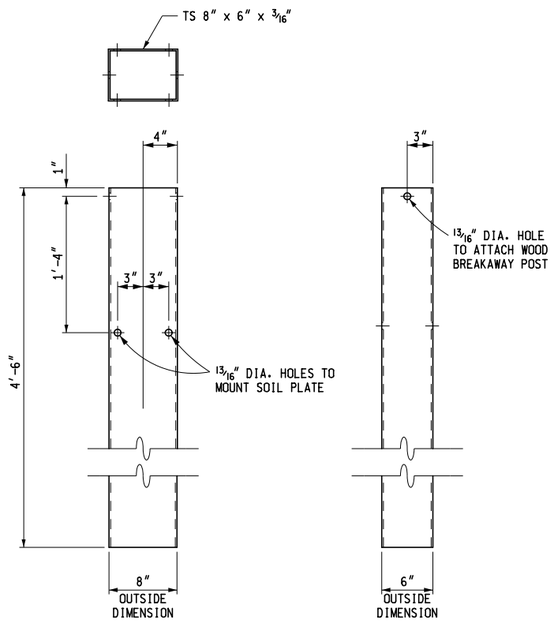
DRAWING
SHEET 240



WOOD BREAKAWAY POST
(C-A-T POST 1)



WOOD BREAKAWAY POST
(C-A-T POST 2 - 6)

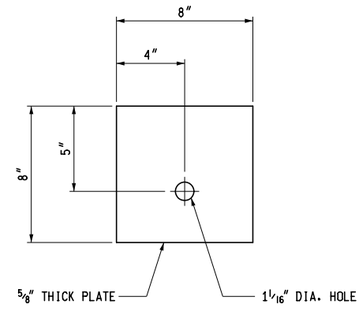


STEEL SLEEVE
(C-A-T)

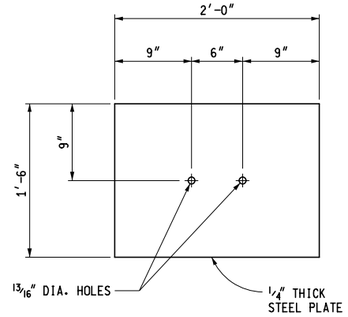
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

GUARDRAIL APPROACH TERMINAL, TYPE 3B & 3T

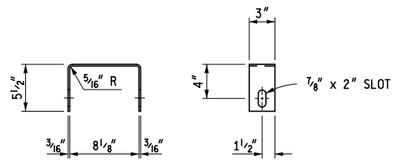
F.H.W.A. APPROVAL	3-15-2016 PLAN DATE	R-63-C	SHEET 7 OF 16

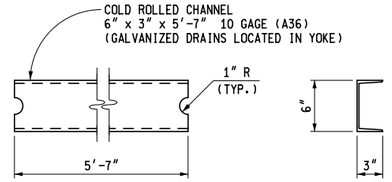


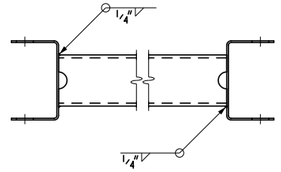
BEARING PLATE
(C-A-T)



SOIL PLATE
(C-A-T)

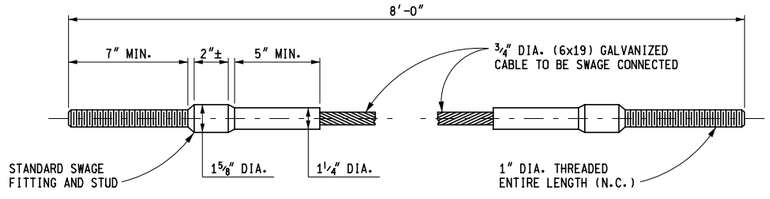






ASSEMBLY DETAIL

STRUT DETAILS
(C-A-T)



CABLE ASSEMBLY
(C-A-T)

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

GUARDRAIL APPROACH TERMINAL, TYPE 3B & 3T

F.H.W.A. APPROVAL	3-15-2016 PLAN DATE	R-63-C	SHEET 8 OF 16

AS-LET PLAN REVISIONS

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

MDOT Michigan Department of Transportation

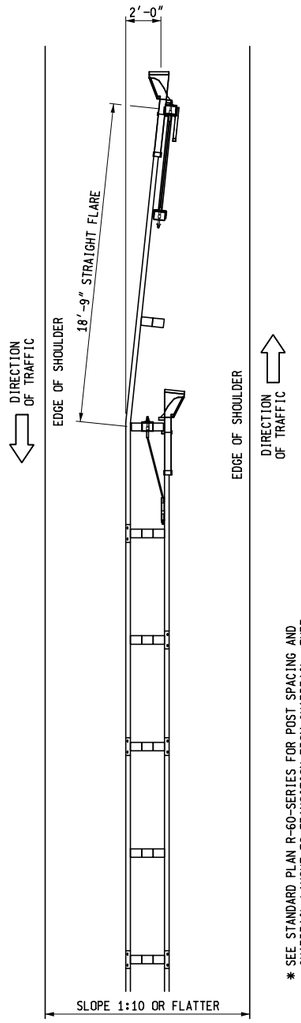
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DATE: 02/10/2017
DESIGN UNIT: FILPUS
TSC: ISHPEMING

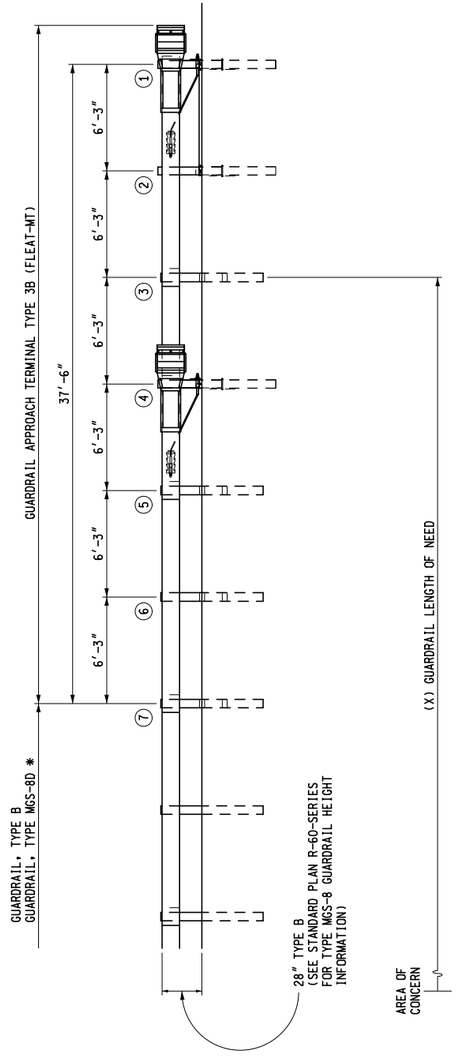
CS: 52042
JN: MQ17-025

DRAWING | SHEET
241



PLAN VIEW

* SEE STANDARD PLAN R-60-SERIES FOR POST SPACING AND GUARDRAIL LAYOUT TO TRANSITION FROM GUARDRAIL, TYPE MGS-8D TO GUARDRAIL APPROACH TERMINAL, TYPE 3B



ELEVATION

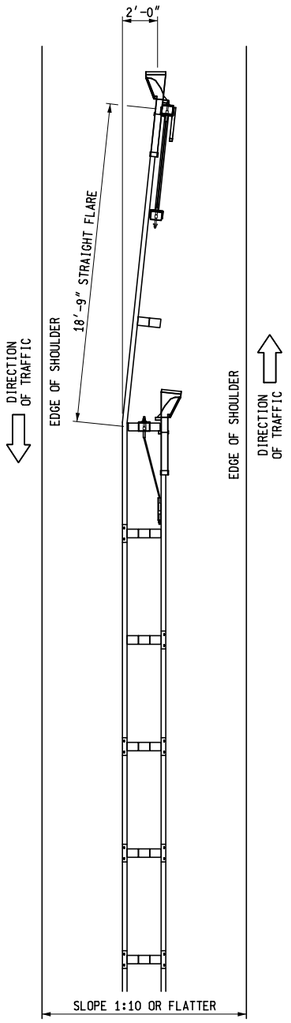
GUARDRAIL APPROACH TERMINAL, TYPE 3B
"FLEAT - MT"

OPTION 2
(DETAILED ON SHEETS 11 - 15)

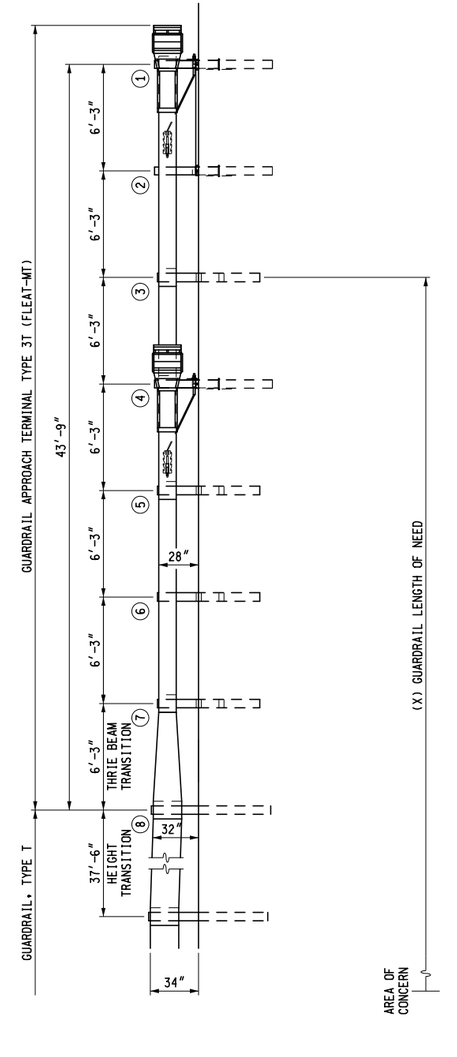
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

GUARDRAIL APPROACH TERMINAL, TYPE 3B & 3T

F.H.W.A. APPROVAL	3-15-2016 PLAN DATE	R-63-C	SHEET 9 OF 16



PLAN VIEW



ELEVATION

GUARDRAIL APPROACH TERMINAL, TYPE 3T
"FLEAT - MT"

OPTION 2
(DETAILED ON SHEETS 11 - 15)

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

GUARDRAIL APPROACH TERMINAL, TYPE 3B & 3T

F.H.W.A. APPROVAL	3-15-2016 PLAN DATE	R-63-C	SHEET 10 OF 16

AS-LET PLAN REVISIONS

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

MDOT Michigan Department of Transportation

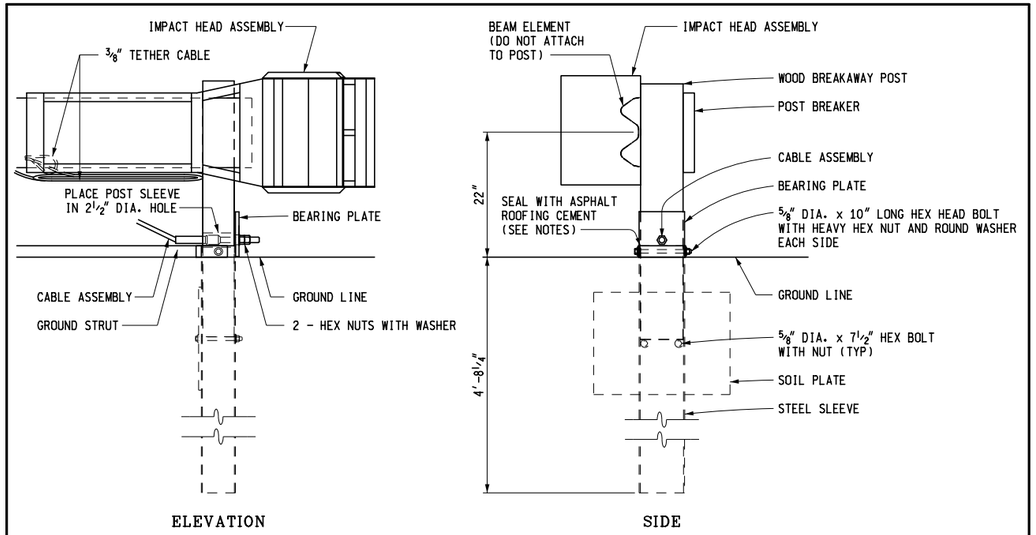
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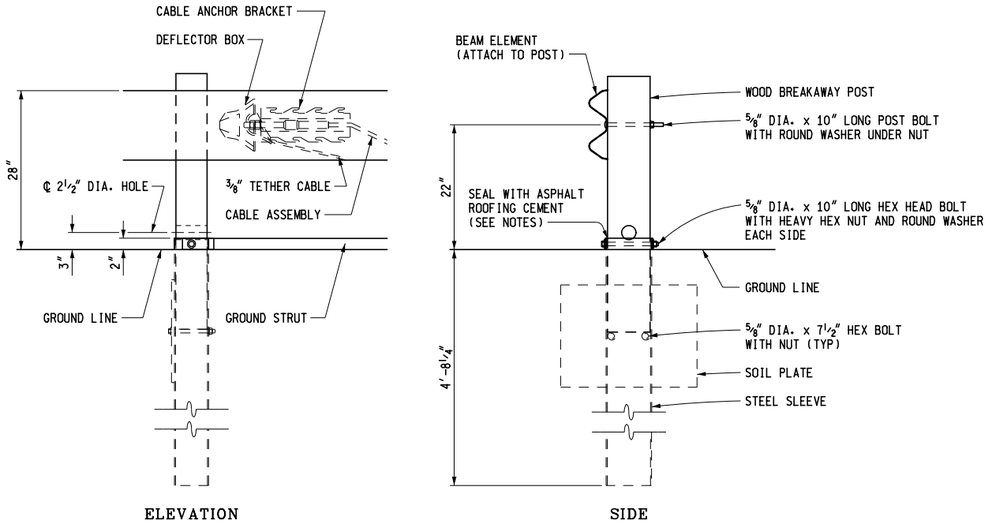
DATE: 02/10/2017
DESIGN UNIT: FILPUS
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CS: 52042
JN: MQ17-025

DRAWING	SHEET
	242



POST 1 DETAIL
(FLEAT-MT)

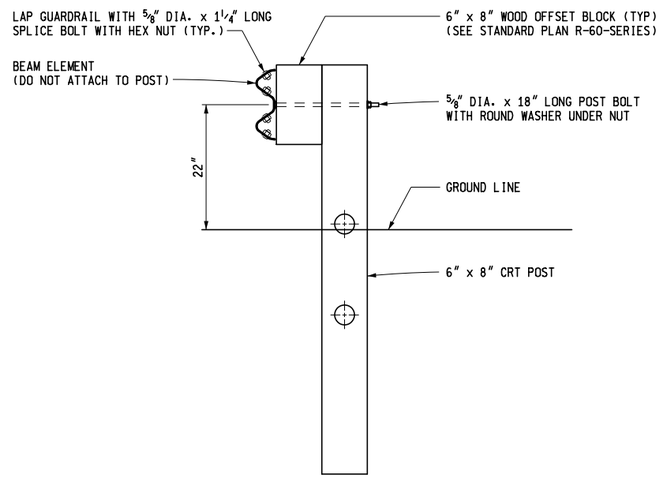


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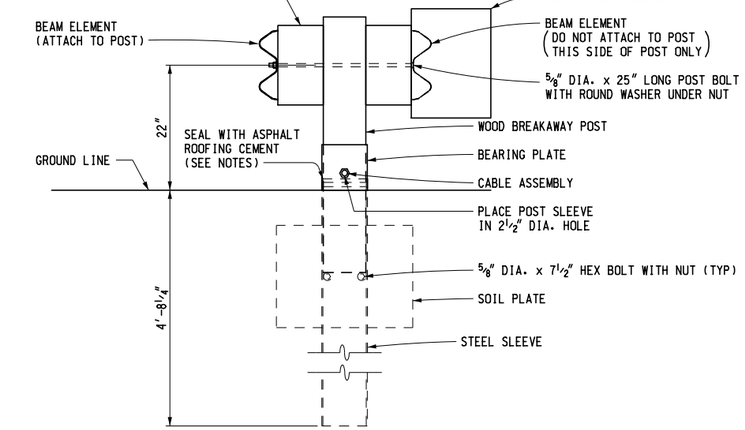
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

GUARDRAIL APPROACH TERMINAL, TYPE 3B & 3T

F.H.W.A. APPROVAL	3-15-2016 PLAN DATE	R-63-C	SHEET 11 OF 16



POST 3 DETAIL
(FLEAT-MT)



POST 4 DETAIL
(FLEAT-MT)

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

GUARDRAIL APPROACH TERMINAL, TYPE 3B & 3T

F.H.W.A. APPROVAL	3-15-2016 PLAN DATE	R-63-C	SHEET 12 OF 16

AS-LET PLAN REVISIONS

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

MDOT Michigan Department of Transportation

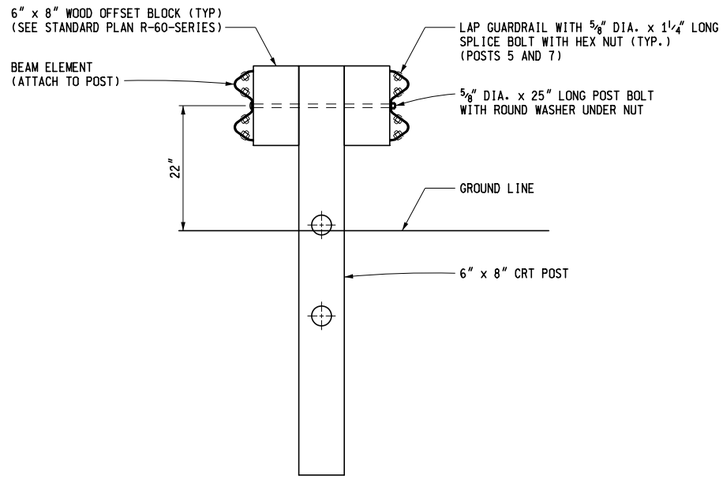
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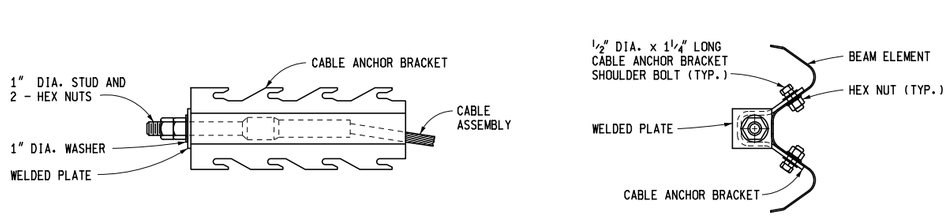
CS: 52042
JN: MQ17-025

DRAWING | SHEET



POST 5, 6 AND 7 DETAIL

(FLEAT-MT)
NOTE: POST 8 IS A STANDARD LINE POST



CABLE ANCHOR BRACKET DETAIL

(FLEAT-MT)



W-BEAM GUARDRAIL END SECTION

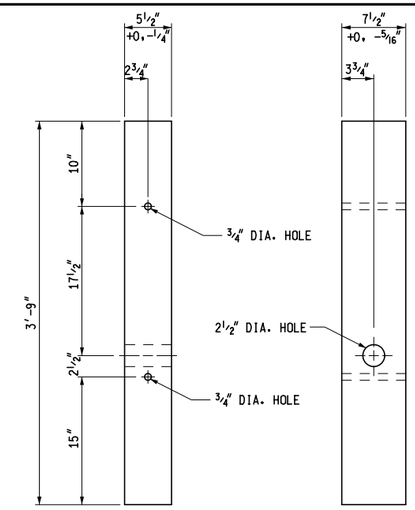
(USE WITH IMPACT HEAD ASSEMBLY)

NOTE: ALL (FLEAT-MT) ITEMS ILLUSTRATED WITHOUT DIMENSIONS SHALL BE ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS.

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

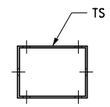
GUARDRAIL APPROACH TERMINAL, TYPE 3B & 3T

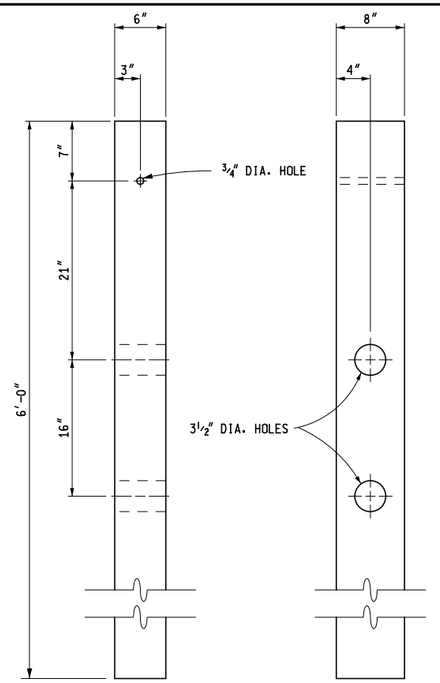
F.H.W.A. APPROVAL	3-15-2016 PLAN DATE	R-63-C	SHEET 13 OF 16



WOOD BREAKAWAY POST

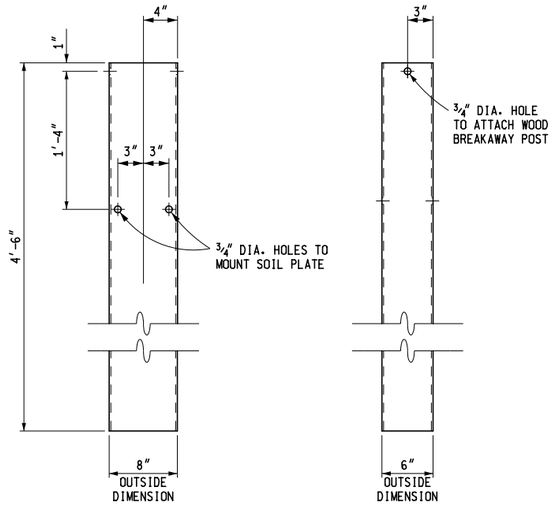
(FLEAT-MT POST 1, 2, & 4)





CRT POST

(FLEAT-MT POST 3, 5, 6, & 7)



STEEL SLEEVE

(FLEAT-MT)

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

GUARDRAIL APPROACH TERMINAL, TYPE 3B & 3T

F.H.W.A. APPROVAL	3-15-2016 PLAN DATE	R-63-C	SHEET 14 OF 16

AS-LET PLAN REVISIONS							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

MDOT Michigan Department of Transportation

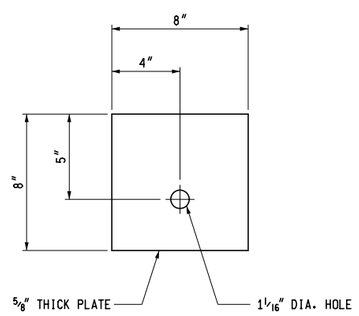
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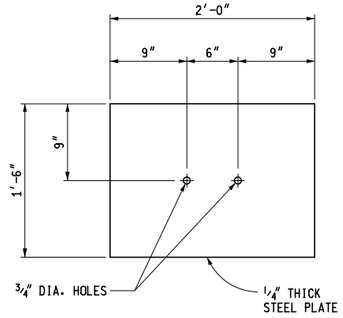
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DESIGN UNIT: FILPUS
TSC: ISHPEMING

CS: 52042
JN: MQ17-025

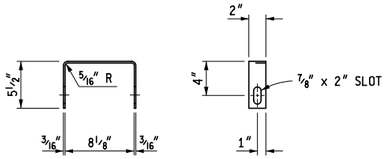
DRAWING	SHEET
	244

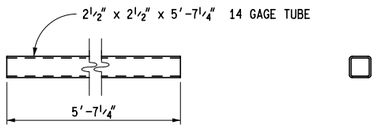


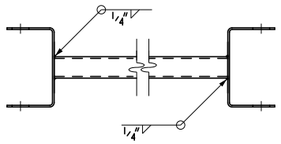
BEARING PLATE
(FLEAT-MT)



SOIL PLATE
(FLEAT-MT)

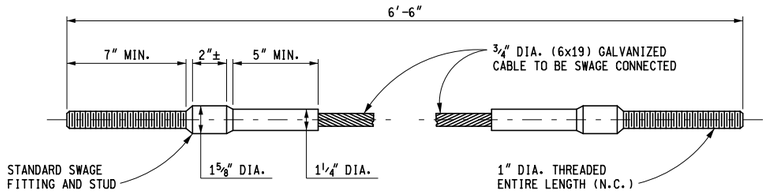






ASSEMBLY DETAIL

STRUT DETAILS
(FLEAT-MT)



CABLE ASSEMBLY
(FLEAT-MT)

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

GUARDRAIL APPROACH TERMINAL, TYPE 3B & 3T

F.H.W.A. APPROVAL	3-15-2016 PLAN DATE	R-63-C	SHEET 15 OF 16

NOTES:

ALL POSTS, OFFSET BLOCKS, BEAM ELEMENTS, AND HARDWARE (INCLUDING BOLTS, NUTS, AND WASHERS) SHALL CONFORM TO THE CURRENT STANDARD SPECIFICATIONS AND TO THE CURRENT STANDARD PLAN R-60-SERIES, WHERE APPLICABLE, EXCEPT AS SPECIFIED ON THIS STANDARD.

ALL 1:10 SLOPES SHALL BE GRADED TO CLASS A SLOPE TOLERANCES.

FOR DETAILS OF GUARDRAIL PLACEMENT, SEE STANDARD PLAN R-56-SERIES, AND R-59-SERIES.

AFTER THE CABLE ASSEMBLY HAS BEEN TIGHTENED, A SECOND NUT SHALL BE INSTALLED SO THAT THE CABLE WILL NOT LOOSEN.

HARDWARE BETWEEN POST 1 AND POST 6 (OPTION 1) ARE PROPRIETARY ITEMS OF THE C-A-T AND MUST BE PURCHASED FROM AN AUTHORIZED DISTRIBUTER.

HARDWARE BETWEEN POST 1 AND POST 7 (OPTION 2) ARE PROPRIETARY ITEMS OF THE FLEAT-MT AND MUST BE PURCHASED FROM AN AUTHORIZED DISTRIBUTER.

GUARDRAIL REFLECTORS ARE NOT TO BE USED ON THE "C-A-T" OR "FLEAT-MT". PLACE RELECTORS BEGINNING ON STANDARD RUN OF GUARDRAIL.

USE REFLECTIVE SHEETING ACCORDING TO THE FOLLOWING TRAFFIC CONDITIONS: (NOTE: ALTERNATE 3" BLACK AND 3" YELLOW STRIPES ON A 45° ANGLE)



TRAFFIC PASSING ON THE LEFT SIDE | TRAFFIC PASSING ON BOTH SIDES | TRAFFIC PASSING ON THE RIGHT SIDE

ON THE "C-A-T", THE CURVED PORTION OF THE NOSE FACING TRAFFIC SHALL BE COMPLETELY COVERED WITH HIGH INTENSITY ADHESIVE REFLECTIVE SHEETING.

ON THE "FLEAT-MT", THE PORTION OF THE IMPACT HEAD ASSEMBLIES FACING TRAFFIC SHALL BE COMPLETELY COVERED WITH HIGH INTENSITY ADHESIVE REFLECTIVE SHEETING.

ASPHALT ROOFING CEMENT SHALL BE USED TO SEAL THE PERIMETER AREA BETWEEN THE STEEL SLEEVE (SOIL TUBE) AND THE WOOD BREAKAWAY POST.

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

GUARDRAIL APPROACH TERMINAL, TYPE 3B & 3T

F.H.W.A. APPROVAL	3-15-2016 PLAN DATE	R-63-C	SHEET 16 OF 16

AS-LET PLAN REVISIONS							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

MDOT Michigan Department of Transportation

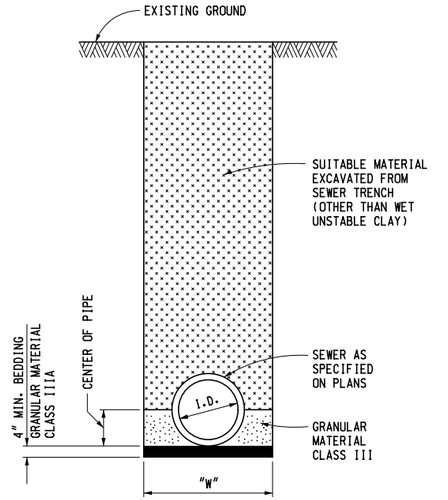
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TSC: ISHPEMING

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JN: MQ17-025

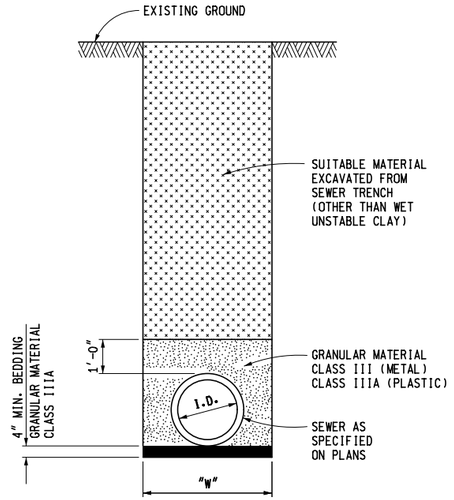
DRAWING	SHEET
	245



SEWER NOT UNDER ROADBED
CONCRETE

NOTE: FOR "W" SEE NOTES ON SHEET 5

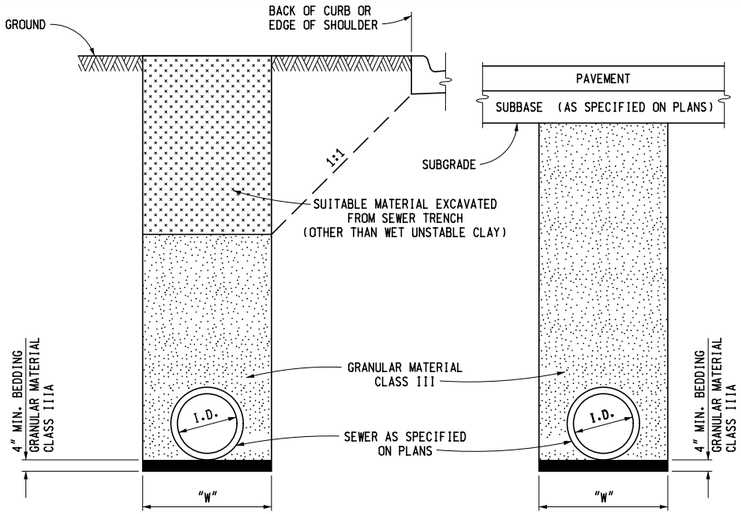
A1



SEWER NOT UNDER ROADBED
METAL & PLASTIC

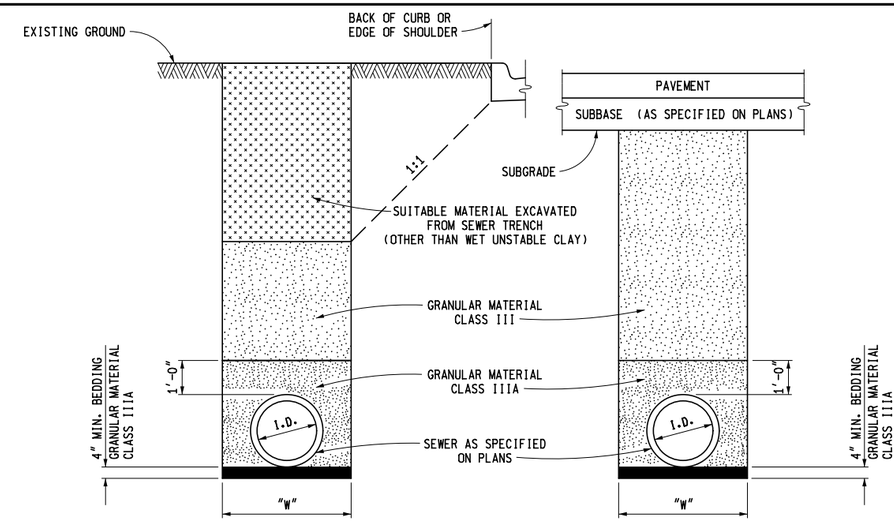
NOTE: FOR "W" SEE NOTES ON SHEET 5

A2



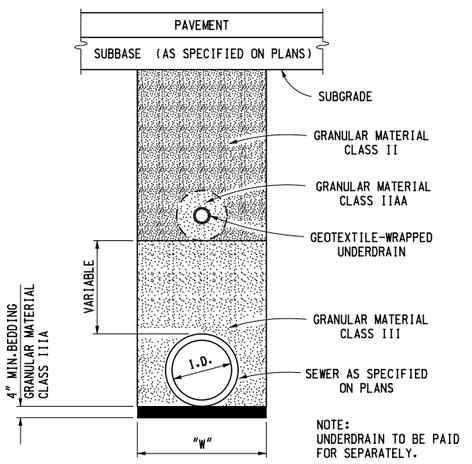
SEWER UNDER ROADBED OR WITHIN INFLUENCE OF ROADBED
CONCRETE & METAL PIPE

B1



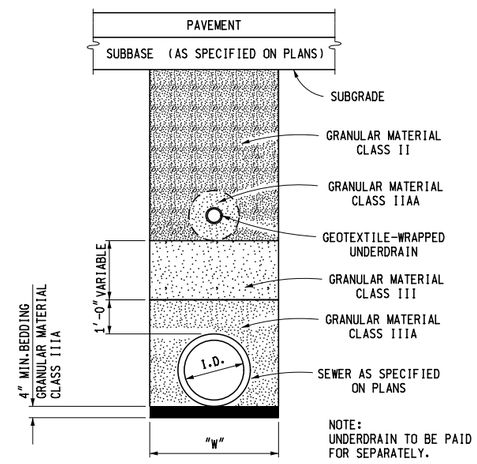
SEWER UNDER ROADBED OR WITHIN INFLUENCE OF ROADBED
PLASTIC PIPE

B2



SEWER WITH UNDERDRAIN UNDER ROADBED
CONCRETE & METAL PIPE

C1



SEWER WITH UNDERDRAIN UNDER ROADBED
PLASTIC PIPE

C2

PREPARED BY DESIGN DIVISION	DEPARTMENT DIRECTOR Kirk T. Steudle	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN FOR UTILITY TRENCHES	
DRAWN BY: B.L.T.	APPROVED BY: _____ DIRECTOR, BUREAU OF FIELD SERVICES		
CHECKED BY: W.K.P.	APPROVED BY: _____ DIRECTOR, BUREAU OF DEVELOPMENT	F.H.W.A. APPROVAL: _____ / 2-8-2016 PLAN DATE / R-83-C / SHEET 1 OF 5	

		MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN FOR UTILITY TRENCHES	
		F.H.W.A. APPROVAL: _____ / 2-8-2016 PLAN DATE / R-83-C / SHEET 2 OF 5	

AS-LET PLAN REVISIONS

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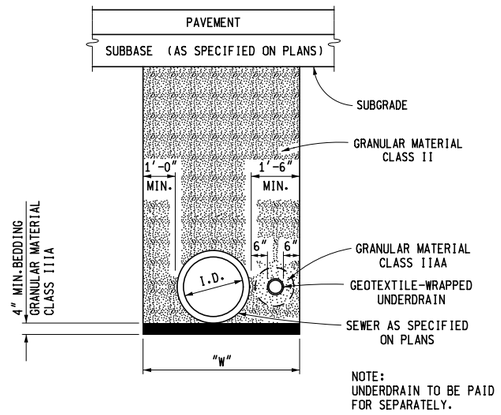
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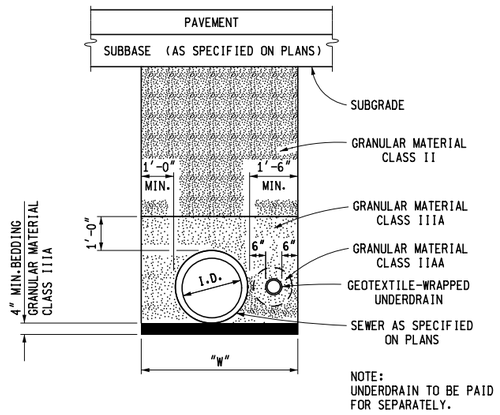
CS: 52042
JN: MQ17-025

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246



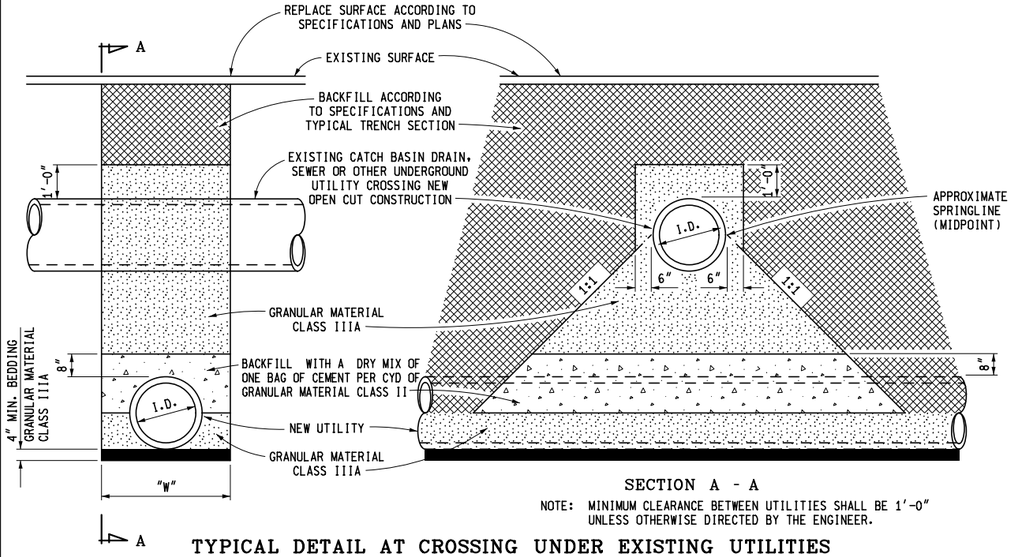
SEWER WITH UNDERDRAIN UNDER ROADBED
CONCRETE & METAL PIPE
(FOR SHALLOW SEWERS)

D1



SEWER WITH UNDERDRAIN UNDER ROADBED
PLASTIC PIPE
(FOR SHALLOW SEWERS)

D2



SECTION A - A

NOTE: MINIMUM CLEARANCE BETWEEN UTILITIES SHALL BE 1'-0" UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

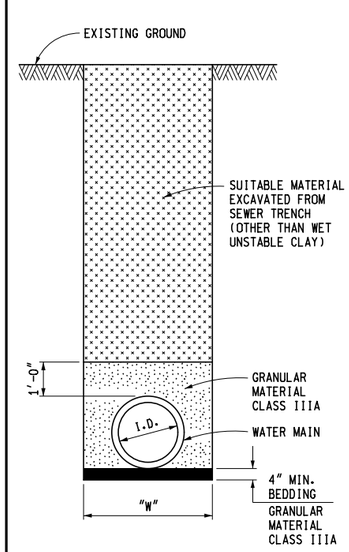
TYPICAL DETAIL AT CROSSING UNDER EXISTING UTILITIES
PAYMENT FOR THIS TRENCH DETAIL WILL BE INCLUDED WITH THE ADJACENT TRENCH DETAILS

E

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

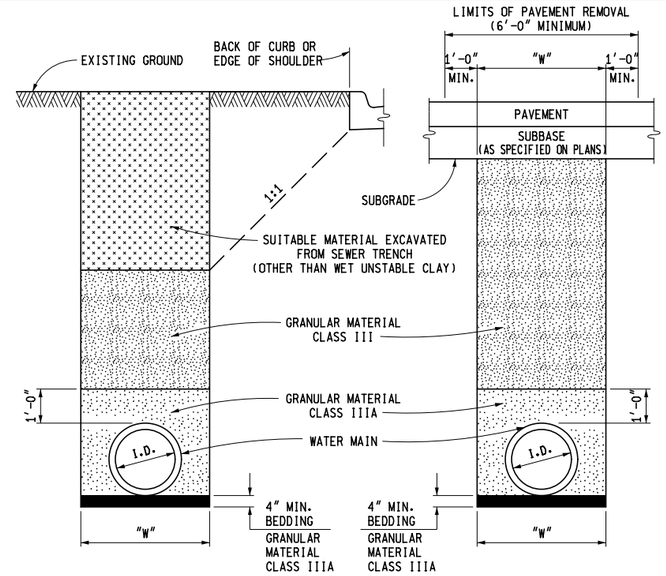
UTILITY TRENCHES

F.H.W.A. APPROVAL	2-8-2016 PLAN DATE	R-83-C	SHEET 3 OF 5



WATER MAINS NOT UNDER ROADBED

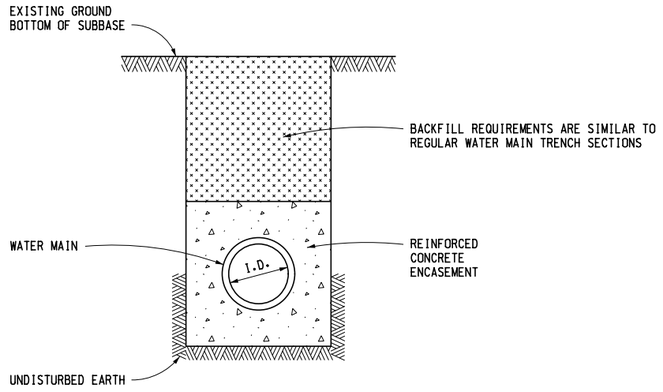
F



NOTE: WHEN WATER MAIN IS PLACED IN PROPOSED ROADBED AREA, IT SHALL BE BACKFILLED WITH SELECTED EXCAVATION MATERIAL ABOVE FUTURE SUBGRADE TO EXISTING GROUND LINE.

WATER MAINS UNDER ROADBED OR WITHIN INFLUENCE OF ROADBED

G



REQUIRED ENCASEMENT SIZE FOR RESPECTIVE PIPE SIZES	
DIAMETER OF PIPE	ENCASEMENT SIZE AND TRENCH WIDTH
6" – 12"	3'-0"
16"	3'-6"
24"	4'-6"
30"	5'-0"
36"	5'-6"
42"	6'-0"
48"	7'-0"
54"	7'-6"
60"	8'-0"
66"	8'-6"
72"	9'-0"

NOTE:
REINFORCEMENT SHALL BE AS SPECIFIED ON PLANS.

WATER MAINS IN REINFORCED CONCRETE ENCASEMENT

H

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

UTILITY TRENCHES

F.H.W.A. APPROVAL	2-8-2016 PLAN DATE	R-83-C	SHEET 4 OF 5

AS-LET PLAN REVISIONS

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

MDOT Michigan Department of Transportation

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FILE:

DATE: 02/10/2017
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NOTES:

BACKFILLING SHALL BE ACCORDING TO THE STANDARD SPECIFICATION.

SUFFICIENT TRENCH WIDTH SHALL BE PROVIDED TO ALLOW FREE WORKING SPACE AND TO PERMIT COMPACTING THE BACKFILL AROUND THE PIPE.

THE FOLLOWING ARE MINIMUM TRENCH WIDTHS:

I.D. PIPE SIZE (INCHES)	LESS THAN 18	21	24	30	36
"W" TRENCH WIDTH (FEET)	3.0	3.5	4.0	5.0	6.0

I.D. PIPE SIZE (INCHES)	42	48	54	60	66	72
"W" TRENCH WIDTH (FEET)	7.0	8.0	9.5	10.0	10.5	11.0

I.D. PIPE SIZE (INCHES)	78	84	90	96	102	108
"W" TRENCH WIDTH (FEET)	11.5	12.0	12.5	13.0	13.5	14.0

ESTIMATED PAVEMENT REMOVAL WIDTH IS TO BE TRENCH WIDTH "W" PLUS 1'-0" EACH SIDE OF THE TRENCH (6'-0" MINIMUM).

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

UTILITY TRENCHES

F.H.W.A. APPROVAL	PLAN DATE	R-83-C	SHEET 5 OF 5
	2-8-2016		

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

F.H.W.A. APPROVAL	PLAN DATE		SHEET OF

AS-LET PLAN REVISIONS

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

MDOT Michigan Department of Transportation

VERT. (FT) 0
HORZ. (FT) 0

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