

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.

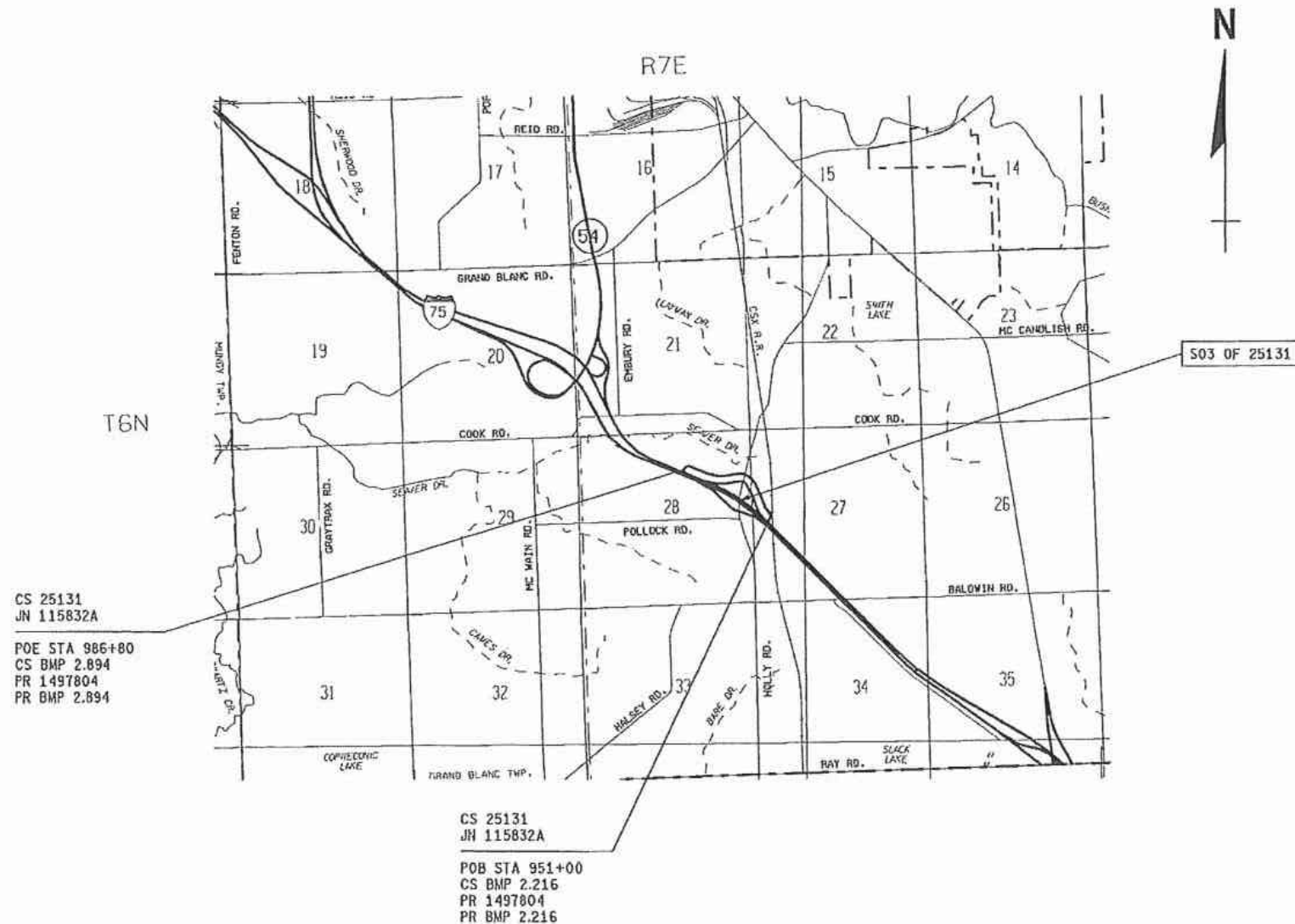
# MICHIGAN DEPARTMENT OF TRANSPORTATION

ROUTE: I-75  
GRAND BLANC TOWNSHIP  
GENESEE COUNTY



ROAD	YEAR	TRAFFIC DATA			SPEED DATA		LIMITS
		ADT	DHV	COMM	DESIGN	POSTED	
I-75	2017	61,550	6,770	6%	75	70	HOLLY ROAD TO M-54
I-75	2037	68,000	7,480	6%	75	70	HOLLY ROAD TO M-54
HOLLY ROAD	2016	22,500			50	45	POLLACK ROAD TO REGENCY PARK DRIVE

SECTION	CONTROL SEC	JOB NO.	FEDERAL PROJECT	FEDERAL ITEM
1	EDA 25131	115832A	CM 1725(021)	DD0055



APPROVALS

RECOMMENDED FOR APPROVAL BY:

*Kevin P. Doyle* 3/1/17  
KEVIN P. DOYLE, P.E. - PROJECT MANAGER DATE

*Armando V. Lopez* 3/13/17  
ARMANDO V. LOPEZ, P.E. - CONSTRUCTION ENGINEER DATE

MICHIGAN  
DEPARTMENT OF TRANSPORTATION  
KIRK T. STEUDLE, P.E. - DIRECTOR

APPROVED BY: *Bradley C. Wierfrich* 3-20-17  
BRADLEY C. WIEFRICH, P.E. - ENGINEER OF DEVELOPMENT DATE

MILES: 0.68  
CONTRACT FOR:  
HOT MIX ASPHALT RECONSTRUCTION OF TWO RAMP AND CONSTRUCTION OF A NEW LOOP RAMP INCLUDING RETAINING WALL, SIGNAL, DRAINAGE AND SAFETY IMPROVEMENTS.

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



NO SCALE

DATE: 03/10/17	CS: 25131
DESIGN UNIT: PETHERS	JN: 115832A
TSC: DAVISON	FILE: 115832_TTitle.dgn

TITLE SHEET	DRAWING	SHEET
TITLE 001		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 its accuracy and the location of existing utilities.

Name Of Owner	Type Of Utility
AT&T Attention: Jeff Heath 54 N Mill Street Pontiac, Michigan 48342 Phone: (248) 975-4588 (W) Phone: (248) 705-5506 (M) Email: jh1786@att.com	Telecom
Comcast Cablevision Attention: Tom Dickinson 6095 Wall Street Sterling Heights, Michigan 48312 Phone: (586) 883-7412 Email: Tom_Dickinson@cable.comcast.com	Cable
Consumers Energy Attention: Marcey Conn 3201 East Court Street Flint, Michigan 48506 Phone: (810) 760-3506 Email: marcey.conn@cmsenergy.com	Electric
Consumers Energy Attention: Sal Delisi 3201 East Court Street Flint, Michigan 48506 Phone: (810) 760-3486 Email: salvatore.delisi@cmsenergy.com	Gas
Genesee County Drain Commission Attention: Jeff Wright 4610 Beecher Road Flint, Michigan 48532 Phone: (810) 732-7870 Email: jwright@co.genesee.mi.us	County Drain
Genesee County Drain Commission Attention: Richard Hill 211 W. Oakly St. Flint, Michigan 48503 Phone: (810) 767-4920 Email: rhill@gcrc.org	Other
Genesee County Road Commission Attention: Don Bright 211 W. Oakly St. Flint, Michigan 48503 Phone: (810) 397-3938 Email: dbright@grgc.org	Electric
Grand Blanc Township Attention: Keith Edwards P.O. Box 1833 Grand Blanc, Michigan 48480-0057 Phone: (810) 424-2642 Email: edwards@twp.grand-blanc.mi.us	Other
Grand Blanc Township Attention: Dave Hobson P.O. Box 1833 Grand Blanc, Michigan 48480-0057 Email: hobson@twp.grand-blanc.mi.us	Other

**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.
<b>ROAD</b>	
DRAINAGE STRUCTURES	R-1-G *
COVER B	R-7-F
COVER DX	R-9X-E
COVER G	R-12-E
CONCRETE CURB AND CONCRETE CURB & GUTTER	R-30-G
CONCRETE SHOULDER GUTTER AND SPILLWAY	R-35-D *
CORRUGATED CONCRETE DIVIDER	R-38-C
FILLER WALLS AT EXISTING BRIDGE PIER COLUMNS	R-55-G
GUARDRAIL AT BRIDGES AND EMBANKMENTS	R-59-E
GUARDRAIL TYPES A, B, BD, T, TD, MGS-8, & MGS-8D	R-60-J *
GUARDRAIL APPROACH TERMINAL TYPES 1B & 1T	R-61-H *
GUARDRAIL APPROACH TERMINAL TYPES 3B & 3T	R-63-C *
GUARDRAIL DEPARTING TERMINAL TYPES B, T, & MGS	R-66-E *
GUARDRAIL ANCHORAGE, BRIDGE, DETAILS	R-67-G *
W-BEAM BACKED GUARDRAIL & GUARDRAIL LONG SPAN INSTALLATIONS	R-72-D *
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 *
OUTLET HEADWALLS	R-85-D
PRECAST CONCRETE END SECTION FOR PIPE CULVERT	R-86-E
STEEL END SECTION	R-88-D
SOIL EROSION & SEDIMENTATION CONTROL MEASURES	R-96-E
SEEDING AND TREE PLANTING	R-100-H
WOVEN WIRE FENCE	R-101-B
INSTALLATION OF WOVEN WIRE FENCE (AT STRUCTURES)	R-102-B
TREATMENT OF PEAT MARSHES	R-103-C
GRADING CROSS-SECTIONS	R-105-D
SUPERELEVATION AND PAVEMENT CROWNS	R-107-H
SHOULDER AND CENTER LINE CORRUGATIONS	R-112-I *
DELINEATOR INSTALLATIONS	R-127-E
GUARDRAIL AT INTERSECTIONS	Special Detail 21 *
<b>BRIDGE</b>	
STANDARD SLOPE PAVING DETAILS	B-102-C
MOLDING, BEVEL, LIGHT STANDARD ANCHOR BOLT ASSEMBLY AND NAME PLATE DETAILS	B-103-E
<b>PAVEMENT MARKINGS</b>	
PAVEMENT ARROW AND MESSAGE DETAILS	PAVE-900-E
LONGITUDINAL LINE TYPES AND PLACEMENT	PAVE-905-C
FREEWAY AND RAMP PAVEMENT MARKINGS	PAVE-925-C
PARTIAL CLOVERLEAF TERMINAL MARKINGS	PAVE-926-A
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
<b>STATEWIDE TRAFFIC SIGNALS</b>	
SPAN WIRE TS ON STEEL AND WOOD POLES	SIG-010-A *
WOOD POLE GUYS AND SETTING DEPTH	SIG-050-A *

STEEL TRUSS BRACKETS	SIG-060-A *
GLOBAL POSITIONING SYSTEM (GPS) MODULE	SIG-120-A *
COLOR CODE WIRING/EQUIPMENT GROUNDING	SIG-230-A *
SPAN WIRE MOUNTED TS BRACKET ASSEMBLY	SIG-300-A *
TRAFFIC SIGNAL BACKPLATES	SIG-304-A *
SPAN WIRE TETHER DETAILS	SIG-305-A *
WIRELESS VEHICLE DETECTION SYSTEM	SIG-420-A *
VIDEO DETECTION CAMERA	SIG-430-A *
<b>SIGNING</b>	
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
SIGN SUPPORT SELECTION CHARTS	SIGN-150-D
CANTILEVER SIGN SUPPORT SELECTION CHART	SIGN-160-C
STEEL POSTS	SIGN-200-D
PERFORATED STEEL SQUARE TUBE BREAKAWAY SYSTEM	SIGN-207-D *
WOOD POSTS	SIGN-210-B
TRUSS, CANTILEVER, COLUMN, AND EXIT NUMBER CONNECTION DETAILS	SIGN-700-D *
<b>WORK ZONE DEVICES</b>	
GROUND DRIVEN SIGN SUPPORTS FOR TEMP SIGNS	WZD-100-A *
TEMPORARY TRAFFIC CONTROL DEVICES	WZD-125-E *

\* Denotes Special Detail

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**FUNDING CATEGORIES**

**JN 115832 Project Description**  
 Category 0001 = Fed/State

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE: )								DATE: 03/10/17		CS: 25131		PROJECT INFORMATION SHEET		DRAWING	SHEET
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION		DESIGN UNIT: PETHERS	JN: 115832A			PROJ	SECT	
								FILE: 115832_ProjInfo_001.dgn	TSC: DAVISON				001	2	



**NO SCALE**

### SURVEY

#### GENERAL

- △ CP 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
- PARCEL CORNER - CAPPED IRON
- PARCEL CORNER - IRON PIN
- PARCEL CORNER - IRON PIPE
- PARCEL CORNER - NO ID
- 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 MONUMENT
- PROTECT MONUMENT

### GENERAL LABELING

#### GENERAL

- LEFT TURN ARROW
- TRAFFIC FLOW ARROW

#### REMOVAL

- ABANDON
- BULKHEAD
- CLEARING
- REMOVE
- SALVAGE
- SAVE

#### CONSTRUCTION

- ADJUST
- ADJUST - STRUC COVER WITH TYPE
- ADJUST - BY OTHERS

#### REMOVAL AND CONSTRUCTION

- RELOCATE - WITH CASE NUMBER
- RELOCATE - BY OTHERS

### CONSTRUCTION LIMITS

- SLOPE STAKE LINE

### BORINGS

- BORING

### STRUCTURES

- BEAM UNDERCLEARANCE
- REFERENCE POINT
- STRUCTURE NO. + CONTROL SEC. LABEL

### VEGETATION

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

### ENVIRONMENTAL

- EROSION CONTROL - SILT FENCE
- WETLAND - LEGAL
- WETLAND - NON-LEGAL
- CONTAMINATION - MONITORING WELL
- EROSION CONTROL NUMBER
- EROSION CONTROL - RIPRAP
- 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
- CROSSING - SIGNAL BOX
- CROSSING - SIGNAL FLASHING
- CROSSING - SYMBOL

### SIGNS

- POST - DOUBLE
- POST - SINGLE
- STRUCTURE - CANTILEVER (EXISTING)
- STRUCTURE - CANTILEVER
- STRUCTURE - TRUSS (EXISTING)
- STRUCTURE - TRUSS
- 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
- 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

#### SIDEWALK

- SIDEWALK - REMOVAL
- SIDEWALK - CONCRETE RAMP
- SIDEWALK - DETECT. WARNING SURF.
- SIDEWALK - LANDING
- 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 SCALE

FILE: 115832\_Legend\_001.dgn

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TSC: DAVISON

CS: 25131

JN: 115832A

LEGEND SHEET

DRAWING SHEET

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)
- S—— SEWER
- //——S—— 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
- WATER MAIN - TO BE TAKEN OUT OF SERVICE
- ×—— WATER MAIN - TO BE REMOVED

### STEAM

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

### GENERIC EXISTING UTILITIES

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

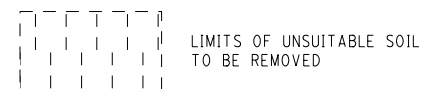
## DRAINAGE

- ⊠ ⊠ ⊠ 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

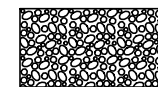
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## SPECIAL LEGEND THIS PROJECT



LIMITS OF UNSUITABLE SOIL  
TO BE REMOVED



RIPRAP, SPECIAL, CLASS

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE: )			
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



LEGEND SHEET

DRAWING SHEET









LEGEND 002 SECT 1

4



## ELECTRICAL

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

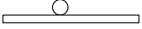










































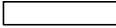





## ARCHITECTURAL

-  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
- \*-o-\* LIGHT STANDARD DOUBLE ARM - EXISTING
- \*-●-\* LIGHT STANDARD DOUBLE ARM
- \* LIGHT STANDARD POST TOP - EXISTING
- \* LIGHT STANDARD POST TOP
- \*-o LIGHT STANDARD SINGLE ARM - EXISTING
- \*-● LIGHT STANDARD SINGLE ARM
- o-● LIGHT POLE - TEMPORARY
- LUMINAIRE WALL MOUNTED UNDERBRIDGE - EXISTING
- LUMINAIRE WALL MOUNTED UNDERBRIDGE
- o-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 PEDESTAL
-  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
- === -x- ITS -x- === 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 - 30 INCH ROUND
- ⊙ SIGNAL HANDHOLE - 36 INCH ROUND
-  SIGNAL HANDHOLE - SQUARE
-  SIGNAL HEAD PEDESTRIAN - EXISTING
-  SIGNAL HEAD PEDESTRIAN 1-WAY
-  SIGNAL HEAD PEDESTRIAN 2-WAY
-  SIGNAL HEAD VEHICLE - 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

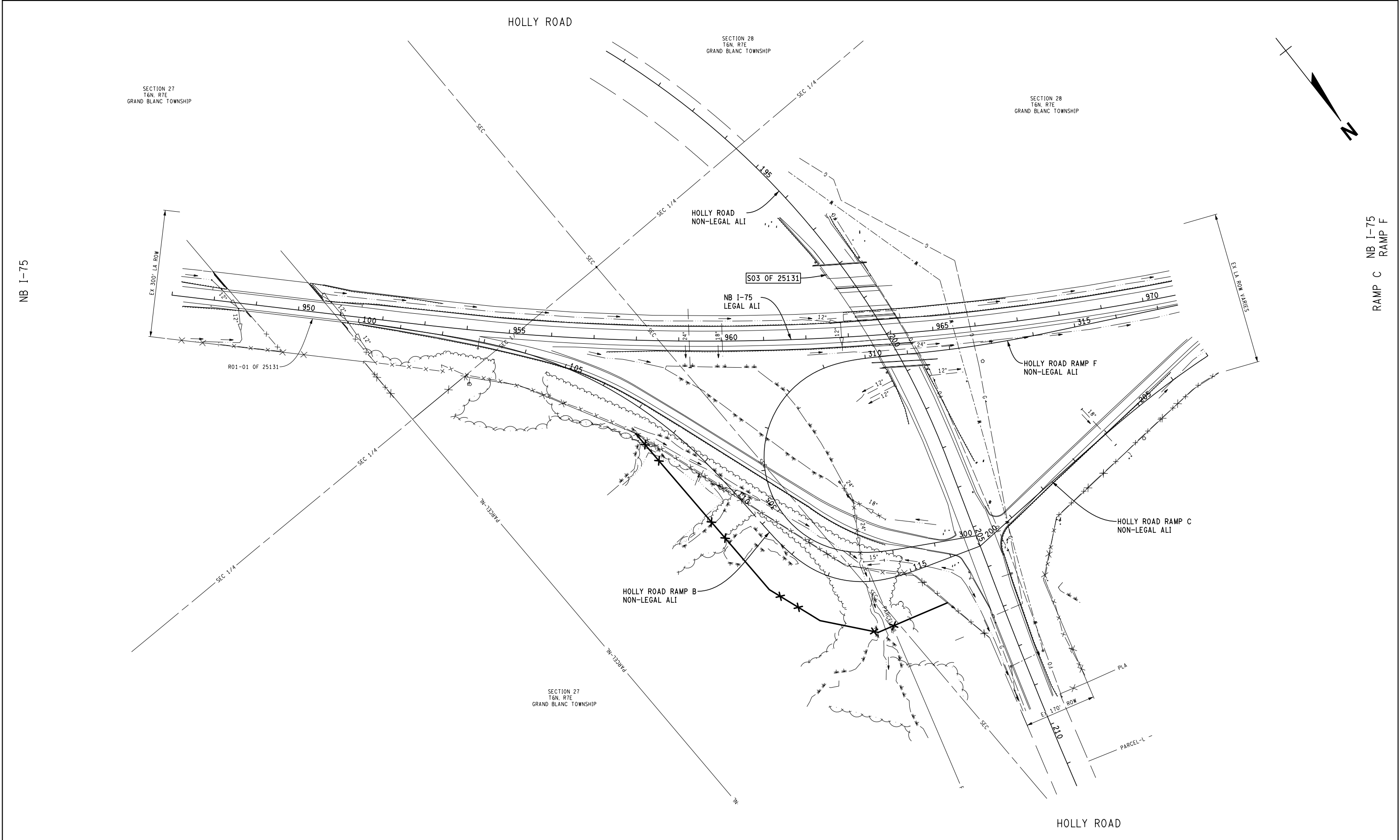
## CABLING / WIRING DIAGRAM

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

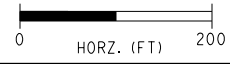
### NOTE:

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

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE: )								 Michigan Department of Transportation	NO SCALE	DATE: 03/10/17		CS: 25131		LEGEND SHEET		DRAWING	SHEET
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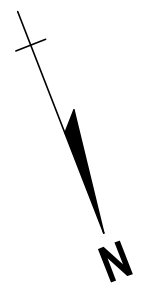
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 JN: 115832A

VICINITY/DRAINAGE MAP  
 I-75 STA 947+00 TO STA 971+00  
 EXISTING

DRAWING SHEET  
 DRNVIC 001 SECT 1  
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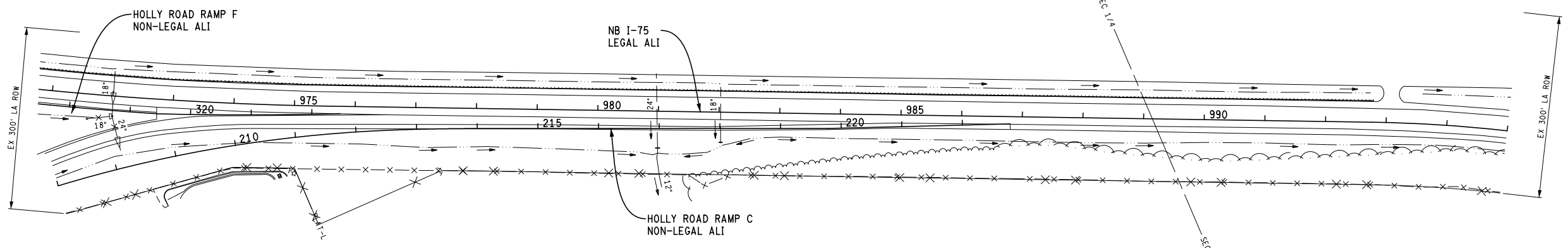
SECTION 27  
T6N, R7E  
GRAND BLANC TOWNSHIP

SECTION 27  
T6N, R7E  
GRAND BLANC TOWNSHIP



NB I-75  
RAMP C

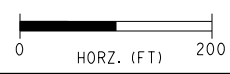
NB I-75



SECTION 27  
T6N, R7E  
GRAND BLANC TOWNSHIP

SECTION 27  
T6N, R7E  
GRAND BLANC TOWNSHIP

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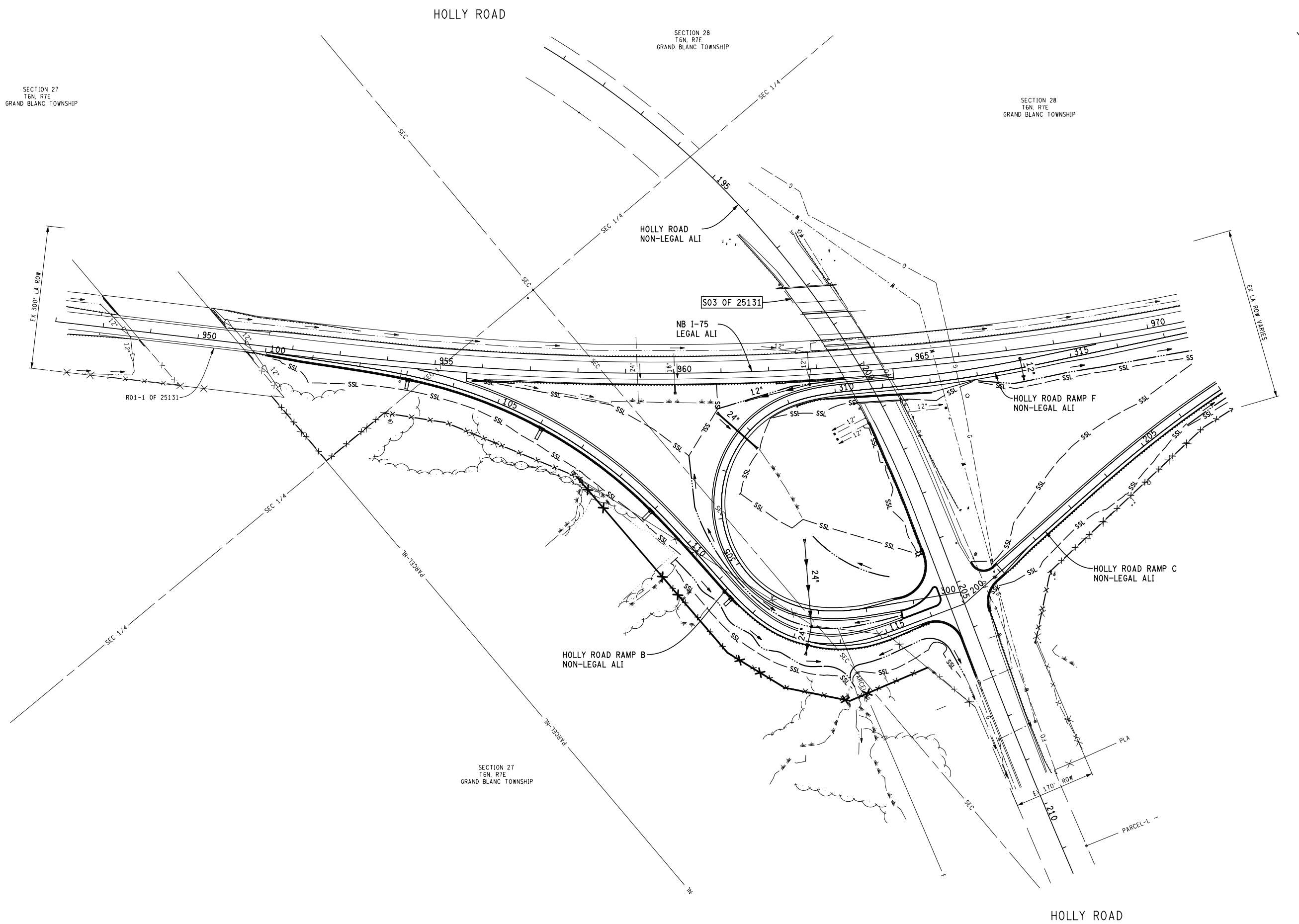


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TSC: DAVISON

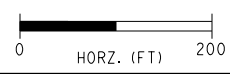
DATE: 03/10/17  
DESIGN UNIT: PETHERS  
CS: 25131  
JN: 115832A

VICINITY/DRAINAGE MAP  
I-75 STA 971+00 TO STA 995+00  
EXISTING

DRAWING SHEET  
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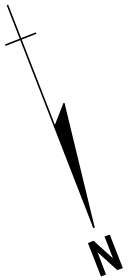
DATE: 03/10/17  
DESIGN UNIT: PETHERS  
TSC: DAVISON

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JN: 115832A

VICINITY/DRAINAGE MAP  
I-75 STA 947+00 TO STA 971+00  
PROPOSED

DRAWING SHEET  
DRNVIC 003      SECT 1  
8



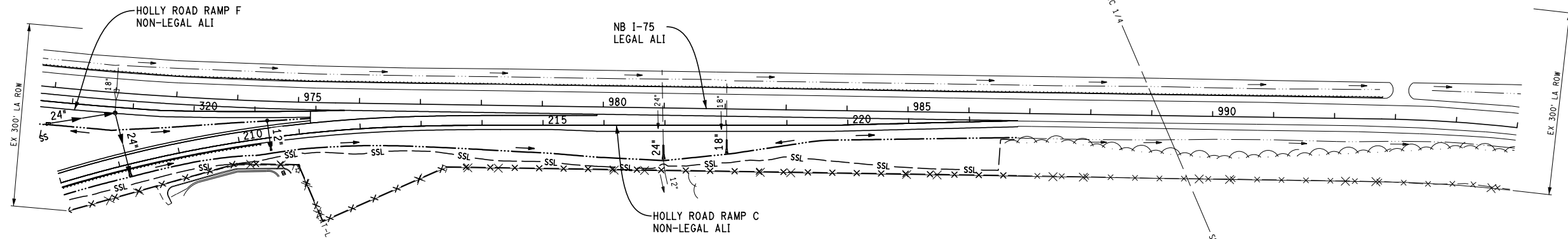


SECTION 27  
T6N, R7E  
GRAND BLANC TOWNSHIP

SECTION 27  
T6N, R7E  
GRAND BLANC TOWNSHIP

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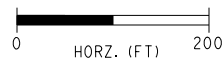
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SECTION 27  
T6N, R7E  
GRAND BLANC TOWNSHIP

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T6N, R7E  
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VICINITY/DRAINAGE MAP  
I-75 STA 971+00 TO STA 995+00  
PROPOSED

DRAWING SHEET  
DRNVIC 004 SECT 1  
9

## 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](http://elocate.missdig.org) for single address or [rte.missdig.org](http://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 MAINTENANCE FREEWAY LIGHTING COORDINATOR:  
Bay Region: (989)754-0784 ext 236

#### **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.  
25071 - C3 C4 W-59-1  
25131 - C3 C4 W-59-1-A  
25131 - 25543  
25131 - 37720  
25131 - S03 37720  
25131, 25132, 63173 - 53200

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.

#### **SIGNALIZED 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 wherever possible. The side road approach grade and crown shall be established to provide for drainage and to assure suitable rideability of the side road.

## 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.

#### **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

#### **CULVERT EXTENSIONS**

The extension of existing culverts on this project may require extra work to obtain a tight seal at the joint connecting new culvert pipe to existing culvert 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 culverts.

#### **DRAINAGE MARKER POSTS**

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

#### **ILLCIT 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.

## GUARDRAIL

#### **8' GUARDRAIL POST**

Guardrail shall be constructed using 8 foot posts at all guardrail locations as shown on the plans except in approach and departing terminals. The additional post length will not be paid for separately, but shall be included in the appropriate guardrail pay item.

#### **SALVAGED BEAM GUARDRAIL**

Guardrail beam elements, posts and hardware that are salvaged shall be neatly stockpiled at an approved location on the project for pickup by Genesee County Road Commission.

#### **GUARDRAIL AT BRIDGE APPROACH**

Guardrail shall be extended parallel to the existing bridge railing until past the bridge approach curb & gutter before flaring to shoulder.

#### **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.

## 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.

No cereal rye seeding shall be used on this project.

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.

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.

#### **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.

#### **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.

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**OVERHEAD STRUCTURES**

All actual heights of new overhead sign structures must be determined by the Contractor and verified by the Engineer prior to end support structures being fabricated.

All cantilevers or trusses installed or removed shall be reported by the Project Engineer on Form 467. Completed Form 467 shall be sent to: MDOT Operations Field Services Division Statewide Sign Shop, 6333 Lansing Rd, Lansing, Michigan 48917

**REMOVAL & SALVAGE**

All overhead signs shall remain in place until the new signs are installed.

The Type I Signs (aluminum extruded sections), cantilevers, trusses, bridge connections, steel breakaway columns and all attaching or fastening devices for these items are the property of MDOT and shall be carefully removed, hauled and stockpiled at: MDOT Operations Field Services Division Statewide Sign Shop, 6333 Lansing Rd, Lansing, Michigan 48917

Temporary stock piling (on site), loading, unloading and hauling of these items is the responsibility of the Contractor, and shall be included in the Pay Item "Transporting Salv MDOT Materials".

When trusses or cantilevers are to be salvaged, at the time of removal the truss boxes or cantilever arms shall be separated without damage to the truss boxes, cantilever arms, or end supports. No scratches, scorches or nicks will be allowed. The truss boxes or cantilever arms shall be removed before the end supports are removed, unless otherwise approved by the Project Engineer/Inspector.

**MALI SIGNS**

113-2 (mali) signs shall be installed on the right support of two support installations unless otherwise noted on the plans.

**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**

**EARTH DISTURBANCE LIMITS**

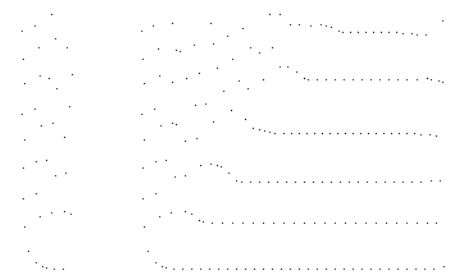
The earth disturbance limits for this project will be limited to 10 feet beyond the slope stake line or to the ROW line whichever is less for all areas except for wetland areas in locations where the slope stake line is shown on the plans. For projects locations with no slope stake information shown, the earth disturbance limit shall be the existing shoulder hinge point. 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.


**PEAT EXCAVATION**

Limits of peat excavation are shown on the plan and profile sheets based on soil boring information and per Standard Plan R-103. Quantities of excavation and backfill may vary based on site conditions.

**STATIONING FOR MAINTAINING TRAFFIC**

Stationing shown on maintaining traffic staging sheets outside the project limits was approximated from old plans.



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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.

PROJECT WIDE

- 1 LSUM Mobilization, Max
- 200 Ft Concrete Barrier, Rem
- 20 Cyd Masonry and Conc Structure, Rem
- 38 Ea Dr Marker Post
- 792 Ft Video Taping Sewer and Culv Pipe
- 80 Ft Underdrain Outlet, 6 inch
- 2 Ea Underdrain, Outlet Ending, 6 inch
- 300 Syd Bump Grinding
- 16550 Dlr HMA Quality Initiative
- 35600 Dlr Longitudinal Joint Density Quality Initiative
- 134 Ea Delineator Reflector
- 7 Ea Delineator, Reflective Sheeting, 3 inch by 6 inch, Red
- 3 Ea Delineator, Reflective Sheeting, 3 inch by 6 inch, White
- 39 Ea Delineator, Reflective Sheeting, 3 inch by 6 inch, Yellow
- 74 Ea Post, Delineator
- 42 Ea Post, Flexible, Delineator
- 4110 Ft Shoulder Corrugations, Ground or Cut, HMA
- 1 LSUM Contractor Staking
- 28 Hr Staking Plan Errors and Extras, One Person
- 11 Hr Staking Plan Errors and Extras, Two Person
- 17 Hr Staking Plan Errors and Extras, Three Person

DELINEATOR REFLECTOR COLORS

THE FOLLOWING IS A SUMMARY OF THE ESTIMATED DELINEATOR REFLECTOR COLORS, FOR INFORMATION ONLY.

CRYSTAL	117 EA
RED	17 EA
TOTAL	134 EA

SOIL EROSION AND SEDIMENTATION CONTROL

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.

- 80 Ft Erosion Control, Check Dam, Stone
- 2 Ea Erosion Control, Gravel Access Approach
- 60 Cyd Erosion Control, Maintenance, Sediment Removal
- 4 Ea Erosion Control, Sediment Trap
- 1000 Ft Erosion Control, Silt Fence

LANDSCAPING ITEMS

THE FOLLOWING ITEMS OF WORK SHALL BE DONE AS DIRECTED BY THE BAY REGION RESOURCE SPECIALIST.

- 1 LSUM Site Preparation, Max
- 1 LSUM Watering and Cultivating, First Season, Min
- 1 LSUM Watering and Cultivating, Second Season, Min

PROTECTED AREA ITEMS

THE FOLLOWING ITEMS OF WORK SHALL BE DONE AS DIRECTED BY THE MDOT ARCHAEOLOGIST.

- 1815 Ft Fence, Protective
- 36 Sft Sign, Type B, Temp, Prismatic, Special, Furn
- 36 Sft Sign, Type B, Temp, Prismatic, Special, Oper

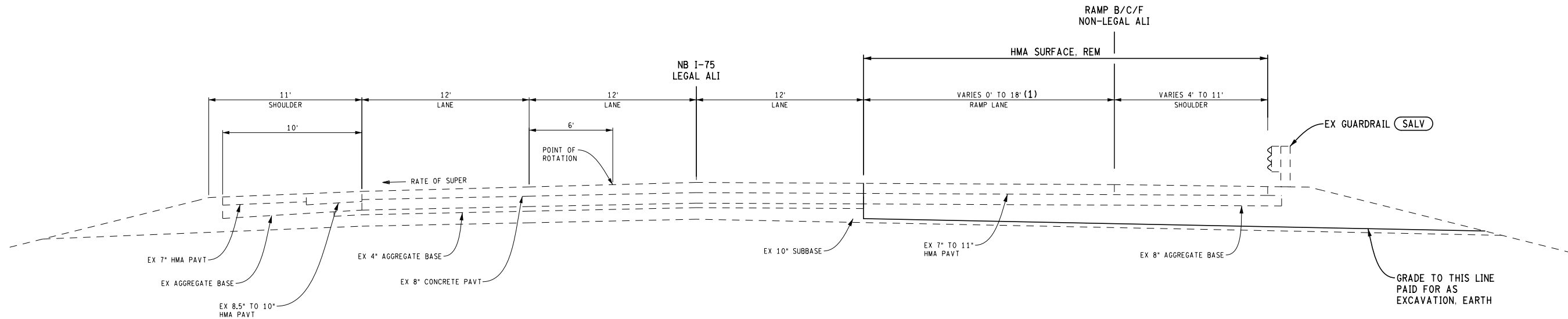
MAINTAINING TRAFFIC

- 1 Cyd Excavation, Earth
- 1 Ea Structure Cover Weigh Down, Temp
- 1375 Syd Cold Milling HMA Surface
- 30 Ton Hand Patching
- 115 Ton HMA Approach
- 6 Ea Barricade, Type III, High Intensity, Lighted, Furn
- 6 Ea Barricade, Type III, High Intensity, Lighted, Oper
- 200 Ea Channelizing Device, 42 inch, Furn
- 200 Ea Channelizing Device, 42 inch, Oper
- 2 Ea Lighted Arrow, Type C, Furn
- 2 Ea Lighted Arrow, Type C, Oper
- 1 LSUM Ltg for Night Work
- 1 LSUM Minor Traf Devices
- 13880 Ft Pavt Mrkg Cover, Type R, Black
- 21750 Ft Pavt Mrkg, Wet Reflective, Type R, Tape, 4 inch, White, Temp
- 7900 Ft Pavt Mrkg, Wet Reflective, Type R, Tape, 4 inch, Yellow, Temp
- 125 Ea Plastic Drum, High Intensity, Furn
- 125 Ea Plastic Drum, High Intensity, Oper
- 120 Ea Raised Pavt Marker, Temp, Type 3, White, Monodirectional
- 40 Ea Raised Pavt Marker, Temp, Type 3, Yellow, Bidirectional
- 25 Ea Sign Cover
- 12 Ea Sign Cover, Type 1
- 2431 Sft Sign, Type B, Temp, Prismatic, Furn
- 2431 Sft Sign, Type B, Temp, Prismatic, Oper
- 171 Sft Sign, Type B, Temp, Prismatic, Special, Furn
- 171 Sft Sign, Type B, Temp, Prismatic, Special, Oper
- 1 LSUM Traf Regulator Control
- 4 Ea Sign, Portable, Changeable Message, NTCIP-Compliant, Furn
- 4 Ea Sign, Portable, Changeable Message, NTCIP-Compliant, Oper

BALDWIN ROAD DETOUR ROUTE

THE FOLLOWING ITEMS OF WORK SHALL BE USED AS DIRECTED BY THE ENGINEER ON THE PRIMARY DETOUR ROUTE OF BALDWIN ROAD.

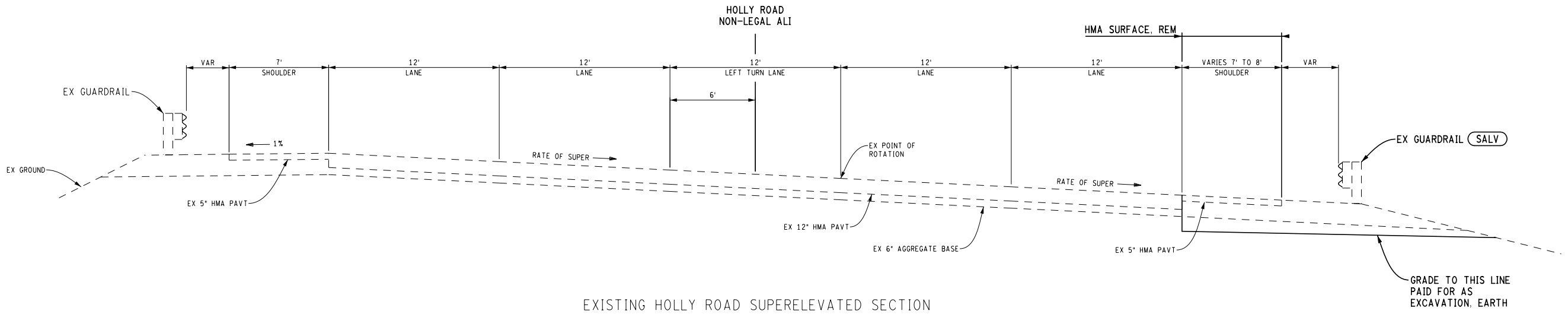
- 1060 Ton Shoulder, Cl II, Modified
- 145 Syd Pavt for Butt Joints, Rem
- 75 Ton Hand Patching
- 1450 Ton HMA, 5E3
- 13000 Ft Pavt Mrkg, Waterborne, 4 inch, White
- 10000 Ft Pavt Mrkg, Waterborne, 4 inch, Yellow



EXISTING NB I-75 SUPERELEVATED SECTION

SECTION APPLIES TO:  
 NB I-75 LEGAL ALI STA 951+47 TO STA 956+07  
 NB I-75 LEGAL ALI STA 964+59 TO STA 986+81

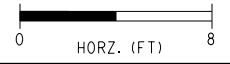
(1) APPLIES TO:  
 RAMP B NON-LEGAL ALI STA 100+03 TO STA 104+23  
 RAMP C NON-LEGAL ALI STA 208+67 TO STA 222+78



EXISTING HOLLY ROAD SUPERELEVATED SECTION

SECTION APPLIES TO:  
 HOLLY ROAD NON-LEGAL ALI STA 201+17.28 TO STA 207+00

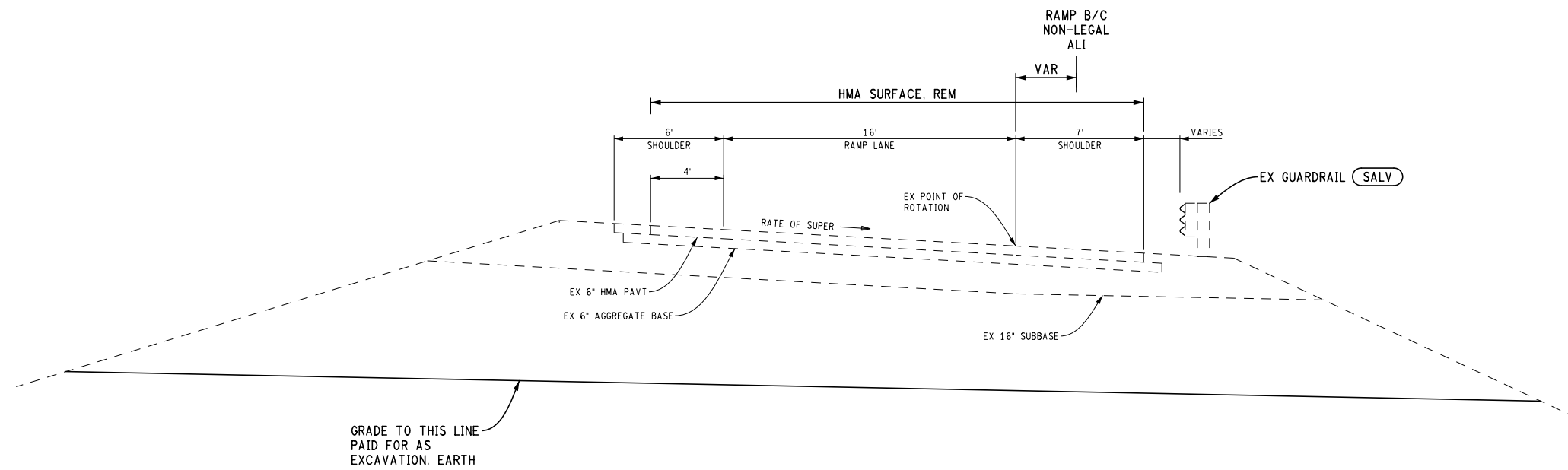
FINAL ROW PLAN REVISIONS		(SUBMITTAL DATE: )	
NO.	DATE	AUTH	DESCRIPTION



DATE: 03/10/17  
 DESIGN UNIT: PETHERS  
 TSC: DAVISON  
 FILE: 115832\_Extyp\_001.dgn

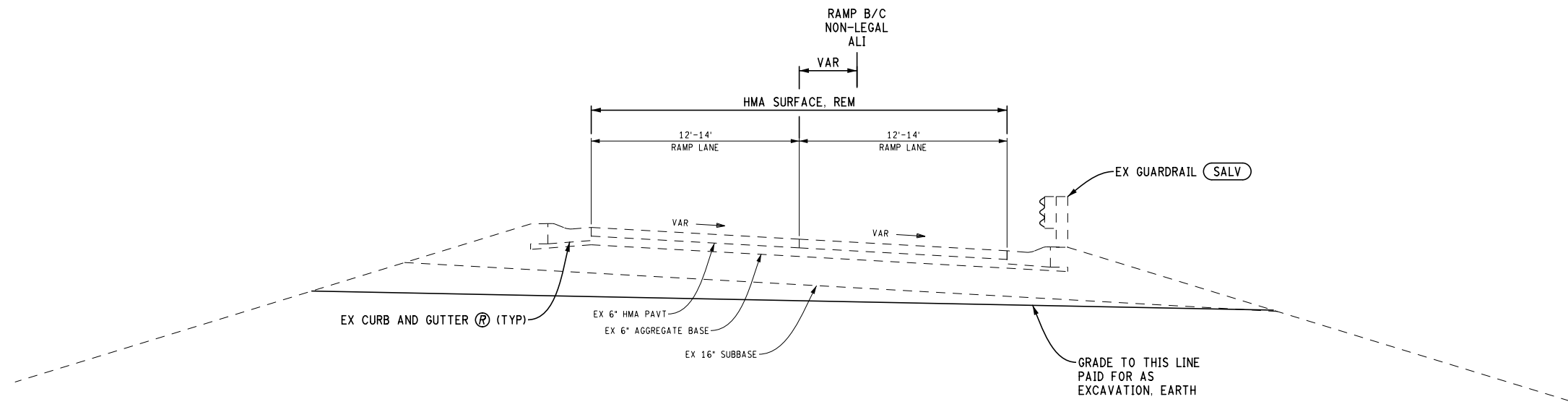
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EXISTING TYPICAL SECTIONS		DRAWING	SHEET
EXTYP	001		13



EXISTING RAMP SECTION

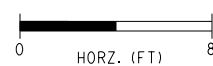
SECTION APPLIES TO:  
 RAMP B NON-LEGAL ALI STA 104+23 TO STA 115+51  
 RAMP C NON-LEGAL ALI STA 201+00 TO STA 208+67



EXISTING RAMP SECTION

SECTION APPLIES TO:  
 RAMP B NON-LEGAL ALI STA 115+51 TO STA 116+45  
 RAMP C NON-LEGAL ALI STA 200+45 TO STA 201+00

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



FILE: 115832\_Extyp\_002.dgn

DATE: 03/10/17

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TSC: DAVISON

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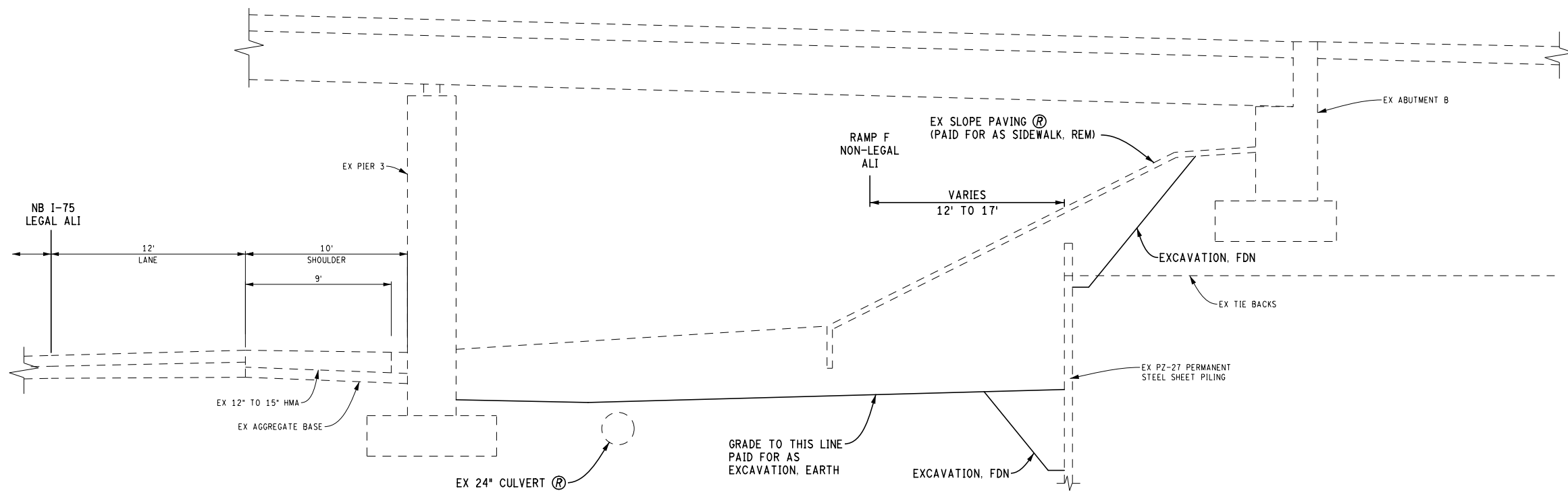
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EXISTING TYPICAL SECTIONS

DRAWING SHEET

EXTYP SECT 1

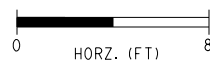
002 14



EXISTING RAMP F UNDER HOLLY ROAD SECTION

SECTION APPLIES TO:  
RAMP F NON-LEGAL ALI STA 310+34 TO STA 311+32

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

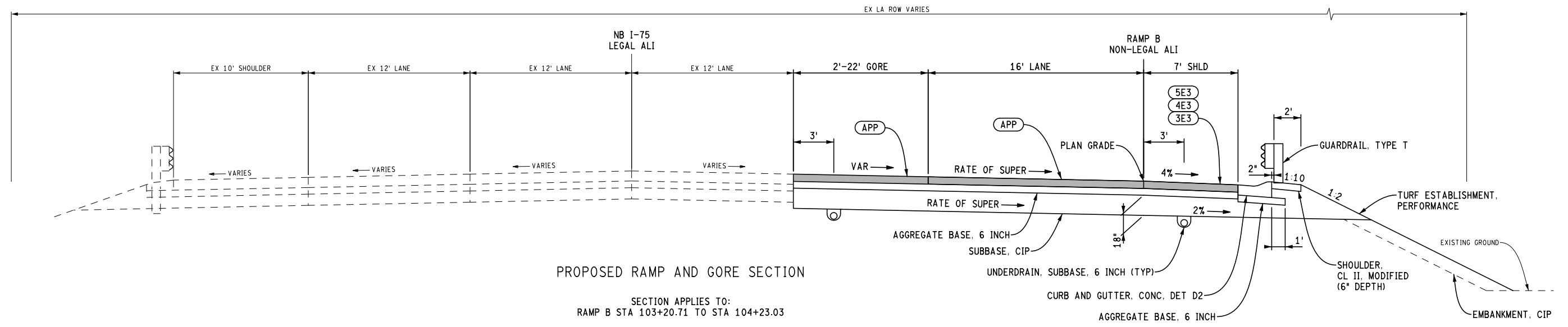
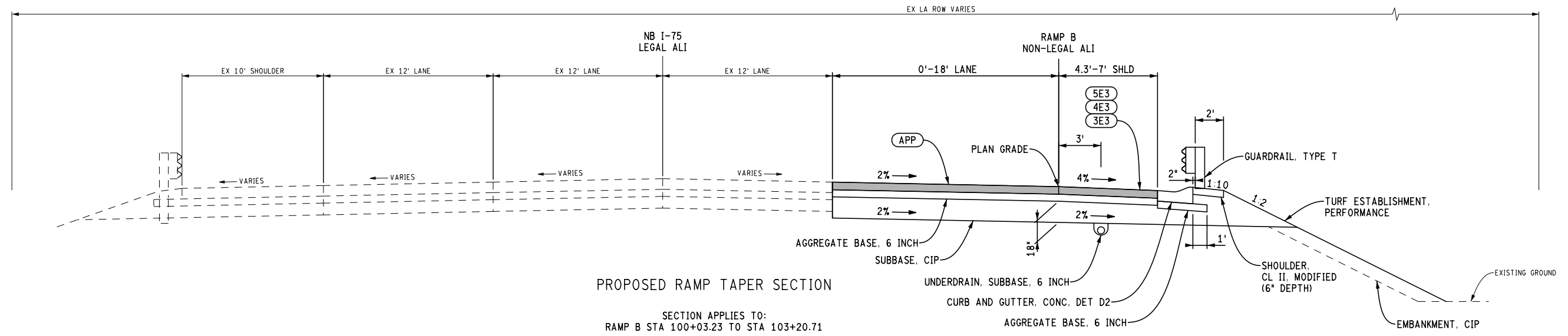


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DATE: 03/10/17  
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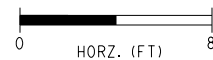
EXISTING TYPICAL SECTIONS		DRAWING	SHEET
EXTYP 003	SECT 1		15



IDENT NO	ITEM	RATE (LBS PER SYD)	PERFORMANCE GRADE	REMARKS
5E3	HMA, 5E3	165	64-28	TOP COURSE, AWI=260
4E3	HMA, 4E3	220	64-28	LEVELING COURSE
3E3	HMA, 3E3	330	58-22	BASE COURSE
APP	HMA APPROACH	165	64-28	INTERSECTIONS, TAPERS, AND GORES, HMA, 5E3 (TOP COURSE, AWI=260)
		220	64-28	INTERSECTIONS, TAPERS, AND GORES, HMA, 4E3 (LEVELING COURSE)
		330	58-22	INTERSECTIONS, TAPERS, AND GORES, HMA, 3E3 (BASE COURSE)
APP-2	HMA APPROACH	165	64-28	SHOULDERS FOR MAINTAINING TRAFFIC, HMA, 5E3 (TOP COURSE, AWI=260)
	* BOND COAT	0.05-0.15 GAL		

\* FOR INFORMATION ONLY

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



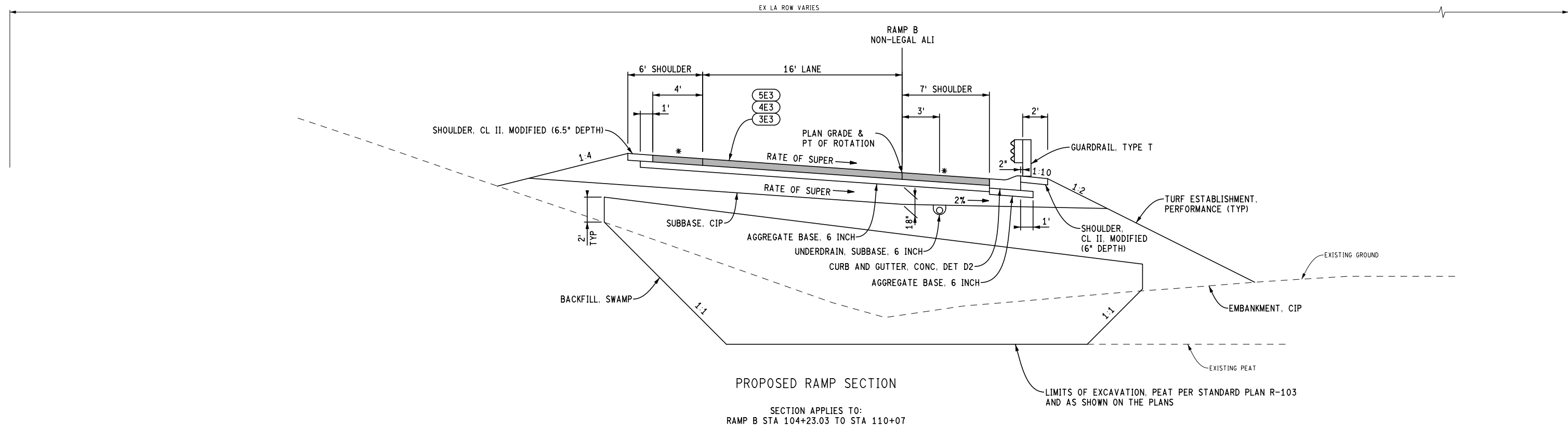
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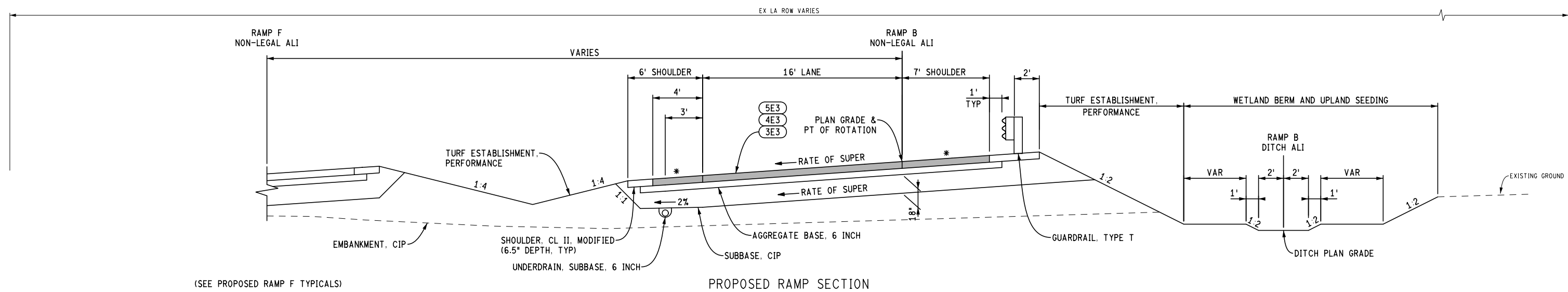
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JN: 115832A

PROPOSED TYPICAL SECTIONS		DRAWING	SHEET
		PRTYP 001	SECT 1 16





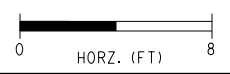
PROPOSED RAMP SECTION  
SECTION APPLIES TO:  
RAMP B STA 104+23.03 TO STA 110+07



PROPOSED RAMP SECTION  
SECTION APPLIES TO:  
RAMP B STA 110+07 TO STA 113+33

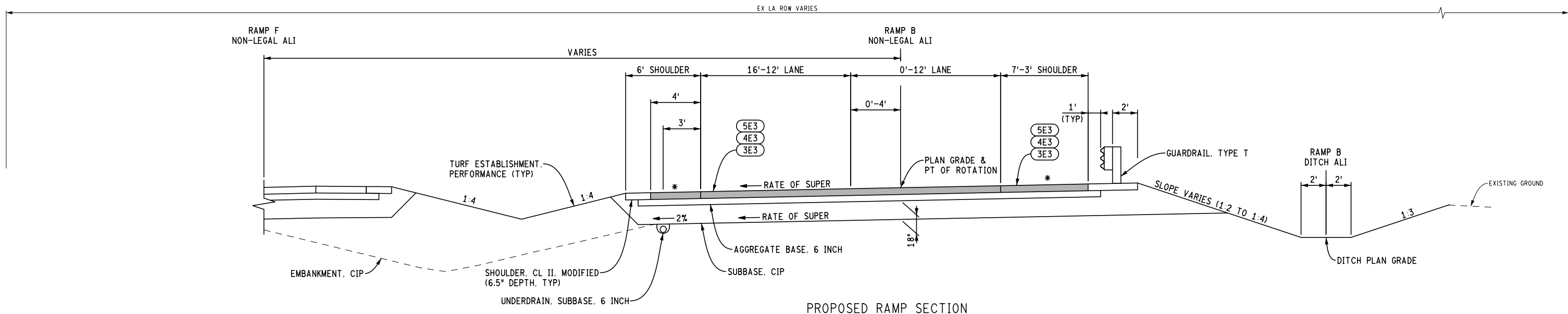
\* FOR SHOULDER SLOPES IN SUPER TRANSITION AND FULL SUPER SEE STANDARD PLAN R-107 SERIES

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



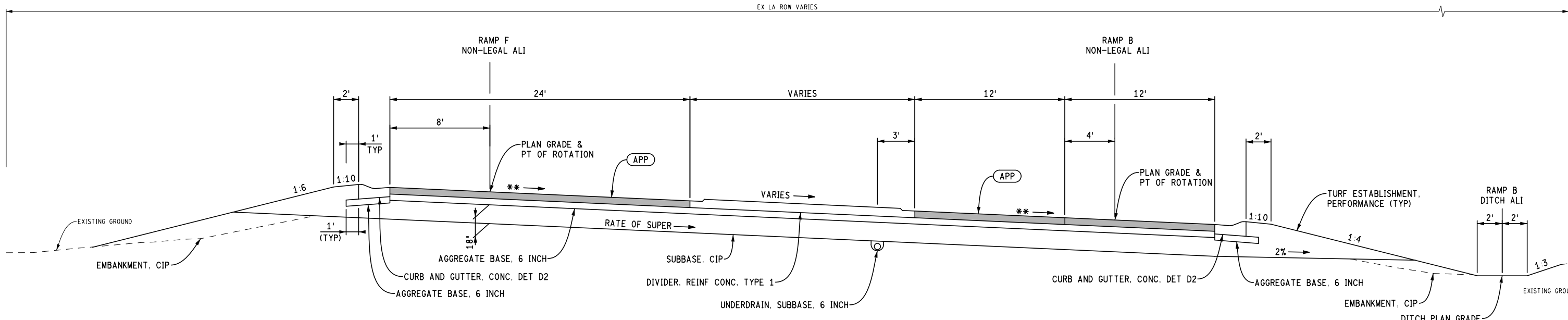
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CS: 25131  
JN: 115832A  
FILE: 115832\_PrTyp\_002.dgn

PROPOSED TYPICAL SECTIONS		DRAWING	SHEET
		PRTYP 002	SECT 1 17



(SEE PROPOSED RAMP F TYPICALS)

PROPOSED RAMP SECTION  
SECTION APPLIES TO:  
RAMP B STA 113+33 TO STA 115+73.92

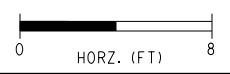


PROPOSED RAMP TERMINAL SECTION  
SECTION APPLIES TO:  
RAMP F STA 300+42 TO STA 301+39.26

PROPOSED RAMP TERMINAL SECTION  
SECTION APPLIES TO:  
RAMP B STA 115+73.92 TO STA 116+44

\* FOR SHOULDER SLOPES IN SUPER TRANSITION AND FULL SUPER SEE STANDARD PLAN R-107 SERIES  
\*\* VARIES (SEE DETAIL GRADES)

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE: )								PROPOSED TYPICAL SECTIONS		DRAWING	SHEET
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION			PRTYP	SECT
										003	18

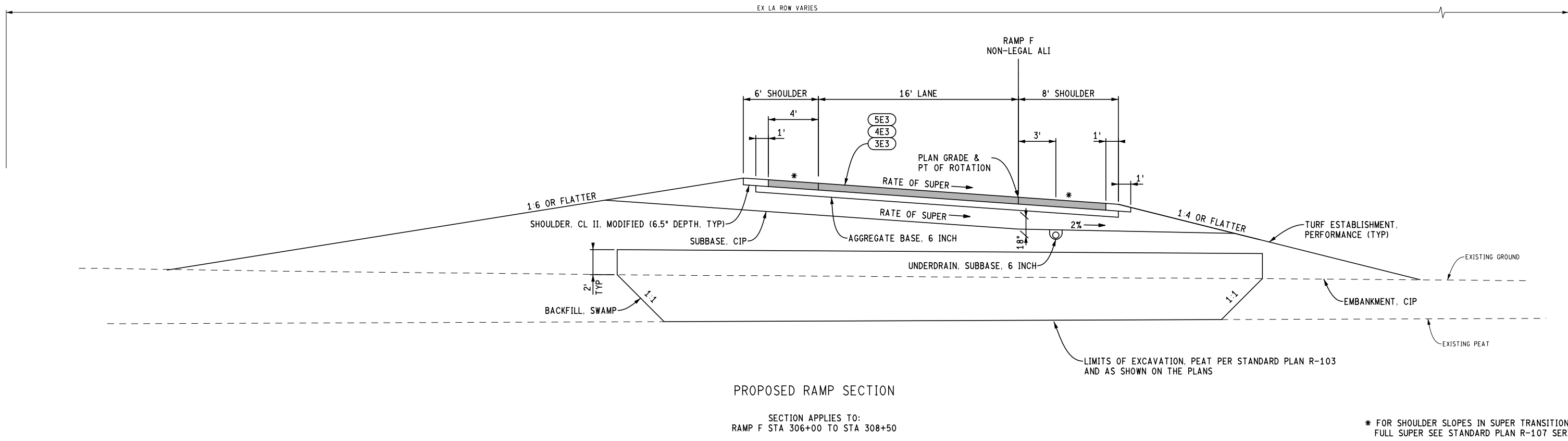
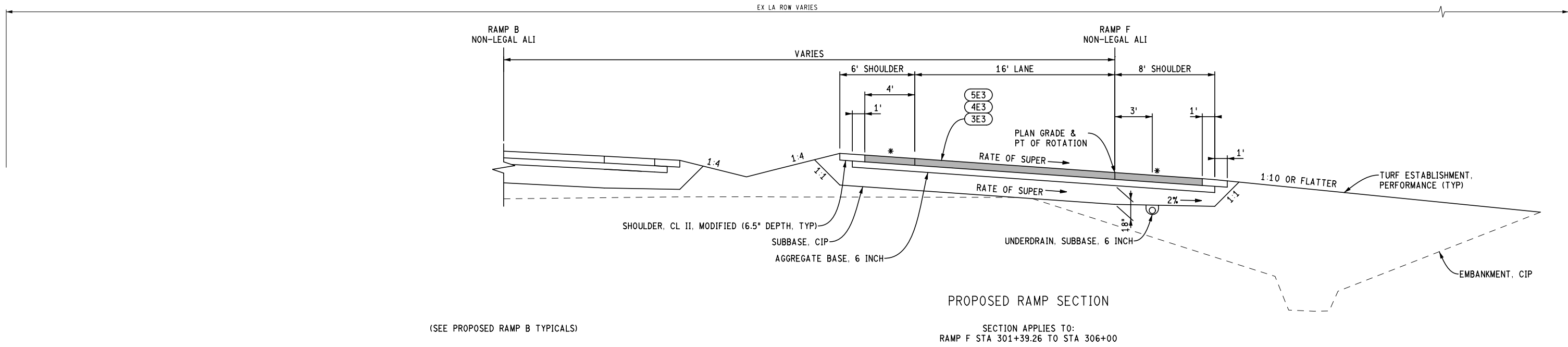


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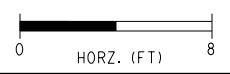
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CS: 25131  
JN: 115832A

DRAWING SHEET  
PRTYP SECT  
003 18



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



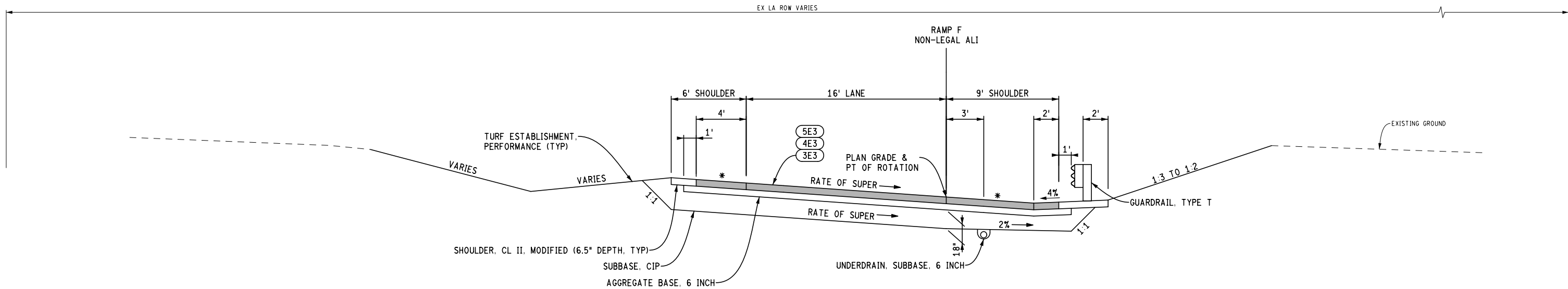
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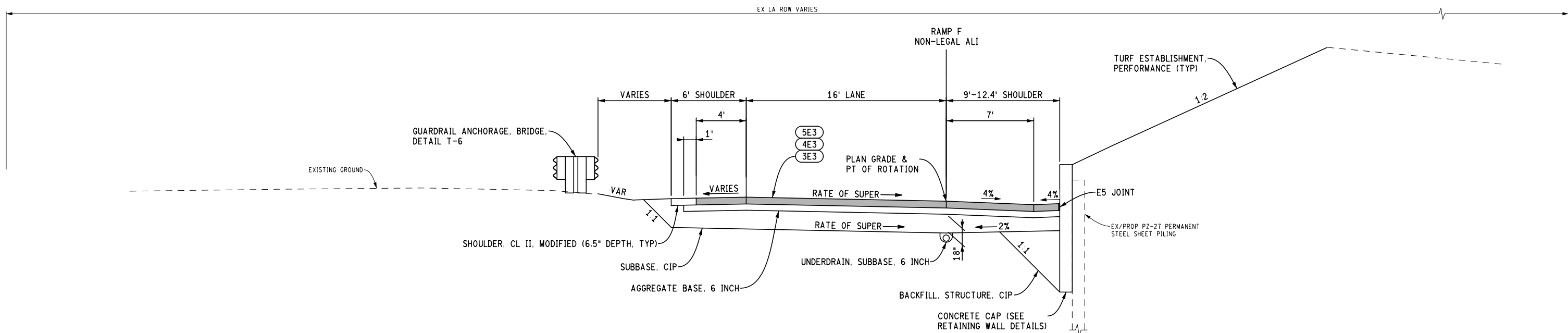
PROPOSED TYPICAL SECTIONS

DRAWING	SHEET
PRTYP 004	19



PROPOSED RAMP SECTION

SECTION APPLIES TO:  
RAMP F STA 308+50 TO STA 309+90

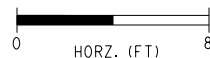


PROPOSED RAMP SECTION AT RETAINING WALL

SECTION APPLIES TO:  
RAMP F STA 309+90 TO STA 310+37

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

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



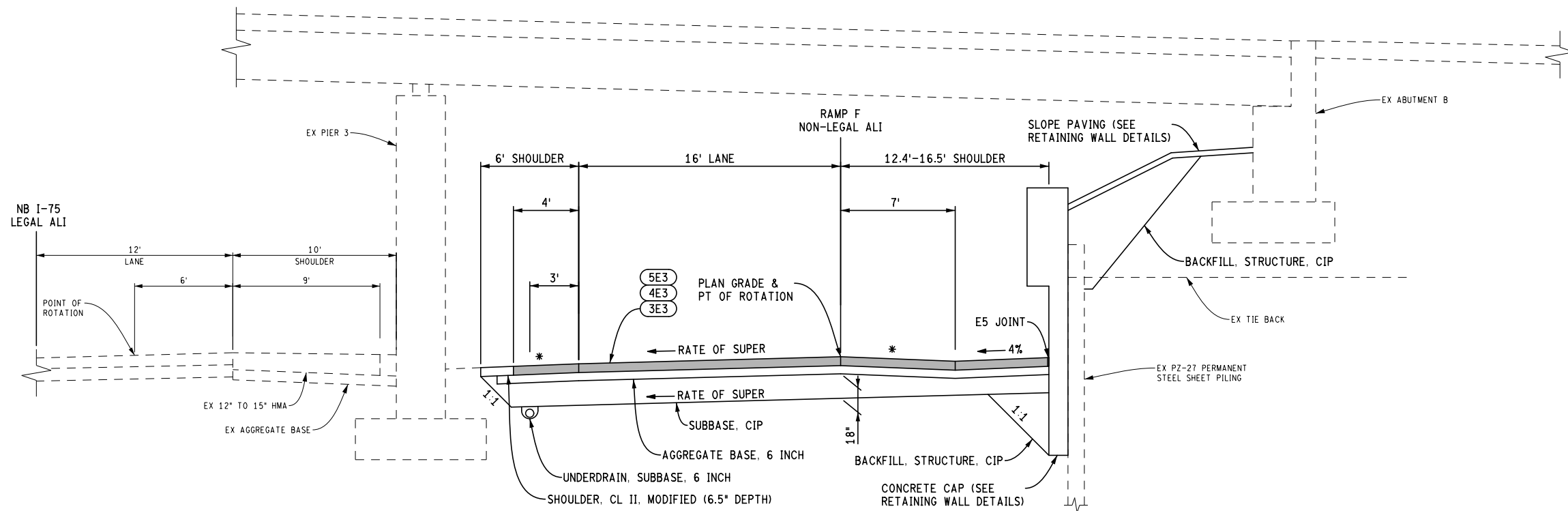
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PROPOSED TYPICAL SECTIONS

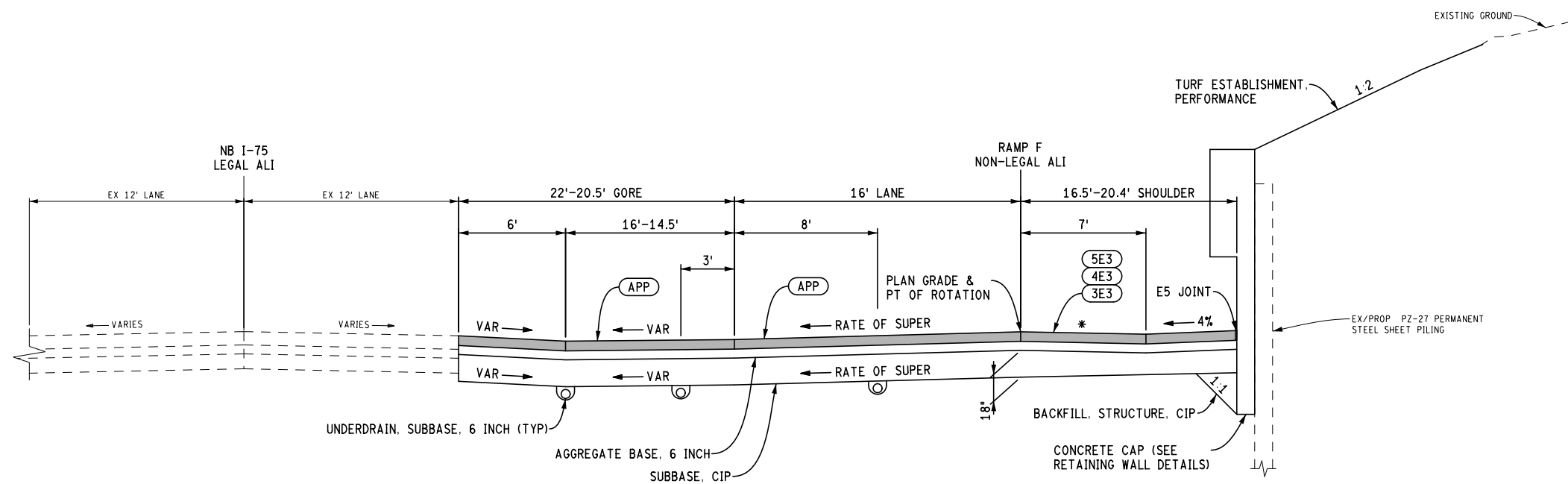
DRAWING	SHEET
PRTYP 005	20



PROPOSED RAMP SECTION UNDER HOLLY ROAD

SECTION APPLIES TO:  
RAMP F STA 310+37 TO STA 311+24.44

EX LA ROW VARIES

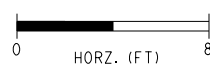


PROPOSED RAMP AND GORE SECTION

SECTION APPLIES TO:  
RAMP F STA 311+24.44 TO STA 312+00

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

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



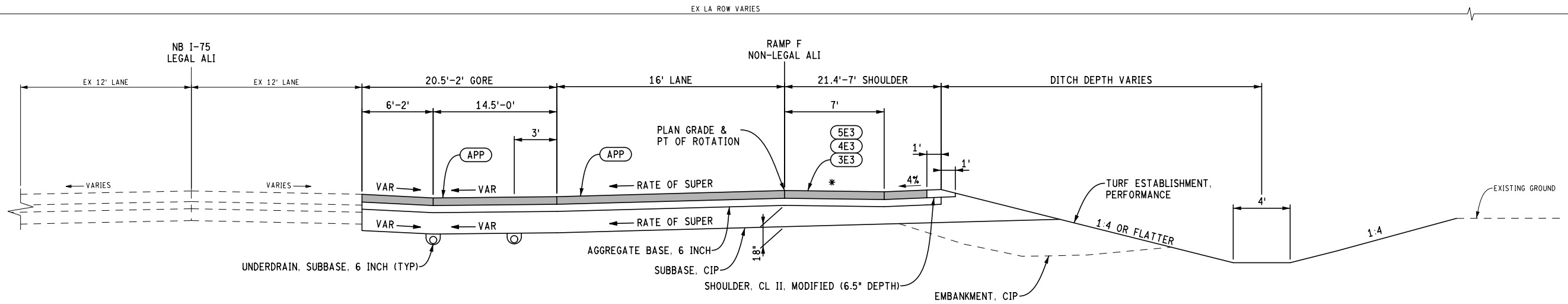
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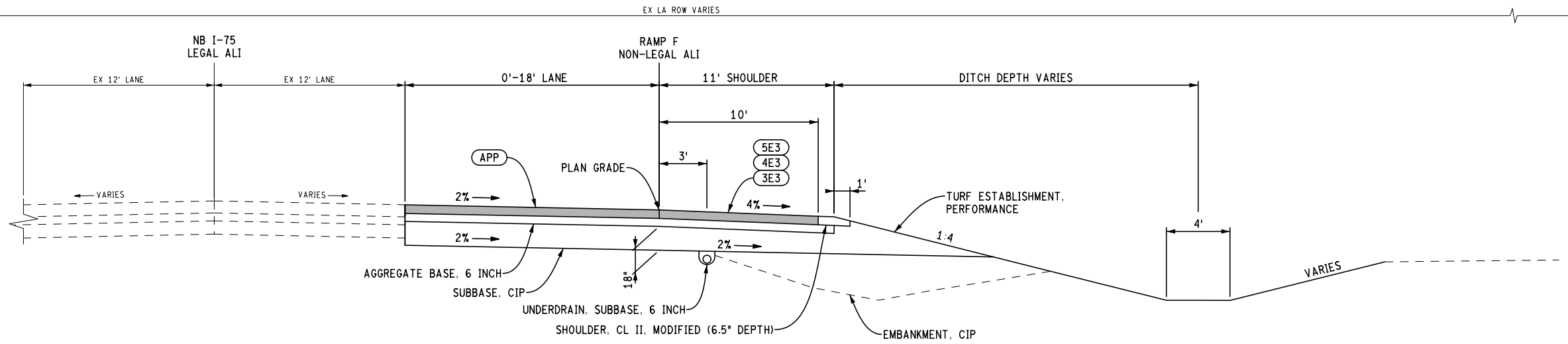
PROPOSED TYPICAL SECTIONS

DRAWING	SHEET
PRTYP 006	SECT 1 21



PROPOSED RAMP AND GORE SECTION

SECTION APPLIES TO:  
RAMP F STA 312+00 TO STA 315+56.45

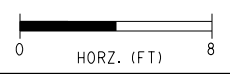


PROPOSED RAMP TAPER SECTION

SECTION APPLIES TO:  
RAMP F STA 315+56.45 TO STA 322+46.56

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

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

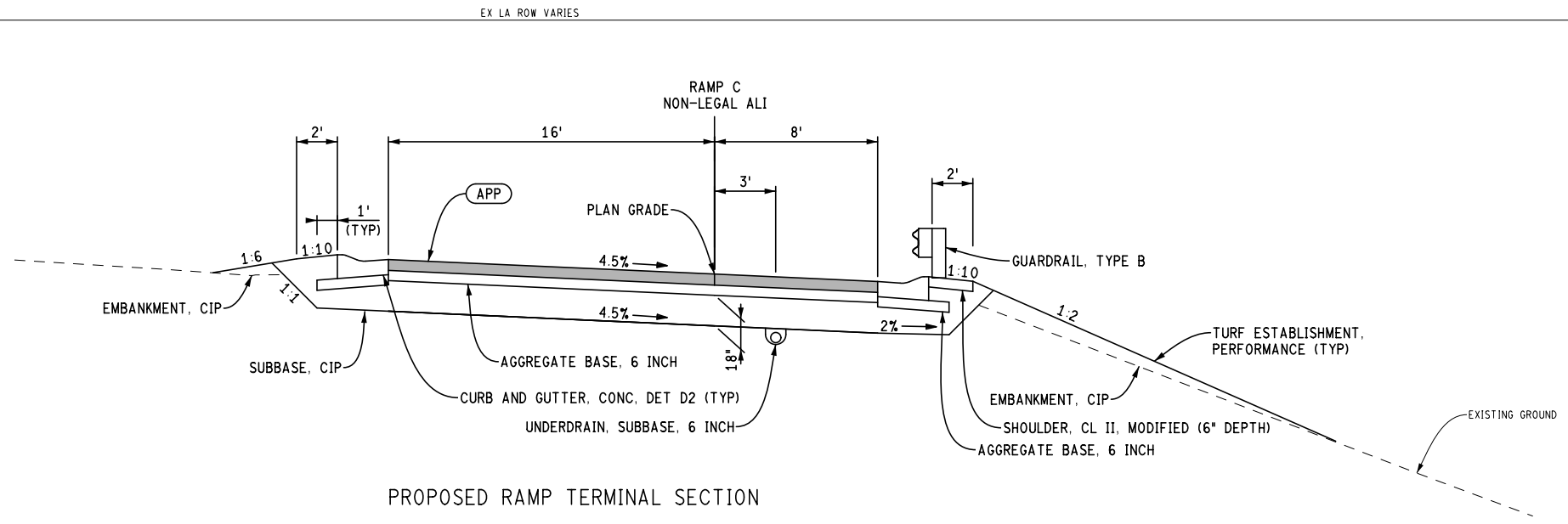


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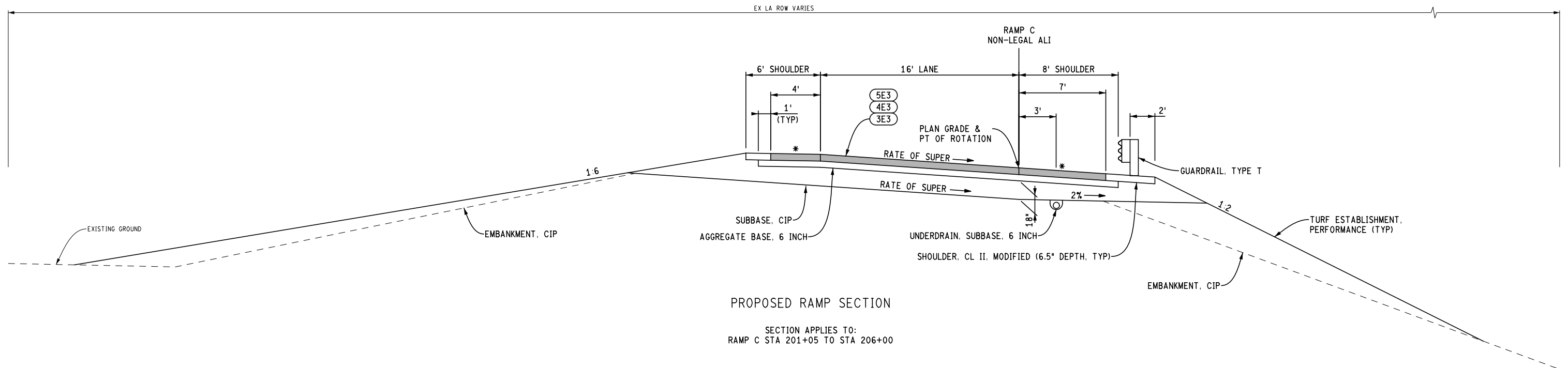
PROPOSED TYPICAL SECTIONS		DRAWING	SHEET

PRTYP 007  
 SECT 1 22



PROPOSED RAMP TERMINAL SECTION

SECTION APPLIES TO:  
RAMP C STA 200+45 TO STA 201+05

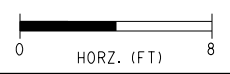


PROPOSED RAMP SECTION

SECTION APPLIES TO:  
RAMP C STA 201+05 TO STA 206+00

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

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

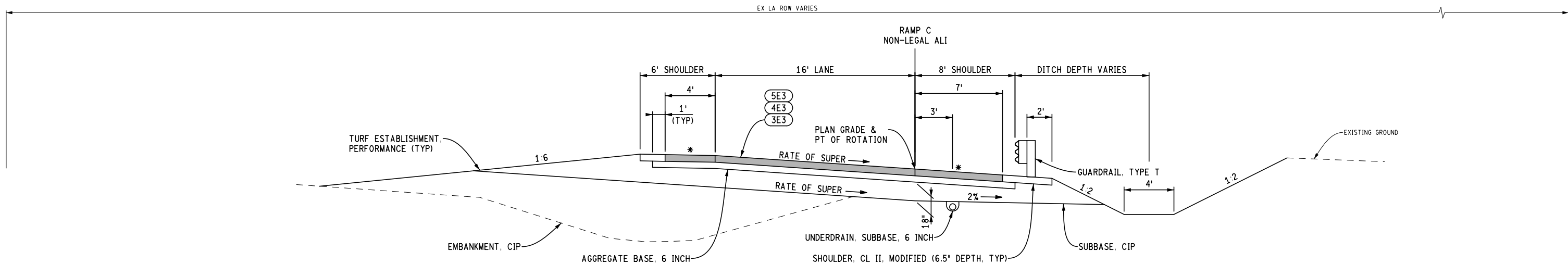


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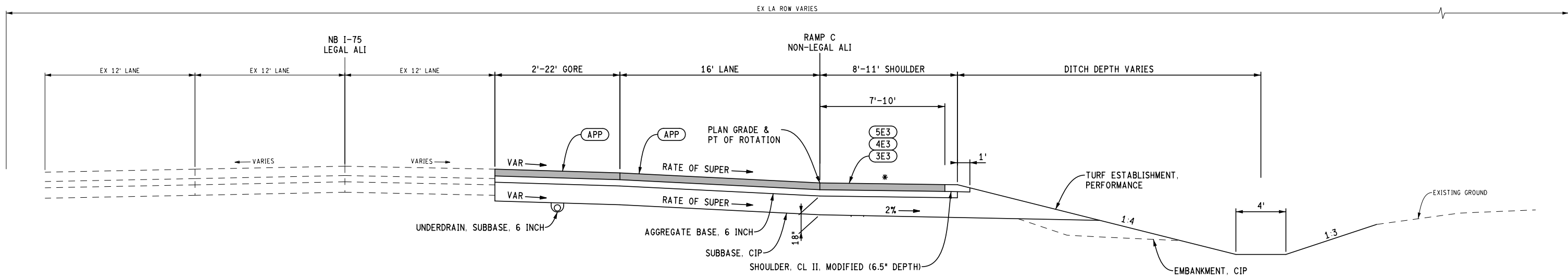
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JN: 115832A

PROPOSED TYPICAL SECTIONS		DRAWING	SHEET
		PRTYP 008	SECT 1 23



PROPOSED RAMP SECTION

SECTION APPLIES TO:  
RAMP C STA 206+00 TO STA 211+19.28

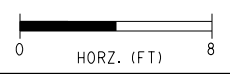


PROPOSED RAMP AND GORE SECTION

SECTION APPLIES TO:  
RAMP C STA 211+19.28 TO STA 215+88.42

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

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

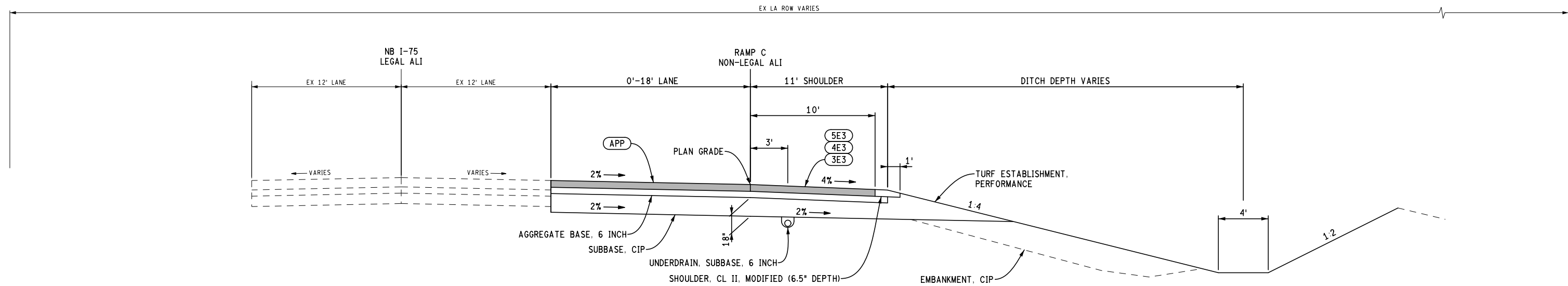


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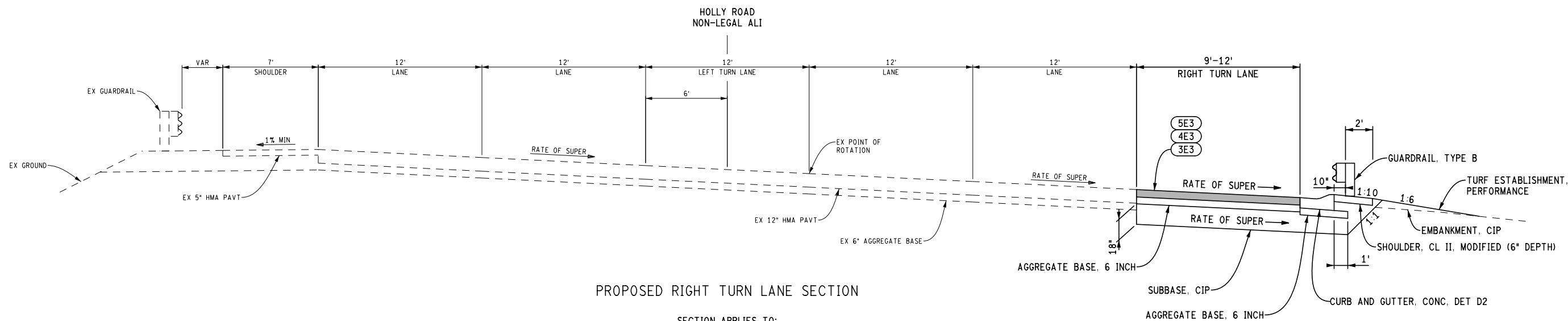
PROPOSED TYPICAL SECTIONS		DRAWING	SHEET





PROPOSED RAMP TAPER SECTION

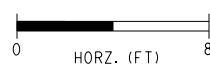
SECTION APPLIES TO:  
RAMP C STA 215+88.42 TO STA 222+78.58



PROPOSED RIGHT TURN LANE SECTION

SECTION APPLIES TO:  
HOLLY RD STA 201+17.28 TO STA 204+20

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



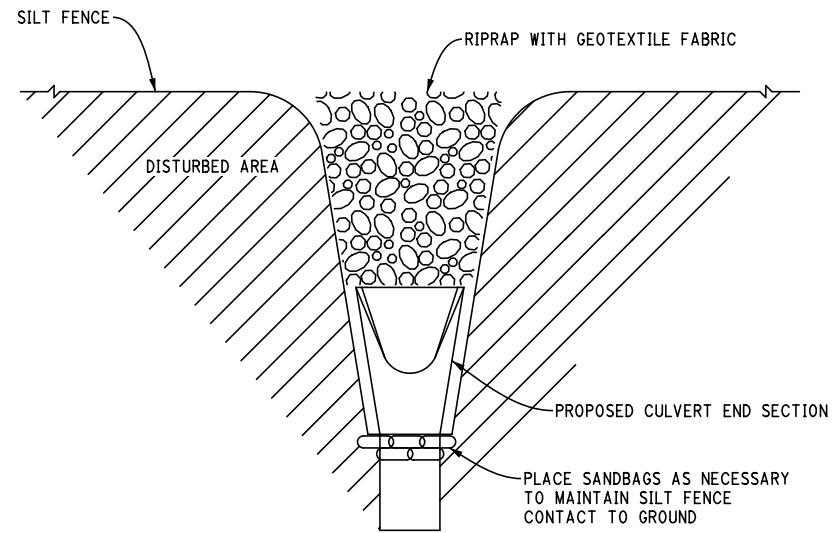
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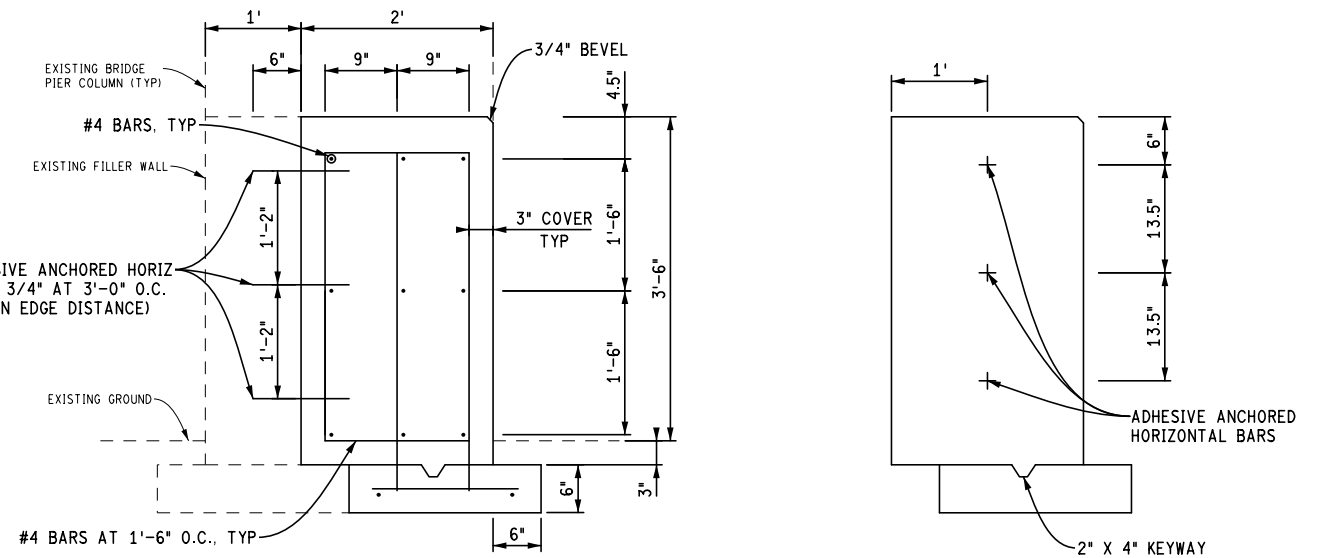
PROPOSED TYPICAL SECTIONS

DRAWING	SHEET
PRTYP 010	SECT 1 25



NOTE: DISTURBED AREA VARIABLE

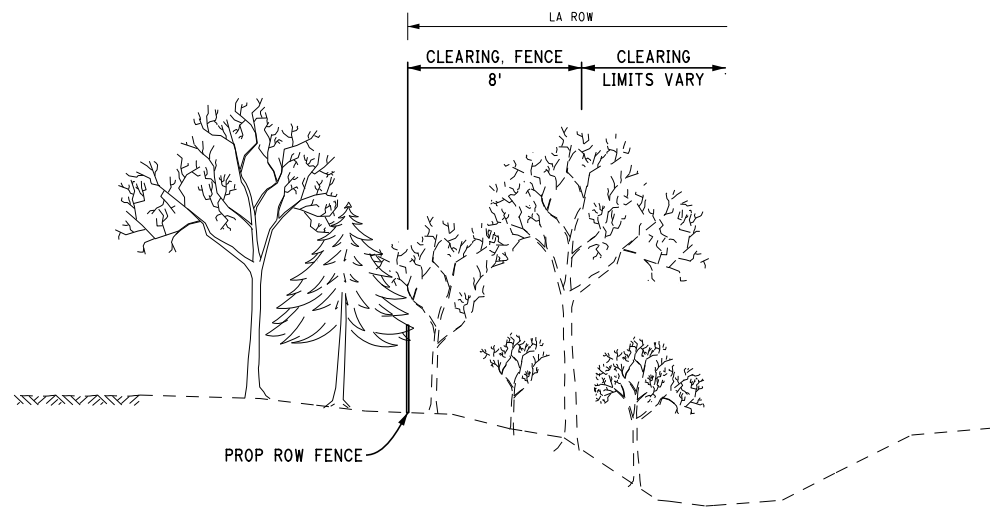
SILT FENCE DETAIL



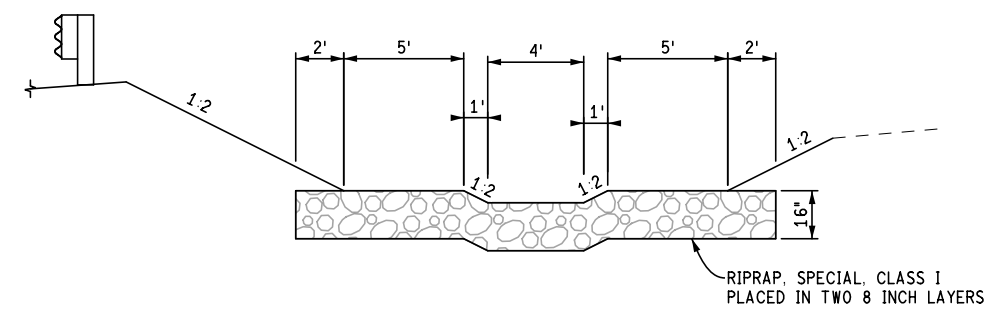
PROPOSED FILLER WALL DETAIL

SEE STD PLAN R-55 SERIES FOR ADDITIONAL REBAR INFORMATION

BAR LAYOUT FOR ADHESIVE ANCHORS TO PIER COLUMNS



LIMITS OF CLEARING AT PROP FENCE



CHANNEL DETAIL WITH RIPRAP, SPECIAL

APPLIES  
RAMP B DITCH ALI STA 3+91 STA 4+01

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



**NO SCALE**

FILE: 115832\_MscDet\_001.dgn

DATE: 03/10/17

DESIGN UNIT: PETHERS

TSC: DAVISON

CS: 25132

JN: 115832A

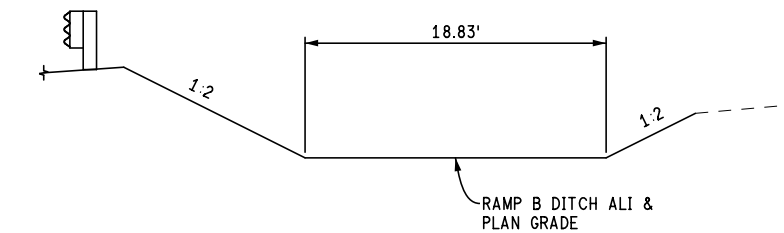
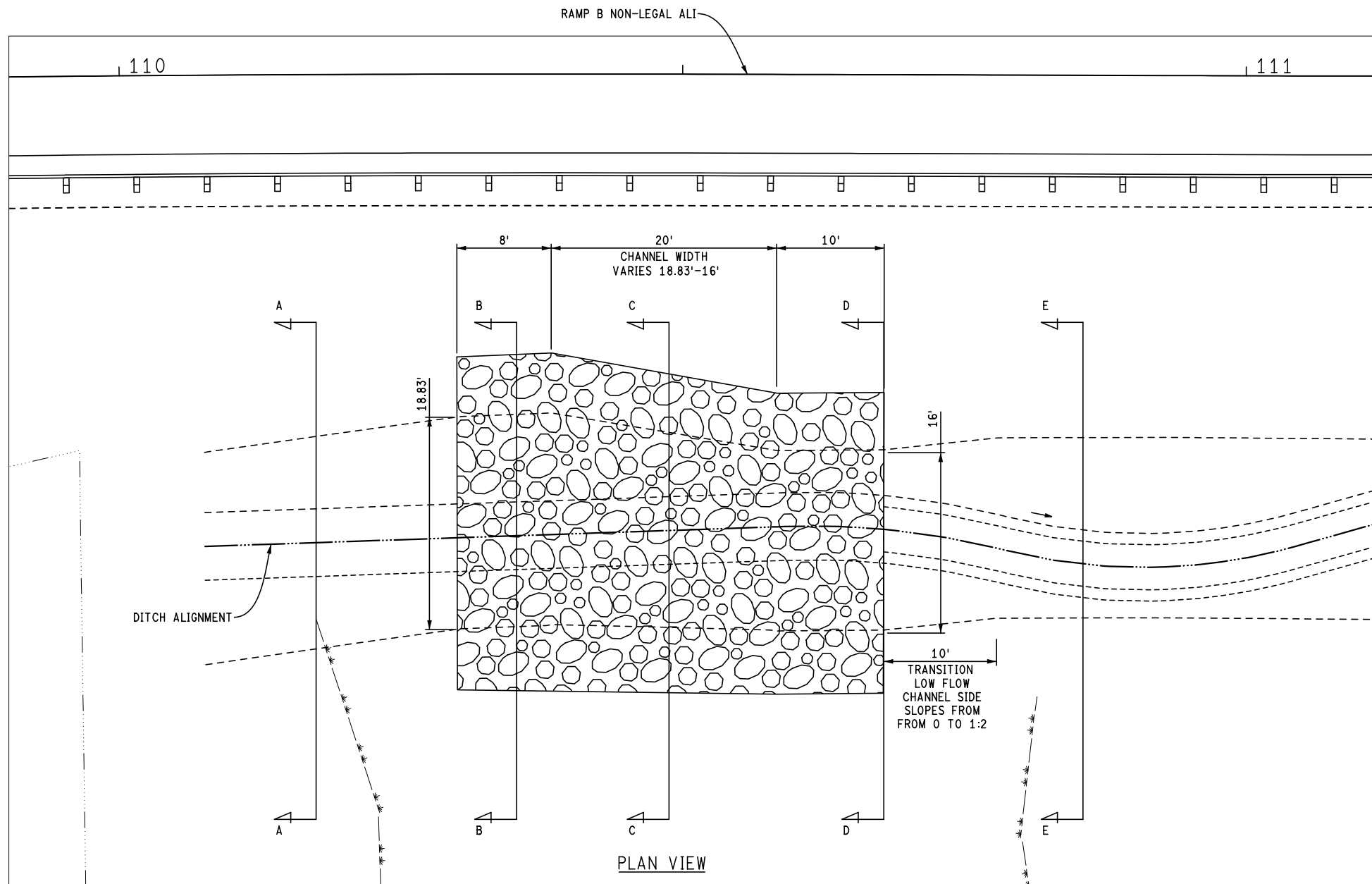
MISCELLANEOUS DETAIL SHEET

SILT FENCE, CLEARING, FILLER WALL & RIPRAP

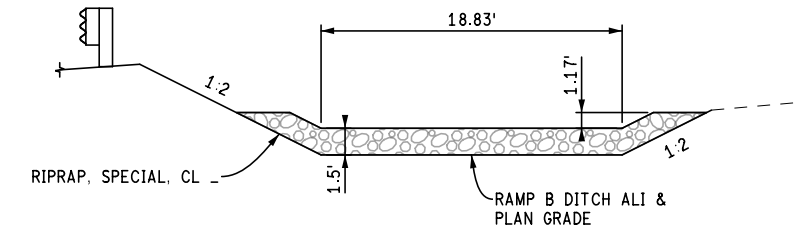
DRAWING SHEET

MSCDET SECT 1

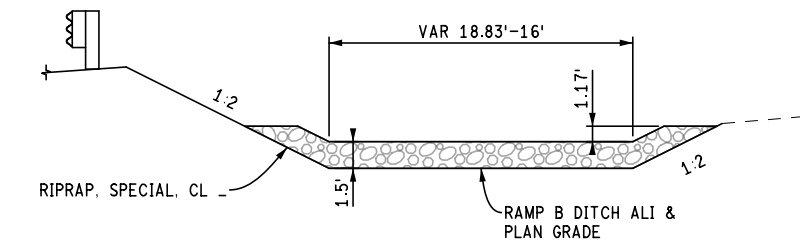
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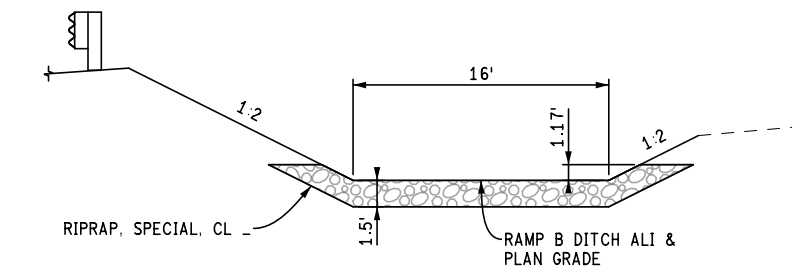
SECTION A-A



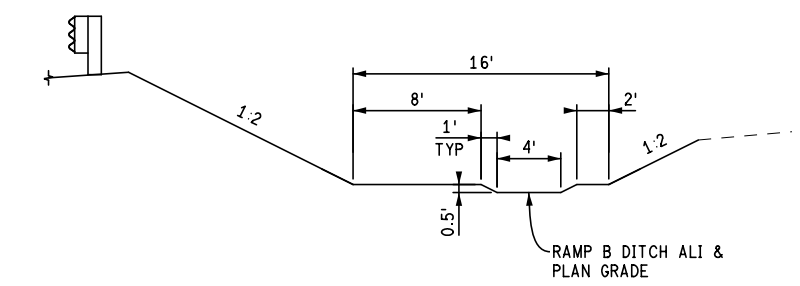
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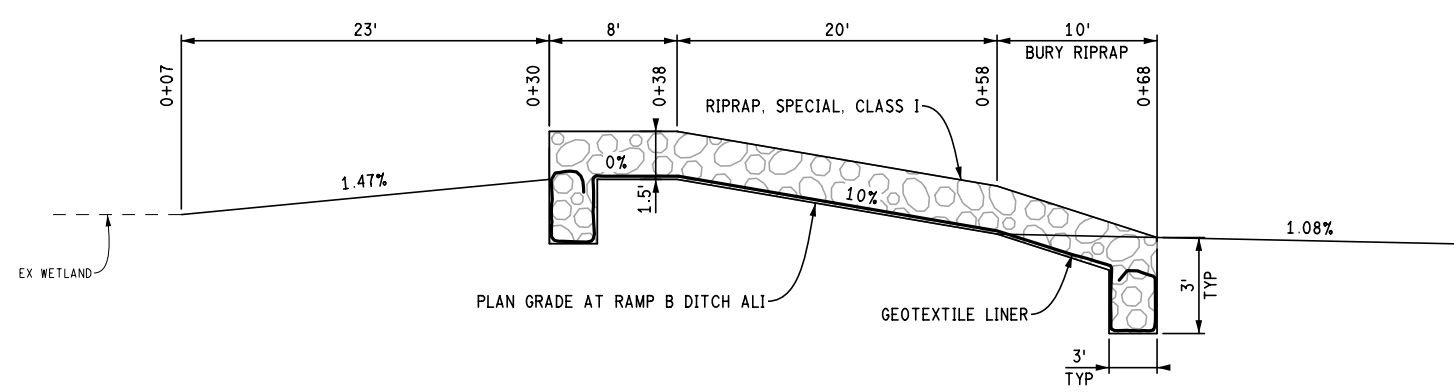
SECTION C-C



SECTION D-D

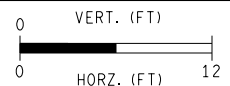


SECTION E-E



RIPRAP SPILLWAY SECTION ALONG DITCH ALIGNMENT

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



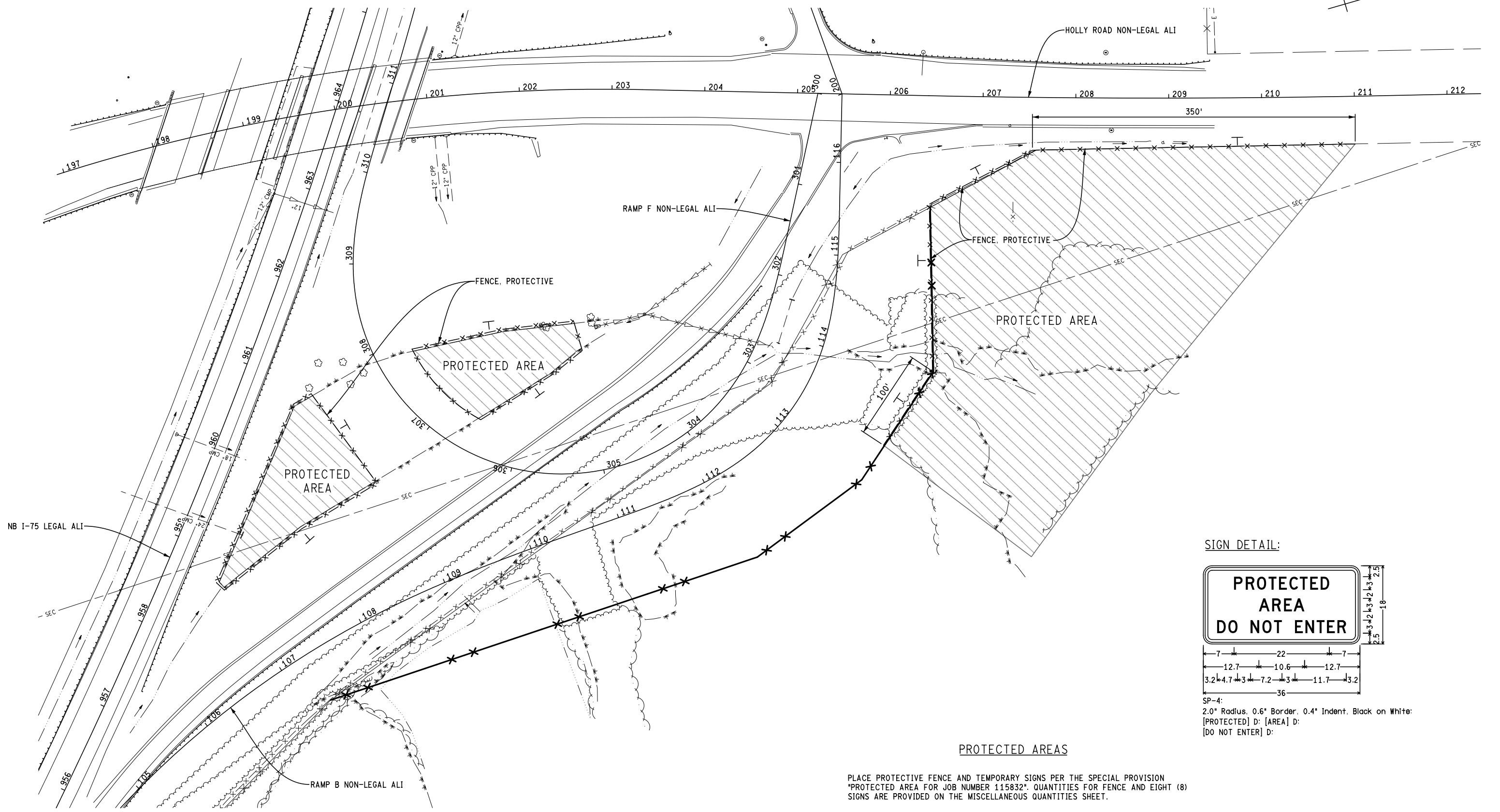
FILE: 115832\_MscDet\_002.dgn

DATE: 03/10/17  
 DESIGN UNIT: PETHERS  
 TSC: DAVISON

CS: 25133  
 JN: 115832A

MISCELLANEOUS DETAIL SHEET  
 RIPRAP SPILLWAY

DRAWING SHEET  
 MSCDET 002 27



SIGN DETAIL:

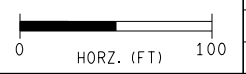


SP-4:  
 2.0" Radius, 0.6" Border, 0.4" Indent, Black on White:  
 [PROTECTED] D: [AREA] D:  
 [DO NOT ENTER] D:

**PROTECTED AREAS**

PLACE PROTECTIVE FENCE AND TEMPORARY SIGNS PER THE SPECIAL PROVISION "PROTECTED AREA FOR JOB NUMBER 115832". QUANTITIES FOR FENCE AND EIGHT (8) SIGNS ARE PROVIDED ON THE MISCELLANEOUS QUANTITIES SHEET.

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

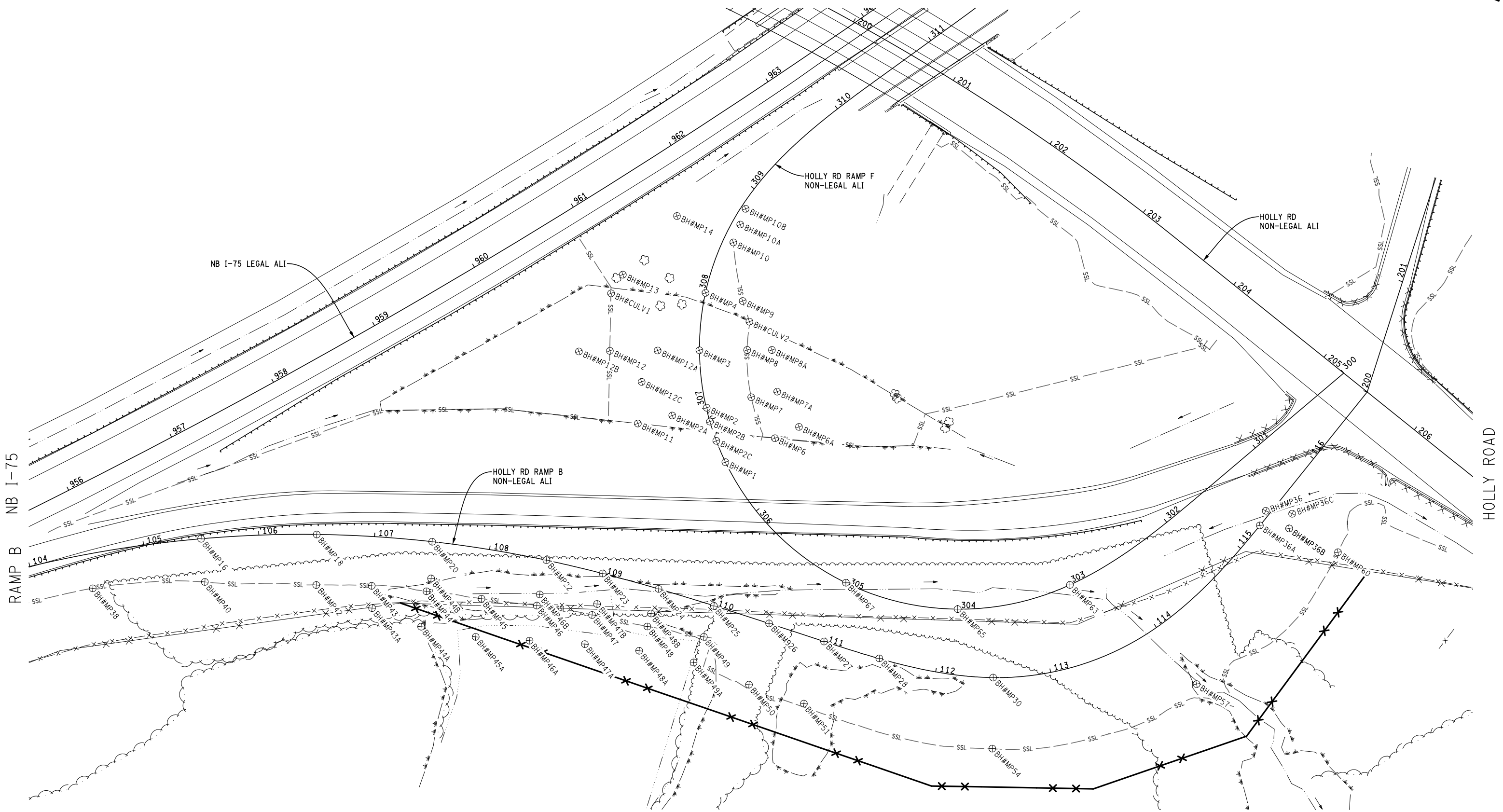
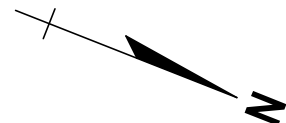


DATE: 03/10/17	CS: 25134	MISCELLANEOUS DETAIL SHEET	DRAWING	SHEET
DESIGN UNIT: PETHERS	JN: 115832A	PROTECTED AREAS	MSCDET	SECT 1
TSC: DAVISON			003	28

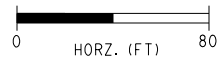
HOLLY ROAD

NB I-75

RAMP F



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



FILE: 115832\_MscDet\_004.dgn

DATE: 03/10/17  
 DESIGN UNIT: PETHERS  
 TSC: DAIVSON

CS: 25135  
 JN: 115832A

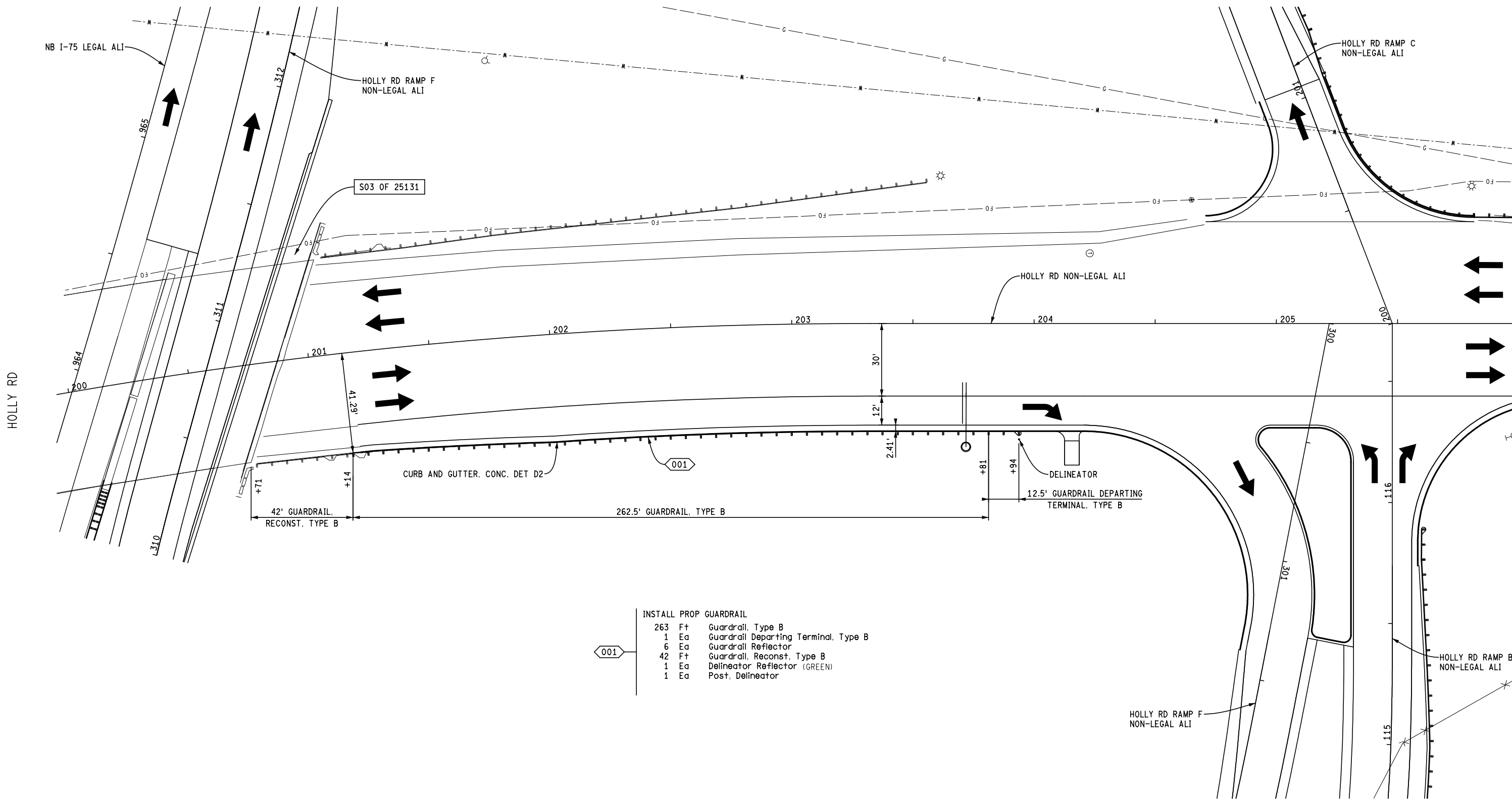
MISCELLANEOUS DETAIL SHEET  
 PEAT EXCAVATION SOIL BORINGS

DRAWING SHEET  
 MSCDET 004 SECT 1  
 29

NB I-75

RAMP F

RAMP C

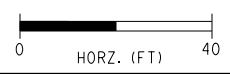


- INSTALL PROP GUARDRAIL
- 263 F+ Guardrail, Type B
  - 1 Ea Guardrail Departing Terminal, Type B
  - 6 Ea Guardrail Reflector
  - 42 F+ Guardrail, Reconst, Type B
  - 1 Ea Delineator Reflector (GREEN)
  - 1 Ea Post, Delineator

NB I-75 RAMP F

RAMP F RAMP B

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

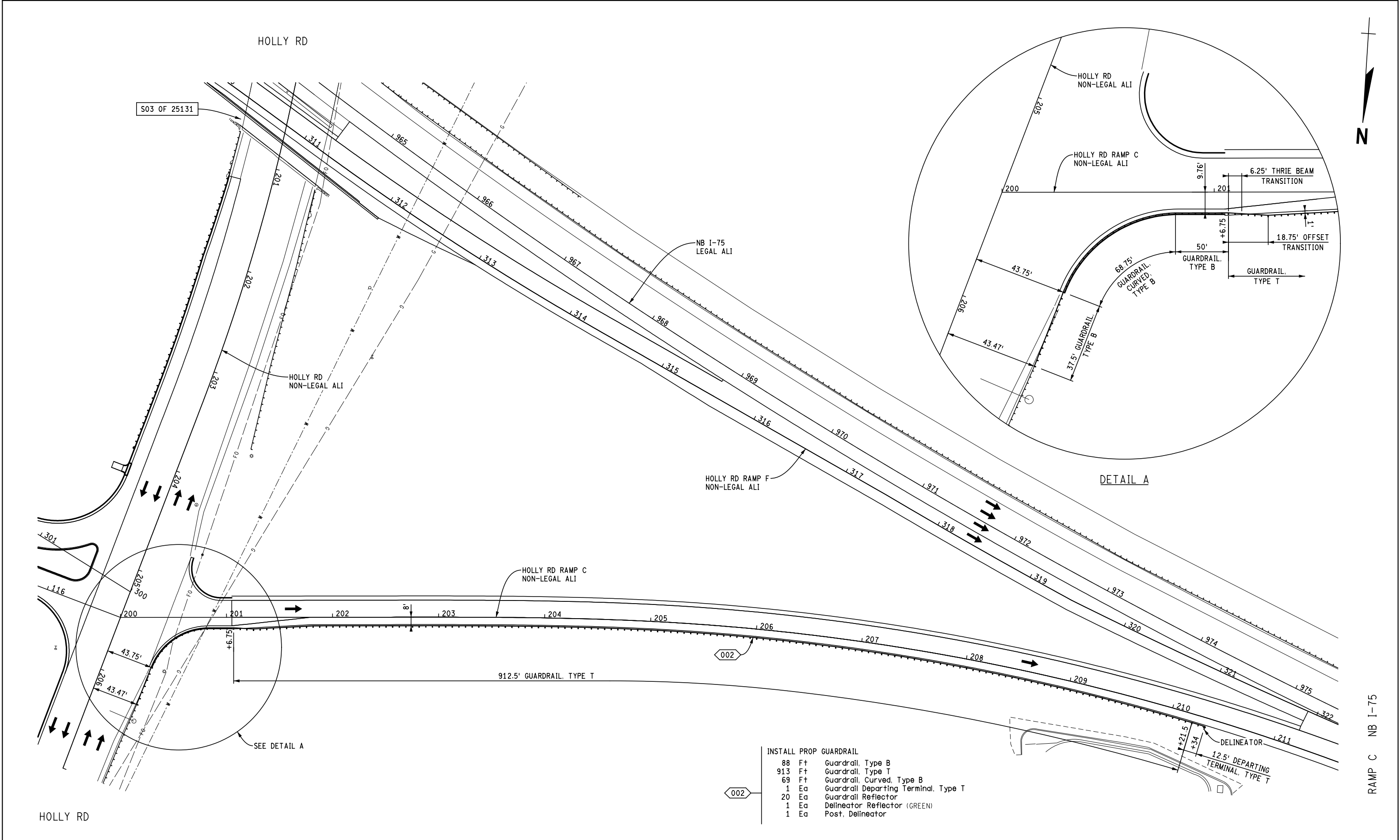


DATE: 03/10/17  
 DESIGN UNIT: PETHERS  
 TSC: DAVISON

CS: 25131  
 JN: 115832A

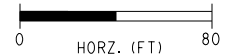
GUARDRAIL DETAIL SHEET  
 HOLLY ROAD STA 200+00 TO STA 206+00

DRAWING SHEET  
 CRDET 001 SECT 1 30



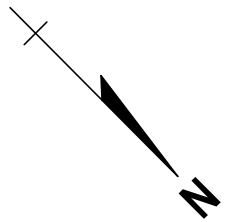
- INSTALL PROP GUARDRAIL
- 88 Ft Guardrail, Type B
  - 913 Ft Guardrail, Type T
  - 69 Ft Guardrail, Curved, Type B
  - 1 Ea Guardrail Departing Terminal, Type T
  - 20 Ea Guardrail Reflector
  - 1 Ea Delineator Reflector (GREEN)
  - 1 Ea Post, Delineator

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

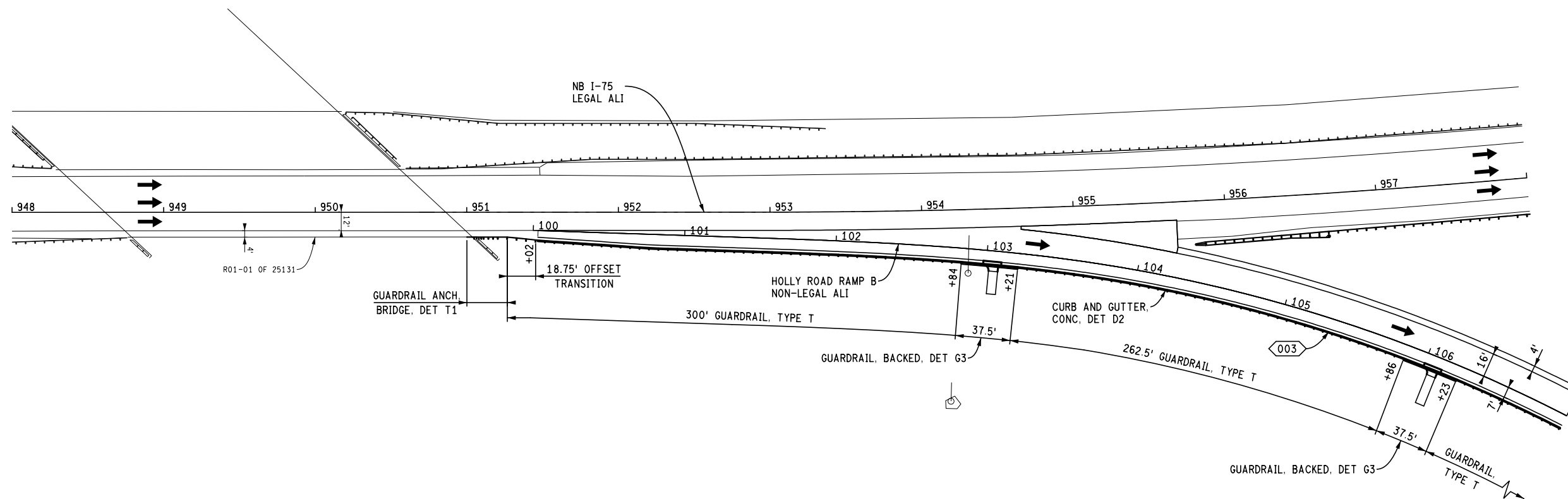


FILE: 115832_GuardrailDet_002.dgn	DATE: 03/10/17	CS: 25131	GUARDRAIL DETAIL SHEET	DRAWING	SHEET
TSC: DAVISON	DESIGN UNIT: PETHERS	JN: 115832A	RAMP C STA 200+00 TO STA 211+00	GRDET	SECT 1
				002	31

RAMP C NB I-75



NB I-75

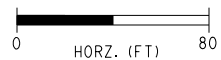


NB I-75

RAMP B

INSTALL PROP GUARDRAIL	
563 Ft	Guardrail, Type T
2 Ea	Guardrail, Backed, Det G3
1 Ea	Guardrail Anch, Bridge, Det T1
13 Ea	Guardrail Reflector

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



DATE: 03/10/17	CS: 25131
DESIGN UNIT: PETHERS	JN: 115832A
TSC: DAVISON	FILE: 115832_GuardrailDet_003.dgn

GUARDRAIL DETAIL SHEET	
RAMP B STA 100+00 TO STA 107+00	

DRAWING	SHEET
GRDET 003	32

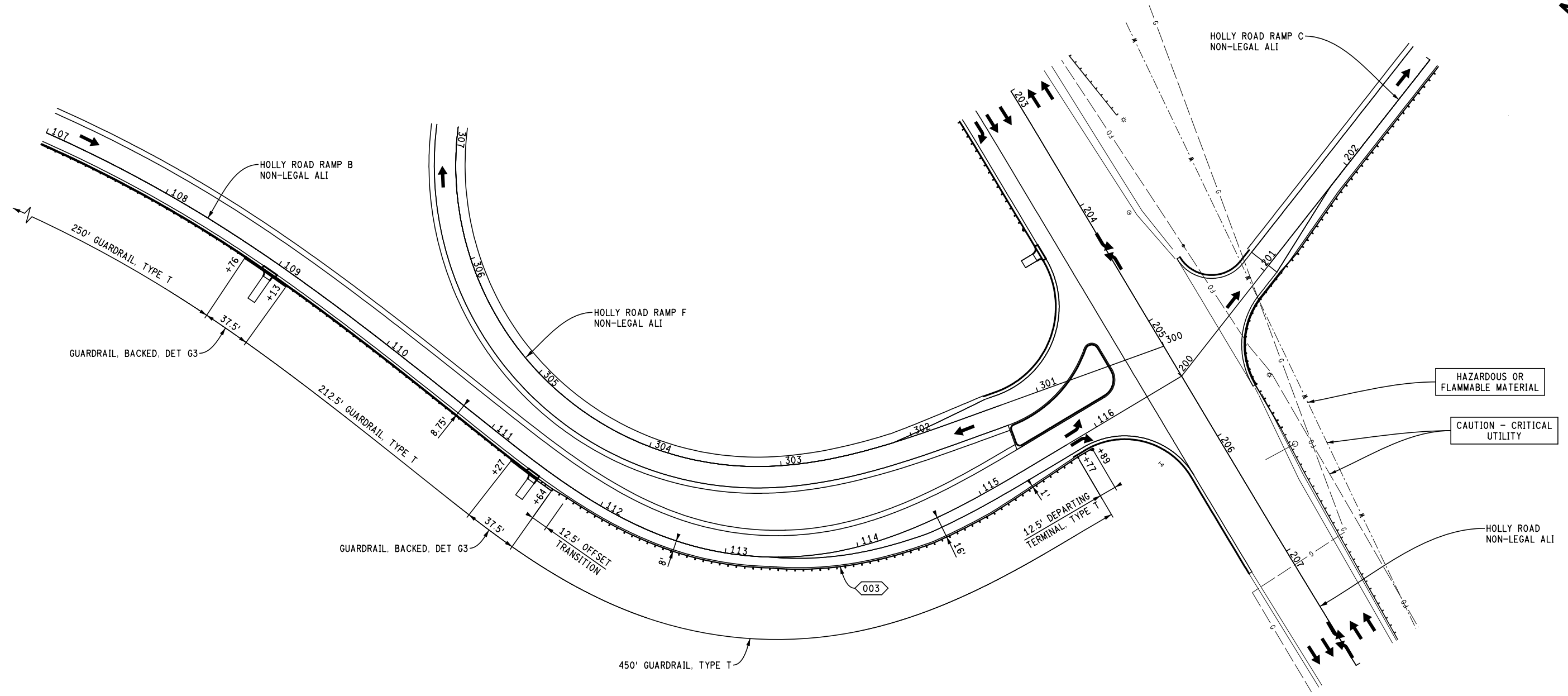
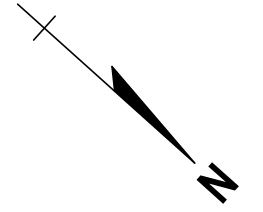


RAMP B

RAMP F

HOLLY RD

RAMP C

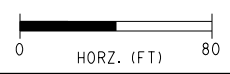


INSTALL PROP GUARDRAIL

- 913 Ft Guardrail, Type T
- 2 Ea Guardrail, Backed, Det G3
- 1 Ea Guardrail Departing Terminal, Type T
- 20 Ea Guardrail Reflector
- 1 Ea Delineator Reflector (GREEN)
- 1 Ea Post, Delineator

003

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



FILE: 115832\_GuardrailDet\_004.dgn

DATE: 03/10/17  
 DESIGN UNIT: PETHERS  
 TSC: DAVISON

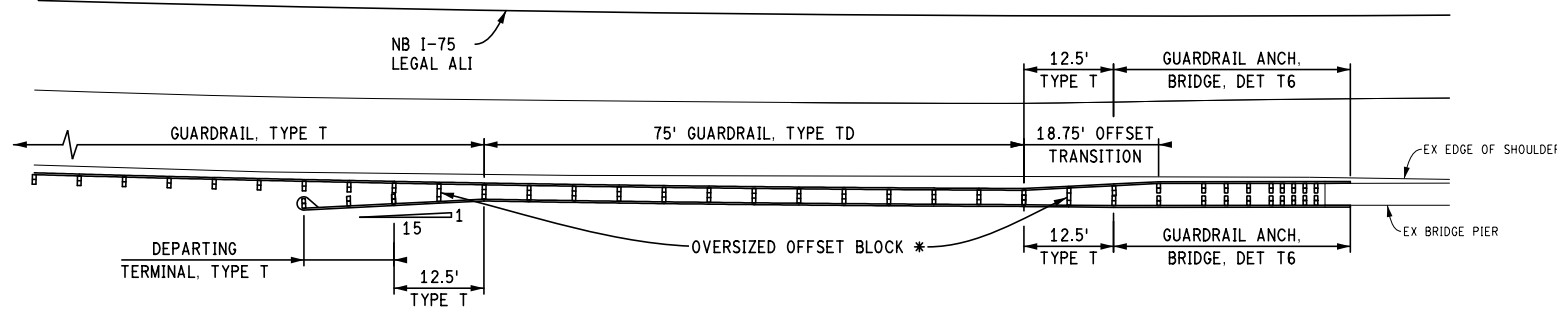
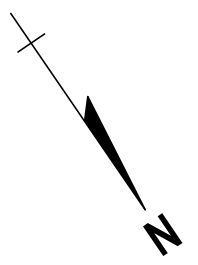
CS: 25131  
 JN: 115832A

GUARDRAIL DETAIL SHEET  
 RAMP B STA 107+00 TO STA 116+00

DRAWING SHEET  
 GRDET 004 SECT 1 33

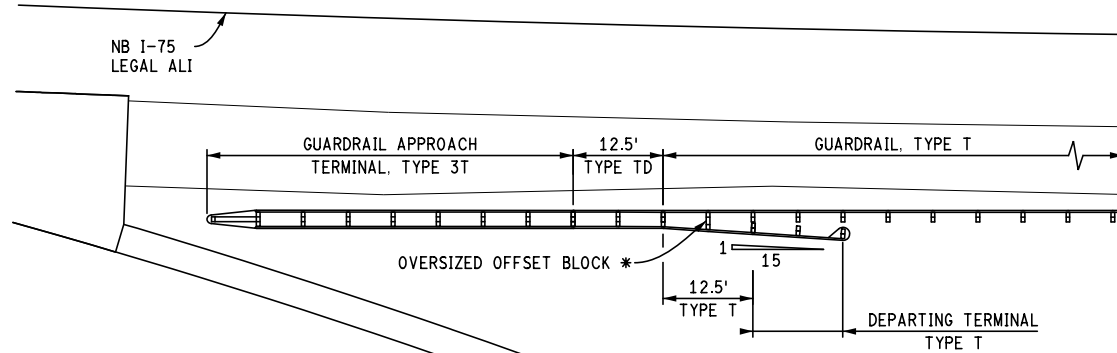
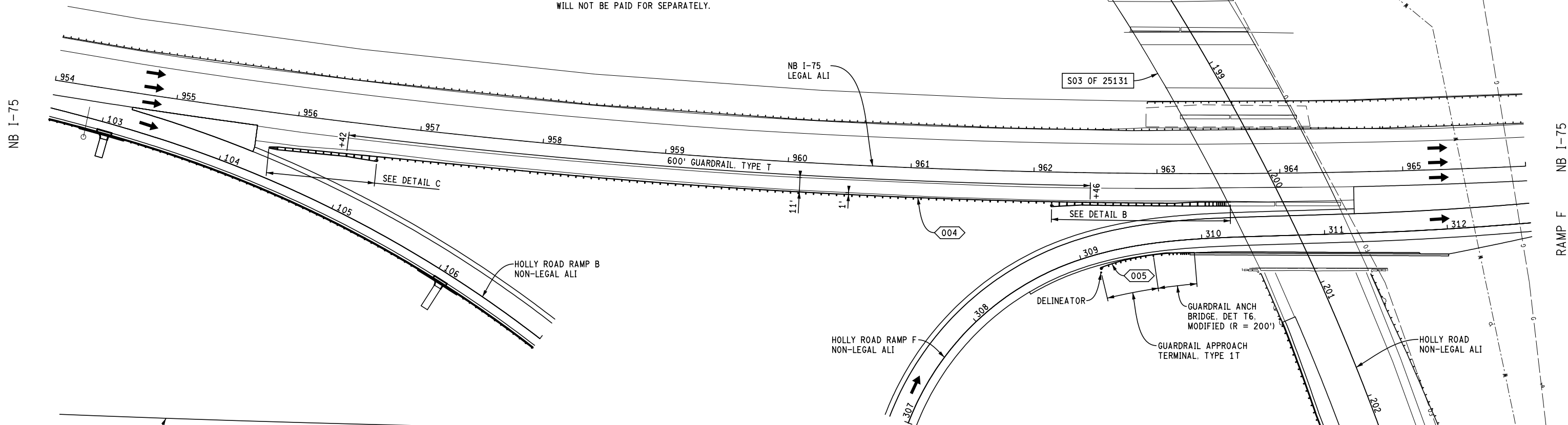
HOLLY RD

HOLLY RD



DETAIL B

\* NOTE:  
WHEN THE WIDTH BETWEEN GUARDRAIL PANELS CANNOT ACCOMMODATE TWO GUARDRAIL POSTS WITH STANDARD OFFSET BLOCKS, INSTALL ONE POST WITH AN OVERSIZED WOOD OFFSET BLOCK ON ONE SIDE (DEPTH AS NEEDED). OVERSIZED WOOD OFFSET BLOCKS MAY BE MADE FROM A COMBINATION OF SEPARATE WOOD BLOCKS. OVERSIZED WOOD OFFSET BLOCKS WILL BE INCLUDED AS PART OF GUARDRAIL PAY ITEMS AND WILL NOT BE PAID FOR SEPARATELY.



DETAIL C

INSTALL PROP GUARDRAIL

- 650 Ft Guardrail, Type T
- 88 Ft Guardrail, Type TD
- 2 Ea Guardrail Anch, Bridge, Det T6
- 1 Ea Guardrail Approach Terminal, Type 3T
- 2 Ea Guardrail Departing Terminal, Type T
- 17 Ea Guardrail Reflector

INSTALL PROP GUARDRAIL

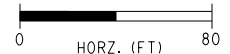
- 120 Ton Shoulder, CI II, Modified
- 1 Ea Guardrail Approach Terminal, Type 1T
- 1 Ea Guardrail Anch Bridge, Det T6, Modified
- 1 Ea Delineator Reflector (GREEN)
- 1 Ea Post, Delineator

RAMP B

RAMP F

HOLLY RD

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



FILE: 115832\_GuardrailDet\_005.dgn

DATE: 03/10/17  
DESIGN UNIT: PETHERS  
TSC: DAVISON

CS: 25131  
JN: 115832A

GUARDRAIL DETAIL SHEET  
I-75 STA 954+00 TO STA 966+00

DRAWING	SHEET
GRDET 005	34

**NOTES**

**COORDINATE SYSTEM:** STATE PLANE GRID  
**ZONE:** MICHIGAN SOUTH 2113  
**ELLIPSOID:** GRS 80  
**HORIZONTAL DATUM:** NAD 83 (MSRN CORS96)  
**VERTICAL DATUM:** NAVD 88  
**GEOID:** GEOID 12  
**UNITS:** INTERNATIONAL FEET  
**ALIGNMENT STATIONING:** LEGAL ALIGNMENT FOR I-75 NB OR  
 CONTSTRUCTION ALIGNMENT FOR HOLLY ROAD

**GROUND DISTANCE CONVERSION**

THE COMBINED SCALE FACTOR (CSF) FOR EACH CONTROL POINT IS INCLUDED IN THE CONTROL POINT LIST.

AVERAGE COMBINED SCALE FACTOR (ACSF) = (CSF1 + CSF2)/2  
 GROUND DISTANCE = GRID DISTANCE / ACSF

**PLAN ELEVATION**

ELEVATIONS SHOWN ON THESE PLANS ARE FROM WADE TRIM LEVEL CIRCUITS DATED 06/11/2014 TO 06/12/2014 AND BASED ON NGS BENCHMARKS 25607 (DL4942) AND 25302 (DL5201)

**INTERMEDIATE CONTROL**

**CONTROL POINT#: CP101**  
 DESCRIPTION: SET 5/8" IRON WITH RED CAP (TRAV.PT.) ON NORTHEAST SIDE OF I-75 NORTHBOUND APPROX. 10' NORTHWEST OF NORTHWEST ABUTMENT OVER RAILROAD TRACKS  
 STATION 951+19.96 OFFSET 20.49  
 COORDINATES: N - 508672.890 E - 13321064.89 ELEV - 925.77  
 SDN=0.008 SDE=0.008 SDZ=0.010  
 COMBINED SCALE FACTOR (AVERAGE): 0.99986799.  
 WITNESSES:  
 1. S45W 4' TO FACE OF GUARD RAIL  
 2. S45W 9' TO EDGE OF CONC  
 3. S20E 13' TO NORTHWEST END OF BRIDGE BARRIER WALL  
 4. N45E 11' TO SOUTH END OF FENCE

**CONTROL POINT#: CP102**  
 DESCRIPTION: SET 5/8" IRON WITH RED CAP (TRAV.PT.) ON SOUTH SIDE OF I-75 NB OFF-RAMP (RAMP B) TO HOLLY ROAD APPROXIMATELY 900' SOUTHEASTERLY FROM HOLLY ROAD  
 STATION 957+88.25 OFFSET 95.10  
 COORDINATES: N - 509186.44 E - 13320622.27 ELEV - 906.65  
 SDN=0.008 SDE=0.008 SDZ=0.009  
 COMBINED SCALE FACTOR (AVERAGE): 0.99986890  
 WITNESSES:  
 1. N60E 5' TO EDGE/PAVEMENT  
 2. SOUTH 87' TO SOUTHEAST END OF GUARD RAIL ON I-75 NB  
 3. S25E 157' TO SIGN  
 4. N60E 33' TO FACE OF GUARD RAIL ON NE SIDE OF RAMP B

**CONTROL POINT#: CP103**  
 DESCRIPTION: SET 5/8" IRON WITH RED CAP (TRAV.PT.) ON EAST SIDE OF HOLLY ROAD EAST OF DITCH AND APPROXIMATELY 100' NORTH OF OFF-RAMP (RAMP B)  
 STATION 206+22.11 (HOLLY RD CONST. ALI) OFFSET 87.95  
 COORDINATES: N - 510047.74 E - 13320319.70 ELEV - 891.74  
 SDN=0.008 SDE=0.008 SDZ=0.006  
 COMBINED SCALE FACTOR (AVERAGE): 0.99986962  
 WITNESSES:  
 1. WEST 45' TO BACK OF CURB ON HOLLY ROAD  
 2. S30W 79' TO BACK OF CURB ON OFF-RAMP (RAMP B)  
 3. S40W 62' TO POWER POLE  
 4. N50E 44' TO ELECTRIC TRANSFORMER BOX

**CONTROL POINT#: CP104**  
 DESCRIPTION: SET 5/8" IRON WITH RED CAP (TRAV.PT.) ON WEST SIDE OF HOLLY ROAD APPROXIMATELY 80 FEET NORTH OF NORTHWEST ABUTMENT OF HOLLY ROAD BRIDGE OVER I-75  
 STATION 201+81.61 (HOLLY RD CONST. ALI) OFFSET -45.27  
 COORDINATES: N - 509661.52 E 13320066.64 ELEV - 910.71  
 SDN=0.007 SDE=0.007 SDZ=0.005  
 COMBINED SCALE FACTOR (AVERAGE): 0.99986871  
 WITNESSES:  
 1. EAST 3' TO FACE OF GUARD RAIL  
 2. EAST 9' TO EDGE/PAVEMENT  
 3. S10W 29' TO SIGN  
 4. SOUTH 75' TO NORTHEAST END OF WEST BRIDGE BARRIER WALL

**CONTROL POINT#: CP105**  
 DESCRIPTION: SET 5/8" IRON WITH RED CAP (TRAV.PT.) ON WEST SIDE OF HOLLY ROAD APPROXIMATELY 90' SOUTH OF SOUTHWEST ABUTMENT OF HOLLY ROAD BRIDGE OVER I-75  
 STATION 197+40.35 (HOLLY RD CONST. ALI) OFFSET -46.91  
 COORDINATES: N - 509213.56 E 13320016.06 ELEV - 918.14  
 SDN=0.000 SDE=0.000 SDZ=0.002  
 COMBINED SCALE FACTOR (AVERAGE): 0.99986835  
 WITNESSES:  
 1. EAST 3' TO FACE OF GUARD RAIL  
 2. EAST 6' TO EDGE/PAVEMENT  
 3. S10W 30' TO SIGN  
 4. NORTH 87' TO SOUTHEAST END OF WEST BRIDGE BARRIER WALL

**CONTROL POINT#: CP106**  
 DESCRIPTION: SET 5/8" IRON WITH RED CAP (TRAV.PT.) ON SOUTH SIDE OF I-75 EASTBOUND APPROXIMATELY 132' WEST OF WEST FACIA OF HOLLY ROAD BRIDGE OVER I-75  
 STATION 964+88.03 OFFSET -116.92  
 COORDINATES: N - 509429.31 E - 13319934.51 ELEV - 886.95  
 SDN=0.008 SDE=0.008 SDZ=0.004  
 COMBINED SCALE FACTOR (AVERAGE): 0.99986985  
 WITNESSES:  
 1. S10W 3' TO FACE OF GUARD RAIL  
 2. SOUTH 4' TO EDGE/PAVEMENT  
 3. EAST 132' TO WEST FACIA OF HOLLY ROAD BRIDGE

**CONTROL POINT#: CP107**  
 DESCRIPTION: SET 5/8" IRON WITH RED CAP (TRAV.PT.) ON NORTH SIDE OF I-75 NORTHBOUND APPROXIMATELY 1700' NORTHWESTERLY FROM HOLLY ROAD  
 STATION 980+94.91 OFFSET 35.64  
 COORDINATES: N - 510255.49 E - 13318565.90 ELEV - 862.31  
 SDN=0.000 SDE=0.000 SDZ=0.008  
 COMBINED SCALE FACTOR (AVERAGE): 0.99987103  
 WITNESSES:  
 1. S10W 5' TO EDGE/PAVEMENT  
 2. N10E 25' TO EAST END OF HEADWALL  
 3. NORTH 27' TO WEST END OF HEADWALL  
 4. N80W 111' TO 12' CPP

**CONTROL POINT#: CP108**  
 DESCRIPTION: SET 5/8" IRON WITH RED CAP (TRAV.PT.) ON SOUTH SIDE OF I-75 NORTHBOUND APPROXIMATELY 1720' SOUTHEASTERLY FROM COOK ROAD  
 STATION 995+36.43 OFFSET -37.89  
 COORDINATES: N - 510744.85 E - 13317204.76 ELEV - 858.83  
 SDN=0.008 SDE=0.008 SDZ=0.009  
 COMBINED SCALE FACTOR (AVERAGE): 0.99987120  
 WITNESSES:  
 1. N10E 5' TO EDGE/PAVEMENT I-75 NORTHBOUND  
 2. S10W 39' TO EDGE/PAVEMENT I-75 SOUTHBOUND  
 3. S70E 231' TO MEDIAN CROSSOVER  
 4. S10W 21' TO CENTERLINE OF DITCH

**CONTROL POINT#: CP109**  
 DESCRIPTION: SET 5/8" IRON WITH RED CAP (TRAV.PT.) ON SOUTHWEST SIDE OF I-75 NORTHBOUND APPROXIMATELY 620' SOUTHEASTERLY FROM COOK ROAD  
 STATION 1005+94.14 OFFSET -36.24  
 COORDINATES: N - 511455.59 E - 13316411.21 ELEV - 866.93  
 SDN=0.008 SDE=0.008 SDZ=0.010  
 COMBINED SCALE FACTOR (AVERAGE): 0.99987082

**WITNESSES:**  
 1. N45E 3' TO FACE OF GUARD RAIL  
 2. N45E 3' TO EDGE/PAVEMENT  
 3. SE 1290' TO MEDIAN CROSSOVER  
 4. N30W 570' TO SOUTH END OF WEST BARRIER WALL COOK ROAD BRIDGE

**CONTROL POINT#: CP110**  
 DESCRIPTION: SET 5/8" IRON WITH RED CAP (TRAV.PT.) ON EAST SIDE OF RAMP TO DORT HIGHWAY NORTHBOUND APPROXIMATELY 90' NORTH OF COOK ROAD  
 STATION 1012+78.59 OFFSET 39.79  
 COORDINATES: N - 512096.30 E - 13316155.04 ELEV - 874.00  
 SDN=0.000 SDE=0.000 SDZ=0.010  
 COMBINED SCALE FACTOR (AVERAGE): 0.99987050  
 WITNESSES:  
 1. S60W 3' TO FACE OF GUARD RAIL  
 2. NORTH 35' TO CANTILEVERED SIGN (BM 204)  
 3. S10E 32' TO NORTH END OF EAST BARRIER WALL COOK ROAD BRIDGE  
 4. S30E 42' TO END OF WING WALL ON COOK ROAD BRIDGE

**CONTROL POINT#: CP111**  
 DESCRIPTION: SET 5/8" IRON WITH RED CAP (TRAV.PT.) ON EAST SIDE OF RAMP TO DORT HIGHWAY NORTHBOUND APPROXIMATELY 850' NORTH OF COOK ROAD  
 STATION 1020+17.99 OFFSET 219.66  
 COORDINATES: N - 512841.54 E - 13316001.12 ELEV - 861.22  
 SDN=0.010 SDE=0.010 SDZ=0.009  
 COMBINED SCALE FACTOR (AVERAGE): 0.99987112  
 WITNESSES:  
 1. WEST 5' TO EDGE/PAVEMENT  
 2. EAST 49' TO CENTERLINE OF DITCH  
 3. SOUTH 790' TO NORTH END OF EAST BARRIER WALL COOK ROAD BRIDGE  
 4. S10E 726' TO CANTILEVERED SIGN (BM 204)

**BENCHMARKS**

**BENCHMARK#: DL4942**  
 DESCRIPTION: BRASS MDOT DISK SET IN EAST END OF SOUTH ABUTMENT OF HOLLY ROAD BRIDGE OVER I-75  
 STATION 962+33.13 OFFSET -172.48  
 COORDINATES: N - 509244.04 E - 13320109.12 ELEV - 914.69  
 SDZ=0.000  
 WITNESSES:  
 1. WEST 6' TO SOUTH END OF BARRIER WALL OF BRIDGE  
 2. NE 59' TO SOUTH EDGE OF PAVEMENT OF I-75 SOUTHBOUND  
 3. SOUTH 143' TO SOUTH END OF GUARD RAIL  
 4. WEST 6' TO FACE OF GUARD RAIL

**BENCHMARK#: BM201**  
 DESCRIPTION: CHISELED SQUARE ON NORTHWEST CORNER OF TOP WINGWALL IN NORTHWEST QUADRANT OF I-75 NORTHBOUND BRIDGE OVER C & O RAILROAD TRACKS  
 STATION 951+13.64 OFFSET 23.18  
 COORDINATES: N - 508670.35 E - 13321071.27 ELEV - 926.09  
 SDZ=0.010  
 WITNESSES:  
 1. N80W 7' TO CP101  
 2. SOUTH 9' TO WEST END OF BRIDGE BARRIER WALL  
 3. S45W 6' TO FACE OF GUARD RAIL  
 4. NORTH 10' TO END OF FENCE

**BENCHMARK#: BM202**  
 DESCRIPTION: TOP OF SOUTH BOLT ON SIGNAL STRAIN POLE IN SOUTHWEST QUADRANT OF HOLLY ROAD AND THE ON-RAMP TO NORTHBOUND I-75  
 STATION 204+63.91 (HOLLY RD CONST. ALI) OFFSET -51.31  
 COORDINATES: N - 509937.93 E - 13320139.81 ELEV - 898.84  
 SDZ=0.005  
 WITNESSES:  
 1. EAST 5' TO BACK OF CURB  
 2. S60W 10' TO ELEC. TRANSFORMER BOX  
 3. S70W 8' TO ELEC. MANHOLE  
 4. S10E 48' TO TELEPHONE MANHOLE

**BENCHMARK#: BM203**  
 DESCRIPTION: TOP OF NAIL IMBEDDED ON SOUTH SIDE OF CONCRETE FOOTING FOR SIGN -FOOD EXIT 109-APPROXIMATELY 2000 FEET WEST OF HOLLY ROAD BRIDGE OVER I-75  
 STATION 983+73.46 OFFSET 43.97  
 COORDINATES: N - 510368.00 E - 13318310.95 ELEV - 860.03  
 SDZ=0.009  
 WITNESSES:  
 1. S10W 18' TO EDGE OF BIT. PAVEMENT  
 2. NORTH 2' TO CANTILEVER SIGN  
 3. N10E 60' TO FENCE  
 4. S50E 278' TO CP107

**BENCHMARK#: BM204**  
 DESCRIPTION: TOP OF WEST BOLT NEAREST TO GUARD RAIL ON CANTILEVERED SIGN POST -EXIT 109 DORT HWY- ON EAST SIDE OF I-75 RAMP TO DORT HIGHWAY AND APPROXIMATELY 120' NORTH OF COOK ROAD  
 STATION 1013+13.12 OFFSET 47.40  
 COORDINATES: N - 512130.76 E - 13316147.14 ELEV - 873.50  
 SDZ=0.010  
 WITNESSES:  
 1. S80W 9' TO FACE OF GUARD RAIL  
 2. S80W 11' TO EDGE OF CONCRETE PAVEMENT  
 3. SOUTH 67' TO NORTH END OF BRIDGE BARRIER WALL  
 4. S10E 75' TO EAST END OF WINGWALL IN NORTHEAST QUAD OF BRIDGE

**REFERENCE POINTS - HOLLY ROAD BRIDGE - S03**


**REF POINT#: A**  
 DESCRIPTION: NOT SET  
 STATION 198+00.62 (HOLLY RD CONST. ALI) OFFSET 0.00  
 COORDINATES: N - 509274.08 E - 13320063.59 ELEV - 916.66  
 WITNESSES:  
 NOT SET

**REF POINT#: 1**  
 DESCRIPTION: NOT SET  
 STATION 198+67.49 (HOLLY RD CONST. ALI) OFFSET 0.00  
 COORDINATES: N - 509340.88 E - 13320066.48 ELEV - 0  
 WITNESSES:  
 NOT SET

**REF POINT#: 2**  
 DESCRIPTION: NOT SET  
 STATION 199+49.60 (HOLLY RD CONST. ALI) OFFSET 0.00  
 COORDINATES: N - 509422.71 E - 13320073.18 ELEV - 0  
 WITNESSES:  
 NOT SET

**REF POINT#: 3**  
 DESCRIPTION: NOT SET  
 STATION 200+29.27 (HOLLY RD CONST. ALI) OFFSET 0.00  
 COORDINATES: N - 509501.77 E - 13320083.00 ELEV - 0  
 WITNESSES:  
 NOT SET

**REF POINT#: B**  
 DESCRIPTION: NOT SET  
 STATION 200+89.61 (HOLLY RD CONST. ALI) OFFSET 0.00  
 COORDINATES: N - 509561.34 E - 13320092.60 ELEV - 912.56  
 WITNESSES:  
 NOT SET

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE: )									NO SCALE	DATE: 03/10/17	CS: 25131	SURVEY INFORMATION SHEET		DRAWING	SHEET
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION			DESIGN UNIT: PETHERS	JN: 115832A			SURVEY	SECT
										FILE: 115832_SurveyInfo_001.dgn	TSC: DAVISON			001	35

**SECTION CORNERS**

SECTION CORNER: G10T6R7  
 DESCRIPTION: REMON DISK IN MON BOX AS PER RECORD  
 DOCUMENT 201112270087542  
 STATION 956+98.35 OFFSET -168.60  
 COORDINATES: N - 508927.48 E - 13320520.02 EL 909.76  
 WITNESSES (FROM LCRC):  
 1. N25W 110.40' TO SE CORNER METAL MILE POST #108  
 2. S80E 85.09' PK/TAG IN ASPHALT  
 3. S10W 153.76' PK/TAG TOP CONC LP BASE  
 4. S30W 87.06' PK/TAG NE CORNER CONC PAD ETB

SECTION CORNER: G09T6R7  
 DESCRIPTION: REMON DISK IN MON BOX AS PER RECORD  
 DOCUMENT 201112270087541  
 STATION 970+51.71 OFFSET 1989.34  
 COORDINATES: N - 511578.88 E - 13320418.84 EL 879.92  
 WITNESSES (FROM LCRC):  
 1. N70E 69.35' CHISELED "X" IN WEST END CURB  
 2. NORTH 32.89' TO 1/2" IRON ROD #32332  
 3. N5W 28.11' CHISELED "X" ON TOP WEST END 18" CMP  
 4. S50W 23.80' NAIL/TAG TOP OF WEST END 18" CMP  
 5. S70E 63.75' CHISLED "X" IN W. END CURB

SECTION CORNER: F10T6R7  
 DESCRIPTION: 3/4" IRON PIN IN MON BOX AS PER RECORD  
 DOCUMENT 200201110002779  
 STATION 982+19.84 OFFSET -1560.96  
 COORDINATES: N - 508823.20 E - 13317849.46 EL 893.50  
 WITNESSES (FROM LCRC):  
 1. S9W 67.59' N/T IN W. FACE 36" SHAGBARK HICKORY  
 2. S30E 35.79' TOP BOLT OF FIRE HYDRANT  
 3. N53E 35.67' NEAREST EDGE OF MANHOLE  
 4. N7E 48.75' SOUTHEAST BOLT OF RED EMERGENCY SIGN

SECTION CORNER: F09T6R7  
 DESCRIPTION: REMON DISK ON CONC MONUMENT PER  
 DOCUMENT 201112270087538 - IN SUPERVISORS PLAT OF  
 MELTRICA ACRES  
 STATION 992+96.55 OFFSET 842.91  
 COORDINATES: N - 511452.95 E - 13317762.78 EL 0.000  
 WITNESSES (FROM LCRC):  
 1. S70W 8.18' ROWE N/T IN N. FACE 24" OAK  
 2. SOUTH 22.62' N/T #32332 E. FACE 16" DEAD MAPLE  
 3. N20E 42.92' NAIL/TAG IN W. FACE 18" JUNIPER  
 4. SOUTH 50.58' ROWE NAIL/TAG E. FACE 18" MAPLE  
 5. S60W 7.25' PK NAIL IN E. FACE 24" OAK  
 6. N15W 47.89' NAIL/TAG #32332 SE FACE OF 14" PINE  
 7. EAST 140.38' ROWE NAIL/TAG IN S. FACE POWER POLE

SECTION CORNER: E10T6R7  
 DESCRIPTION: REMON DISK IN MON BOX AS PER RECORD  
 DOCUMENT 201112220084852  
 STATION 998+92.30 OFFSET -2827.96  
 COORDINATES: N - 508726.56 E - 13315205.32 EL 880.32  
 WITNESSES (FROM LCRC):  
 1. S70E 152.03' GOULD TAG IN S. FACE OF POWER POLE  
 2. S10W 45.92' NAIL/TAG IN N. FACE POWER POLE  
 3. SOUTH 44.08' 2" CPCO PIPE  
 4. NORTH 32.61' 2" CPCO PIPE  
 5. S60W 89.70' TO NE RIM SANITARY MANHOLE

SECTION CORNER: E09T6R7  
 DESCRIPTION: REMON DISK OVER "T" IRON AS PER RECORD  
 DOCUMENT 201112220084851  
 STATION 1010+70.58 OFFSET -1206.64  
 COORDINATES: N - 511374.80 E - 13315117.60 EL 854.55  
 WITNESSES (FROM LCRC):  
 1. S15W 11.27' NAIL/TAG #17635 E. FACE 28" WALNUT  
 2. S85E 66.13' CROSS "X" ON NW BOLT CPCO TOWER  
 3. SOUTH 49.86' TO 1/2" RE-ROD  
 4. S5W 86.74' NAIL/TAG #30092 IN E. FACE POWER POLE  
 5. WEST 11.30' TO EAST EDGE B/T

SECTION CORNER: H09T6R7  
 DESCRIPTION: REMON DISK IN MON BOX AS PER RECORD  
 DOCUMENT 201112210084568  
 STATION N/A  
 COORDINATES: N - 511714.19 E - 13323071.50 EL 881.46  
 WITNESSES (FROM LCRC):  
 1. NORTH 50.03' GOULD TAG ON "T" IRON  
 2. NORTH 77.43' CENTERLINE OF 40" MULTI-MAPLE  
 3. N45E 63.67' CHISELED "X" ON WEST RIM OF SANITARY  
 MH  
 4. N45E 121.78' SW FACE OF TEXTURED HEX STREET LIGHT  
 POLE  
 5. S45W 53.24' TOP NUT C/L FIRE HYDRANT  
 6. N60W 128.41' GOULD NAIL/TAG IN SW FACE OF POWER  
 POLE

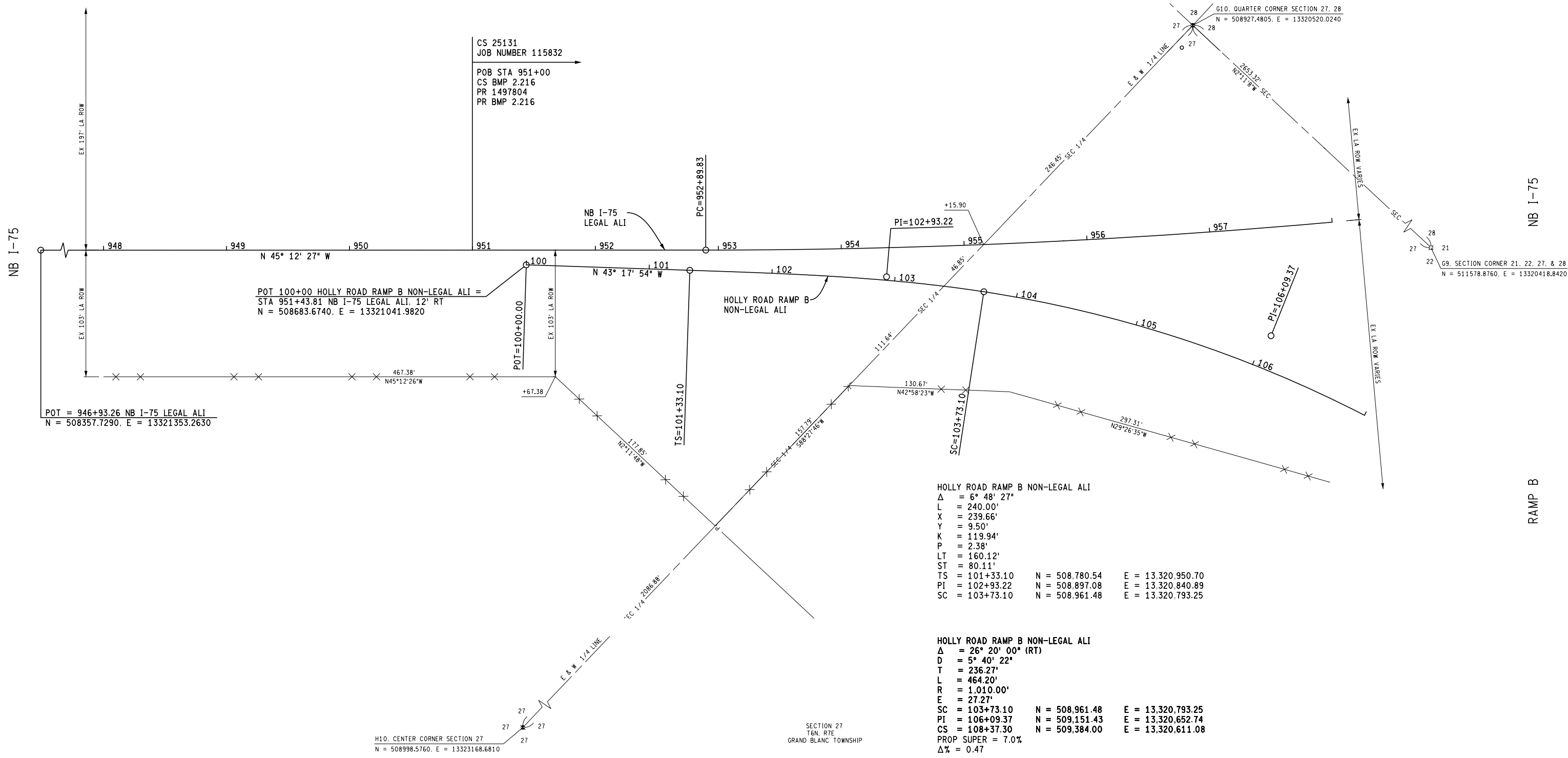
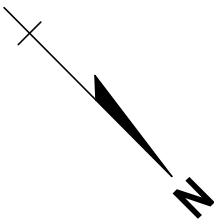
FINAL ROW PLAN REVISIONS (SUBMITTAL DATE: )								DATE: 03/10/17		CS: 25131		SURVEY INFORMATION SHEET		DRAWING SHEET	
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION	DESIGN UNIT: PETHERS	JN: 115832A			SURVEY	SECT		
								FILE: 115832_SurveyInfo_002.dgn	TSC: DAVISON			002	1		
													36		



**NO SCALE**

**ALIGNMENT KEY**  
 NB I-75 LEGAL ALI: NB I-75 LEGAL ALIGNMENT AS SURVEYED IN 2014 FOR JN 115832 BY WADE TRIM  
 HOLLY ROAD LEGAL ALI: HOLLY ROAD LEGAL ALIGNMENT AS SURVEYED IN 2014 FOR JN 115832 BY WADE TRIM  
 HOLLY ROAD NON-LEGAL ALI: HOLLY ROAD CONSTRUCTION ALIGNMENT AS PROPOSED FOR JN 115832  
 HOLLY ROAD RAMP B NON-LEGAL ALI: HOLLY ROAD RAMP B CONSTRUCTION ALIGNMENT AS PROPOSED FOR JN 115832  
 HOLLY ROAD RAMP C NON-LEGAL ALI: HOLLY ROAD RAMP C CONSTRUCTION ALIGNMENT AS PROPOSED FOR JN 115832  
 HOLLY ROAD RAMP F NON-LEGAL ALI: HOLLY ROAD RAMP F CONSTRUCTION ALIGNMENT AS PROPOSED FOR JN 115832  
 RAMP B NORTH DITCH ALI: HOLLY ROAD RAMP B DITCH CONSTRUCTION ALIGNMENT AS PROPOSED FOR JN 115832  
 RAMP B SOUTH DITCH ALI: HOLLY ROAD RAMP B DITCH CONSTRUCTION ALIGNMENT AS PROPOSED FOR JN 115832  
 RETAINING WALL NON-LEGAL ALI: CONSTRUCTION ALIGNMENT AS PROPOSED FOR JN 115832

SECTION 27  
 T6N, R7E  
 GRAND BLANC TOWNSHIP



**HOLLY ROAD RAMP B NON-LEGAL ALI**  
 Δ = 6° 48' 27"  
 L = 240.00'  
 X = 239.66'  
 Y = 9.50'  
 K = 119.94'  
 P = 2.38'  
 LT = 160.12'  
 ST = 80.11'  
 TS = 101+33.10    N = 508,780.54    E = 13,320,950.70  
 PI = 102+93.22    N = 508,897.08    E = 13,320,840.89  
 SC = 103+73.10    N = 508,961.48    E = 13,320,793.25

**HOLLY ROAD RAMP B NON-LEGAL ALI**  
 Δ = 26° 20' 00" (RT)  
 D = 5° 40' 22"  
 T = 236.27'  
 L = 464.20'  
 R = 1,010.00'  
 E = 27.27'  
 SC = 103+73.10    N = 508,961.48    E = 13,320,793.25  
 PI = 106+09.37    N = 509,151.43    E = 13,320,652.74  
 CS = 108+37.30    N = 509,384.00    E = 13,320,611.08  
 PROP SUPER = 7.0%  
 Δ% = 0.47

H10, CENTER CORNER SECTION 27  
 N = 508998.5760, E = 13323168.6810

SECTION 27  
 T6N, R7E  
 GRAND BLANC TOWNSHIP

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE: )						MDOT Michigan Department of Transportation	0 80 HORZ. (FT)	DATE: 03/10/17	CS: 25131	ALIGNMENT SHEET	DRAWING	SHEET
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE							

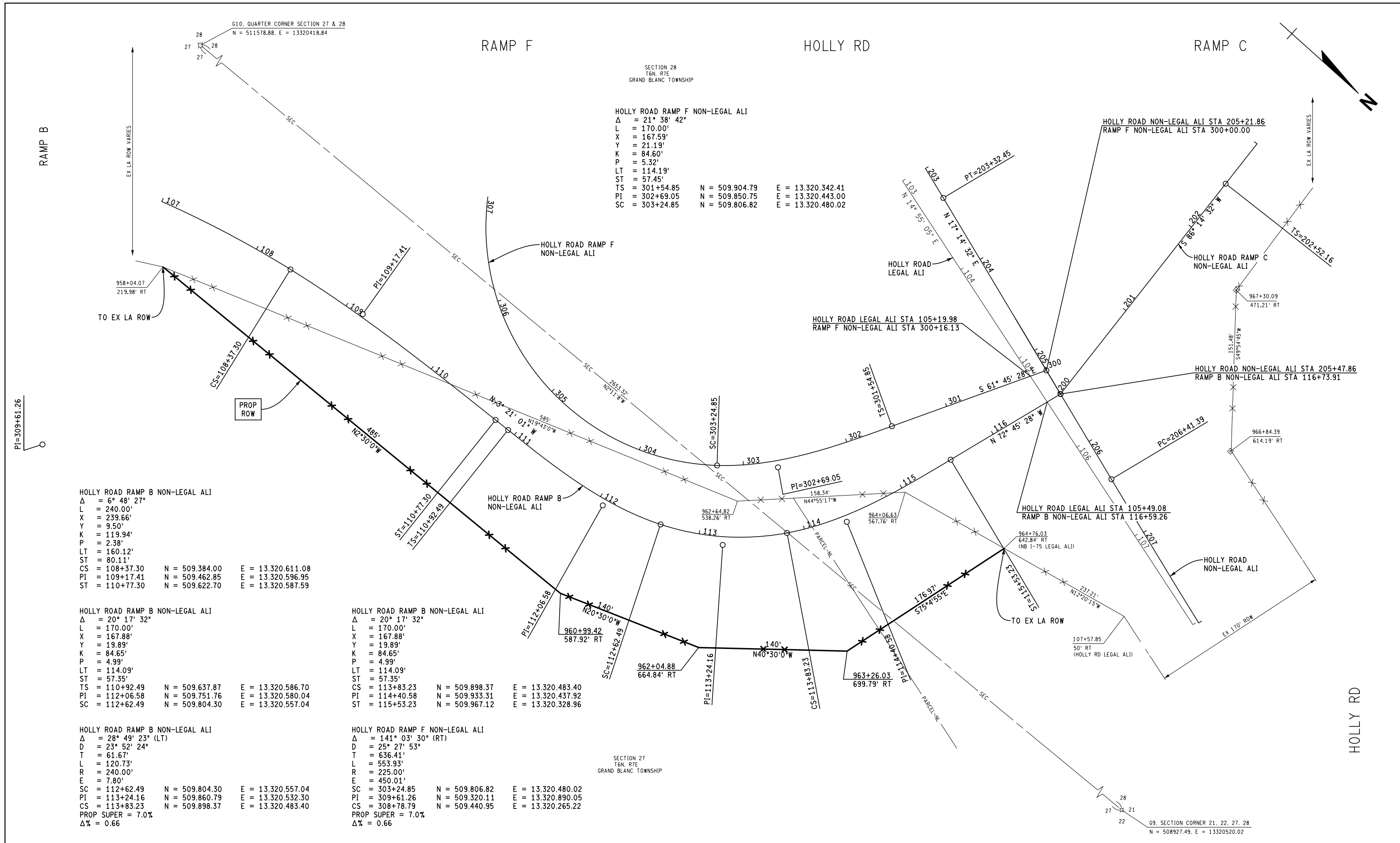
FILE: 115832\_175\_949Ali.dgn

DESIGN UNIT: PETHERS  
 TSC: DAIVISON

JN: 115832A

NB I-75 STA 949+00 TO STA 958+00  
 RAMP B STA 100+00 TO STA 107+00

175 ALI 001  
 SECT 1 37



SECTION 28  
T6N, R7E  
GRAND BLANC TOWNSHIP

HOLLY ROAD RAMP F NON-LEGAL ALI  
 $\Delta = 21^\circ 38' 42''$   
 $L = 170.00'$   
 $X = 167.59'$   
 $Y = 21.19'$   
 $K = 84.60'$   
 $P = 5.32'$   
 $LT = 114.19'$   
 $ST = 57.45'$   
 $TS = 301+54.85$      $N = 509.904.79$      $E = 13.320.342.41$   
 $PI = 302+69.05$      $N = 509.850.75$      $E = 13.320.443.00$   
 $SC = 303+24.85$      $N = 509.806.82$      $E = 13.320.480.02$

HOLLY ROAD RAMP B NON-LEGAL ALI  
 $\Delta = 6^\circ 48' 27''$   
 $L = 240.00'$   
 $X = 239.66'$   
 $Y = 9.50'$   
 $K = 119.94'$   
 $P = 2.38'$   
 $LT = 160.12'$   
 $ST = 80.11'$   
 $CS = 108+37.30$      $N = 509.384.00$      $E = 13.320.611.08$   
 $PI = 109+17.41$      $N = 509.462.85$      $E = 13.320.596.95$   
 $ST = 110+77.30$      $N = 509.622.70$      $E = 13.320.587.59$

HOLLY ROAD RAMP B NON-LEGAL ALI  
 $\Delta = 20^\circ 17' 32''$   
 $L = 170.00'$   
 $X = 167.88'$   
 $Y = 19.89'$   
 $K = 84.65'$   
 $P = 4.99'$   
 $LT = 114.09'$   
 $ST = 57.35'$   
 $TS = 110+92.49$      $N = 509.637.87$      $E = 13.320.586.70$   
 $PI = 112+06.58$      $N = 509.751.76$      $E = 13.320.580.04$   
 $SC = 112+62.49$      $N = 509.804.30$      $E = 13.320.557.04$

HOLLY ROAD RAMP B NON-LEGAL ALI  
 $\Delta = 20^\circ 17' 32''$   
 $L = 170.00'$   
 $X = 167.88'$   
 $Y = 19.89'$   
 $K = 84.65'$   
 $P = 4.99'$   
 $LT = 114.09'$   
 $ST = 57.35'$   
 $CS = 113+83.23$      $N = 509.898.37$      $E = 13.320.483.40$   
 $PI = 114+40.58$      $N = 509.933.31$      $E = 13.320.437.92$   
 $ST = 115+53.23$      $N = 509.967.12$      $E = 13.320.328.96$

HOLLY ROAD RAMP B NON-LEGAL ALI  
 $\Delta = 28^\circ 49' 23''$  (LT)  
 $D = 23^\circ 52' 24''$   
 $T = 61.67'$   
 $L = 120.73'$   
 $R = 240.00'$   
 $E = 7.80'$   
 $SC = 112+62.49$      $N = 509.804.30$      $E = 13.320.557.04$   
 $PI = 113+24.16$      $N = 509.860.79$      $E = 13.320.532.30$   
 $CS = 113+83.23$      $N = 509.898.37$      $E = 13.320.483.40$   
 PROP SUPER = 7.0%  
 $\Delta\% = 0.66$

HOLLY ROAD RAMP F NON-LEGAL ALI  
 $\Delta = 141^\circ 03' 30''$  (RT)  
 $D = 25^\circ 27' 53''$   
 $T = 636.41'$   
 $L = 553.93'$   
 $R = 225.00'$   
 $E = 450.01'$   
 $SC = 303+24.85$      $N = 509.806.82$      $E = 13.320.480.02$   
 $PI = 309+61.26$      $N = 509.320.11$      $E = 13.320.890.05$   
 $CS = 308+78.79$      $N = 509.440.95$      $E = 13.320.265.22$   
 PROP SUPER = 7.0%  
 $\Delta\% = 0.66$

SECTION 27  
T6N, R7E  
GRAND BLANC TOWNSHIP

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE: )						MDOT Michigan Department of Transportation	0      80 HORIZ. (FT)	DATE: 03/10/17		CS: 25131		ALIGNMENT SHEET		DRAWING	SHEET
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE			AUTH	DESCRIPTION	DESIGN UNIT: PETHERS	JN: 115832A	RAMP B STA 107+00 TO STA 114+00			
								TSC: DAVISON		RAMP C 200 TO 203 / RAMP F 300 TO 307		ALI 001	38		

FILE: 115832\_RampB\_107Ali.dgn

69, SECTION CORNER 21, 22, 27, 28  
N = 508927.49, E = 13320520.02

HOLLY RD

SECTION 28  
TGN. RTE  
GRAND BLANC TOWNSHIP

I-75 LEGAL ALI  
 $\Delta = 22^\circ 41' 32''$  (LT)  
 $D = 0^\circ 59' 57''$   
 $T = 1,150.52'$   
 $L = 2,270.88'$   
 $R = 5,733.76'$   
 $E = 114.29'$   
 PC = 952+89.83    N = 508,778.04    E = 13,320,929.90  
 PI = 964+40.35    N = 509,588.63    E = 13,320,113.42  
 PT = 975+60.71    N = 510,021.49    E = 13,319,047.44

G10. QUARTER CORNER SECTION 27, 28  
 N = 508927.4803, E = 13320520.0240

NB I-75 LEGAL ALI STA 963+62.56  
 HOLLY ROAD LEGAL ALI STA 99+94.10

HOLLY ROAD LEGAL ALI STA 100+51.02  
 HOLLY ROAD RAMP F NON-LEGAL ALI STA 310+51.45

NB I-75 LEGAL ALI STA 963+90.73  
 HOLLY ROAD NON-LEGAL ALI STA 200+01.38

HOLLY ROAD NON-LEGAL ALI STA 200+57.40  
 HOLLY ROAD RAMP F NON-LEGAL ALI STA 310+78.89

RETAINING WALL NON-LEGAL ALI  
 STA 409+90 =  
 HOLLY ROAD RAMP F NON-LEGAL ALI  
 STA 309+90, 11.33' RT

NB I-75

NB I-75  
 RAMP F

HOLLY ROAD RAMP F NON-LEGAL ALI  
 $\Delta = 141^\circ 03' 30''$  (RT)  
 $D = 25^\circ 27' 53''$   
 $T = 636.41'$   
 $L = 553.93'$   
 $R = 225.00'$   
 $E = 450.01'$   
 SC = 303+24.85    N = 509,806.82    E = 13,320,480.02  
 PI = 309+61.26    N = 509,320.11    E = 13,320,890.05  
 CS = 308+78.79    N = 509,440.95    E = 13,320,265.22  
 PROP SUPER = 7.0%  
 $\Delta\% = 0.66$

HOLLY ROAD RAMP F NON-LEGAL ALI  
 $\Delta = 21^\circ 38' 42''$   
 $L = 170.00'$   
 $X = 167.59'$   
 $Y = 21.19'$   
 $K = 84.60'$   
 $P = 5.32'$   
 $LT = 114.19'$   
 $ST = 57.45'$   
 CS = 308+78.79    N = 509,440.95    E = 13,320,265.22  
 PI = 309+36.24    N = 509,451.85    E = 13,320,208.82  
 ST = 310+48.79    N = 509,513.36    E = 13,320,112.61

HOLLY ROAD RAMP F NON-LEGAL ALI  
 $\Delta = 6^\circ 31' 17''$  (LT)  
 $D = 2^\circ 05' 01''$   
 $T = 156.67'$   
 $L = 313.01'$   
 $R = 2,750.00'$   
 $E = 4.46'$   
 PC = 311+15.79    N = 509,549.45    E = 13,320,056.15  
 PI = 312+72.46    N = 509,633.84    E = 13,319,924.15  
 PT = 314+28.80    N = 509,702.69    E = 13,319,783.42  
 PROP SUPER = 2.7%  
 $\Delta\% = 0.43$

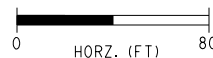
RAMP F

HOLLY RD

G9. SECTION CORNER 21, 22, 27, & 28  
 N = 511578.8760, E = 13320418.8420

SECTION 28  
TGN. RTE  
GRAND BLANC TOWNSHIP

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE: )								DATE: 03/10/17		CS: 25131		ALIGNMENT SHEET		DRAWING SHEET	
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION	DESIGN UNIT: PETHERS		JN: 115832A		NB I-75 STA 958+00 TO STA 967+00		175	SECT 1
								TSC: DAVISON				RAMP F STA 307+00 TO STA 314+00		002	39

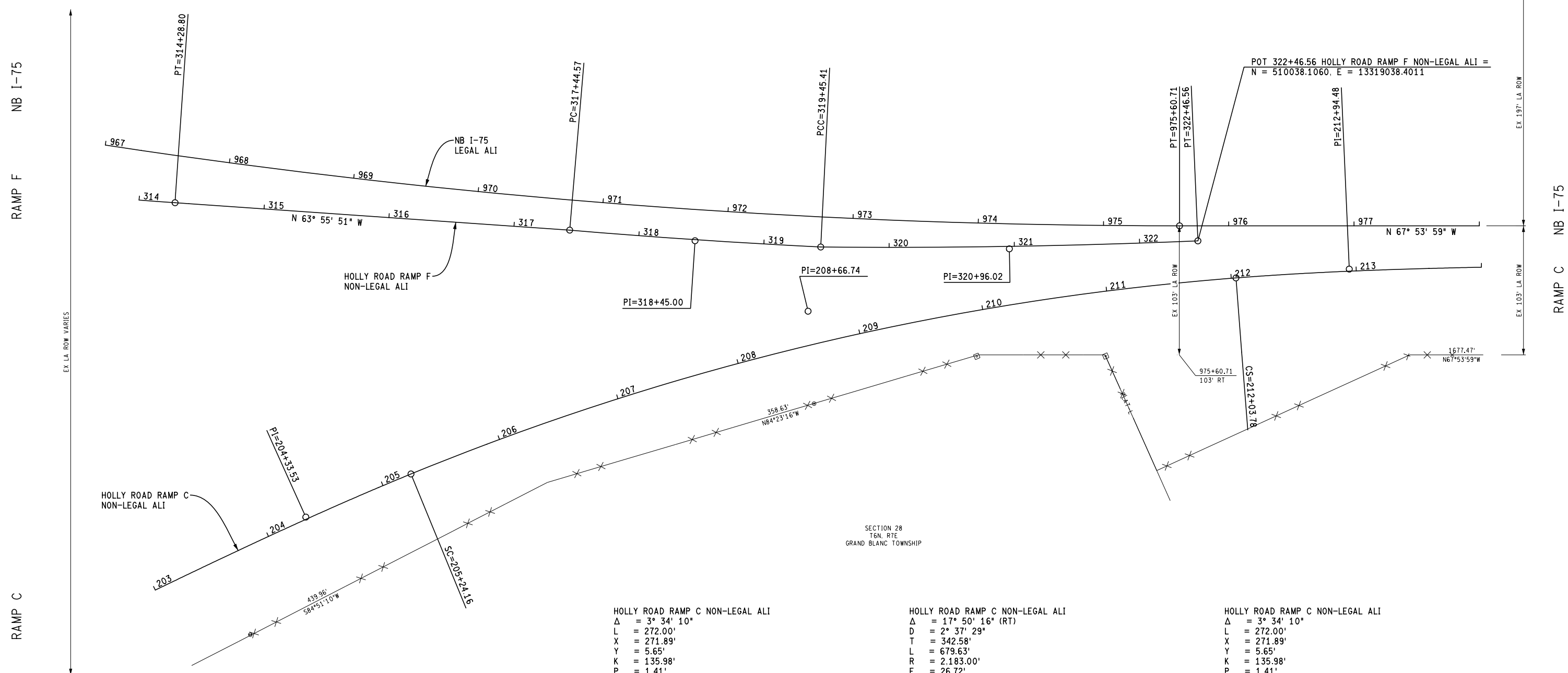
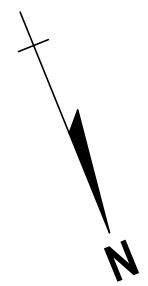


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HOLLY ROAD RAMP F NON-LEGAL ALI  
 $\Delta = 1^\circ 59' 55''$  (LT)  
 $D = 0^\circ 59' 42''$   
 $T = 100.43'$   
 $L = 200.84'$   
 $R = 5,757.76'$   
 $E = 0.88'$   
 $PC = 317+44.57$      $N = 509.841.46$      $E = 13,319.499.77$   
 $PI = 318+45.00$      $N = 509.886.98$      $E = 13,319.410.24$   
 $PCC = 319+45.41$      $N = 509.929.34$      $E = 13,319.319.19$

HOLLY ROAD RAMP F NON-LEGAL ALI  
 $\Delta = 2^\circ 59' 23''$  (LT)  
 $D = 0^\circ 59' 34''$   
 $T = 150.61'$   
 $L = 301.15'$   
 $R = 5,771.55'$   
 $E = 1.96'$   
 $PCC = 319+45.41$      $N = 509.929.34$      $E = 13,319.319.19$   
 $PI = 320+96.02$      $N = 509.987.39$      $E = 13,319.180.21$   
 $PT = 322+46.56$      $N = 510.038.11$      $E = 13,319.038.40$

SECTION 28  
 T6N, R7E  
 GRAND BLANC TOWNSHIP



HOLLY ROAD RAMP C NON-LEGAL ALI  
 $\Delta = 3^\circ 34' 10''$   
 $L = 272.00'$   
 $X = 271.89'$   
 $Y = 5.65'$   
 $K = 135.98'$   
 $P = 1.41'$   
 $LT = 181.37'$   
 $ST = 90.70'$   
 $TS = 202+52.16$      $N = 509.986.37$      $E = 13,319.962.08$   
 $PI = 204+33.53$      $N = 509.974.49$      $E = 13,319.781.10$   
 $SC = 205+24.16$      $N = 509.974.19$      $E = 13,319.690.40$

HOLLY ROAD RAMP C NON-LEGAL ALI  
 $\Delta = 17^\circ 50' 16''$  (RT)  
 $D = 2^\circ 37' 29''$   
 $T = 342.58'$   
 $L = 679.63'$   
 $R = 2,183.00'$   
 $E = 26.72'$   
 $SC = 205+24.16$      $N = 509.974.19$      $E = 13,319.690.40$   
 $PI = 208+66.74$      $N = 509.973.06$      $E = 13,319.347.82$   
 $CS = 212+03.78$      $N = 510.076.93$      $E = 13,319.021.36$   
 PROP SUPER = 6.8%  
 $\Delta\% = 0.40$

HOLLY ROAD RAMP C NON-LEGAL ALI  
 $\Delta = 3^\circ 34' 10''$   
 $L = 272.00'$   
 $X = 271.89'$   
 $Y = 5.65'$   
 $K = 135.98'$   
 $P = 1.41'$   
 $LT = 181.37'$   
 $ST = 90.70'$   
 $CS = 212+03.78$      $N = 510.076.93$      $E = 13,319.021.36$   
 $PI = 212+94.48$      $N = 510.104.43$      $E = 13,318.934.93$   
 $ST = 214+75.78$      $N = 510.170.07$      $E = 13,318.765.85$

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE: )						MDOT Michigan Department of Transportation	0 80 HORZ. (FT)	DATE: 03/10/17	CS: 25131	ALIGNMENT SHEET	DRAWING	SHEET
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE							

FILE: 115832\_175\_967Ali.dgn

DESIGN UNIT: PETHERS  
 TSC: DAIVSON

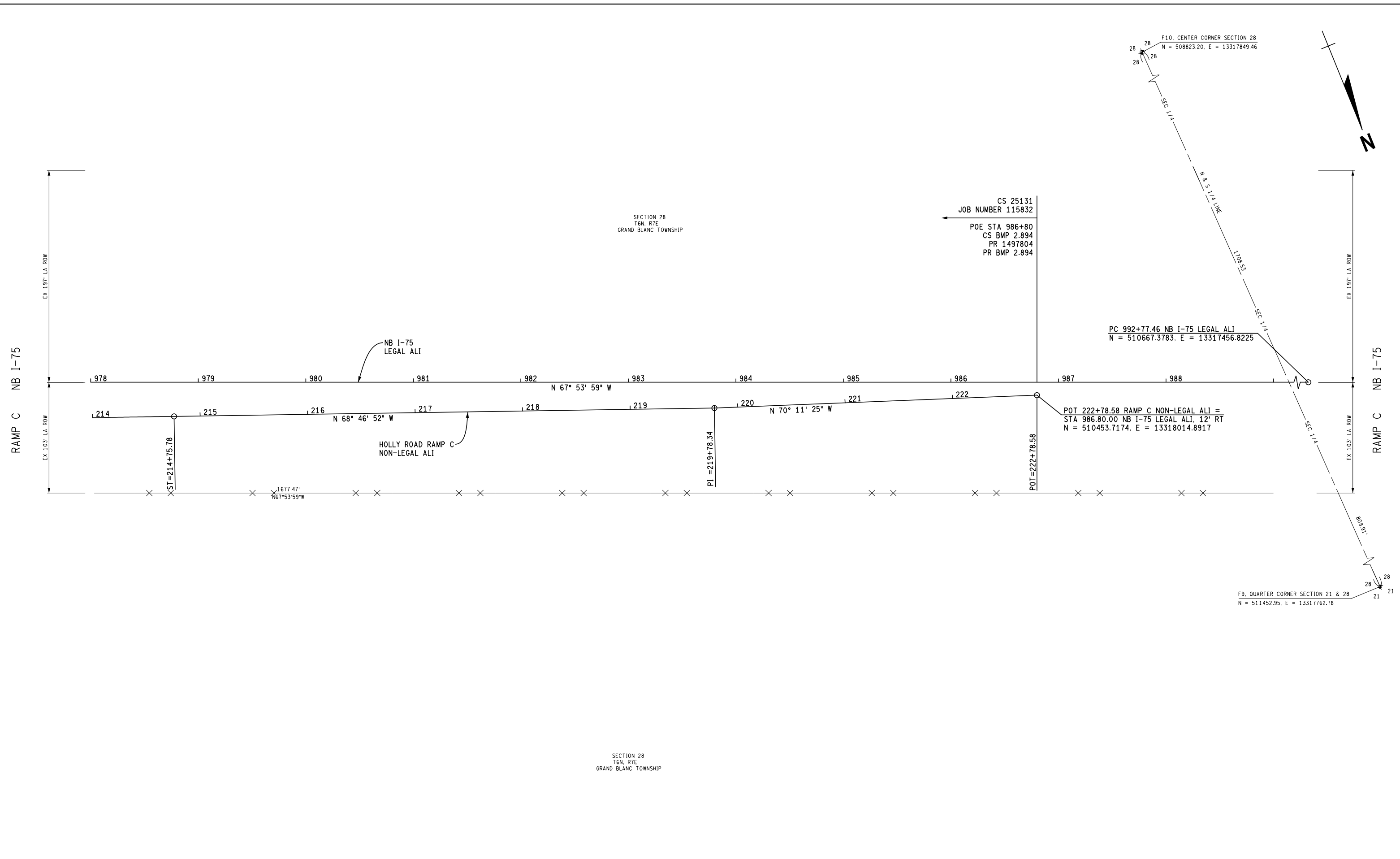
JN: 115832A

NB I-75 STA 967+00 TO STA 978+00  
 RAMP C 203 TO 214 / RAMP F 314 TO 322

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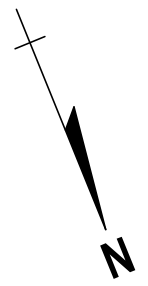
SECTION 28  
T6N, R7E  
GRAND BLANC TOWNSHIP

CS 25131  
JOB NUMBER 115832  
POE STA 986+80  
CS BMP 2.894  
PR 1497804  
PR BMP 2.894

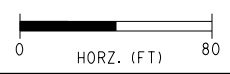
PC 992+77.46 NB I-75 LEGAL ALI  
N = 510667.3783, E = 13317456.8225

POT 222+78.58 RAMP C NON-LEGAL ALI =  
STA 986.8000 NB I-75 LEGAL ALI, 12' RT  
N = 510453.7174, E = 13318014.8917

SECTION 28  
T6N, R7E  
GRAND BLANC TOWNSHIP



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



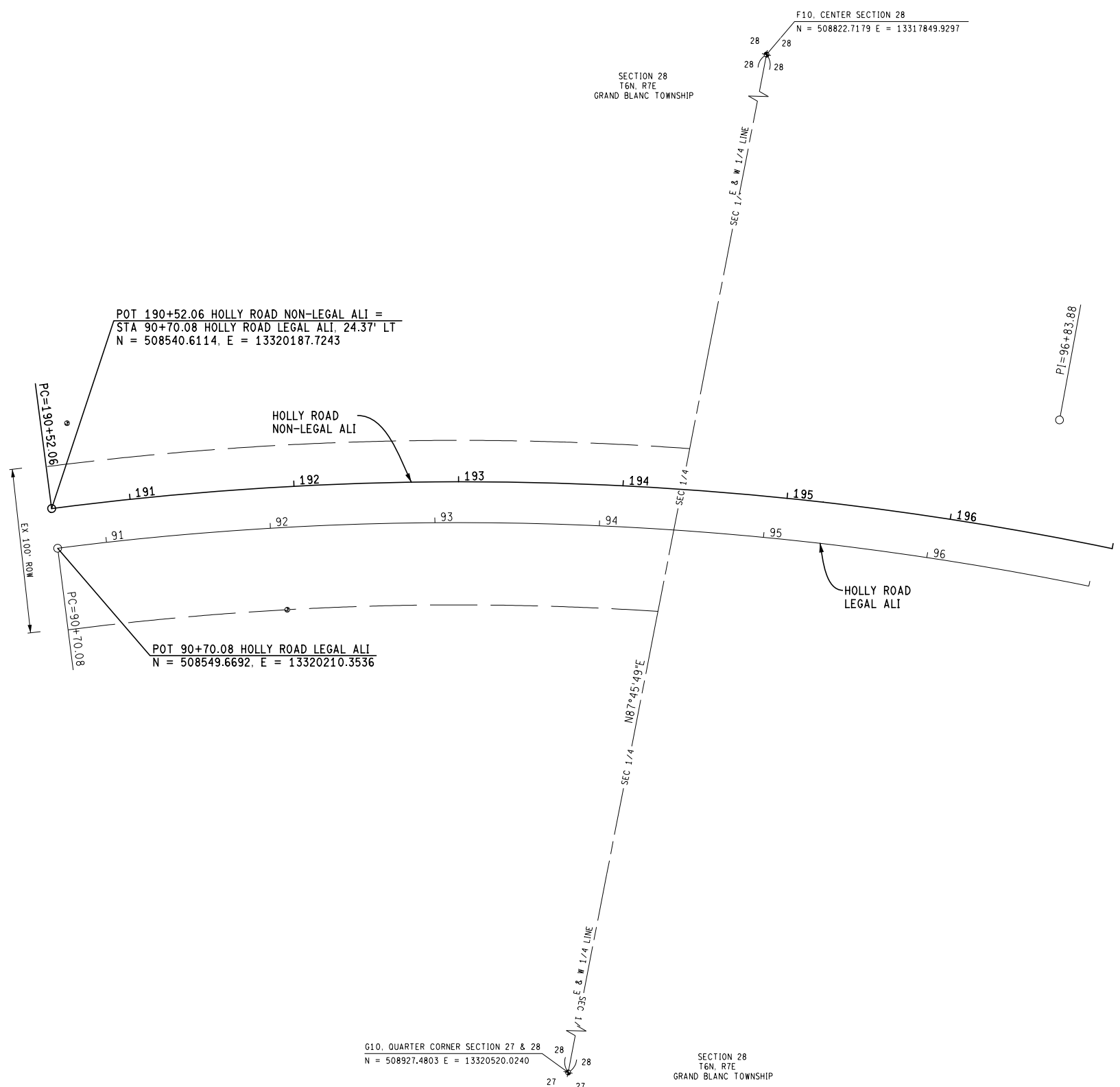
FILE: 115832\_175\_978Ali.dgn

DATE: 03/10/17  
DESIGN UNIT: PETHERS  
TSC: DAVISON

CS: 25131  
JN: 115832A

ALIGNMENT SHEET  
NB I-75 STA 978+00 TO STA 986+80  
RAMP C STA 214+00 TO STA 222+79

DRAWING	SHEET
I75 ALI 004	SECT 1 41



HOLLY RD

HOLLY RD

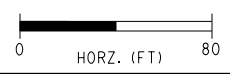
HOLLY ROAD NON-LEGAL ALI  
 $\Delta = 37^\circ 56' 17''$  (RT)  
 $D = 2^\circ 57' 47''$   
 $T = 664.66'$   
 $L = 1,280.39'$   
 $R = 1,933.71'$   
 $E = 111.04'$   
 PC = 190+52.06    N = 508,540.61    E = 13,320,187.72  
 PI = 197+16.72    N = 509,162.38    E = 13,319,952.83  
 PT = 203+32.45    N = 509,797.17    E = 13,320,149.84

HOLLY ROAD LEGAL ALI  
 $\Delta = 35^\circ 28' 44''$  (RT)  
 $D = 2^\circ 59' 10''$   
 $T = 613.80'$   
 $L = 1,188.12'$   
 $R = 1,918.73'$   
 $E = 95.79'$   
 PC = 90+70.08    N = 508,549.67    E = 13,320,210.35  
 PI = 96+83.88    N = 509,124.37    E = 13,319,994.79  
 PT = 102+58.20    N = 509,717.48    E = 13,320,152.80

G10, QUARTER CORNER SECTION 27 & 28  
 N = 508927.4803 E = 13320520.0240

SECTION 28  
 T6N, R7E  
 GRAND BLANC TOWNSHIP

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



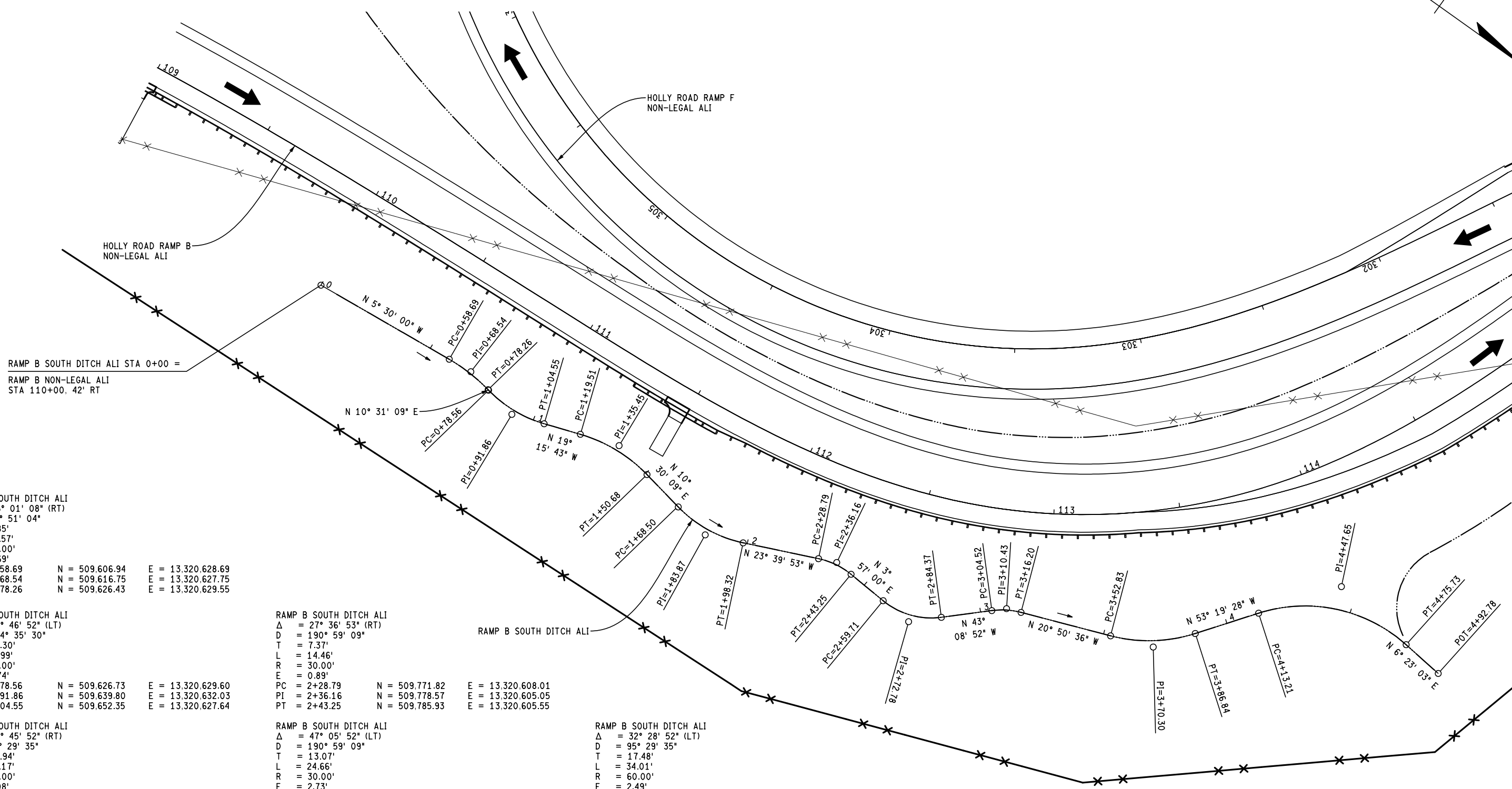
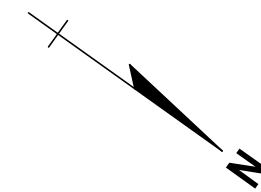
DATE: 03/10/17  
 DESIGN UNIT: PETHERS  
 TSC: DAVISON  
 FILE: 115832\_HollyRoad\_097Ali.dgn

CS: 25131  
 JN: 115832A

ALIGNMENT SHEET  
 HOLLY ROAD STA 90+70 TO STA 97+00

DRAWING	SHEET
HOLLY ALI 001	SECT 1 42





RAMP B SOUTH DITCH ALI  
 $\Delta = 16^\circ 01' 08''$  (RT)  
 $D = 81^\circ 51' 04''$   
 $T = 9.85'$   
 $L = 19.57'$   
 $R = 70.00'$   
 $E = 0.69'$   
 PC = 0+58.69    N = 509.606.94    E = 13.320.628.69  
 PI = 0+68.54    N = 509.616.75    E = 13.320.627.75  
 PT = 0+78.26    N = 509.626.43    E = 13.320.629.55

RAMP B SOUTH DITCH ALI  
 $\Delta = 29^\circ 46' 52''$  (LT)  
 $D = 114^\circ 35' 30''$   
 $T = 13.30'$   
 $L = 25.99'$   
 $R = 50.00'$   
 $E = 1.74'$   
 PC = 0+78.56    N = 509.626.73    E = 13.320.629.60  
 PI = 0+91.86    N = 509.639.80    E = 13.320.632.03  
 PT = 1+04.55    N = 509.652.35    E = 13.320.627.64

RAMP B SOUTH DITCH ALI  
 $\Delta = 29^\circ 45' 52''$  (RT)  
 $D = 95^\circ 29' 35''$   
 $T = 15.94'$   
 $L = 31.17'$   
 $R = 60.00'$   
 $E = 2.08'$   
 PC = 1+19.51    N = 509.666.47    E = 13.320.622.71  
 PI = 1+35.45    N = 509.681.52    E = 13.320.617.45  
 PT = 1+50.68    N = 509.697.20    E = 13.320.620.36

RAMP B SOUTH DITCH ALI  
 $\Delta = 34^\circ 10' 02''$  (LT)  
 $D = 114^\circ 35' 30''$   
 $T = 15.37'$   
 $L = 29.82'$   
 $R = 50.00'$   
 $E = 2.31'$   
 PC = 1+68.50    N = 509.714.72    E = 13.320.623.60  
 PI = 1+83.87    N = 509.729.83    E = 13.320.626.41  
 PT = 1+98.32    N = 509.743.91    E = 13.320.620.24

RAMP B SOUTH DITCH ALI  
 $\Delta = 27^\circ 36' 53''$  (RT)  
 $D = 190^\circ 59' 09''$   
 $T = 7.37'$   
 $L = 14.46'$   
 $R = 30.00'$   
 $E = 0.89'$   
 PC = 2+28.79    N = 509.771.82    E = 13.320.608.01  
 PI = 2+36.16    N = 509.778.57    E = 13.320.605.05  
 PT = 2+43.25    N = 509.785.93    E = 13.320.605.55

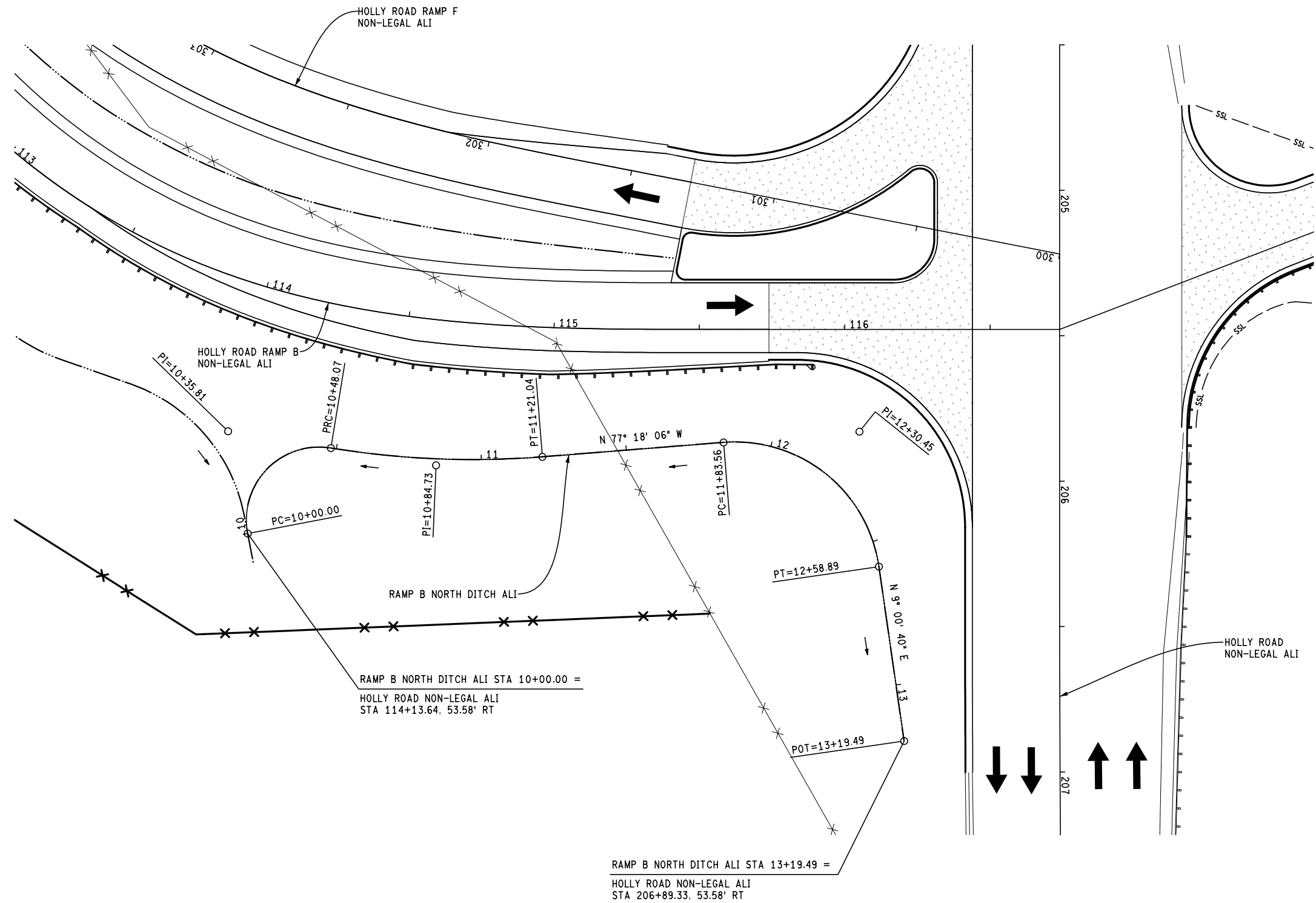
RAMP B SOUTH DITCH ALI  
 $\Delta = 47^\circ 05' 52''$  (LT)  
 $D = 190^\circ 59' 09''$   
 $T = 13.07'$   
 $L = 24.66'$   
 $R = 30.00'$   
 $E = 2.73'$   
 PC = 2+59.71    N = 509.802.35    E = 13.320.606.69  
 PI = 2+72.78    N = 509.815.39    E = 13.320.607.59  
 PT = 2+84.37    N = 509.824.93    E = 13.320.598.65

RAMP B SOUTH DITCH ALI  
 $\Delta = 22^\circ 18' 16''$  (RT)  
 $D = 190^\circ 59' 09''$   
 $T = 5.91'$   
 $L = 11.68'$   
 $R = 30.00'$   
 $E = 0.58'$   
 PC = 3+04.52    N = 509.839.63    E = 13.320.584.87  
 PI = 3+10.43    N = 509.843.95    E = 13.320.580.82  
 PT = 3+16.20    N = 509.849.47    E = 13.320.578.72

RAMP B SOUTH DITCH ALI  
 $\Delta = 32^\circ 28' 52''$  (LT)  
 $D = 95^\circ 29' 35''$   
 $T = 17.48'$   
 $L = 34.01'$   
 $R = 60.00'$   
 $E = 2.49'$   
 PC = 3+52.83    N = 509.883.70    E = 13.320.565.68  
 PI = 3+70.30    N = 509.900.04    E = 13.320.559.47  
 PT = 3+86.84    N = 509.910.48    E = 13.320.545.45

RAMP B SOUTH DITCH ALI  
 $\Delta = 59^\circ 42' 31''$  (RT)  
 $D = 95^\circ 29' 35''$   
 $T = 34.44'$   
 $L = 62.53'$   
 $R = 60.00'$   
 $E = 9.18'$   
 PC = 4+13.21    N = 509.926.23    E = 13.320.524.30  
 PI = 4+47.65    N = 509.946.79    E = 13.320.496.68  
 PT = 4+75.73    N = 509.981.02    E = 13.320.500.51

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE: )							0 VERT. (FT) 4 0 HORZ. (FT) 40	DATE: 03/10/17 DESIGN UNIT: PETHERS TSC: DAIVSON	CS: 25131 JN: 115832A	ALIGNMENT SHEET		DRAWING	SHEET
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE					AUTH	DESCRIPTION		
										SOUTH DITCH STA 0+00 TO STA 4+92		DITCH ALI 001	SECT 1 44



RAMP B NORTH DITCH ALI  
 $\Delta = 110^\circ 09' 32''$  (RT)  
 $D = 229^\circ 10' 59''$   
 $T = 35.81'$   
 $L = 48.07'$   
 $R = 25.00'$   
 $E = 18.67'$   
 $PC = 10+00.00$      $N = 509.987.13$      $E = 13.320.501.20$   
 $PI = 10+35.81$      $N = 509.951.55$      $E = 13.320.497.21$   
 $PRC = 10+48.07$      $N = 509.967.55$      $E = 13.320.465.18$

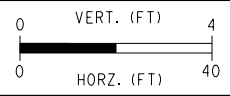
RAMP B NORTH DITCH ALI  
 $\Delta = 13^\circ 50' 41''$  (LT)  
 $D = 18^\circ 58' 20''$   
 $T = 36.67'$   
 $L = 72.97'$   
 $R = 302.00'$   
 $E = 2.22'$   
 $PRC = 10+48.07$      $N = 509.967.55$      $E = 13.320.465.18$   
 $PI = 10+84.73$      $N = 509.983.93$      $E = 13.320.432.38$   
 $PT = 11+21.04$      $N = 509.991.99$      $E = 13.320.396.61$

RAMP B NORTH DITCH ALI  
 $\Delta = 86^\circ 18' 46''$  (RT)  
 $D = 114^\circ 35' 30''$   
 $T = 46.88'$   
 $L = 75.32'$   
 $R = 50.00'$   
 $E = 18.54'$   
 $PC = 11+83.56$      $N = 510.005.74$      $E = 13.320.335.61$   
 $PI = 12+30.45$      $N = 510.016.04$      $E = 13.320.289.88$   
 $PT = 12+58.89$      $N = 510.062.35$      $E = 13.320.297.22$

RAMP B NORTH DITCH ALI STA 10+00.00 =  
 HOLLY ROAD NON-LEGAL ALI  
 STA 114+13.64, 53.58' RT

RAMP B NORTH DITCH ALI STA 13+19.49 =  
 HOLLY ROAD NON-LEGAL ALI  
 STA 206+89.33, 53.58' RT

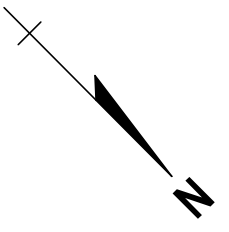
FINAL ROW PLAN REVISIONS (SUBMITTAL DATE: )							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION



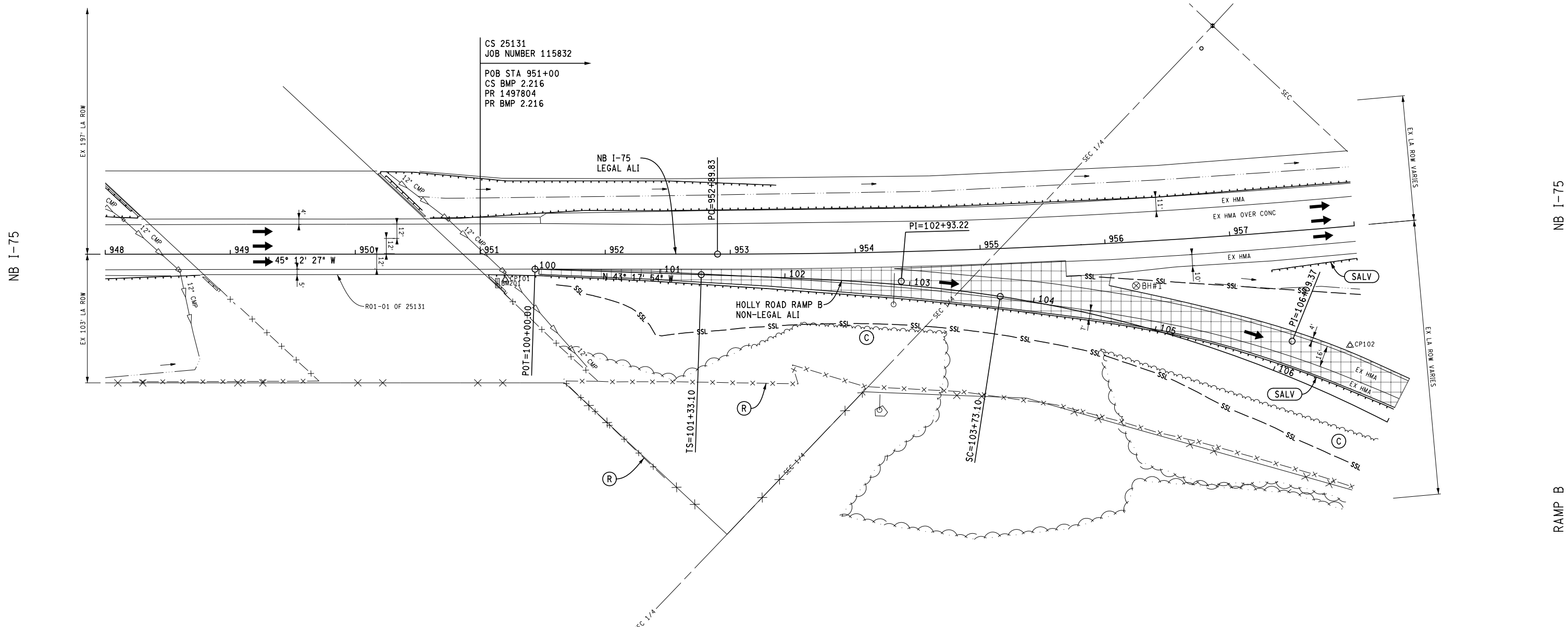
DATE: 03/10/17  
 DESIGN UNIT: PETHERS  
 TSC: DAIVSON  
 CS: 25131  
 JN: 115832A  
 FILE: 115832\_Di+ch\_N\_Ali.dgn

ALIGNMENT SHEET		DRAWING	SHEET
HOLLY ROAD RAMP B		DITCH ALI 002	SECT 1 45
NORTH DITCH STA 10+00 TO STA 13+19			

SECTION 27  
T6N. R7E  
GRAND BLANC TOWNSHIP



CS 25131  
JOB NUMBER 115832  
POB STA 951+00  
CS BMP 2.216  
PR 1497804  
PR BMP 2.216



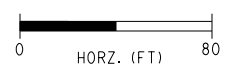
QUANTITIES THIS SHEET

JN 115832		
CAT 0001		
0.15	Acre	Clearing
6	Sta	Clearing, Fence
750	Ft	Fence, Rem
4015	Cyd	Excavation, Earth *
1750	Syd	HMA Surface, Rem
810	Ft	Guardrail, Salv

\* INCLUDES 1043 CYD TOPSOIL STRIPPING

SECTION 27  
T6N. R7E  
GRAND BLANC TOWNSHIP

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



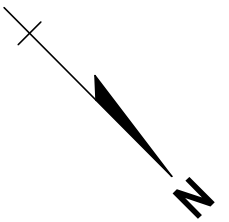
DATE: 03/10/17  
DESIGN UNIT: PETHERS  
TSC: DAVISON  
FILE: 115832\_175\_949Rem.dgn

CS: 25131  
JN: 115832A

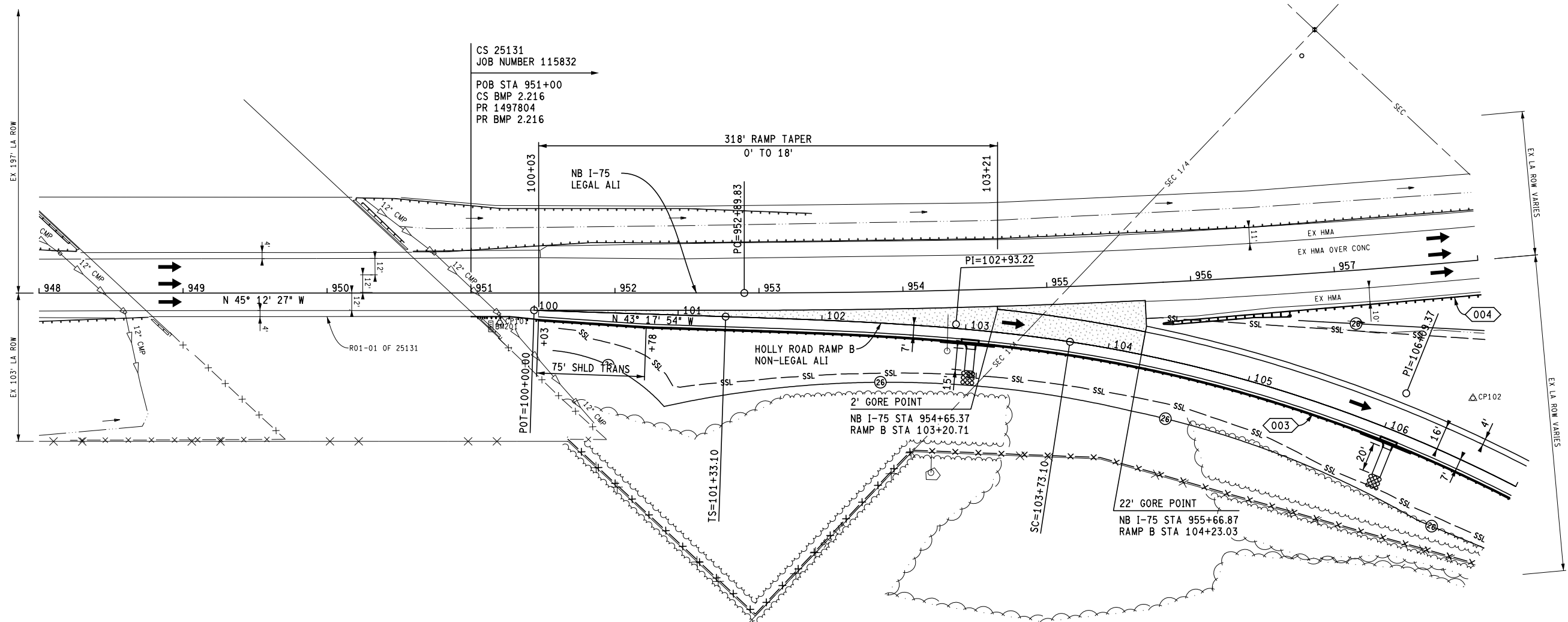
REMOVAL SHEET  
NB I-75 STA 949+00 TO STA 958+00  
RAMP B STA 100+00 TO STA 107+00

DRAWING	SHEET
175 REM 001	SECT 1 46

SECTION 27  
T6N, R7E  
GRAND BLANC TOWNSHIP



CS 25131  
JOB NUMBER 115832  
POB STA 951+00  
CS BMP 2.216  
PR 1497804  
PR BMP 2.216



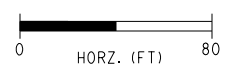
SECTION 27  
T6N, R7E  
GRAND BLANC TOWNSHIP

SEE GUARDRAIL DETAIL SHEETS FOR GUARDRAIL DETAILS AND LAYOUT  
SEE DETAIL GRADE SHEETS FOR DETAILED GRADING

QUANTITIES THIS SHEET

NO.	UNIT	DESCRIPTION
4220	Cyd	Embankment, CIP
810	Ft	Erosion Control, Silt Fence
1280	Cyd	Subbase, CIP
1975	Syd	Aggregate Base, 6 inch
80	Ton	Shoulder, CI II, Modified
825	Ft	Underdrain, Subbase, 6 inch
85	Ft	Underdrain Outlet, 6 inch
3	Ea	Underdrain, Outlet Ending, 6 inch
190	Ton	HMA, 3E3
130	Ton	HMA, 4E3
95	Ton	HMA, 5E3
195	Ton	HMA Approach
676	Ft	Curb and Gutter, Conc, Det D2
2	Ea	Shoulder Gutter, Conc, Det 1
35	Ft	Spillway, Conc
750	Ft	Fence, Woven Wire with Wood Post
20	Syd	Riprap, Plain
3610	Syd	Turf Establishment, Performance

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



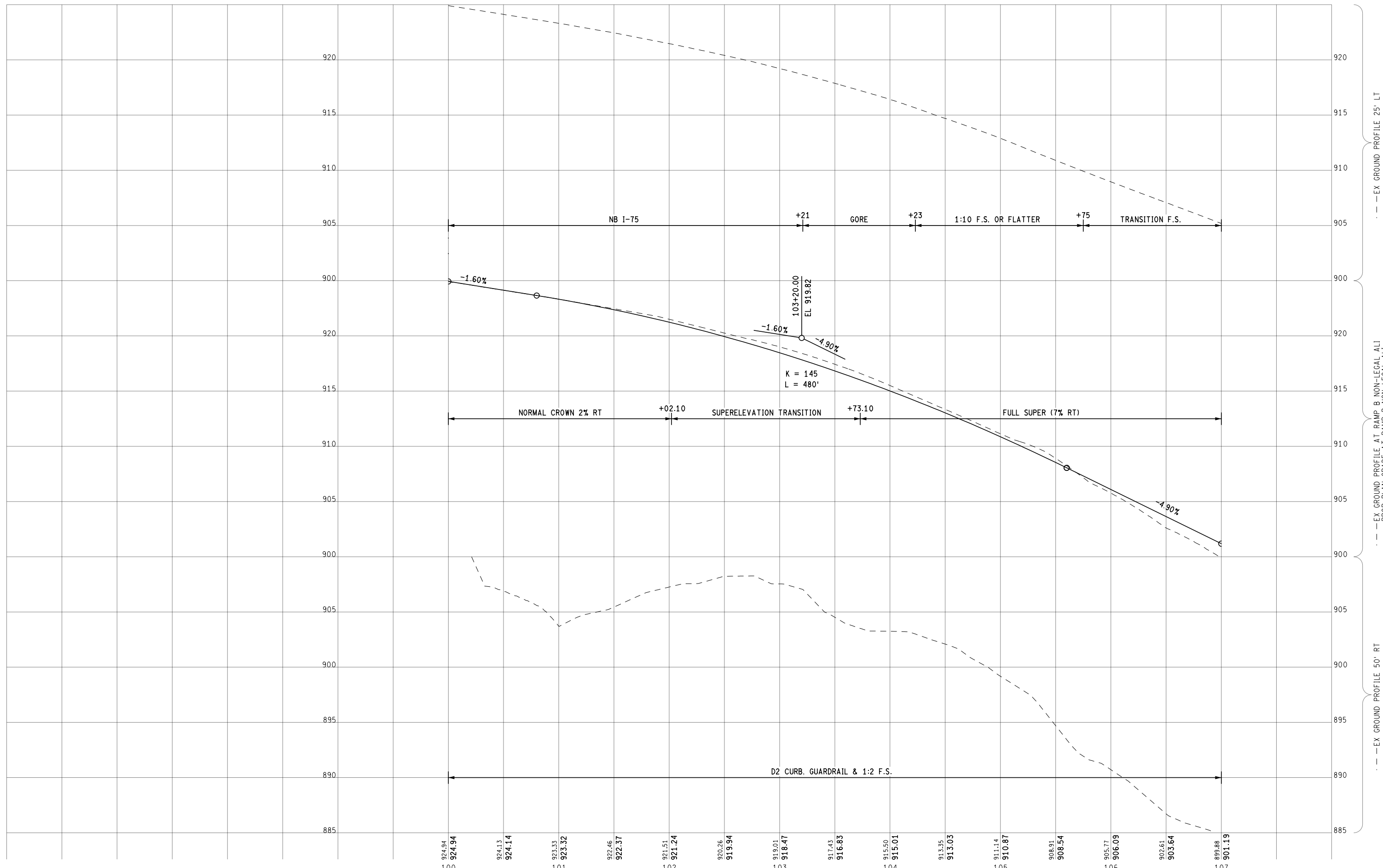
FILE: 115832\_175\_949Con.dgn

DATE: 03/10/17  
DESIGN UNIT: PETHERS  
TSC: DAVISON

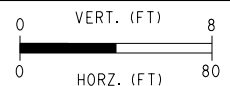
CS: 25131  
JN: 115832A

CONSTRUCTION SHEET  
NB I-75 STA 949+00 TO STA 958+00  
RAMP B STA 100+00 TO STA 107+00

DRAWING SHEET  
175 CON 001  
SECT 1 47



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



DATE: 03/10/17  
 DESIGN UNIT: PETHERS  
 TSC: DAVISON  
 CS: 25131  
 JN: 115832A  
 FILE: 115832\_RampB\_100Prof.dgn

PROFILE SHEET	
RAMP B STA 100+00 TO STA 107+00	
DRAWING	SHEET
RAMPB	SECT 1
PROF	48
001	



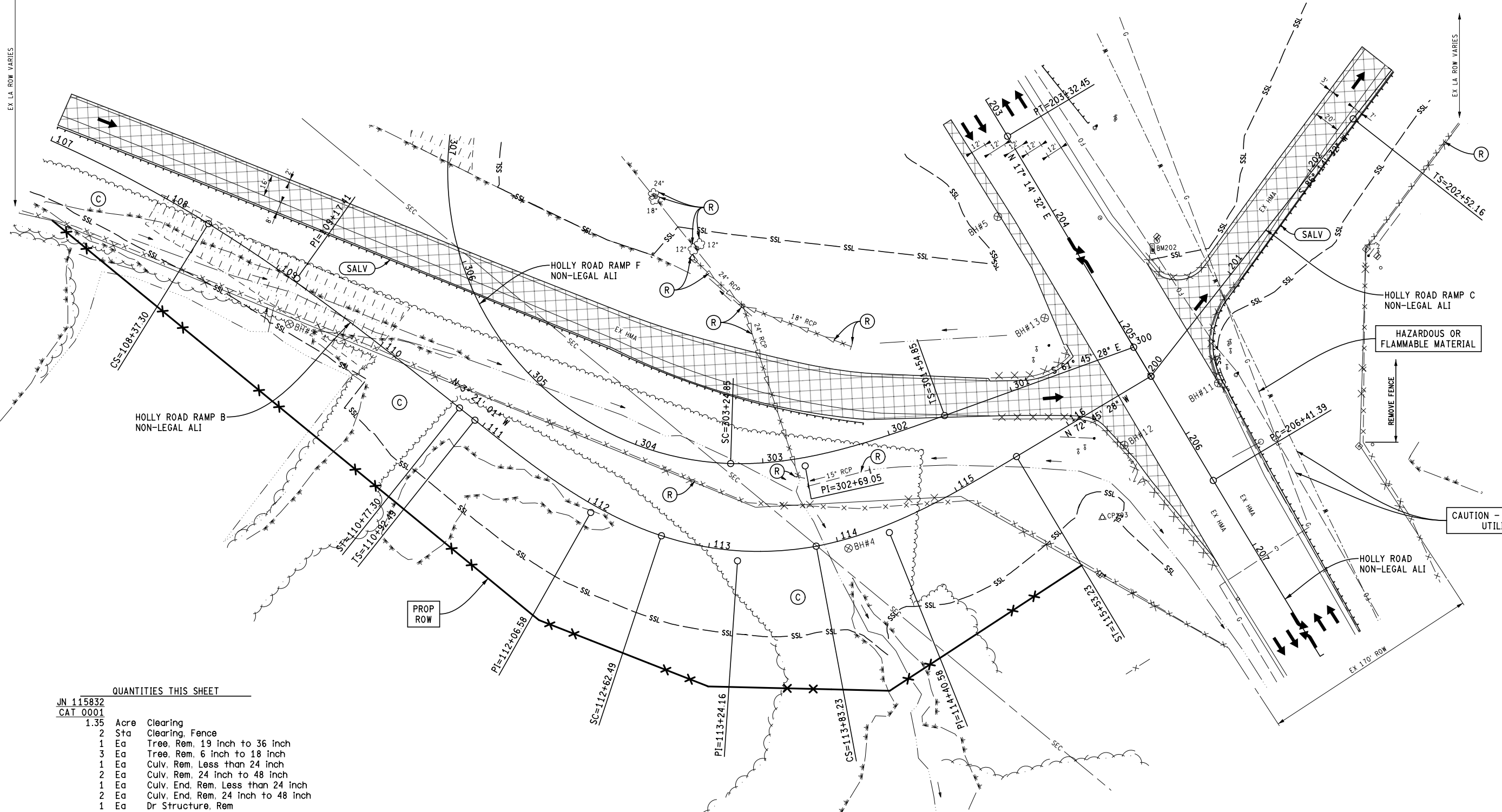
RAMP F

HOLLY RD

RAMP C

SECTION 28  
T6N, R7E  
GRAND BLANC TOWNSHIP

RAMP B



PI=309+61.26

QUANTITIES THIS SHEET

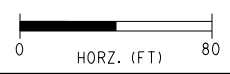
JN 115832  
CAT 0001

1.35	Acre	Clearing
2	Sta	Clearing, Fence
1	Ea	Tree, Rem, 19 inch to 36 inch
3	Ea	Tree, Rem, 6 inch to 18 inch
1	Ea	Culv, Rem, Less than 24 inch
2	Ea	Culv, Rem, 24 inch to 48 inch
1	Ea	Culv, End, Rem, Less than 24 inch
2	Ea	Culv, End, Rem, 24 inch to 48 inch
1	Ea	Dr Structure, Rem
90	Ft	Sewer, Rem, Less than 24 inch
195	Ft	Sewer, Rem, 24 inch to 48 inch
460	Ft	Curb and Gutter, Rem
1150	Ft	Fence, Rem
17150	Cyd	Excavation, Earth *
1450	Cyd	Excavation, Peat
4150	Syd	HMA Surface, Rem
990	Ft	Guardrail, Salv

\* INCLUDES 6394 CYD TOPSOIL STRIPPING

SECTION 27  
T6N, R7E  
GRAND BLANC TOWNSHIP

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



DATE: 03/10/17  
DESIGN UNIT: PETHERS  
TSC: DAVISON  
FILE: 115832\_RampB\_107Rem.dgn

CS: 25131  
JN: 115832A

REMOVAL SHEET  
RAMP B STA 107+00 TO STA 114+00  
RAMP C 200 TO 203 / RAMP F 300 TO 307

DRAWING SHEET  
RAMPB REM 001 SECT 1 49

RAMP F

HOLLY RD

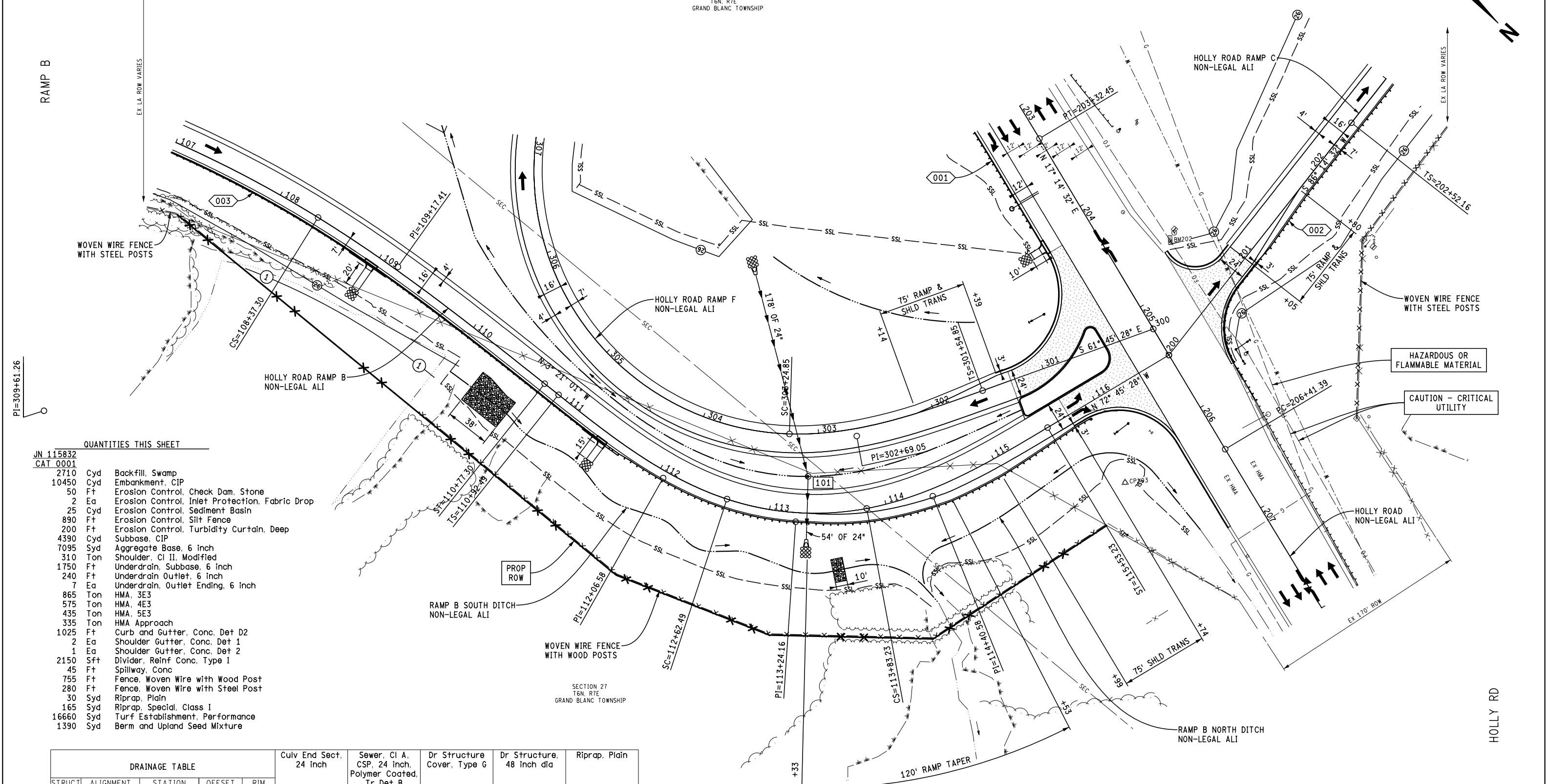
RAMP C

SECTION 28  
T6N, R7E  
GRAND BLANC TOWNSHIP

SECTION 27  
T6N, R7E  
GRAND BLANC TOWNSHIP

RAMP B

HOLLY RD



QUANTITIES THIS SHEET

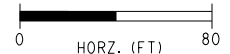
JN 115832  
CAT 0001

2710	Cyd	Backfill, Swamp
10450	Cyd	Embankment, CIP
50	Ft	Erosion Control, Check Dam, Stone
2	Ea	Erosion Control, Inlet Protection, Fabric Drop
25	Cyd	Erosion Control, Sediment Basin
890	Ft	Erosion Control, Silt Fence
200	Ft	Erosion Control, Turbidity Curtain, Deep
4390	Cyd	Subbase, CIP
7095	Syd	Aggregate Base, 6 inch
310	Ton	Shoulder, Cl II, Modified
1750	Ft	Underdrain, Subbase, 6 inch
240	Ft	Underdrain Outlet, 6 inch
7	Ea	Underdrain, Outlet Ending, 6 inch
865	Ton	HMA, 3E3
575	Ton	HMA, 4E3
435	Ton	HMA, 5E3
335	Ton	HMA Approach
1025	Ft	Curb and Gutter, Conc, Det D2
2	Ea	Shoulder Gutter, Conc, Det 1
1	Ea	Shoulder Gutter, Conc, Det 2
2150	Sft	Divider, Reinf Conc, Type I
45	Ft	Spillway, Conc
755	Ft	Fence, Woven Wire with Wood Post
280	Ft	Fence, Woven Wire with Steel Post
30	Syd	Riprap, Plain
165	Syd	Riprap, Special, Class I
16660	Syd	Turf Establishment, Performance
1390	Syd	Berm and Upland Seed Mixture

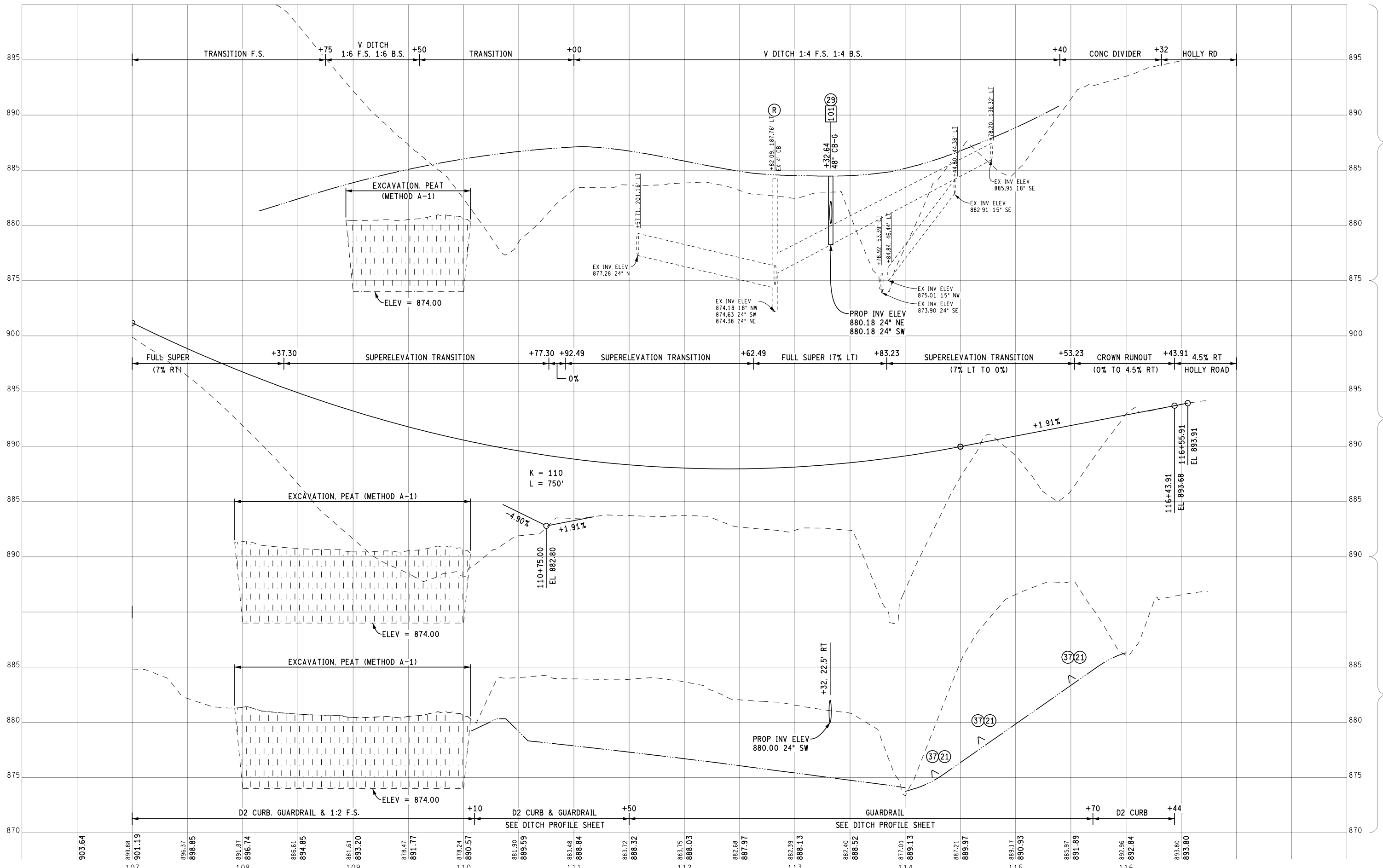
DRAINAGE TABLE					Culv End Sect, 24 inch	Sewer, Cl A, CSP, 24 inch, Polymer Coated, Tr Det B	Dr Structure Cover, Type G	Dr Structure, 48 inch dia	Riprap, Plain
STRUCT NO.	ALIGNMENT	STATION	OFFSET	RIM ELEV					
101	RAMP B	113+32	31.40 LT	884.51	2	232	1	1	8
TOTAL					2	232	1	1	8

SEE GUARDRAIL DETAIL SHEETS FOR GUARDRAIL DETAILS AND LAYOUT  
SEE DETAIL GRADE SHEETS FOR DETAILED GRADING

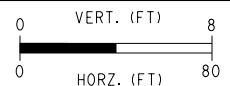
FINAL ROW PLAN REVISIONS (SUBMITTAL DATE: )							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION



DATE: 03/10/17	CS: 25131	CONSTRUCTION SHEET		DRAWING	SHEET
DESIGN UNIT: PETHERS	JN: 115832A	RAMP B STA 107+00 TO STA 114+00		RAMPB CON	SECT 1
TSC: DAVISON	FILE: 115832_RampB_107Con.dgn	RAMP C 200 TO 203 / RAMP F 300 TO 307		001	50



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

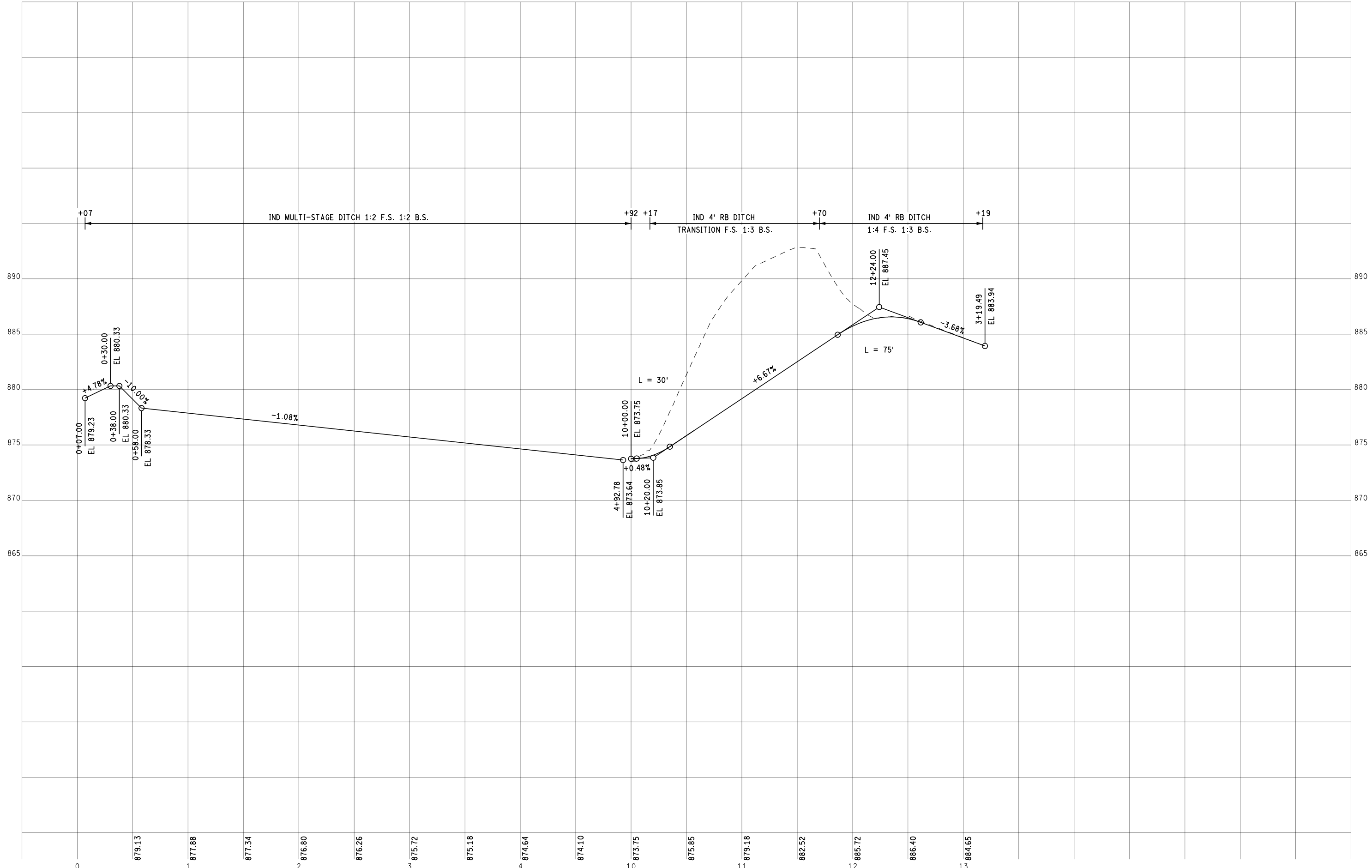


DATE: 03/10/17  
 DESIGN UNIT: PETHERS  
 TSC: DAIVSON  
 FILE: 115832\_RampB\_107Prof.dgn

CS: 25131  
 JN: 115832A

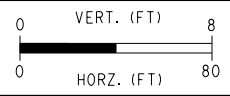
PROFILE SHEET  
 RAMP B STA 107+00 TO STA 114+00

DRAWING SHEET  
 RAMPB PROF 002 SECT 1 51



--- EX GROUND PROFILE AT RAMP B DITCH ALI  
 ——— PROP PLAN GRADE AT RAMP B DITCH ALI

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

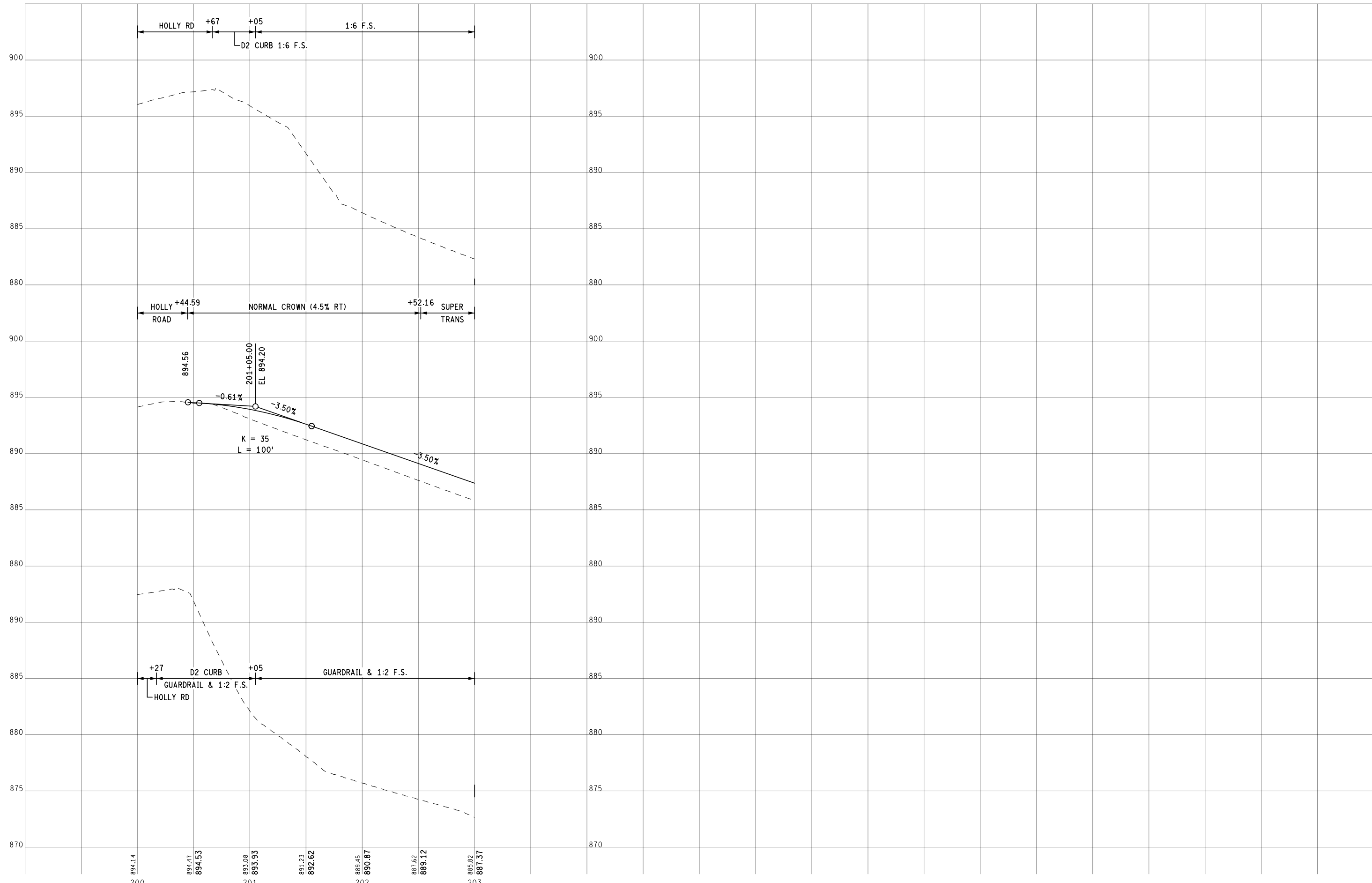


DATE: 03/10/17  
 DESIGN UNIT: PETHERS  
 TSC: DAVISON  
 FILE: 115832\_RampB\_DitchProf.dgn

CS: 25131  
 JN: 115832A

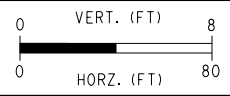
PROFILE SHEET  
 SOUTH DITCH STA 0+00 TO STA 4+92  
 NORTH DITCH STA 10+00 TO STA 13+19

DRAWING SHEET  
 DITCH PROF 001  
 SECT 1 52



. . . . . EX GROUND PROFILE 50' LT  
 . . . . . EX GROUND PROFILE AT RAMP C NON-LEGAL ALI  
 . . . . . EX GROUND PROFILE 40' RT  
 - - - - - EX GROUND PROFILE AT RAMP C NON-LEGAL ALI  
 ———— PROP PLAN GRADE AT RAMP C NON-LEGAL ALI

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

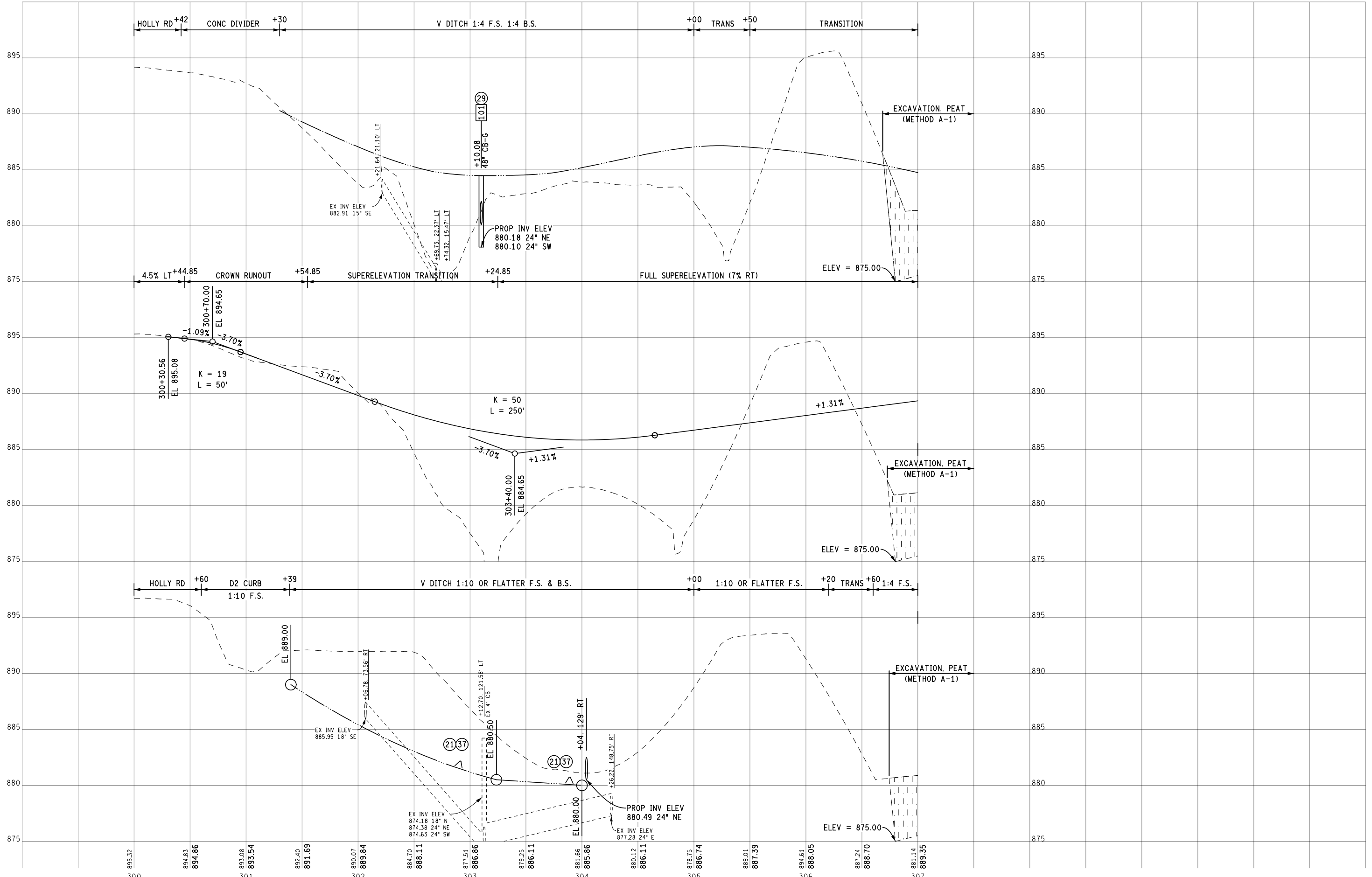


DATE: 03/10/17	CS: 25131
DESIGN UNIT: PETHERS	JN: 115832A
TSC: DAVISON	

PROFILE SHEET	
RAMP C STA 200+00 TO STA 203+00	

DRAWING	SHEET
RAMP C PROF 001	SECT 1 53

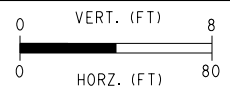
FILE: 115832\_RampC\_200Prof.dgn



--- EX GROUND PROFILE AT RAMP F NON-LEGAL ALI  
 --- EX GROUND PROFILE 25' LT  
 --- EX GROUND PROFILE 30' RT  
 --- EX GROUND PROFILE 30' LT  
 --- PROP PLAN GRADE AT RAMP F NON-LEGAL ALI

FINAL ROW PLAN REVISIONS							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

(SUBMITTAL DATE: )



DATE: 03/10/17  
 DESIGN UNIT: PETHERS  
 TSC: DAVISON  
 FILE: 115832\_RampF\_300Prof.dgn

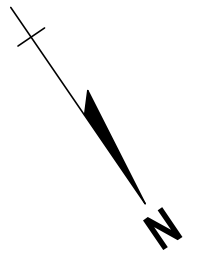
CS: 25131  
 JN: 115832A

PROFILE SHEET  
 RAMP F STA 300+00 TO STA 307+00

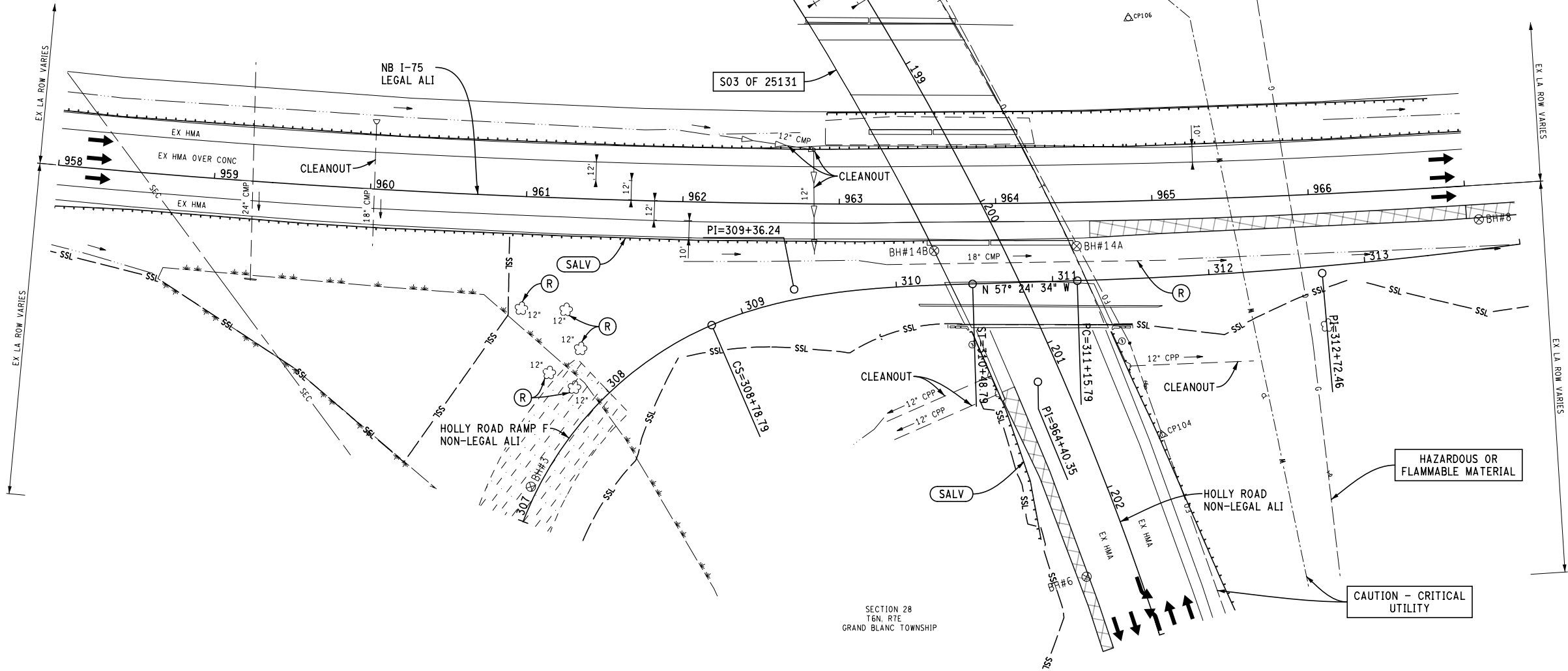
DRAWING SHEET  
 RAMP F  
 PROF 001  
 SECT 1  
 54

HOLLY RD

SECTION 28  
T6N, R7E  
GRAND BLANC TOWNSHIP



NB I-75



RAMP F NB I-75

SECTION 28  
T6N, R7E  
GRAND BLANC TOWNSHIP

HAZARDOUS OR  
FLAMMABLE MATERIAL

CAUTION - CRITICAL  
UTILITY

QUANTITIES THIS SHEET

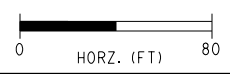
JN 115832			
CAT 0001			
5	Ea	Tree, Rem. 6 inch to 18 inch	
1	Ea	Culv. Rem. Less than 24 inch	
6920	Cyd	Excavation, Earth *	
990	Cyd	Excavation, Peat	
305	Ft	Culvert Cleanout	
130	Ft	Sewer Cleanout	
1	Ea	Dr Structure, Cleaning	
415	Syd	HMA Surface, Rem	
660	Ft	Guardrail, Salv	

\* INCLUDES 2023 CYD TOPSOIL STRIPPING

RAMP F

HOLLY RD

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



DATE: 03/10/17  
DESIGN UNIT: PETHERS  
TSC: DAVISON  
FILE: 115832\_175\_958Rem.dgn

CS: 25131  
JN: 115832A

REMOVAL SHEET		DRAWING	SHEET
NB I-75 STA 958+00 TO STA 967+00		175	SECT 1
RAMP F STA 307+00 TO STA 314+00		REM 002	55

QUANTITIES THIS SHEET

JN 115832  
CAT 0001

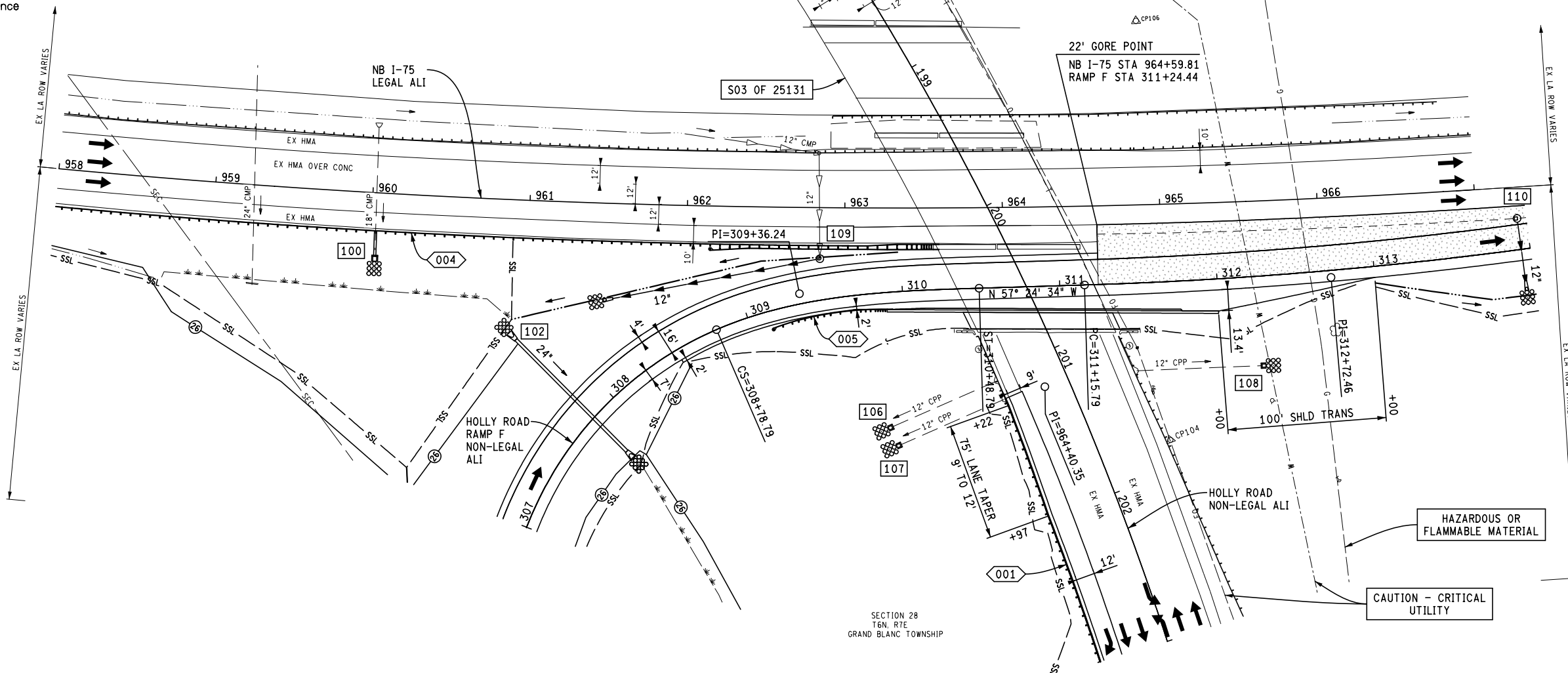
1560	Cyd	Backfill, Swamp
2610	Cyd	Embankment, CIP
10	Ft	Erosion Control, Check Dam, Stone
1	Ea	Erosion Control, Inlet Protection, Fabric Drop
5	Cyd	Erosion Control, Sediment Basin
670	Ft	Erosion Control, Silt Fence
1580	Cyd	Subbase, CIP
3135	Syd	Aggregate Base, 6 inch
75	Ton	Shoulder, CI II, Modified
1125	Ft	Underdrain, Subbase, 6 inch
85	Ft	Underdrain Outlet, 6 inch
3	Ea	Underdrain, Outlet Ending, 6 inch
335	Ton	HMA, 3E3
225	Ton	HMA, 4E3
170	Ton	HMA, 5E3
370	Ton	HMA Approach
1165	Lb	Reinforcement, Steel, Epoxy Coated
84	Ea	Adhesive Anchoring of Horizontal Bar, 3/4 inch
27	Cyd	Filler Wall Conc
183	Ft	Curb and Gutter, Conc, Det D2
4920	Syd	Turf Establishment, Performance

HOLLY RD

SECTION 28  
T6N, R7E  
GRAND BLANC TOWNSHIP

NB I-75

RAMP F NB I-75



SECTION 28  
T6N, R7E  
GRAND BLANC TOWNSHIP

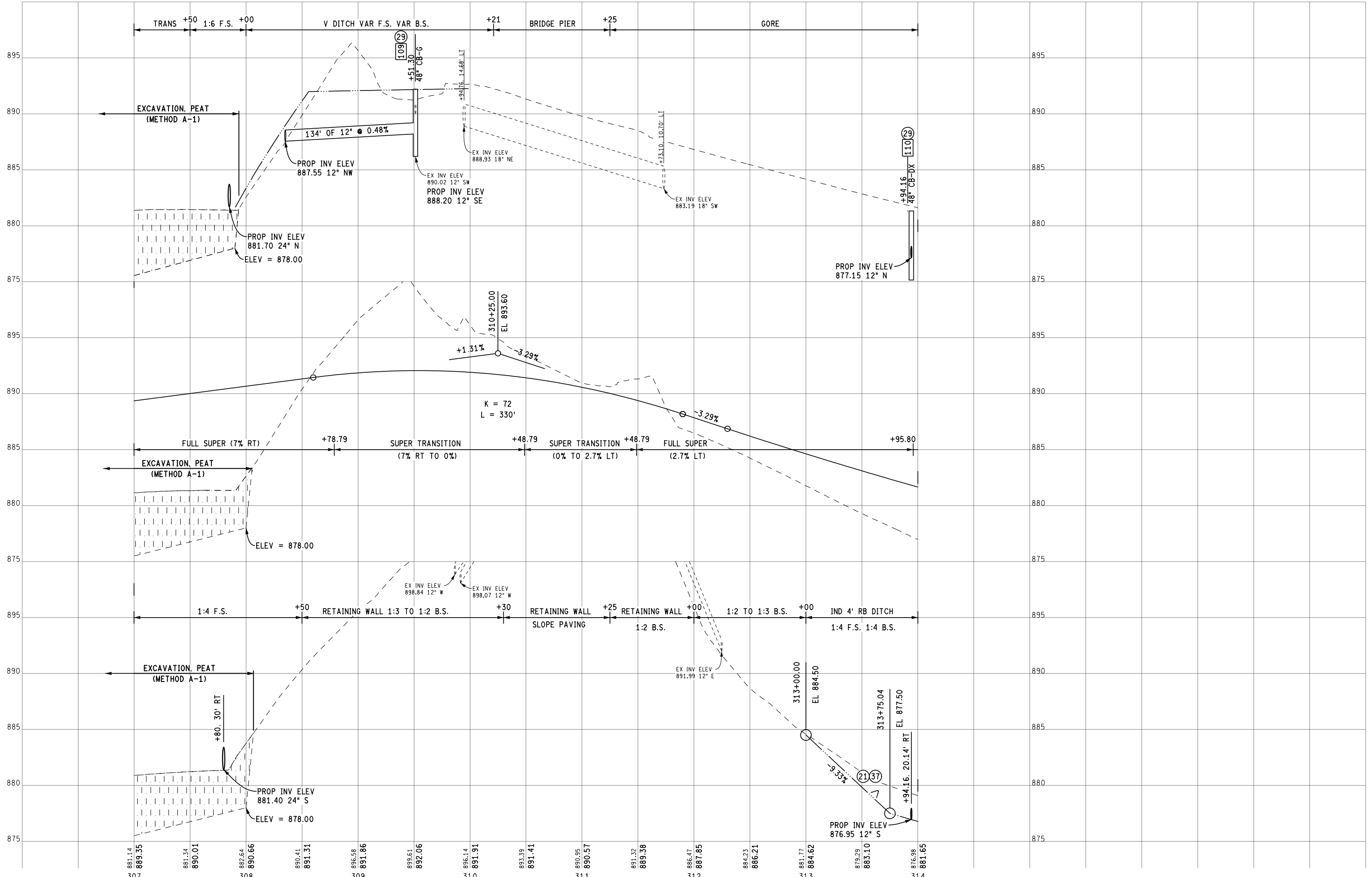
DRAINAGE TABLE					Culv End Sect, 12 inch	Culv End Sect, Metal, 24 inch	Culv, CI A, CSP, 18 inch	Culv, CI A, CSP, 24 inch, Polymer Coated	Sewer Tap, 12 inch	Sewer Tap, 18 inch	Sewer, CI A, CSP, 12 inch, Polymer Coated, Tr Det B	Dr Structure Cover, Type DX	Dr Structure Cover, Type G	Dr Structure, 48 inch dia	Conc. Grade S2	Reinforcement, Steel, Culv and Headwall	Riprap, Plain
STRUCT NO.	ALIGNMENT	STATION	OFFSET	RIM ELEV	Ea	Ea	F+	F+	Ea	Ea	F+	Ea	Ea	Ea	Cyd	Lb	Syd
100	NB I-75	960+02.00	36.00 RT	--	--	--	16	--	--	1	--	--	--	1	50	2	
102	RAMP F	307+80.00	--	--	--	2	--	100	--	--	--	--	--	--	--	8	
106	HOLLY	201+04.65	114.00 RT	--	--	--	--	1	--	--	--	--	1	40	2		
107	HOLLY	201+17.70	114.00 RT	--	--	--	--	1	--	--	--	--	1	40	2		
108	HOLLY	201+60.50	117.00 LT	--	--	--	--	1	--	--	--	--	1	40	2		
109	RAMP F	309+51.30	26.00 LT	892.90	1	--	--	1	--	134	--	1	1	--	2		
110	RAMP F	313+94.16	16.86 LT	881.32	1	--	--	--	--	40	1	--	1	--	2		
TOTAL					2	2	16	100	4	1	174	1	1	2	4	170	20

RAMP F

HOLLY RD

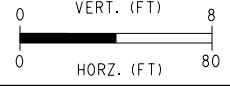
SEE GUARDRAIL DETAIL SHEETS FOR GUARDRAIL DETAILS AND LAYOUT  
SEE DETAIL GRADE SHEETS FOR DETAILED GRADING





--- EX GROUND PROFILE 25' LT  
 --- EX GROUND PROFILE RAMP F NON-LEGAL ALI  
 --- EX GROUND PROFILE 30' RT  
 --- EX GROUND PROFILE RAMP F NON-LEGAL ALI  
 --- PROP PLAN GRADE RAMP F NON-LEGAL ALI

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

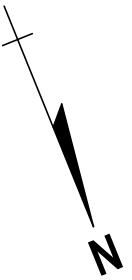


DATE: 03/10/17  
 DESIGN UNIT: PETHERS  
 TSC: DAIVSON  
 FILE: 115832\_RampF\_307Prof.dgn

CS: 25131  
 JN: 115832A

PROFILE SHEET  
 RAMP F STA 307+00 TO STA 314+00

DRAWING SHEET  
 RAMP F PROF 002 SECT 1 57

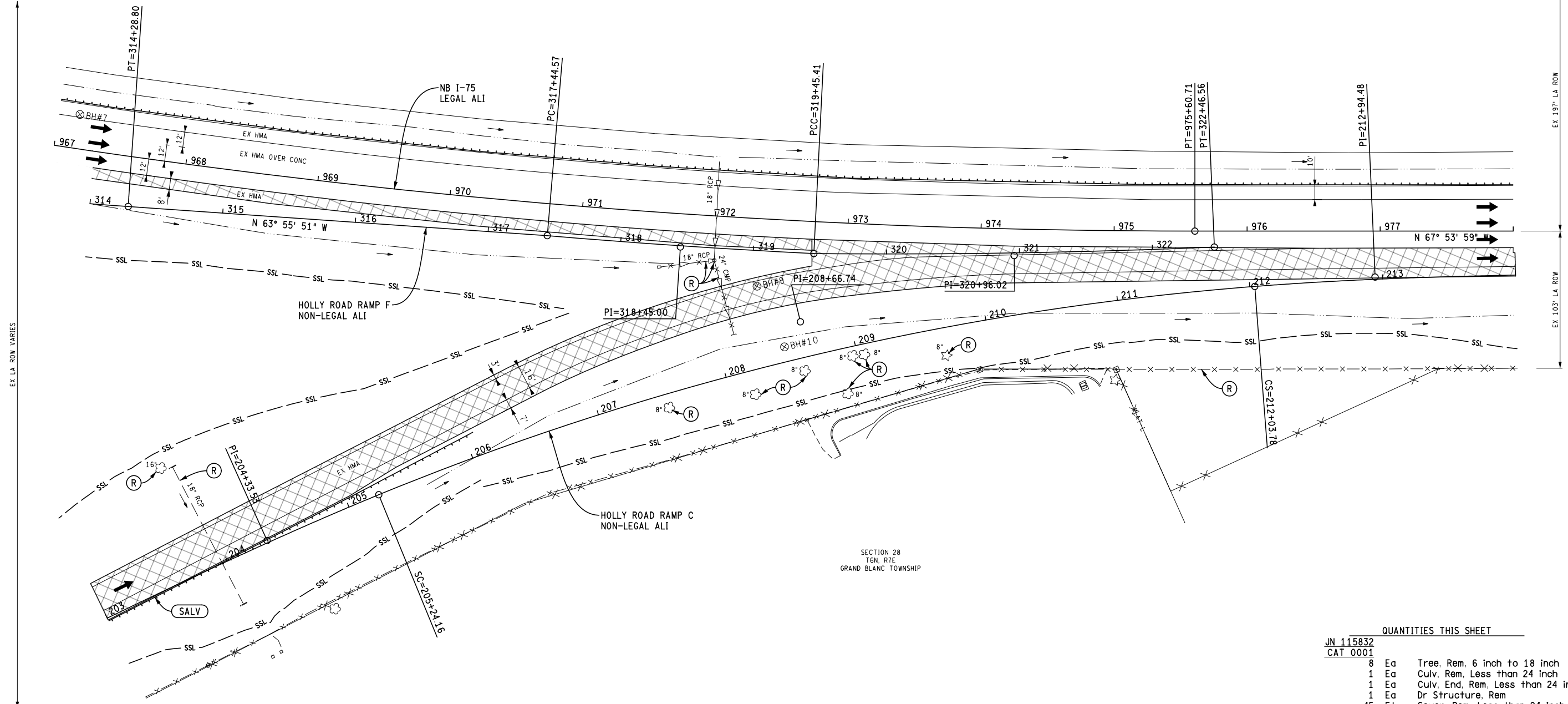


SECTION 28  
T6N, R7E  
GRAND BLANC TOWNSHIP

RAMP F NB I-75

RAMP C

RAMP C NB I-75



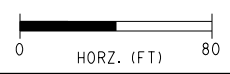
SECTION 28  
T6N, R7E  
GRAND BLANC TOWNSHIP

QUANTITIES THIS SHEET

JN 115832		
CAT 0001		
8	Ea	Tree, Rem, 6 inch to 18 inch
1	Ea	Culv, Rem, Less than 24 inch
1	Ea	Culv, End, Rem, Less than 24 inch
1	Ea	Dr Structure, Rem
45	Ft	Sewer, Rem, Less than 24 inch
60	Ft	Sewer, Rem, 24 inch to 48 inch
1085	Ft	Fence, Rem
11800	Cyd	Excavation, Earth *
3965	Syd	HMA Surface, Rem
310	Ft	Guardrail, Salv

\* INCLUDES 3848 CYD TOPSOIL STRIPPING

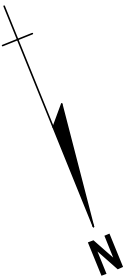
FINAL ROW PLAN REVISIONS		(SUBMITTAL DATE: )	
NO.	DATE	AUTH	DESCRIPTION



DATE: 03/10/17  
 DESIGN UNIT: PETHERS  
 TSC: DAVISON  
 FILE: 115832\_175\_967Rem.dgn

CS: 25131  
 JN: 115832A

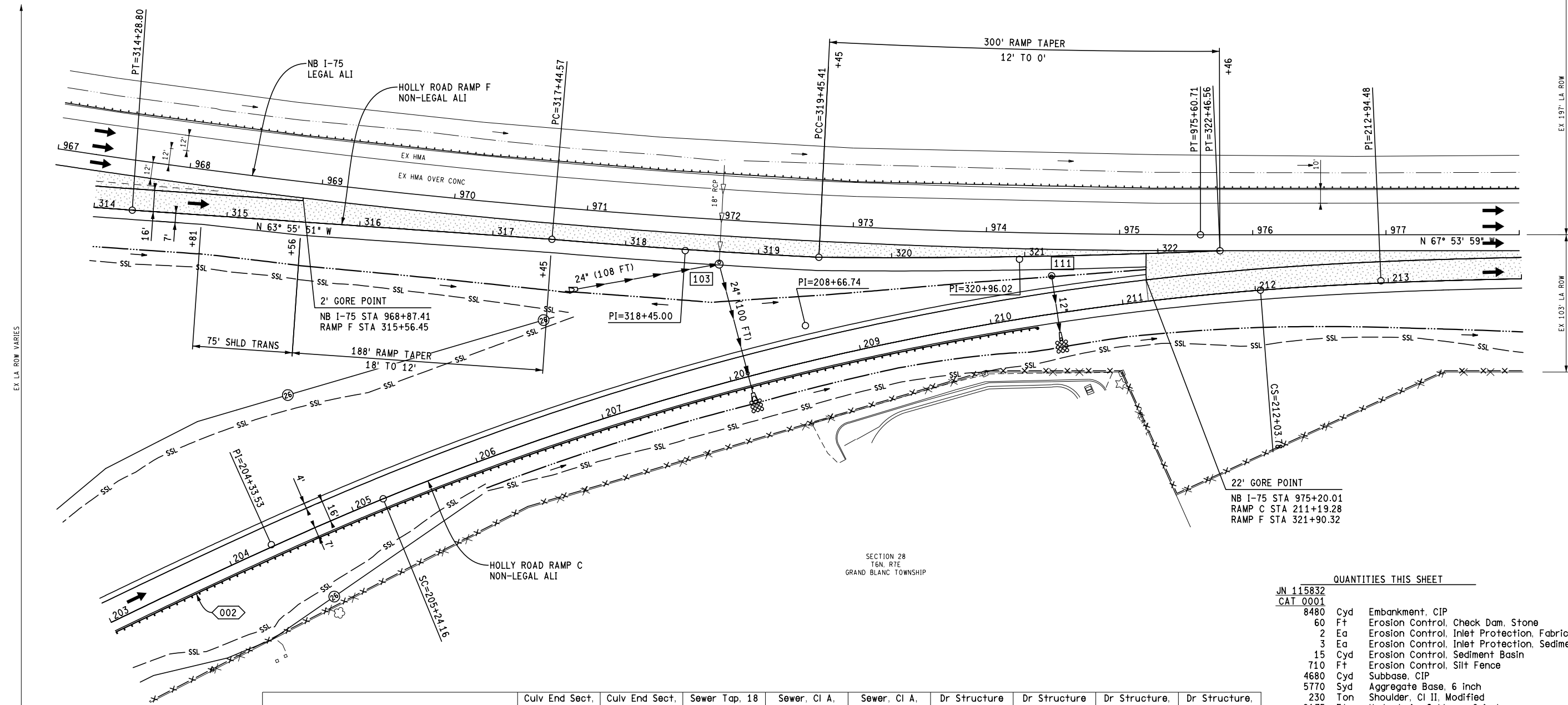
REMOVAL SHEET		DRAWING	SHEET
NB I-75 STA 967+00 TO STA 978+00		175	SECT 1
RAMP C 203 TO 214 / RAMP F 314 TO 322		003	58



SECTION 28  
T6N, R7E  
GRAND BLANC TOWNSHIP

RAMP F NB I-75

RAMP C NB I-75



SECTION 28  
T6N, R7E  
GRAND BLANC TOWNSHIP

EX LA ROW VARIES

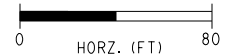
EX 197' LA ROW  
EX 103' LA ROW

DRAINAGE TABLE					Culv End Sect, 12 inch	Culv End Sect, 24 inch	Sewer Tap, 18 inch	Sewer, CI A, CSP, 12 inch, Polymer Coated, Tr Det B	Sewer, CI A, CSP, 24 inch, Polymer Coated, Tr Det B	Dr Structure Cover, Type B	Dr Structure Cover, Type G	Dr Structure, 48 inch dia	Dr Structure, 60 inch dia
STRUCT NO.	ALIGNMENT	STATION	OFFSET FT	RIM ELEV	Ea	Ea	Ea	F+	F+	Ea	Ea	Ea	Ea
103	RAMP C	208+13.60	87.21 LT	870.82	--	2	1	--	208	1	--	--	1
111	RAMP F	210+50.00	28.42 LT	866.94	1	--	--	43	--	--	1	1	--
<b>TOTAL</b>					<b>1</b>	<b>2</b>	<b>1</b>	<b>43</b>	<b>208</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>

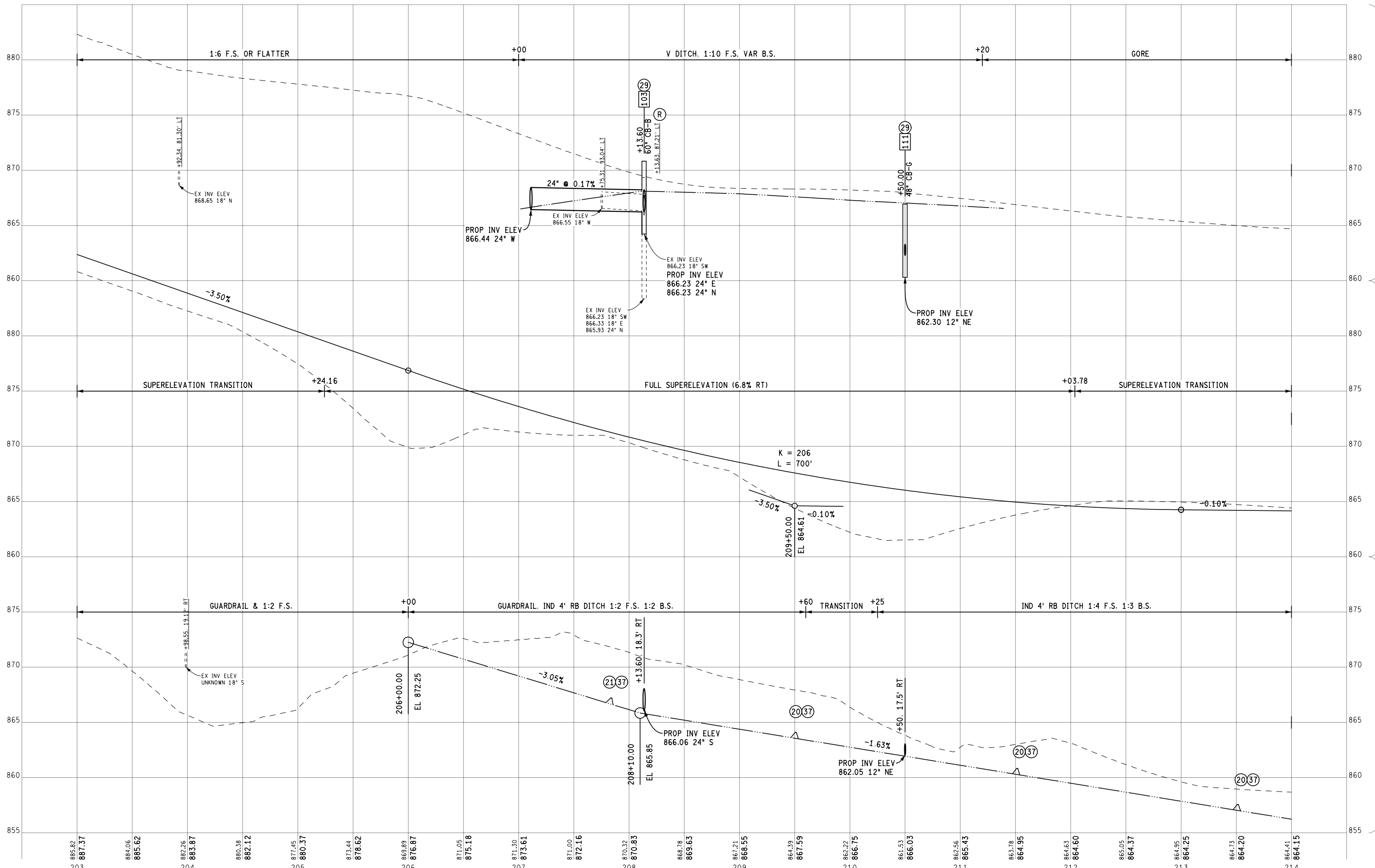
QUANTITIES THIS SHEET

JN 115832		
CAT 0001		
8480	Cyd	Embankment, CIP
60	Ft	Erosion Control, Check Dam, Stone
2	Ea	Erosion Control, Inlet Protection, Fabric Drop
3	Ea	Erosion Control, Inlet Protection, Sediment Trap
15	Cyd	Erosion Control, Sediment Basin
710	Ft	Erosion Control, Silt Fence
4680	Cyd	Subbase, CIP
5770	Syd	Aggregate Base, 6 inch
230	Ton	Shoulder, CI II, Modified
2175	Ft	Underdrain, Subbase, 6 inch
140	Ft	Underdrain Outlet, 6 inch
7	Ea	Underdrain, Outlet Ending, 6 inch
580	Ton	HMA, 3E3
385	Ton	HMA, 4E3
290	Ton	HMA, 5E3
710	Ton	HMA Approach
1170	Ft	Fence, Woven Wire with Steel Post
2	Syd	Riprap, Plain
11490	Syd	Turf Establishment, Performance

SEE GUARDRAIL DETAIL SHEETS FOR GUARDRAIL DETAILS AND LAYOUT  
SEE DETAIL GRADE SHEETS FOR DETAILED GRADING

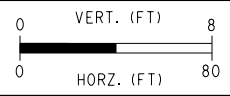


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FINAL ROW PLAN REVISIONS (SUBMITTAL DATE: )

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

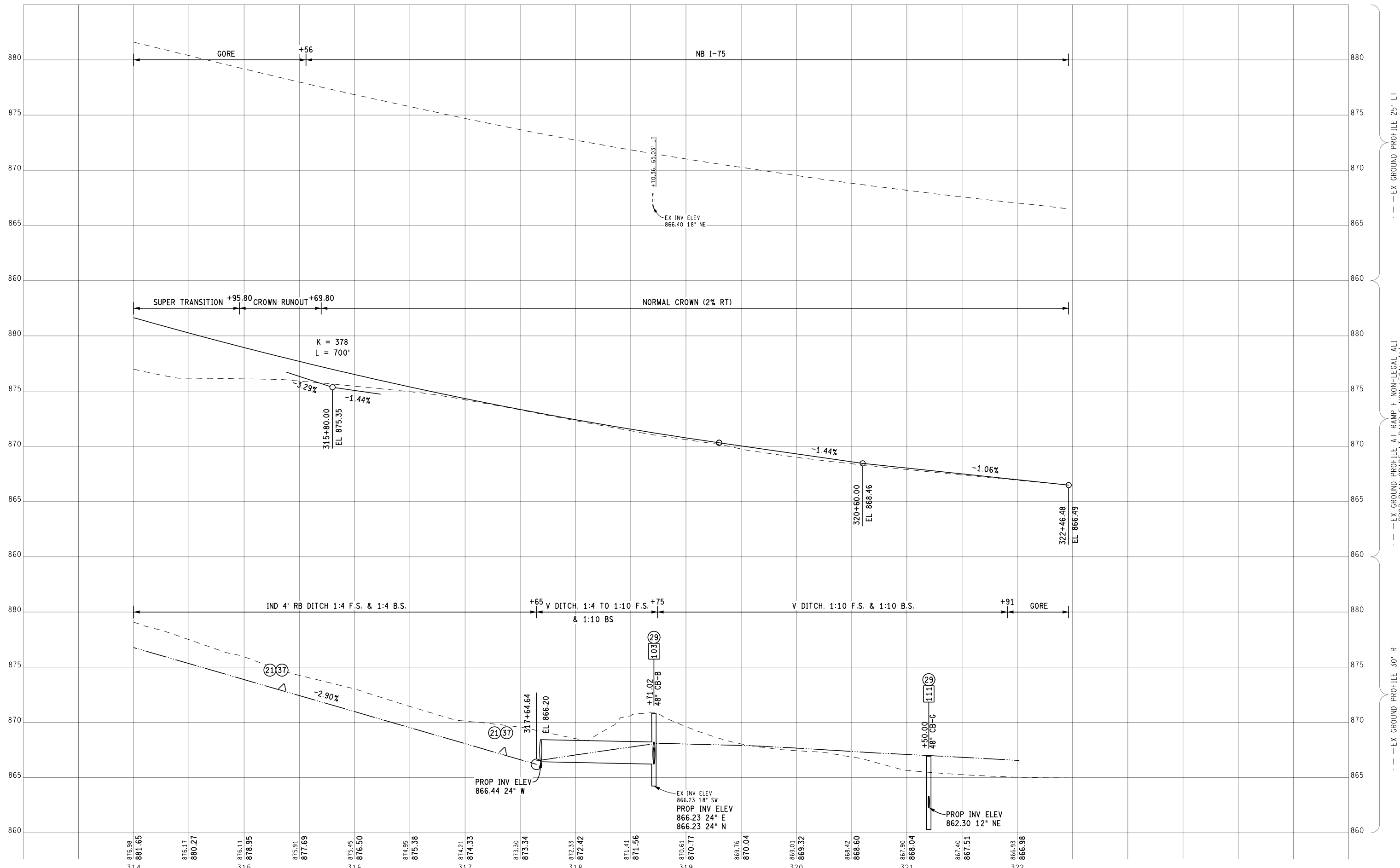


DATE: 03/10/17  
 DESIGN UNIT: PETHERS  
 TSC: DAVISON  
 FILE: 115832\_RampC\_203Prof.dgn

CS: 25131  
 JUN: 115832A

PROFILE SHEET  
 RAMP C STA 203+00 TO STA 214+00

DRAWING SHEET  
 RAMP C PROF 002 SECT 1 60



FINAL ROW PLAN REVISIONS					
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE

(SUBMITTAL DATE: )					
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE

**MDOT**  
Michigan Department of Transportation

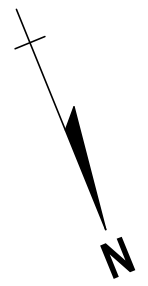
0 VERT. (FT) 8  
0 HORZ. (FT) 80

DATE: 03/10/17  
DESIGN UNIT: PETHERS  
TSC: DAVISON  
FILE: 115832\_RampF\_314Prof.dgn

CS: 25131  
JN: 115832A

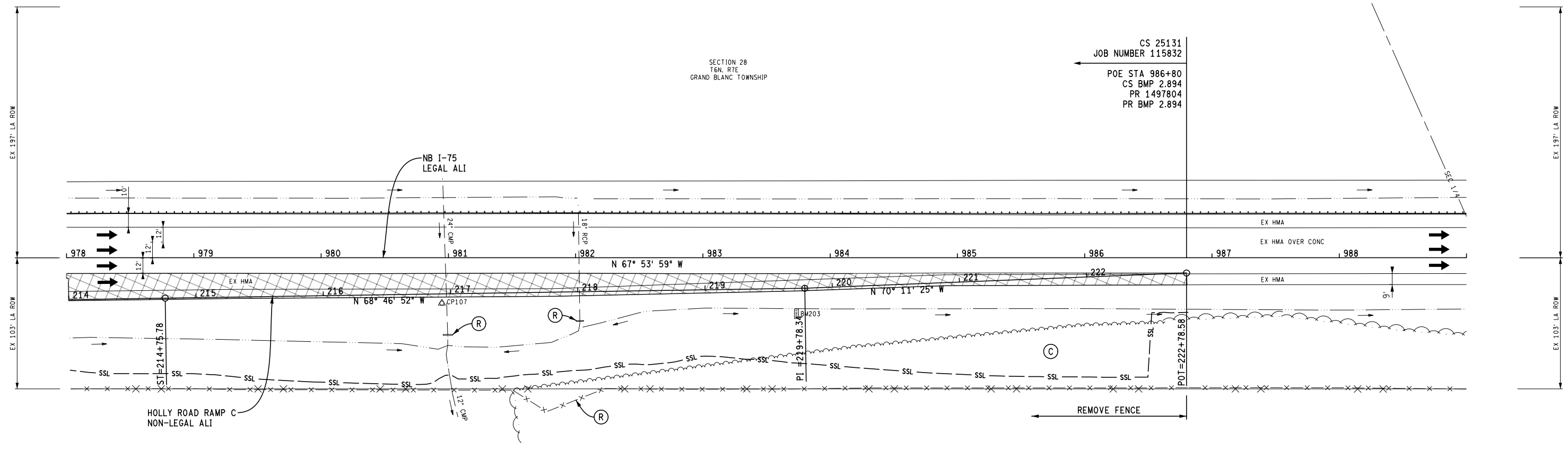
PROFILE SHEET  
RAMP F STA 314+00 TO STA 322+00

DRAWING	SHEET
RAMP F PROF 003	SECT 1 61



RAMP C NB I-75

RAMP C NB I-75



CS 25131  
JOB NUMBER 115832  
POE STA 986+80  
CS BMP 2.894  
PR 1497804  
PR BMP 2.894

SECTION 28  
T6N, R7E  
GRAND BLANC TOWNSHIP

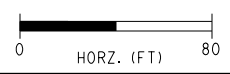
SECTION 28  
T6N, R7E  
GRAND BLANC TOWNSHIP

QUANTITIES THIS SHEET

JN 115832	0.37	Acre	Clearing
CAT 0001	1	Ea	Culv, End, Rem, Less than 24 inch
	1	Ea	Culv, End, Rem, 24 inch to 48 inch
	890	Ft	Fence, Rem
	3855	Cyd	Excavation, Earth *
	1515	Syd	HMA Surface, Rem

\* INCLUDES 2007 CYD TOPSOIL STRIPPING

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



DATE: 03/10/17  
DESIGN UNIT: PETHERS  
TSC: DAVISON  
FILE: 115832\_175\_978Rem.dgn

CS: 25131  
JN: 115832A

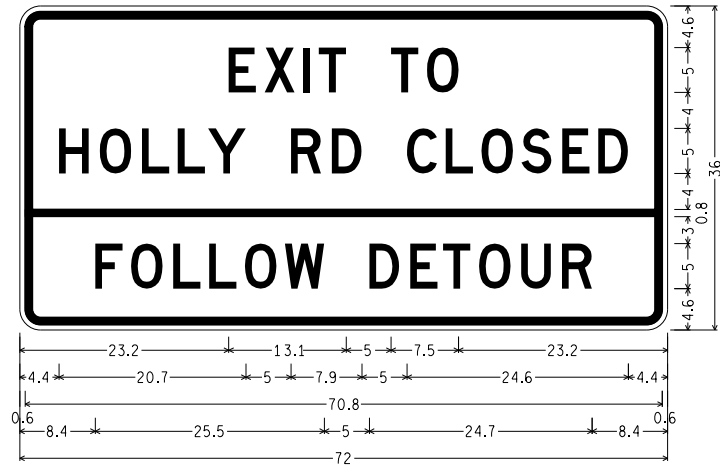
REMOVAL SHEET		DRAWING	SHEET
NB I-75 STA 978+00 TO STA 986+80		175	SECT 1
RAMP C STA 214+00 TO STA 222+79		REM 004	62





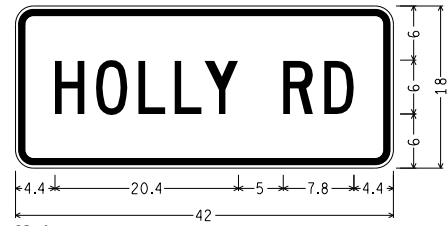


SP-1



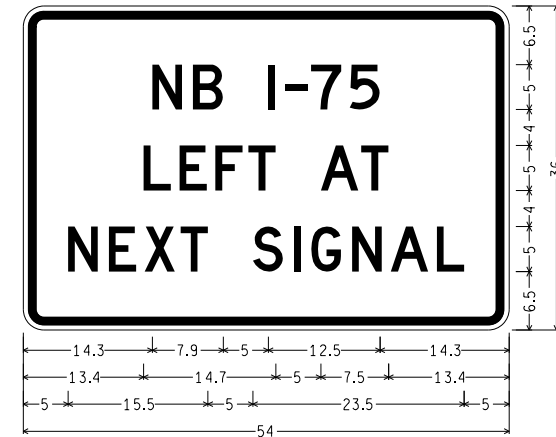
SP-1: 2.3" Radius, 0.8" Border, 0.6" Indent, Black on Orange:  
[EXIT TO] D: [HOLLY RD CLOSED] D: [FOLLOW DETOUR] D:

SP-2



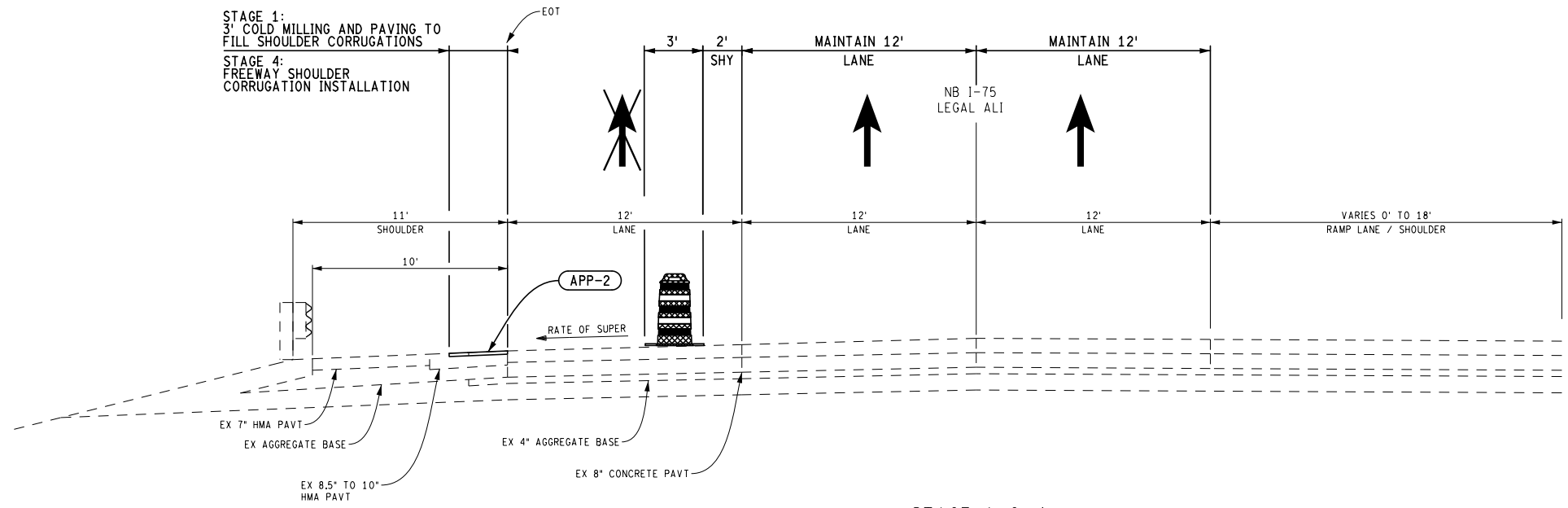
SP-2:  
2.0" Radius, 0.6" Border, 0.4" Indent, Black on Orange:  
[HOLLY] C: [RD] C:

SP-3

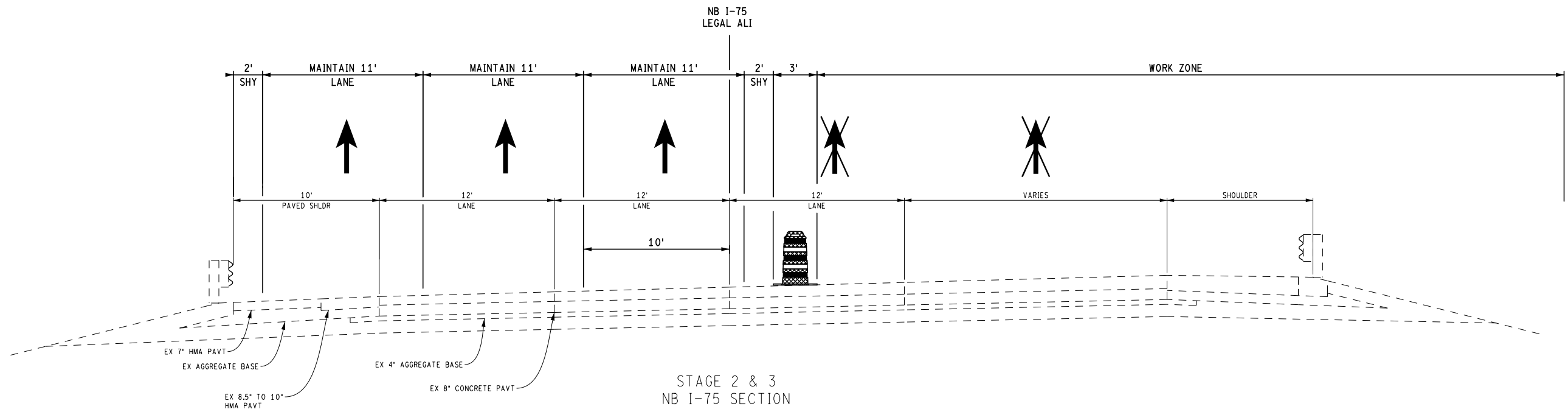


SP-3: 2.3" Radius, 0.8" Border, 0.6" Indent, Black on Orange:  
[NB I-75] D: [LEFT AT] D: [NEXT SIGNAL] D:

FINAL ROW PLAN REVISIONS				(SUBMITTAL DATE: )					NO SCALE	DATE: 03/10/17	CS: 25131	MAINTAINING TRAFFIC		DRAWING	SHEET
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION			DESIGN UNIT: PETHERS	JN: 115832A	SPECIAL SIGNS DETAIL SHEET		175	SECT 1
										TSC: DAVISON				MTSDET	65
								FILE: 115832_SPEC_SIGN_DETAILS.dgn				001			

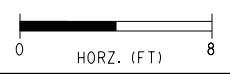


STAGE 1 & 4  
NB I-75 SECTION  
SECTION APPLIES TO:  
STA 951+45 TO STA 992+50



STAGE 2 & 3  
NB I-75 SECTION  
SECTION APPLIES TO:  
STA 949+55 TO STA 992+50

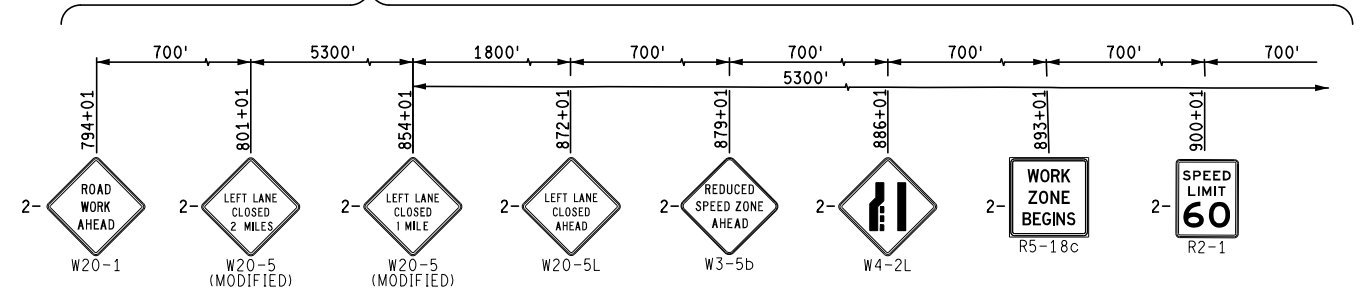
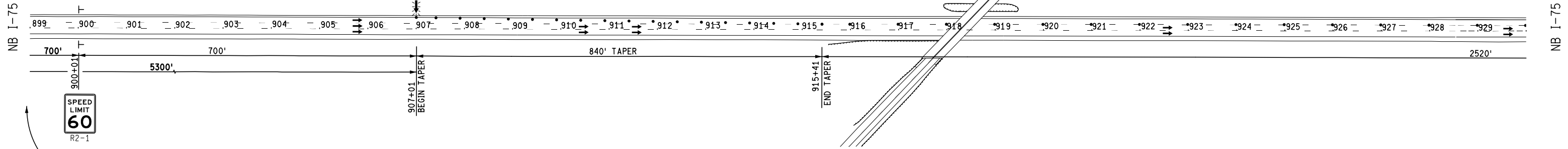
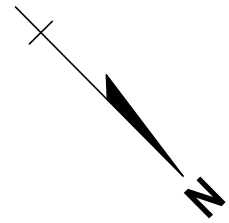
FINAL ROW PLAN REVISIONS		(SUBMITTAL DATE: )	
NO.	DATE	AUTH	DESCRIPTION



DATE: 03/10/17  
DESIGN UNIT: PETHERS  
TSC: DAVISON  
FILE: 115832\_MOT\_StagingTyp1.dgn

CS: 25131  
JN: 115832A

DRAWING		SHEET	
175 MTTYP 001		SECT 1 66	

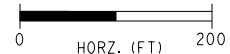


SEE MOT TYPICAL M0080a (ADVANCE SIGNING)  
AND MOT TYPICAL M1290a (LANE CLOSURE)  
FOR ADDITIONAL NOTES

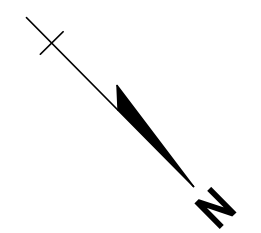
NOTE TO CONTRACTOR:

1. PLASTIC DRUM SPACING ON I-75:  
100' CENTER-TO-CENTER, TANGENTS  
50' CENTER-TO-CENTER, SHIFTS AND TAPERS  
25' CENTER-TO-CENTER, WHERE TIGHTER  
TRAFFIC CONTROL IS REQUIRED BY THE ENGINEER.
2. STATIONING IS APPROXIMATE AND MAY REQUIRE  
FIELD ADJUSTMENTS.

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE: )								DATE: 03/10/17		CS: 25131		DRAWING SHEET	
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION	DESIGN UNIT: PETHERS	JN: 115832A	MAINTAINING TRAFFIC		175	SECT 1
								TSC: DAVISON		NB I-75 STA 794+00 TO STA 930+00		MTSTG1	
										STAGE 1		001	67

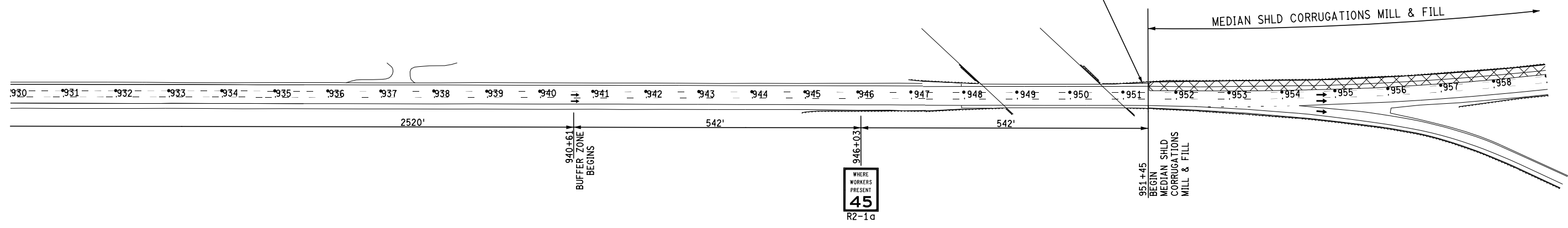


FILE: 115832\_175\_MOT\_ST1\_794.dgn



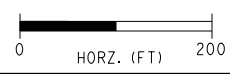
APPROXIMATELY BETWEEN STA 951+10 TO STA 951+45, BETWEEN THE EXISTING GUARDRAIL AND EXISTING DEPARTING CONCRETE BRIDGE APPROACH, IS A NARROW TRIANGULAR SHAPED AGGREGATE SHOULDER. REMOVE A DEPTH OF 6" OF AGGREGATE, PAID FOR AS EXCAVATION, EARTH. PLACE A DEPTH OF 6" OF HMA, PAID FOR AS HAND PATCHING. QUANTITIES ARE INCLUDED ON THE MISCELLANEOUS QUANTITIES SHEET UNDER THE MAINTAINING TRAFFIC PAY ITEMS

NB I-75



NB I-75

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



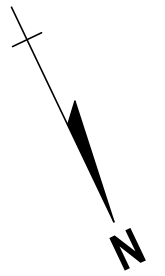
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DATE: 03/10/17	CS: 25131
DESIGN UNIT: PETHERS	JN: 115832A

MAINTAINING TRAFFIC	
NB I-75 STA 930+00 TO STA 959+00	
STAGE 1	

DRAWING	SHEET
175 MTSTG1 002	SECT 1 68

HOLLY RD

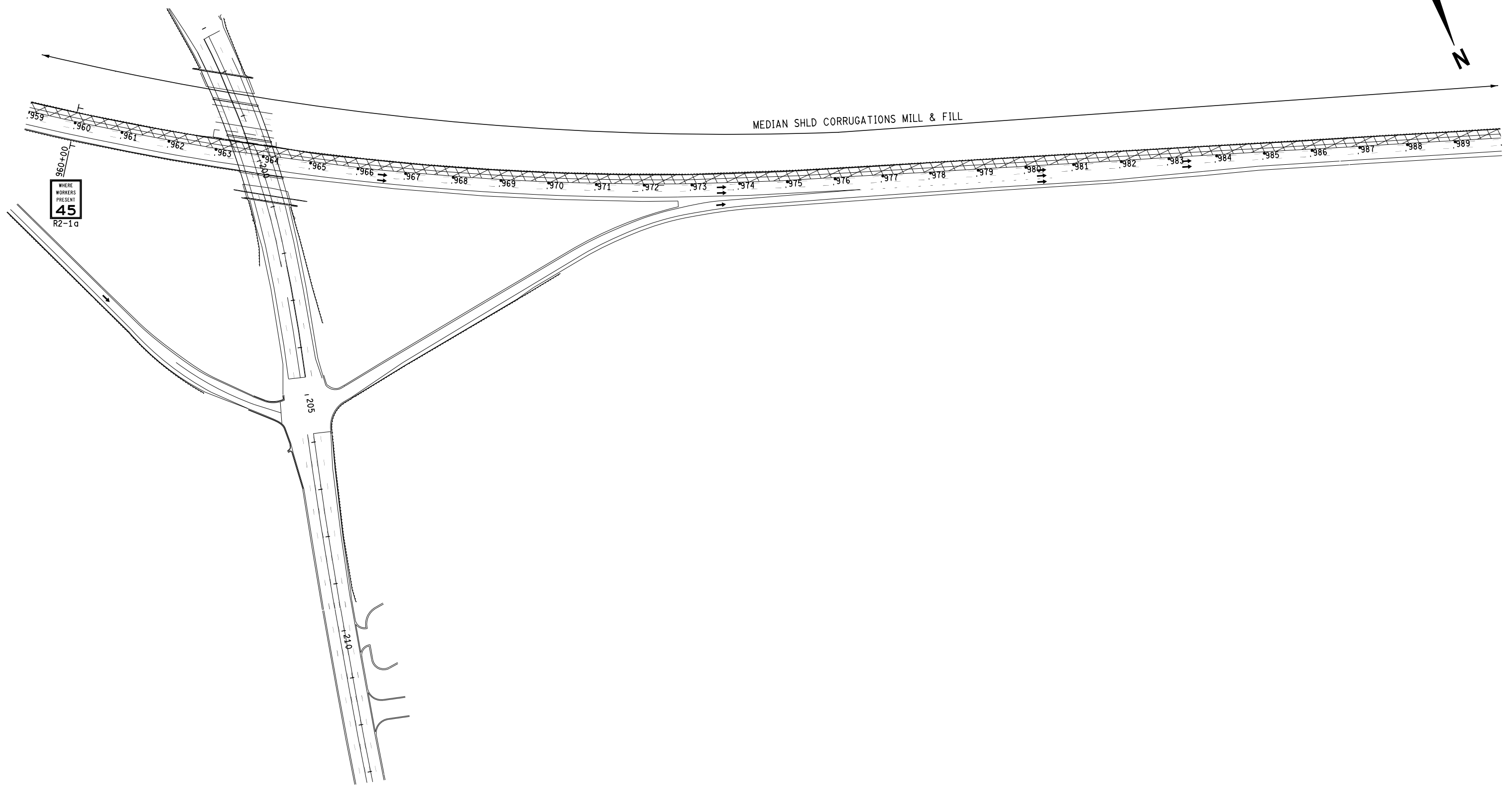


NB I-75

NB I-75

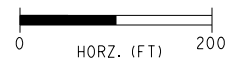
MEDIAN SHLD CORRUGATIONS MILL & FILL

WHERE WORKERS PRESENT  
45  
R2-1a



HOLLY RD

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



FILE: 115832\_175\_M0T\_ST1\_959.dgn

DATE: 03/10/17

DESIGN UNIT: PETHERS

TSC: DAVISON

CS: 25131

JN: 115832A

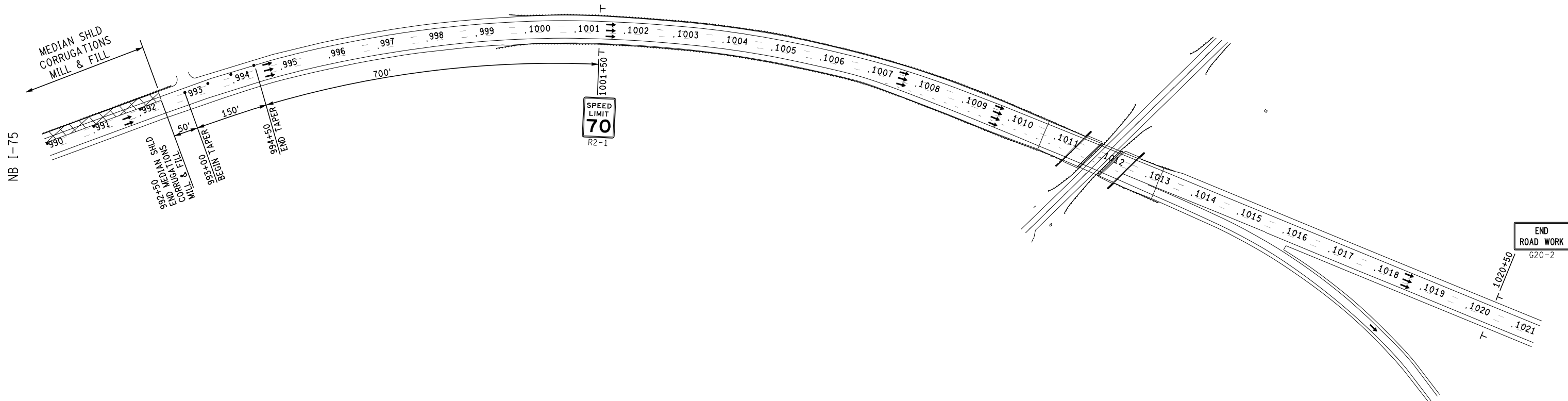
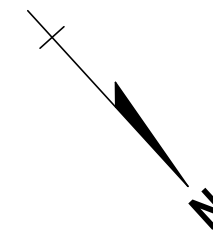
MAINTAINING TRAFFIC

NB I-75 STA 959+00 TO STA 990+00

STAGE 1

DRAWING	SHEET
175 MTSTG1 003	SECT 1 69

E COOK RD

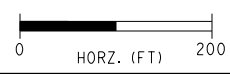


NB I-75

NB I-75

E COOK RD

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



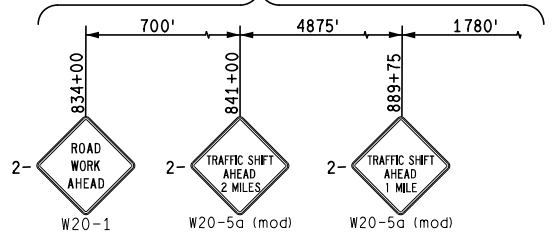
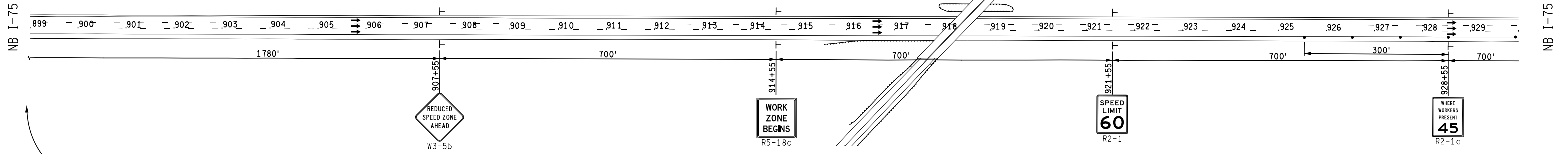
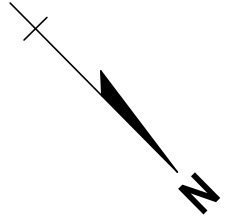
FILE: 115832\_175\_M0T\_ST1\_990.dgn

DATE: 03/10/17  
 DESIGN UNIT: PETHERS  
 TSC: DAVISON

CS: 25131  
 JN: 115832A

MAINTAINING TRAFFIC  
 NB I-75 STA 990+00 TO STA 1021+00  
 STAGE 1

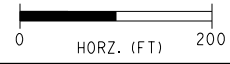
DRAWING SHEET  
 175 MTSTG1 004 SECT 1  
 70



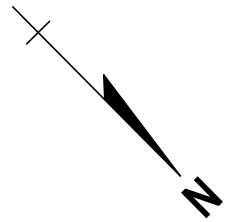
SEE MOT TYPICAL M0080a (ADVANCE SIGNING)  
AND MOT TYPICAL DAV005 (LANE CLOSURE)  
FOR ADDITIONAL NOTES

NOTE TO CONTRACTOR:  
1. PLASTIC DRUM SPACING ON I-75:  
100' CENTER-TO-CENTER, TANGENTS  
50' CENTER-TO-CENTER, SHIFTS AND TAPERS  
25' CENTER-TO-CENTER, WHERE TIGHTER  
TRAFFIC CONTROL IS REQUIRED BY THE ENGINEER.

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE: )								DATE: 03/10/17		CS: 25131		DRAWING		SHEET	
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION	DESIGN UNIT: PETHERS		JN: 115832A		175		SECT 1	
								TSC: DAVISON		NB I-75 STA 834+00 TO STA 930+00		MTSTG2		71	
										STAGE 2		001			

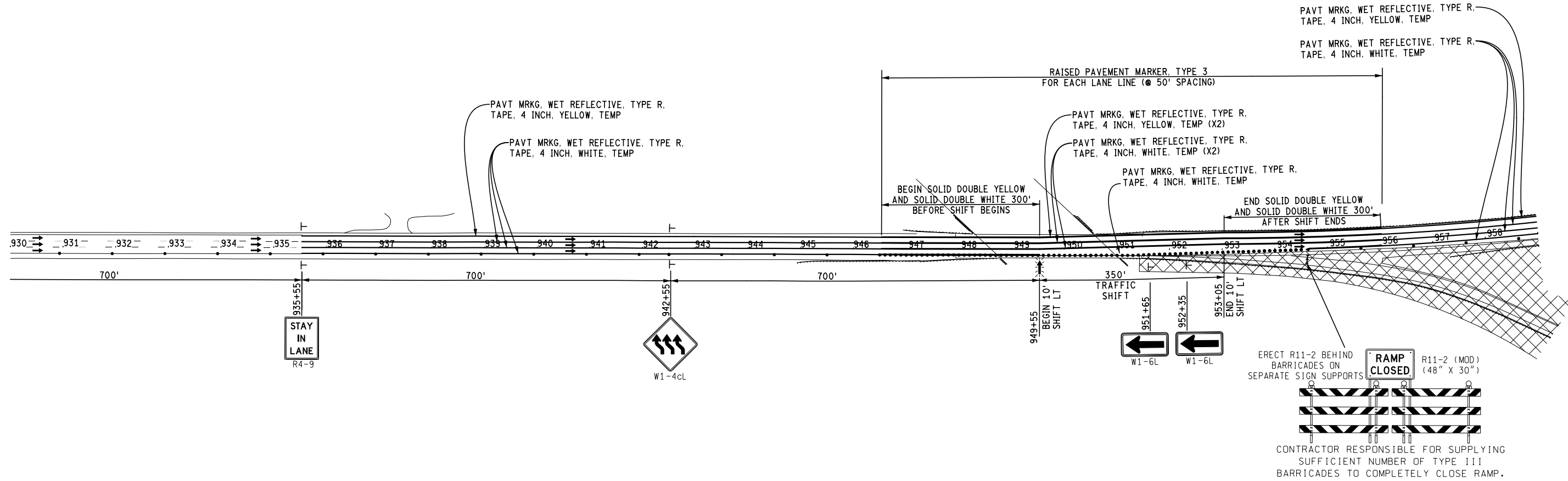


FILE: 115832\_175\_MOT\_ST2\_834.dgn

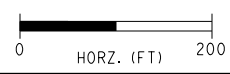


NB I-75

NB I-75



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



FILE: 115832_175_M0T_ST2_930.dgn	TSC: DAVISON	DATE: 03/10/17	CS: 25131
		DESIGN UNIT: PETHERS	JN: 115832A

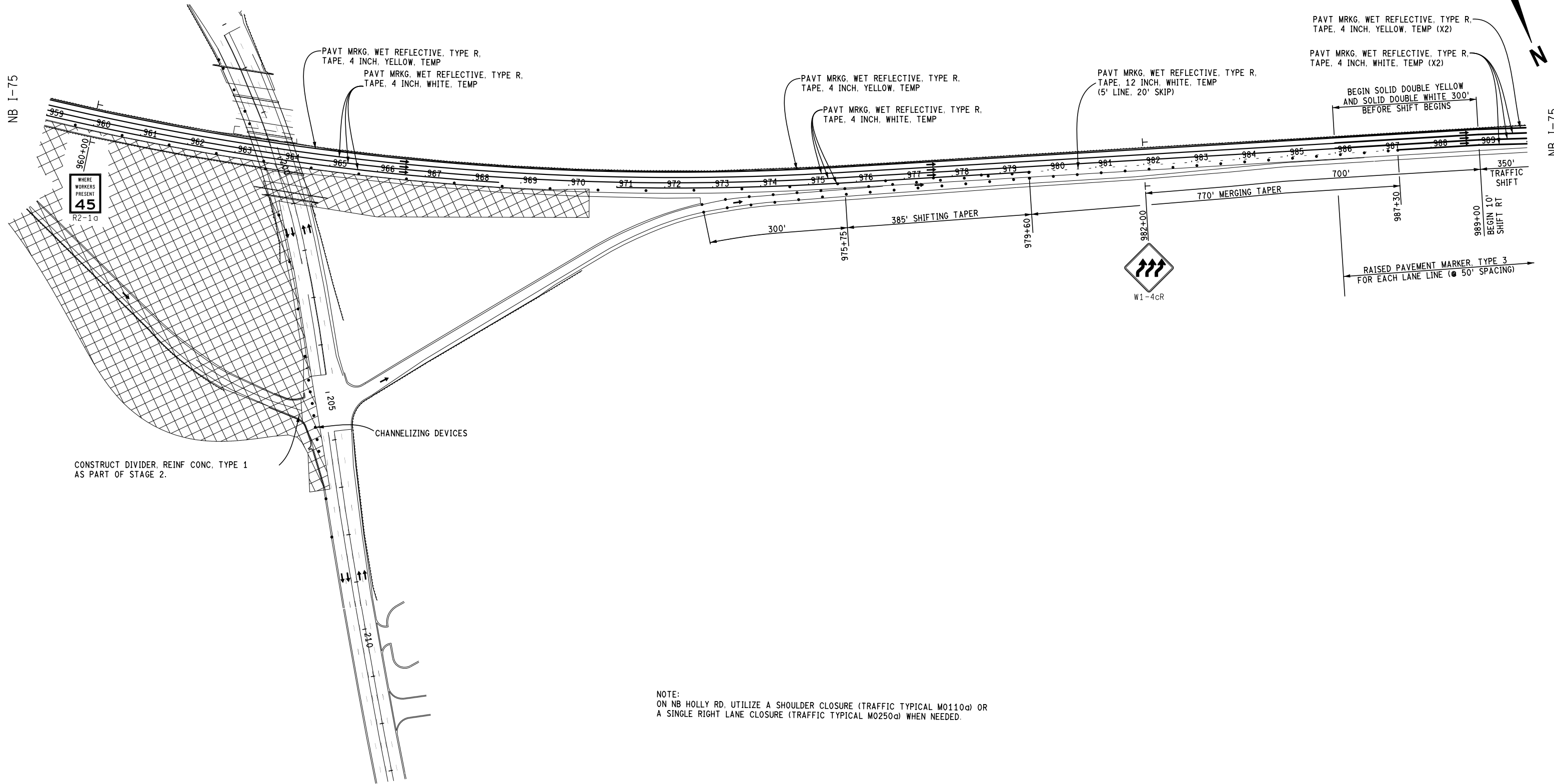
DRAWING		SHEET	
NB I-75 STA 930+00 TO STA 959+00		175	SECT 1
STAGE 2		002	72



HOLLY RD

NB I-75

NB I-75



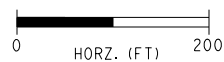
CONSTRUCT DIVIDER, REINF CONC, TYPE 1 AS PART OF STAGE 2.

CHANNELIZING DEVICES

NOTE:  
ON NB HOLLY RD, UTILIZE A SHOULDER CLOSURE (TRAFFIC TYPICAL M0110a) OR  
A SINGLE RIGHT LANE CLOSURE (TRAFFIC TYPICAL M0250a) WHEN NEEDED.

HOLLY RD

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



FILE: 115832\_I75\_M0T\_ST2\_959.dgn

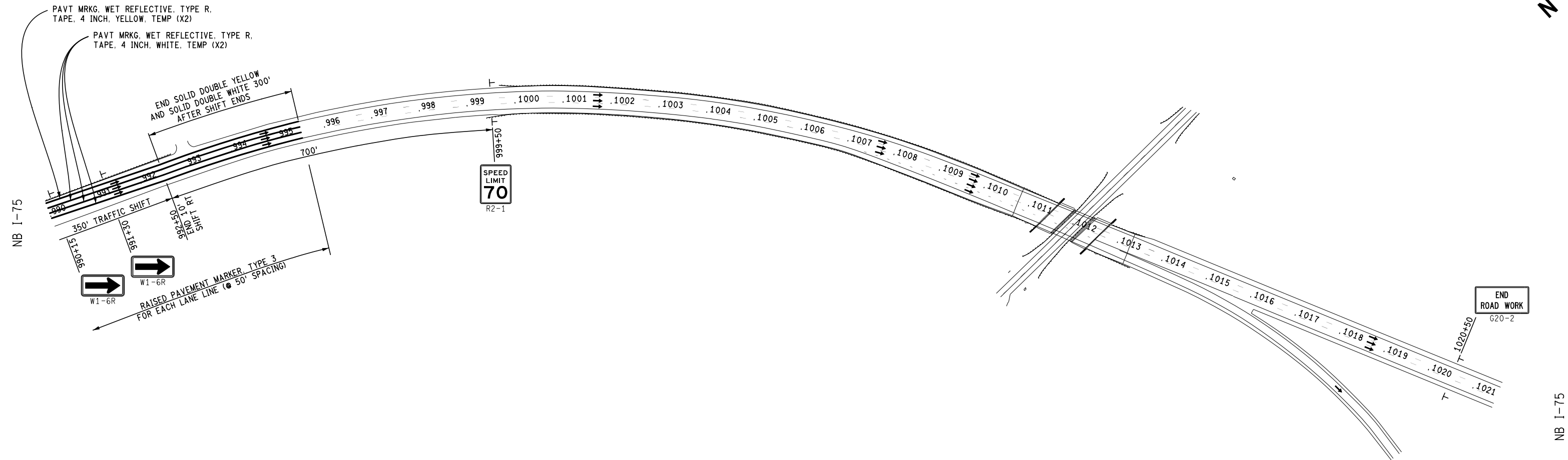
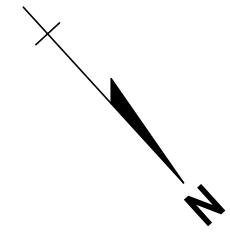
DATE: 03/10/17  
DESIGN UNIT: PETHERS  
TSC: DAVISON

CS: 25131  
JN: 115832A

MAINTAINING TRAFFIC  
NB I-75 STA 959+00 TO STA 990+00  
STAGE 2

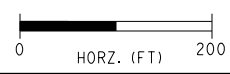
DRAWING	SHEET
175 MTSTG2 003	73

E COOK RD



E COOK RD

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

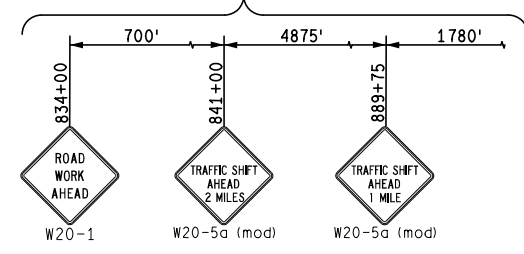
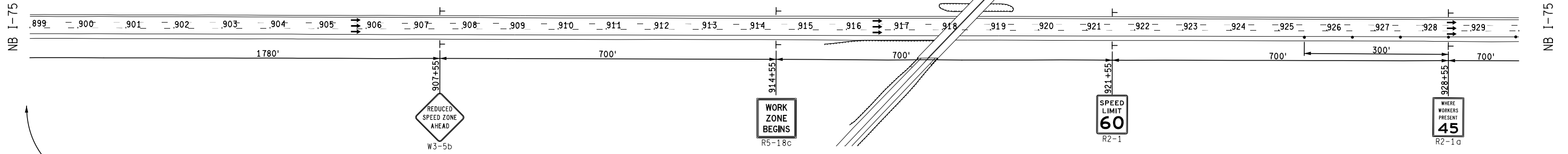
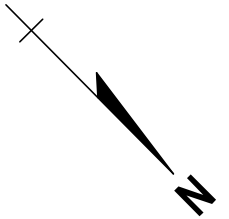


FILE: 115832\_175\_M0T\_ST2\_990.dgn  
 DATE: 03/10/17  
 DESIGN UNIT: PETHERS  
 TSC: DAVISON

CS: 25131  
 JN: 115832A

MAINTAINING TRAFFIC  
 NB I-75 STA 990+00 TO STA 1021+00  
 STAGE 2

DRAWING SHEET  
 175 MTSTG2 004  
 SECT 1 74

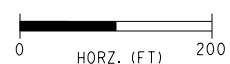


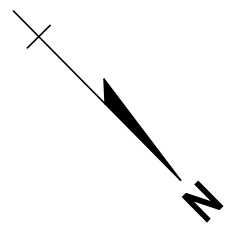
SEE MOT TYPICAL M0080a (ADVANCE SIGNING)  
AND MOT TYPICAL DAV005 (LANE CLOSURE)  
FOR ADDITIONAL NOTES

NOTE TO CONTRACTOR:

1. PLASTIC DRUM SPACING ON I-75:  
100' CENTER-TO-CENTER, TANGENTS  
50' CENTER-TO-CENTER, SHIFTS AND TAPERS  
25' CENTER-TO-CENTER, WHERE TIGHTER  
TRAFFIC CONTROL IS REQUIRED BY THE ENGINEER.

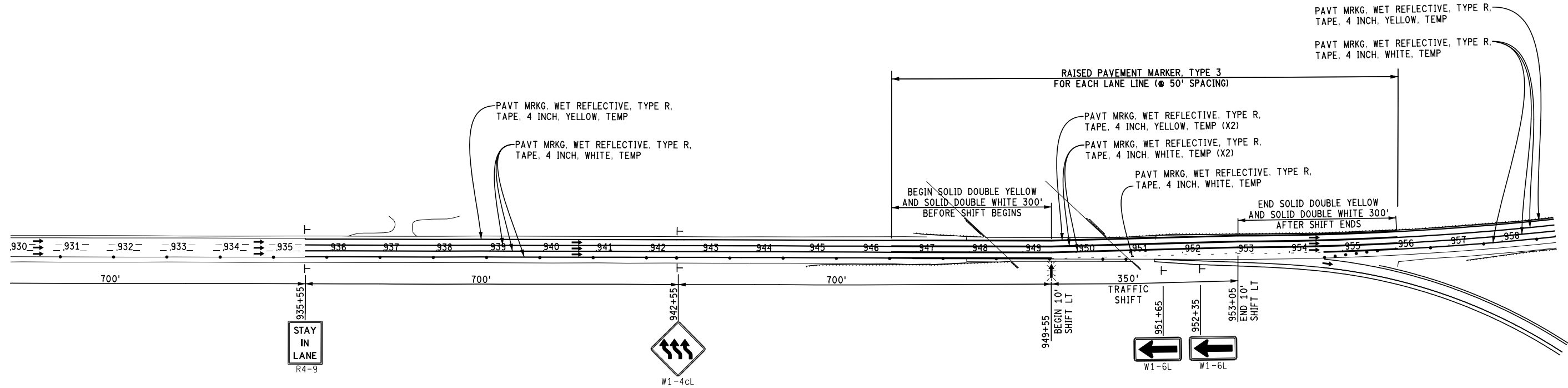
FINAL ROW PLAN REVISIONS (SUBMITTAL DATE: )								DATE: 03/10/17		CS: 25131		DRAWING		SHEET	
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION	DESIGN UNIT: PETHERS		JN: 115832A		175		SECT 1	
								TSC: DAVISON		MAINTAINING TRAFFIC		001		75	
										NB I-75 STA 834+00 TO STA 930+00					
										STAGE 3					
								FILE: 115832_175_MOT_ST3_834.dgn							



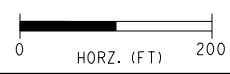


NB I-75

NB I-75



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

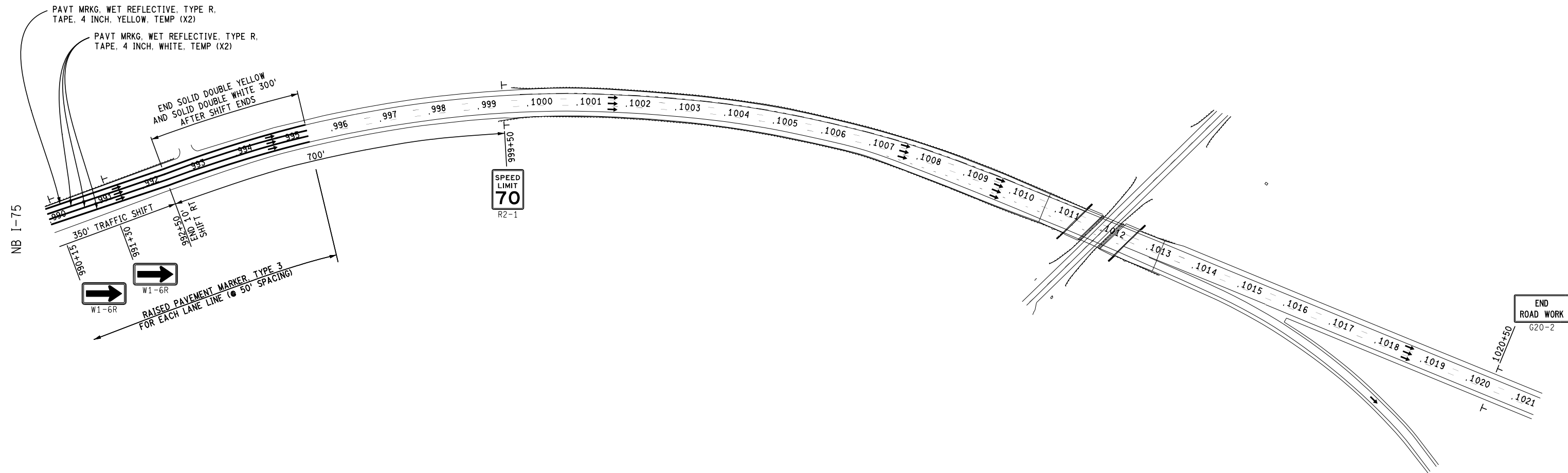
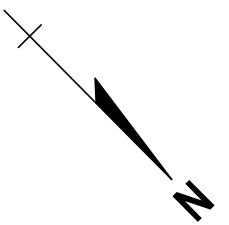


FILE: 115832_175_M0T_ST3_930.dgn	TSC: DAVISON	DATE: 03/10/17	CS: 25131
		DESIGN UNIT: PETHERS	JN: 115832A

MAINTAINING TRAFFIC	DRAWING	SHEET
NB I-75 STA 930+00 TO STA 959+00	175	SECT 1
STAGE 3	MTSTG3	002
		76



E COOK RD

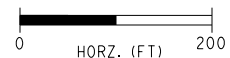


NB I-75

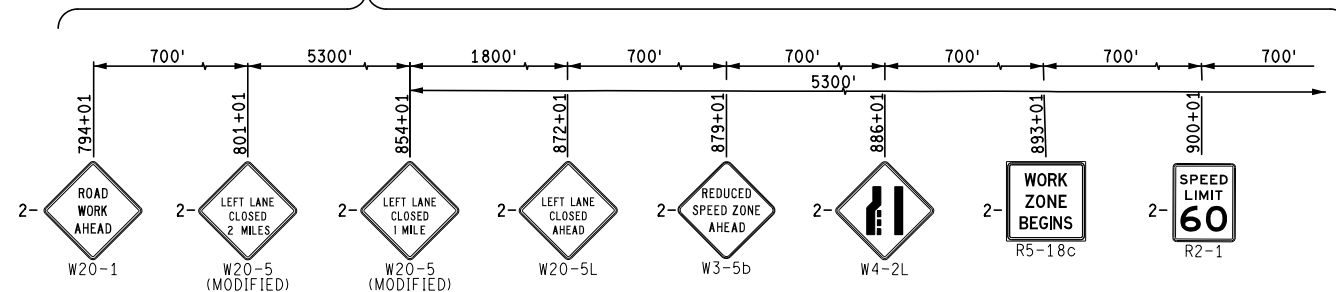
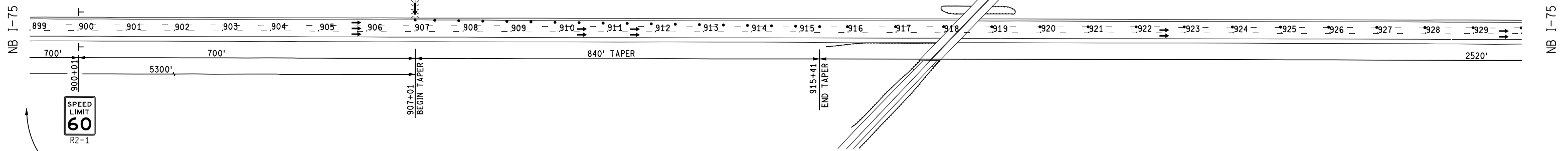
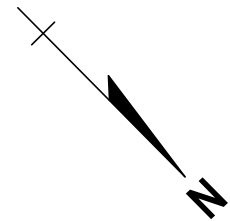
NB I-75

E COOK RD

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



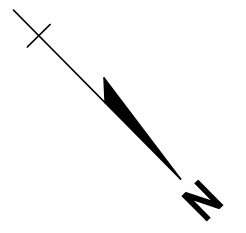
DATE: 03/10/17	CS: 25131	DRAWING SHEET
DESIGN UNIT: PETHERS	JN: 115832A	
TSC: DAVISON	FILE: 115832_175_M0T_ST3_990.dgn	DRAWING SHEET
MAINTAINING TRAFFIC		175 MTSTG3 004
NB I-75 STA 990+00 TO STA 1021+00		SECT 1
STAGE 3		78



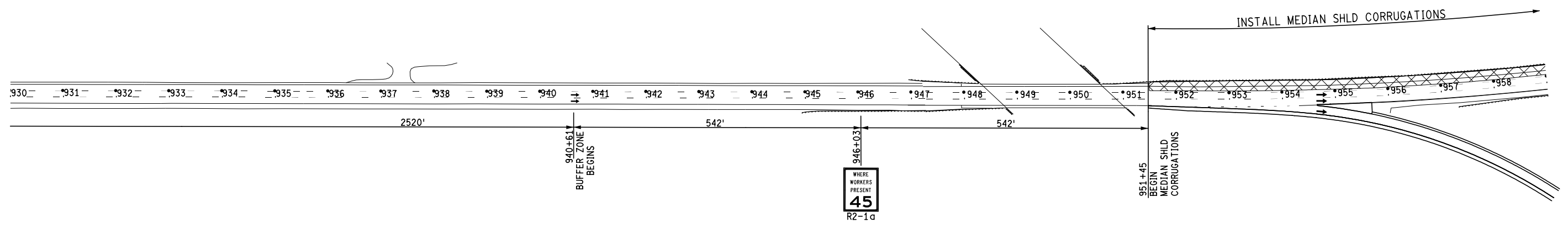
SEE MOT TYPICAL M0080a (ADVANCE SIGNING)  
AND MOT TYPICAL M1290a (LANE CLOSURE)  
FOR ADDITIONAL NOTES

NOTE TO CONTRACTOR:  
1. PLASTIC DRUM SPACING ON I-75:  
100' CENTER-TO-CENTER, TANGENTS  
50' CENTER-TO-CENTER, SHIFTS AND TAPERS  
25' CENTER-TO-CENTER, WHERE TIGHTER  
TRAFFIC CONTROL IS REQUIRED BY THE ENGINEER.

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE: )								MDOT Michigan Department of Transportation		DATE: 03/10/17		CS: 25131		DRAWING SHEET	
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION	0 200 HORZ. (FT)		DESIGN UNIT: PETHERS	JN: 115832A	MAINTAINING TRAFFIC NB I-75 STA 794+00 TO STA 930+00		175 MTSTG4 001	SECT 1 79
										TSC: DAVISON		STAGE 4			

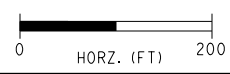


NB I-75



NB I-75

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



FILE: 115832\_175\_M0T\_ST4\_930.dgn

DATE: 03/10/17  
 DESIGN UNIT: PETHERS  
 TSC: DAVISON

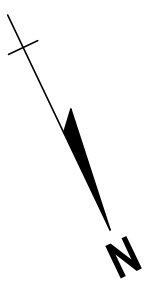
CS: 25131  
 JN: 115832A

MAINTAINING TRAFFIC  
 NB I-75 STA 930+00 TO STA 959+00  
 STAGE 4

DRAWING SHEET  
 175 MTSTG4 002 SECT 1 80

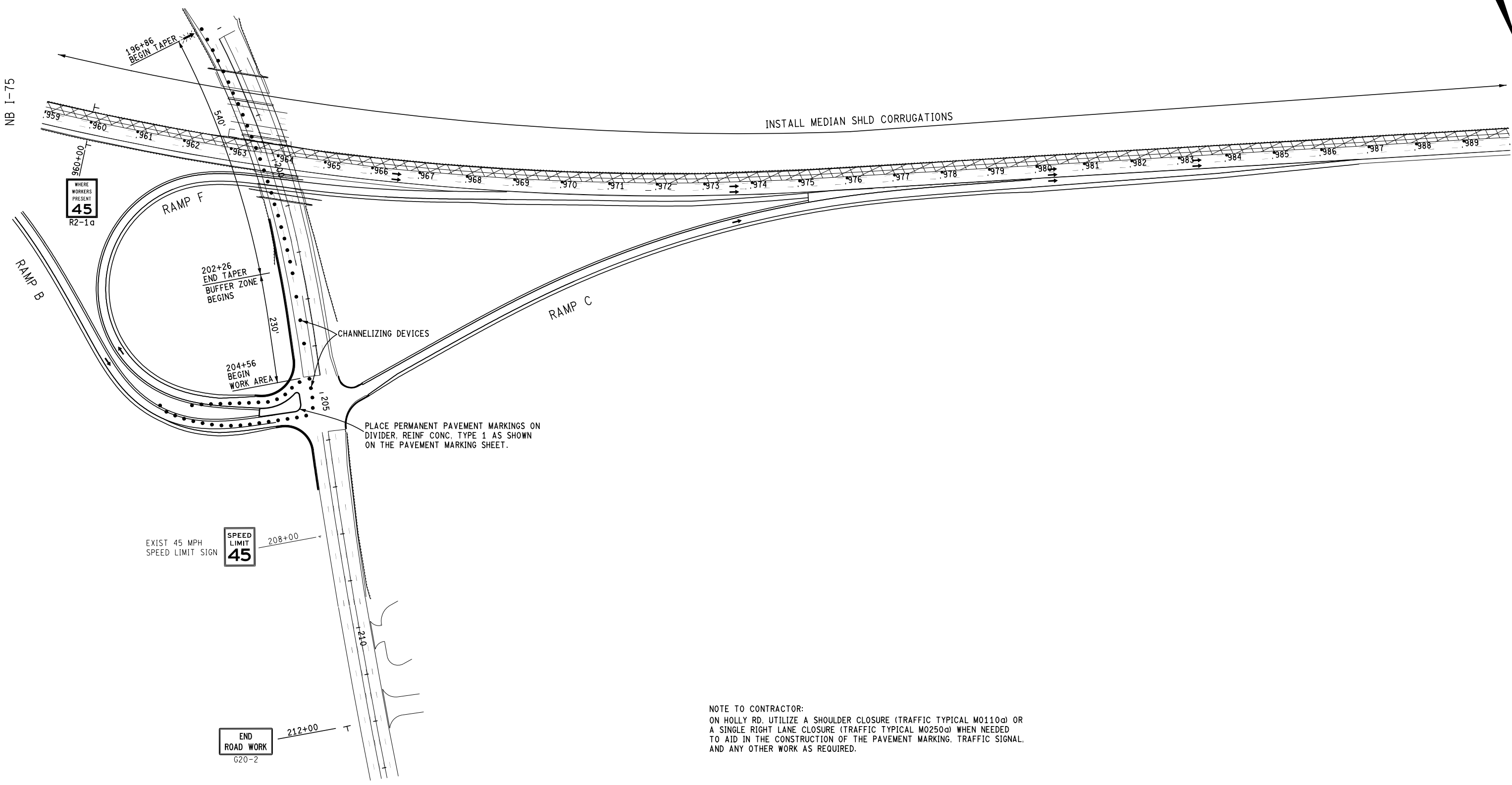


HOLLY RD



NB I-75

NB I-75



PLACE PERMANENT PAVEMENT MARKINGS ON DIVIDER, REINF CONC. TYPE 1 AS SHOWN ON THE PAVEMENT MARKING SHEET.

NOTE TO CONTRACTOR:  
ON HOLLY RD, UTILIZE A SHOULDER CLOSURE (TRAFFIC TYPICAL M0110d) OR A SINGLE RIGHT LANE CLOSURE (TRAFFIC TYPICAL M0250d) WHEN NEEDED TO AID IN THE CONSTRUCTION OF THE PAVEMENT MARKING, TRAFFIC SIGNAL, AND ANY OTHER WORK AS REQUIRED.

EXIST 45 MPH SPEED LIMIT SIGN

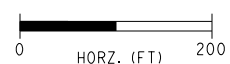
SPEED LIMIT 45

END ROAD WORK

G20-2

HOLLY RD

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

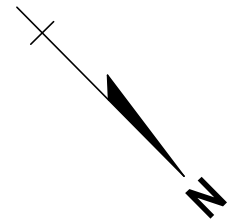


DATE: 03/10/17	CS: 25131
DESIGN UNIT: PETHERS	JN: 115832A
TSC: DAVISON	

MAINTAINING TRAFFIC		DRAWING	SHEET
NB I-75 STA 959+00 TO STA 990+00		175	SECT 1
STAGE 4		MTSTG4	003
			81

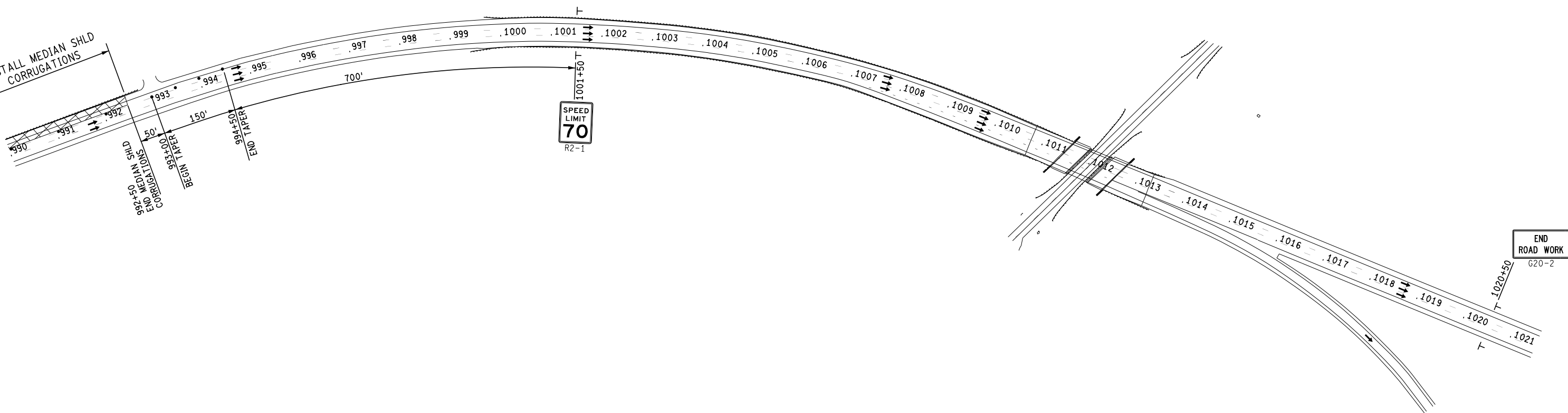
FILE: 115832\_175\_M0T\_ST4\_959.dgn

E COOK RD



INSTALL MEDIAN SHLD CORRUGATIONS

NB I-75



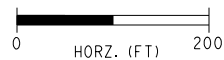
END ROAD WORK

G20-2

NB I-75

E COOK RD

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

















FILE: 115832\_175\_M0T\_ST4\_990.dgn

DATE: 03/10/17  
DESIGN UNIT: PETHERS  
TSC: DAVISON





CS: 25131  
JN: 115832A

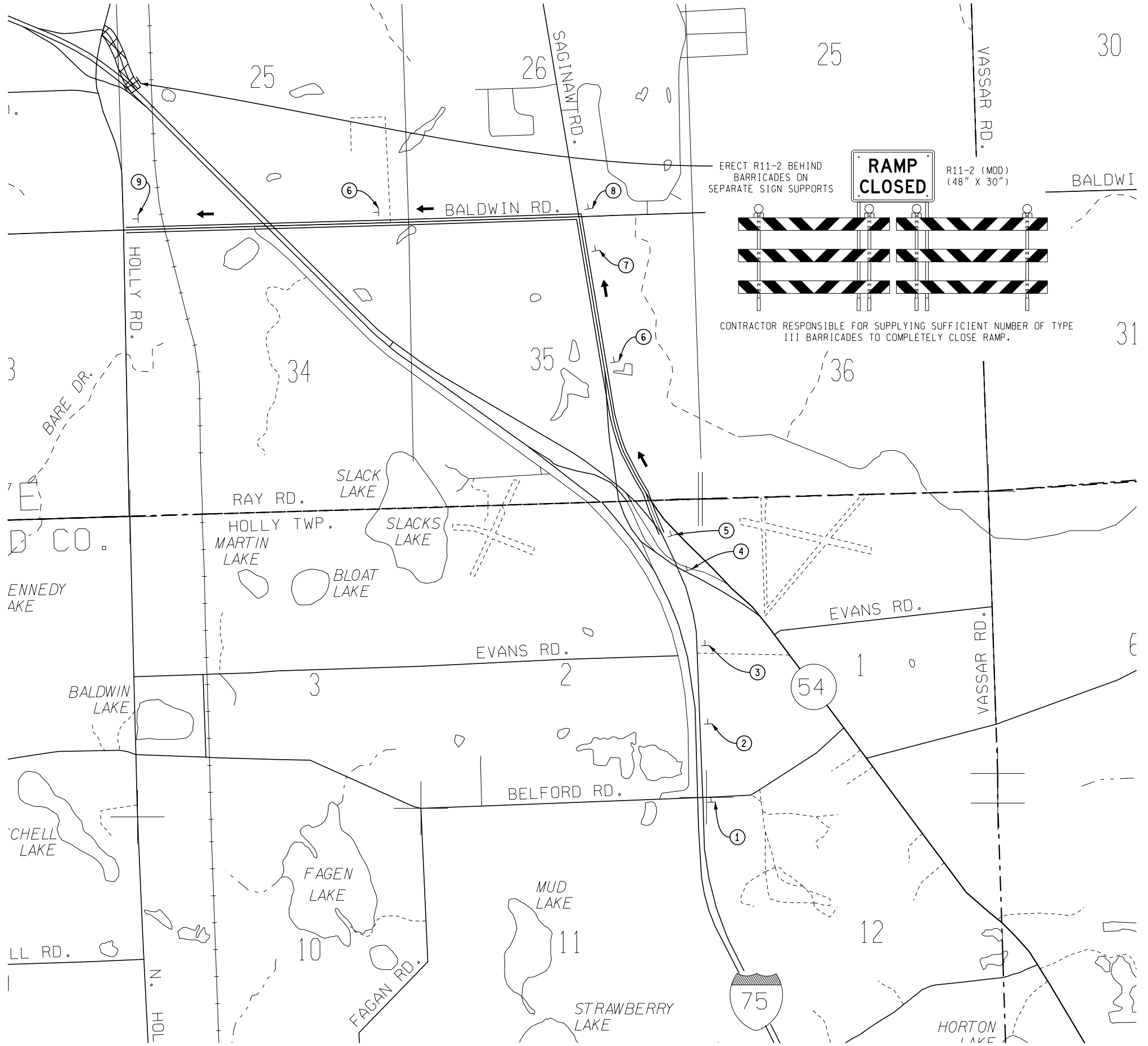
MAINTAINING TRAFFIC  
NB I-75 STA 990+00 TO STA 1021+00  
STAGE 4

DRAWING SHEET  
175 MTSTG4 004 SECT 1  
82

- ①  W20-3(MOD) (48" X 48")  
HOLLY RD SP-2
- ②  SP-1
- ③  W20-2 (48" X 48")  
HOLLY RD SP-2
- ④  M4-8 (30" X 15")  
HOLLY RD SP-2  
 M5-2R (30" X 21")\*
- ⑤  M4-8 (30" X 15")  
HOLLY RD SP-2  
 M6-2R (30" X 21")\*
- ⑥  M4-8 (24" X 12")  
HOLLY RD SP-2  
 M6-3 (21" X 15")\*
- ⑦  M4-8 (24" X 12")  
HOLLY RD SP-2  
 M5-1L (21" X 15")\*
- ⑧  M4-8 (24" X 12")  
HOLLY RD SP-2  
 M6-1L (21" X 15")\*
- ⑨  M4-8a (24" X 18")  
HOLLY RD SP-2

\* BLACK LEGEND AND BORDER ON ORANGE BACKGROUND

KEY	
	TRAFFIC FLOW
	TEMPORARY SIGN
	TYPE III BARRICADE
	WORK ZONE



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



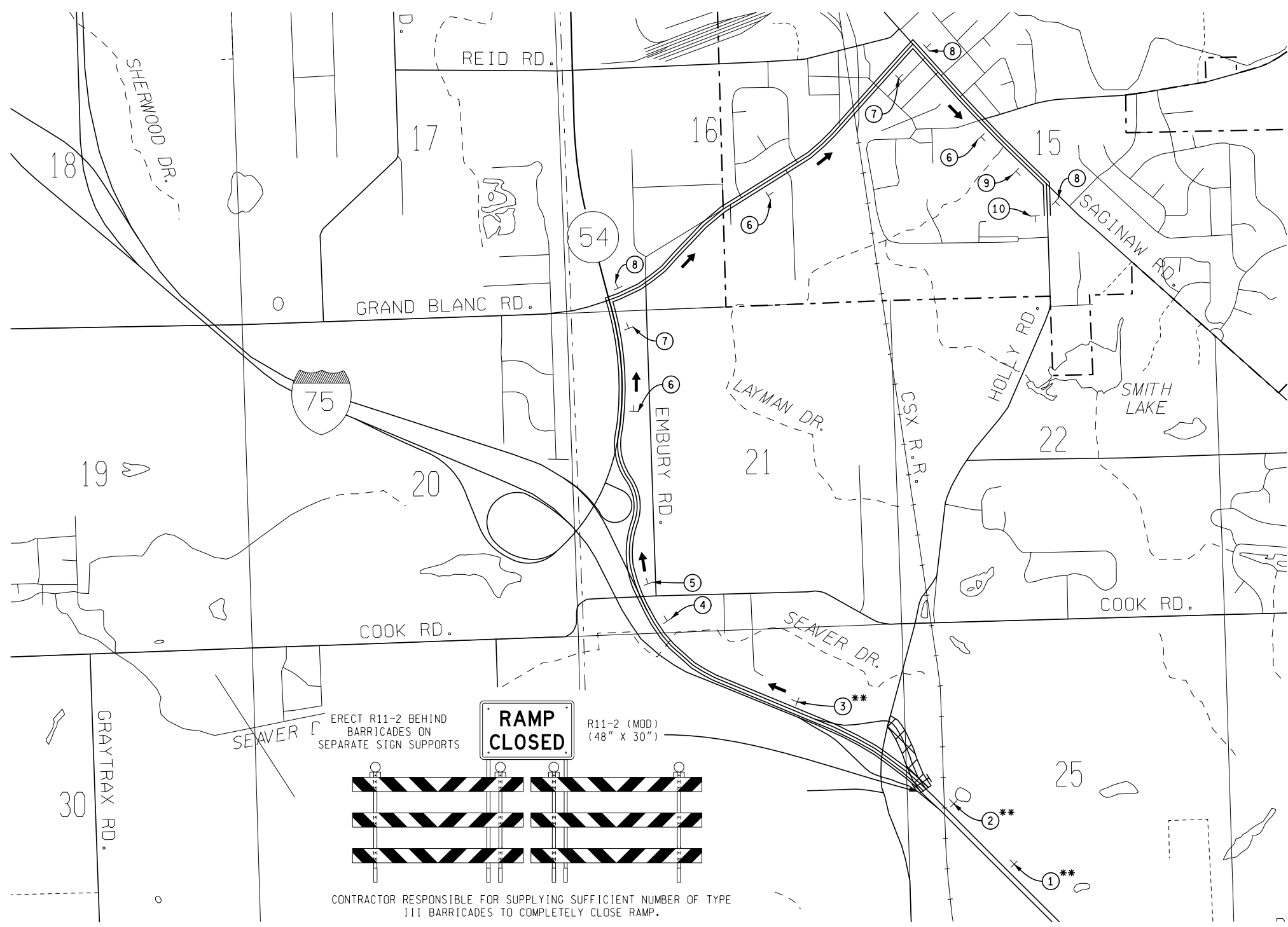
**NO SCALE**

FILE: 115832\_175\_MTDETR001.dgn  
 DATE: 03/10/17  
 DESIGN UNIT: PETHERS  
 TSC: DAIVSON

CS: 25131  
 JN: 115832A

MAINTAINING TRAFFIC  
 DETOUR MAP  
 PRIMARY ROUTE

DRAWING	SHEET
175 MTDETR 001	SECT 1 83



- ① W20-2 (48" X 48")  
HOLLY RD SP-2
- ② SP-1
- ③ M4-8 (30"x 15")  
HOLLY RD SP-2  
M6-3 (30" X 21")\*
- ④ M4-8 (30"x 15")  
HOLLY RD SP-2  
M5-2R (30" X 21")\*
- ⑤ M4-8 (30"x 15")  
HOLLY RD SP-2  
M6-2R (30" X 21")\*
- ⑥ M4-8 (24"x 12")  
HOLLY RD SP-2  
M6-3 (21" X 15")\*
- ⑦ M4-8 (24"x 12")  
HOLLY RD SP-2  
M5-1R (21" X 15")\*
- ⑧ M4-8 (24"x 12")  
HOLLY RD SP-2  
M6-1R (21" X 15")\*
- ⑨ M4-8 (24"x 12")  
HOLLY RD SP-2  
M5-2R (21" X 15")\*
- ⑩ M4-8a (24" X 18")\*  
HOLLY RD SP-2

\* BLACK LEGEND AND BORDER ON ORANGE BACKGROUND

KEY	
	TRAFFIC FLOW
	TEMPORARY SIGN
	TYPE III BARRICADE
	WORK ZONE

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



NO SCALE

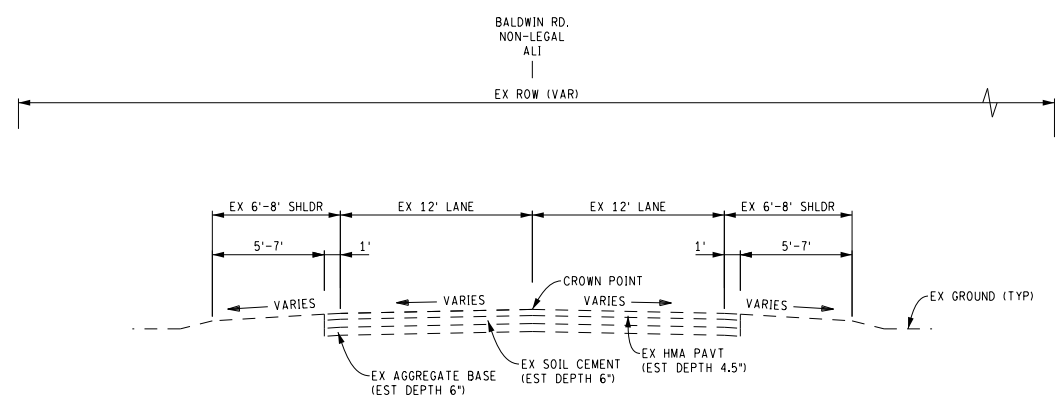
DATE: 03/10/17	CS: 25131
DESIGN UNIT: PETHERS	JN: 115832A
TSC: DAVISON	

DATE: 03/10/17	CS: 25131
DESIGN UNIT: PETHERS	JN: 115832A
TSC: DAVISON	

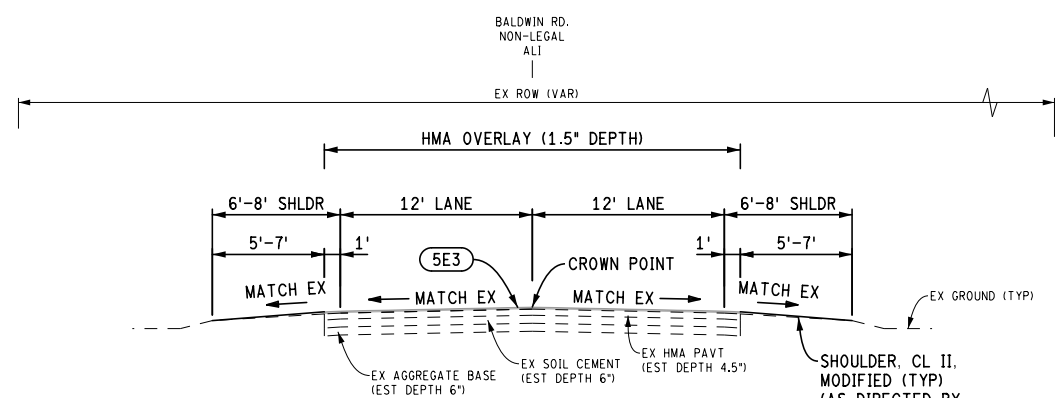
MAINTAINING TRAFFIC	
DETOUR MAP	
SECONDARY ROUTE	

DRAWING	SHEET
175	84
MTDETR	002

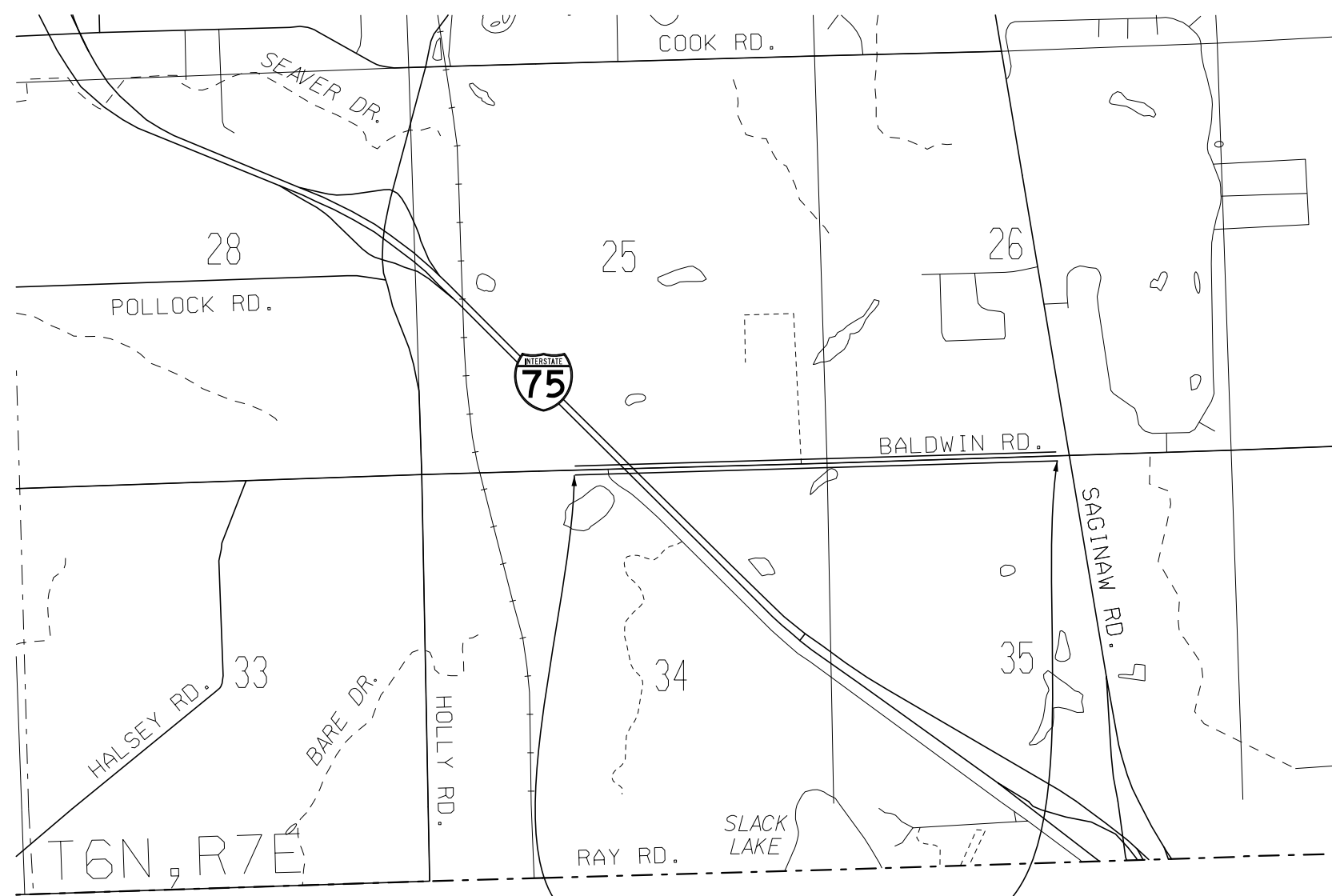
\*\* DETOUR SIGNS TO BE FIELD VERIFIED AS TO NOT CONFLICT WITH OTHER CONSTRUCTION STAGING SIGNS ALONG NORTHBOUND I-75.



**EXISTING BALDWIN RD. TYPICAL SECTION**  
 TO APPLY AS DIRECTED BY THE ENGINEER:  
 FROM HOLLY RD. TO SAGINAW RD.



**PROPOSED BALDWIN RD. TYPICAL SECTION**  
 TO APPLY AS DIRECTED BY THE ENGINEER:  
 FROM HOLLY RD. TO SAGINAW RD.



**HOLLY RD. DETOUR UPGRADES ON BALDWIN RD. BETWEEN SAGINAW AND HOLLY ROADS AS DIRECTED BY THE ENGINEER**

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



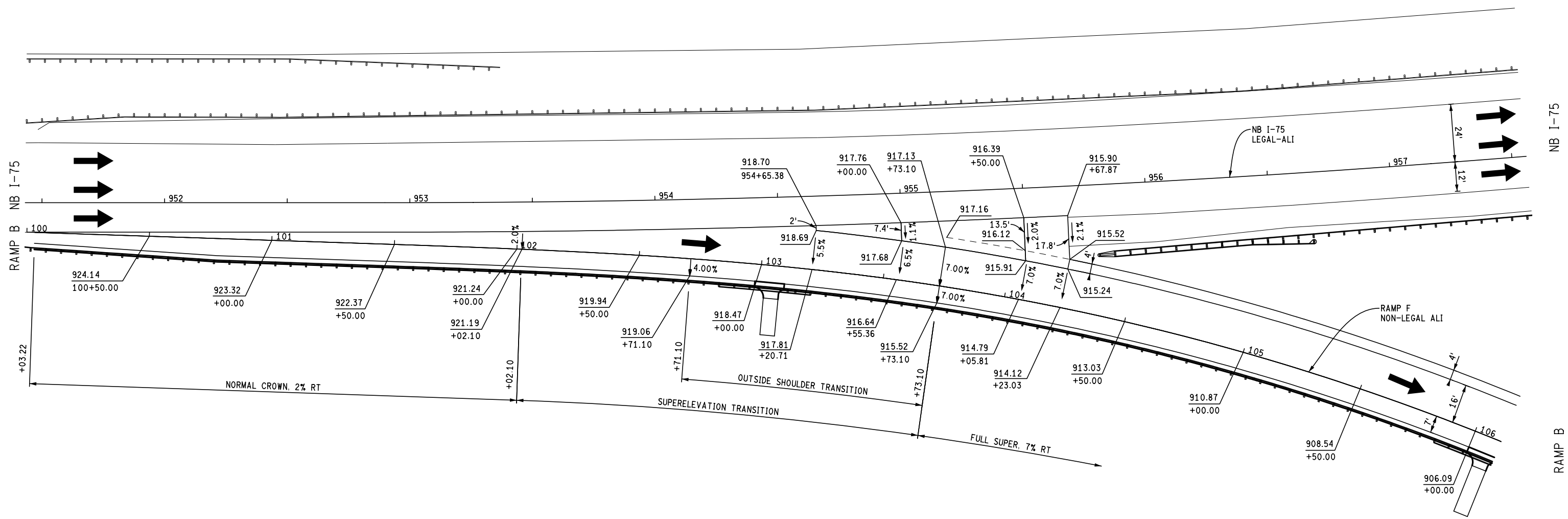
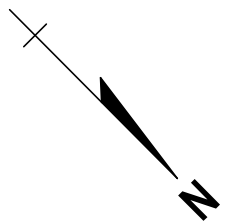
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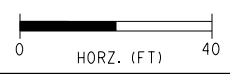
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FILE: 115832_175_Baldwin Upgrades.dgn	TSC: DAVISON

MAINTAINING TRAFFIC	
BALDWIN ROAD IMPROVEMENTS	

DRAWING	SHEET
BALDWIN	SECT 1
MTSD01	85



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



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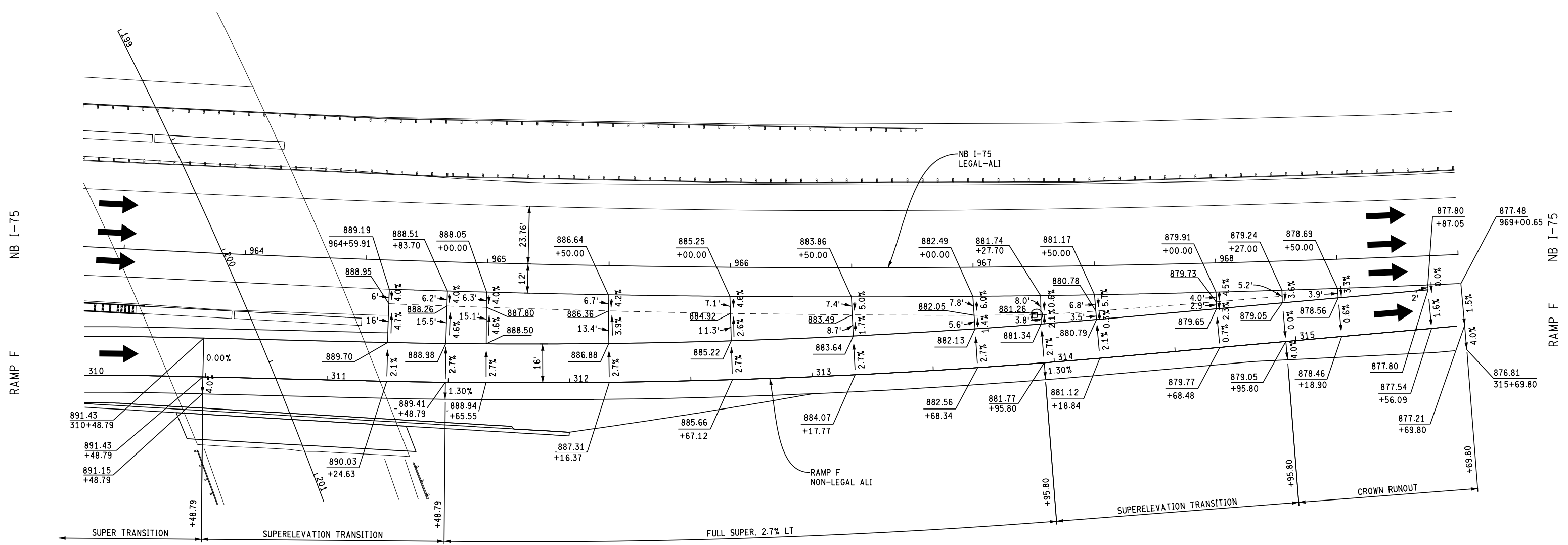
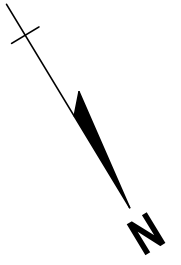
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 DESIGN UNIT: PETHERS  
 TSC: DAVISON

CS: 25131  
 JN: 115832A

DETAIL GRADES  
 RAMP B GORE

DRAWING SHEET  
 175 SECT 1  
 DETGRD 001 86

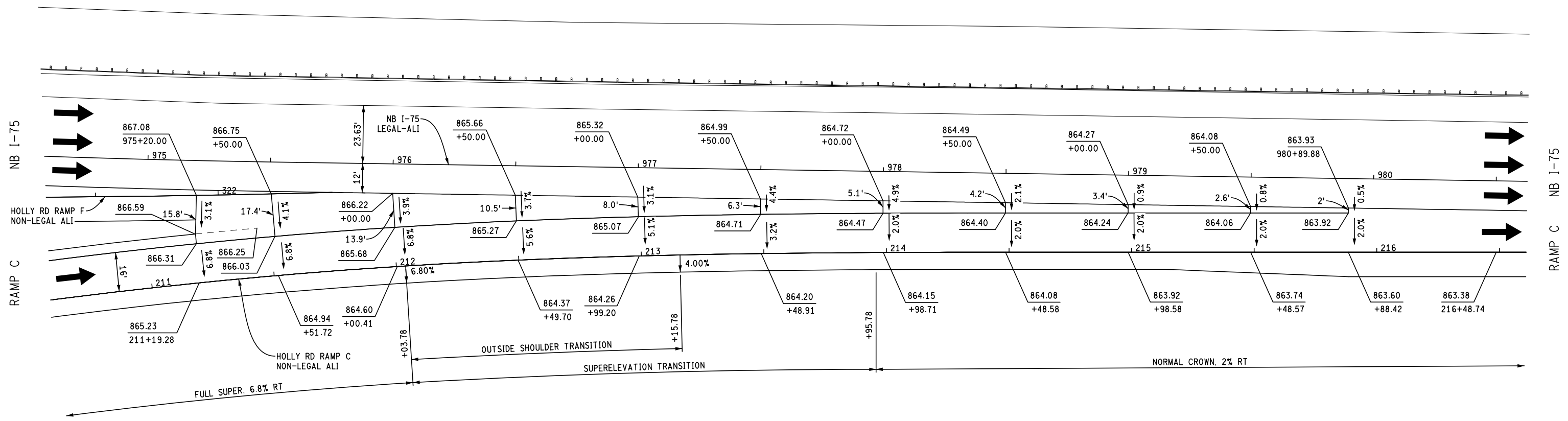
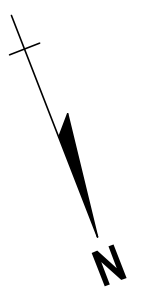
HOLLY RD.



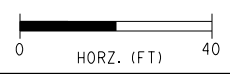
HOLLY RD.

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE: )										DATE: 03/10/17 DESIGN UNIT: PETHERS TSC: DAVISON	CS: 25131 JN: 115832A	DETAIL GRADES RAMP F GORE	DRAWING 175 DETGRD 002	SHEET SECT 1 87
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION							

FILE: 115832\_De+Grd002.dgn



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



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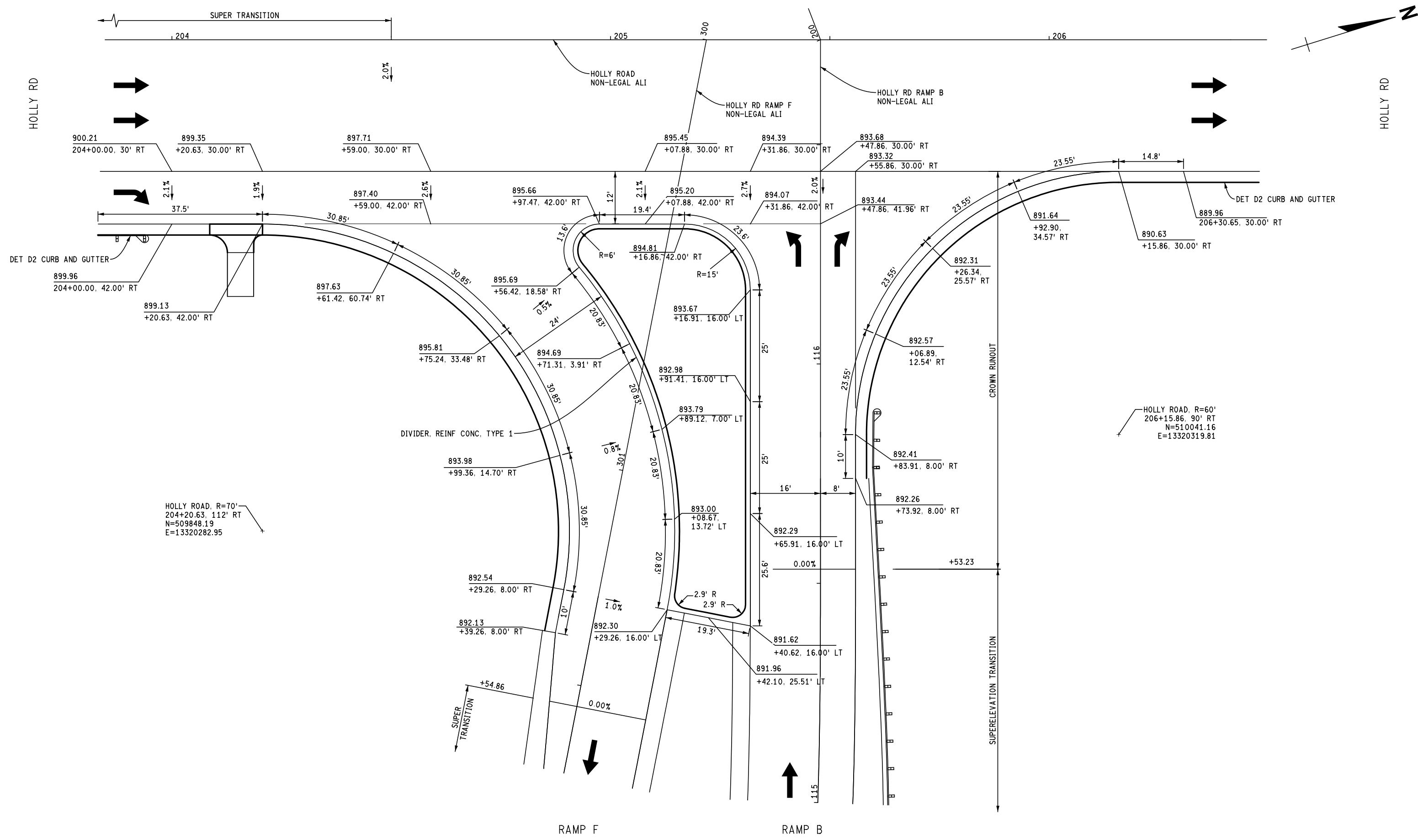
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 DESIGN UNIT: PETHERS  
 TSC: DAVISON

CS: 25131  
 JN: 115832A

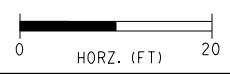
DETAIL GRADES  
 RAMP C GORE

DRAWING SHEET  
 175 SECT 1  
 DETGRD 003 88





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



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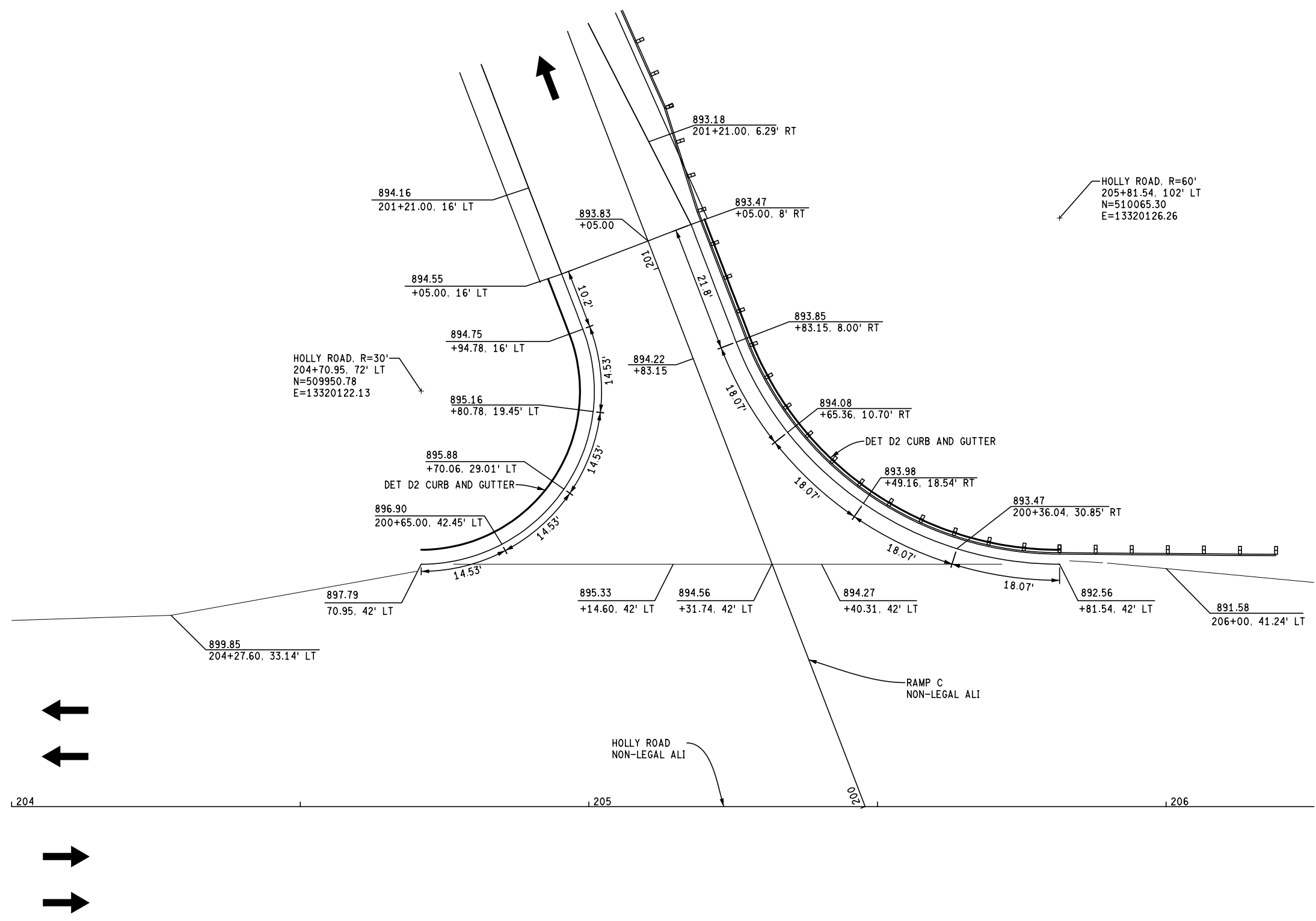
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 JN: 115832A

DETAIL GRADES  
 RAMP B / RAMP F TERMINAL

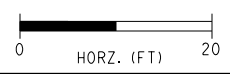
DRAWING	SHEET
HOLLY DETGRD 004	SECT 1 89



RAMP C

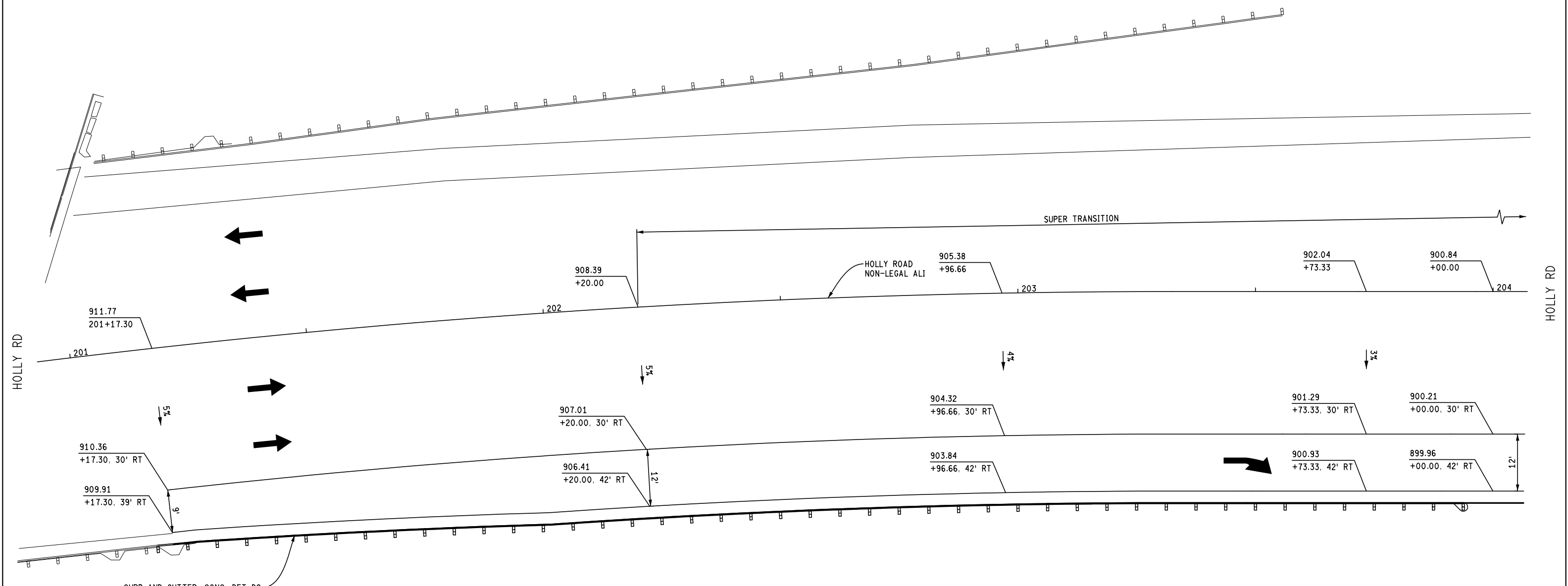


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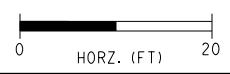


DATE: 03/10/17	CS: 25131
DESIGN UNIT: PETHERS	JN: 115832A
TSC: DAVISON	

DETAIL GRADES		DRAWING	SHEET
RAMP C TERMINAL		HOLLY DETGRD	SECT 1
		005	90



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



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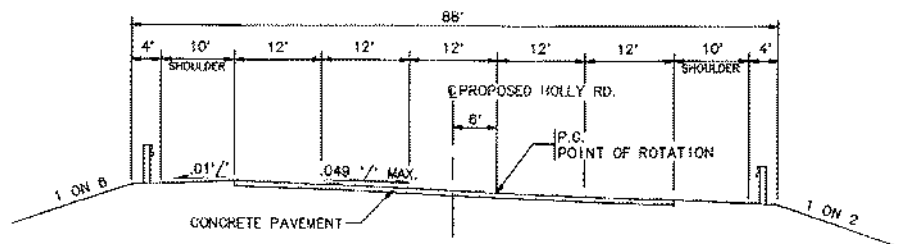
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 TSC: DAVISON

CS: 25131  
 JN: 115832A

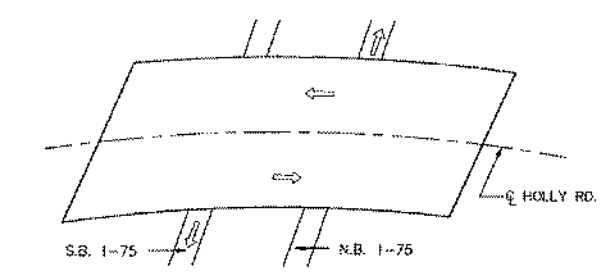
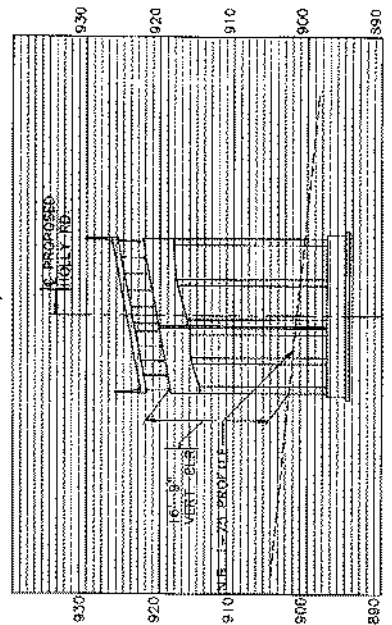
DETAIL GRADES  
 HOLLY ROAD RIGHT TURN LANE

DRAWING SHEET  
 HOLLY DETGRD 006 SECT 1  
 91

<b>UTILITIES</b> <b>GAS &amp; ELECTRIC (PANHANDLE EASTERN PIPELINE)</b> CONSUMERS POWER - 4141 EAST WILDER RD., BAY CITY, MI. 48706 810-760-3327 OR 517-667-5110 CONTACT PERSON - SALLY TOWN <b>WATER &amp; SANITARY SEWER</b> GRAND BLANC PUBLIC WORKS - 5371 SOUTH SAGINAW, GRAND BLANC MI 48439 810-694-5300 CONTACT PERSON - NORMAN RIOPELLE, SUPERINTENDENT		<b>UTILITIES</b> <b>CABLE T.V.</b> COMCAST - 3008 AIRPARK DRIVE SOUTH, FLINT MI. 48507 810-235-9200 CONTACT PERSON - ROBIN WATKINS <b>TELEPHONE</b> AMERITECH - 502 BEACH ROOM 402, FLINT MI. 48502 810-788-0118 CONTACT PERSON - PAUL CORLISS		<b>BENCH MARKS</b> B.M. 109 (EL. 911.97) CHSLD SQ. ON S.E. COR. OF TOP NORTH WINGWALL AT N.E. COR. OF HOLLY RD. BRIDGE OVER I-75, STA 201+17 B.M. 110 (EL. 915.66) CHSLD SQ. ON SE COR. OF TOP WINGWALL AT SE COR. OF HOLLY RD. BRIDGE OVER I-75, STA. 198+20
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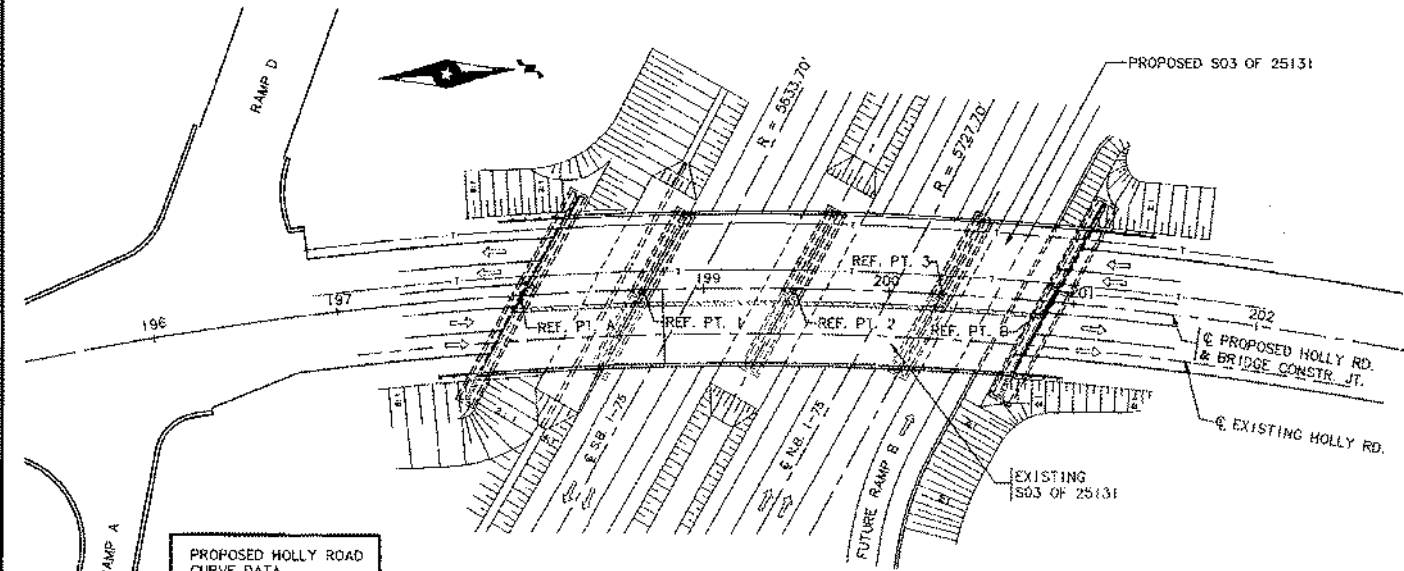
WITNESSES	
P.I. - STA. 183+70.53 (PROPOSED SURVEY CENTERLINE) (P.T. 1953, SET 1/2" REBAR IN EXISTING GRAVEL SHOULDER) N20°E 223.98' SET NAIL/REI BRASS TAG # 23857 NW FACE 15' SUGAR MAPLE S56°E 125.05' SET NAIL/REI BRASS TAG #23857 SW FACE 18' SUGAR MAPLE S13°42'15"W 149.84' SET 1/2" REBAR W. OF STA. 183+50.00 N75°49'12"W 131.50' SET 1/2" REBAR W. OF STA. 185+50.00 S41°53'35"E 78.24' SET 1/2" REBAR E. OF EXISTING ROAD APPROX. 50' OFFSET S71°09'24"W 88.20' SET 1/2" REBAR W. OF EXISTING ROAD APPROX. 50' OFFSET N34°34'40"W 62.50' SET 1/2" REBAR W. OF EXISTING ROAD APPROX. 50' OFFSET	
P.C. = STA. 206+41.39 (PROPOSED SURVEY CENTERLINE) (P.T. 1962, SET PK NAIL/REI BRASS TAG # 23857) N44°28'41"E 123.92' NW COR. ANGLE-IRON FENCE POST AT NW END R.O.W. FENCE S65°23'27"E 76.42' SET 1/2" REBAR E. OF EXISTING ROAD AT TOP OF BANK S43°30'24"W 23.77' BAK ANGLE AT CROSS WEBS AT TOP OF STEEL I-BEAM GUARDRAIL POST N17°11'30"W 19.59' SET PK NAIL/REI TAG # 23857 ON TOP OF WOOD GUARDRAIL POST	



ESTIMATED TRAFFIC DISTRIBUTION					
HOLLY ROAD		I-75			
1998	2020	1998	2020	TOTAL AVERAGE DAILY TRAFFIC A.D.T.	
20,000	25,000	49,000	70,000		
1.8%	2.2%	5.8%	8.4%	P.M. DESIGN HOURLY VOLUME D.H.V.	
3%	3%	6%	5%	PERCENT COMMERCIAL AVERAGE DAILY TRAFFIC	

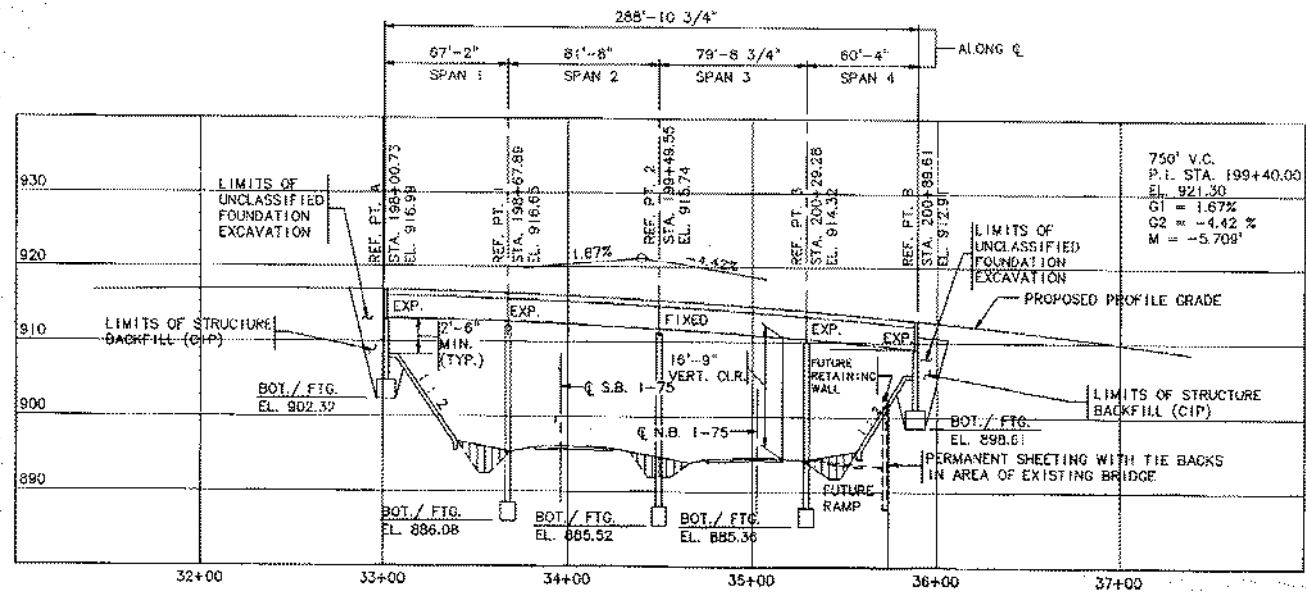
ALL TRAFFIC VOLUMES ARE TWO-WAY TOTAL TRAFFIC VOLUMES

**NOTES:**  
 THE WORK COVERED BY THESE PLANS INCLUDES REMOVING THE ENTIRE SUPERSTRUCTURE, REMOVING PORTIONS OF SUBSTRUCTURE AND SLOPE PROTECTION, CONSTRUCTING WIDENED SUPERSTRUCTURE AND SUBSTRUCTURE RECONSTRUCTION ALL OTHER WORK IS INCLUDED WITH ROAD PLANS THAT ARE A PART OF THIS CONTRACT.  
 HOLLY ROAD TRAFFIC TO BE MAINTAINED OVER THE BRIDGE BY PART-WIDTH CONSTRUCTION.  
 THIS BRIDGE IS PART OF AN INTERCHANGE AND ALL AREA SHOWN IS WITHIN MDOT RIGHT-OF-WAY.  
 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.



PROPOSED HOLLY ROAD CURVE DATA	
Δ = 37°-56'-14"	
D = 2°-57'-47"	
R = 1933.71'	
L = 1280.40'	
T = 664.66'	
E = 111.04'	
S.E. = 0.049%	
P.C. = 190+52.06	
P.I. = 197+16.72	
P.T. = 203+32.46	

CURVE DATA	
@ N.B. I-75 CURVE DATA Δ = 22°-42'-56" D = 1°-00'-01" R = 5727.70' L = 2270.81' T = 1150.52' P.C. = 952+89.83 P.I. = 964+25.24 P.T. = 975+60.64	@ S.B. I-75 CURVE DATA Δ = 22°-42'-56" D = 1°-01'-01" R = 5633.70' L = 2233.55' T = 1131.64' P.C. = 953+27.10 P.I. = 964+43.87 P.T. = 975+60.64



PROFILE CONSTR. - @ HOLLY ROAD  
 SCALE: 1" = 40'-0" (HORIZ.)  
 1" = 10'-0" (VERT.)



MICHIGAN DEPARTMENT OF TRANSPORTATION  
 HOLLY ROAD CROSSING I-75 INTERCHANGE  
 1.25 MILES S.W. OF GRAND BLANC

GENERAL PLAN OF SITE

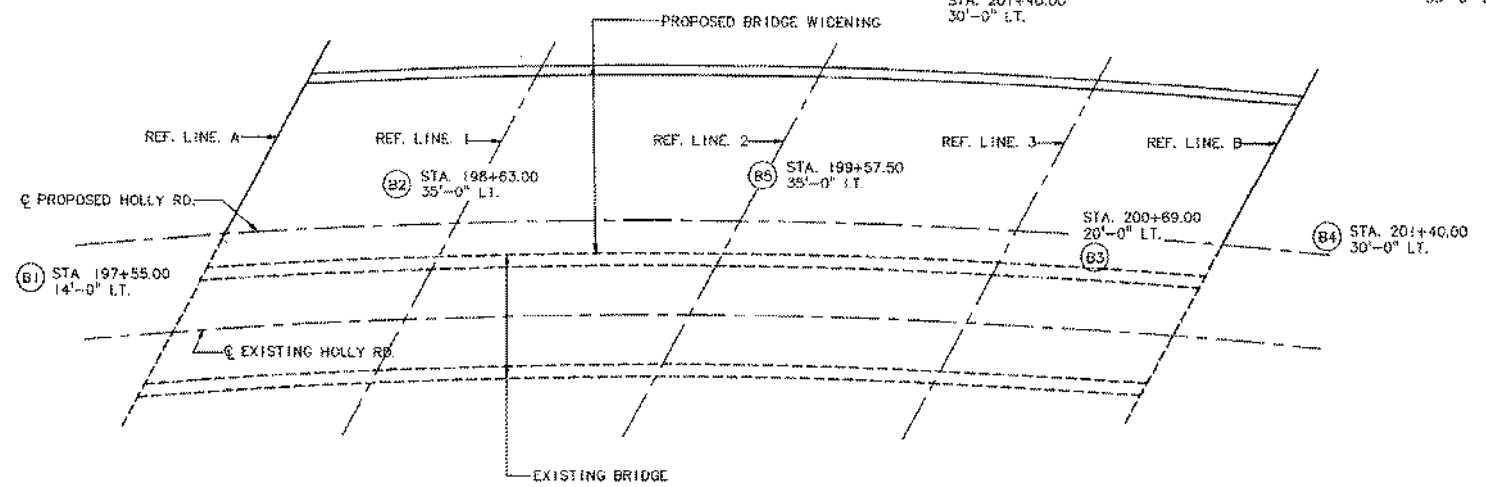
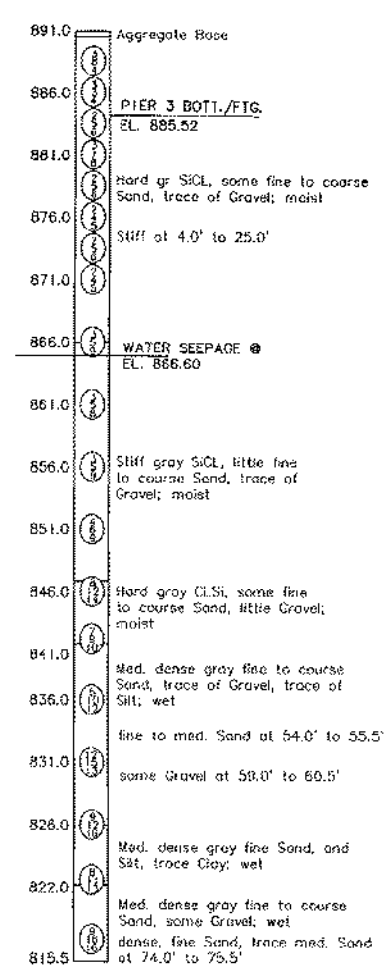
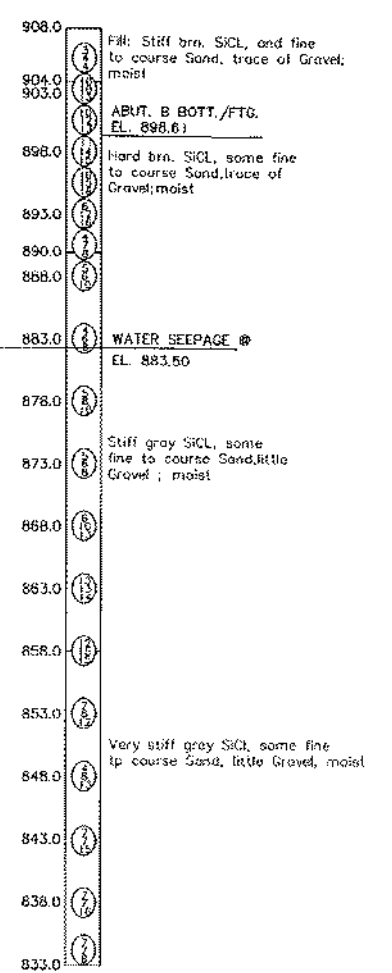
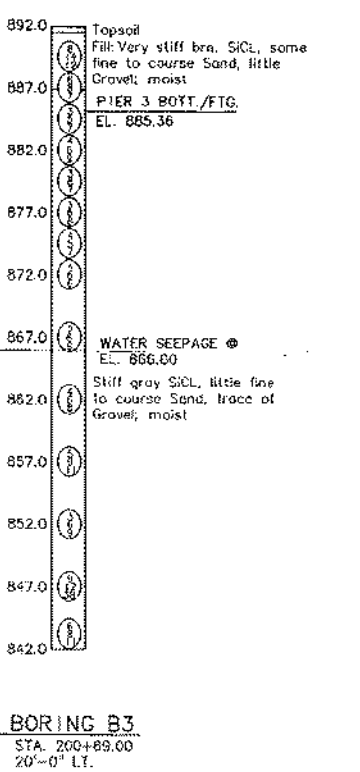
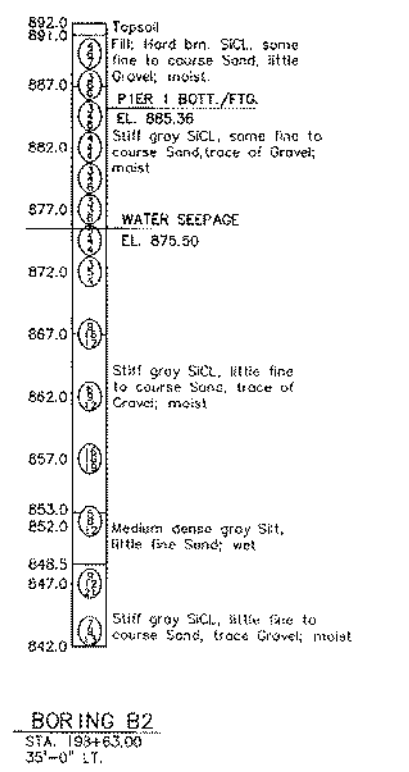
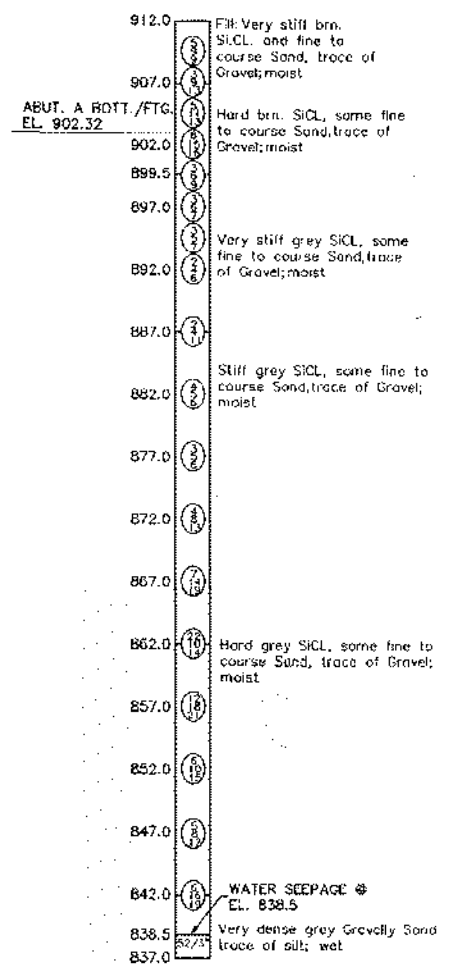
NO.	REVISIONS	DATE	BY

APPROVED: *[Signature]* 12596  
 CONSULTANT COORDINATION ENGINEER

MOBY UNIT	PROZEMIS
CONSULTANT UNIT	AYAL
DRAWN BY:	S.J.V.
CHECKED BY:	M.S.M.
DATE:	8.24

SHEET 2 OF 34 SHEET  
 S03 OF 25131

37720A  
 DO NOT WORK FROM THIS SHEET. THE INFORMATION SHOWN HERE IS FOR REFERENCE ONLY. NO PAY ITEMS ARE SHOWN.



**NOTES:**

NUMBERS IN CIRCLES DENOTE NUMBER OF BLOWS TO DRIVE A 2" SPLIT SPOON SAMPLER 3 SUCCESSIVE 6" INCREMENTS USING A 140 LB HAMMER FALLING 30".

THE SOIL BORING LOGS REPRESENT POINT INFORMATION. PRESENTATION OF THIS INFORMATION IN NO WAY IMPLIES THAT SUBSURFACE CONDITIONS ARE THE SAME AT LOCATIONS OTHER THAN THE EXACT LOCATION OF THE BORING.

CONSISTENCY WAS DETERMINED BY INSPECTION OF SAMPLES AND SUBSTANTIATED BY SOILS RESISTANCE TO DRILLING TOOLS.

FOR FURTHER SOIL EXPLORATION AND FOUNDATION RECOMMENDATION REFER TO ORIGINAL SUBSURFACE EXPLORATION REPORT PREPARED BY P.S.I. DATED JUNE 12, 1985 AND AS AMENDED BY REPORT DATED OCTOBER 10, 1995.

ESTIMATED BOTTOM OF PILES AT PIER 1, EL. 820.00

MICHIGAN DEPARTMENT OF TRANSPORTATION  
HOLLY ROAD CROSSING I-75 INTERCHANGE  
1.25 MILES S.W. OF GRAND BLANC

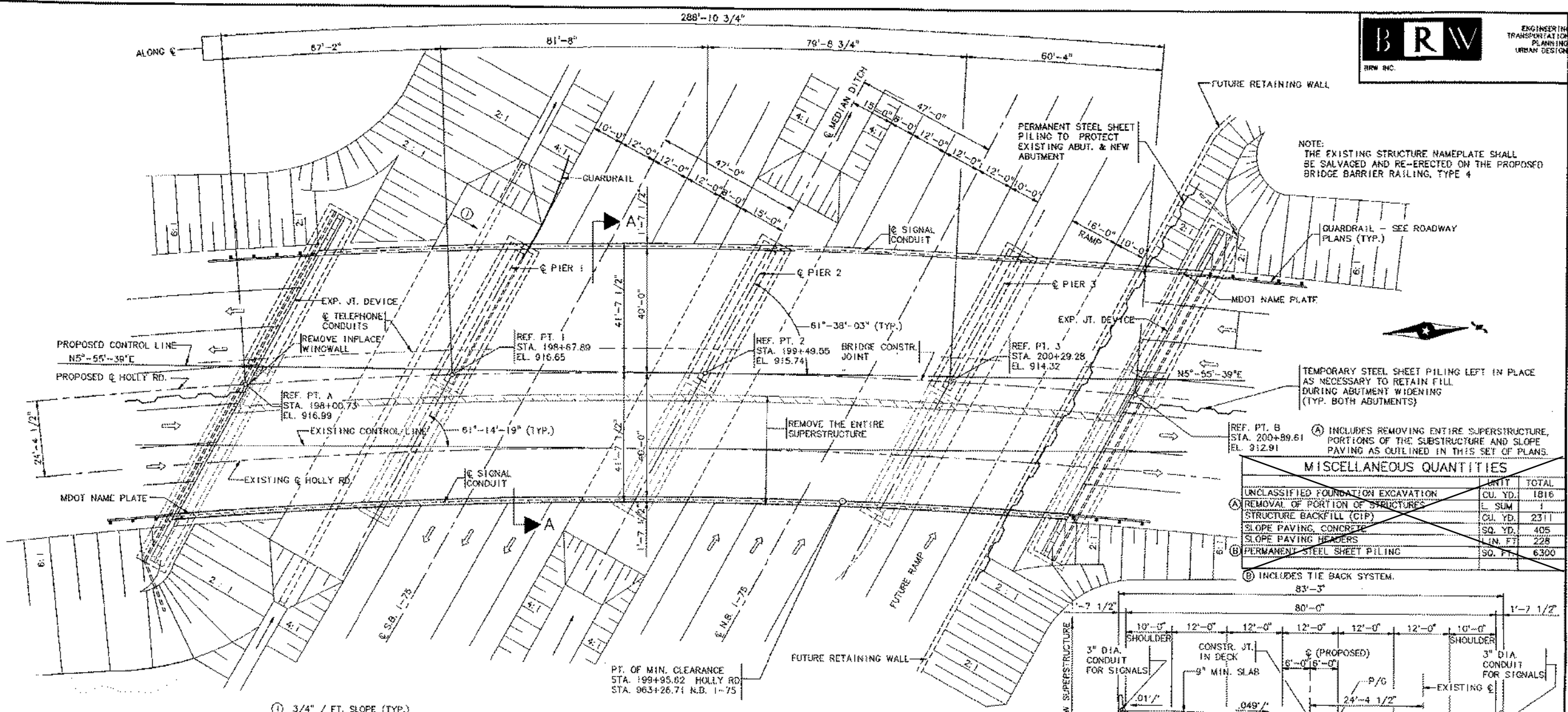
**SOIL BORING DATA**

DESIGNED BY	DATE
CHECKED BY	DATE
APPROVED BY	DATE
DRAWN BY	DATE
CORRECTED BY	DATE
CHECKED BY	DATE
SHEET 3 OF 24 SHEET	
S03 OF 25131	

REVISIONS			
NO.	DATE	BY	

37720A

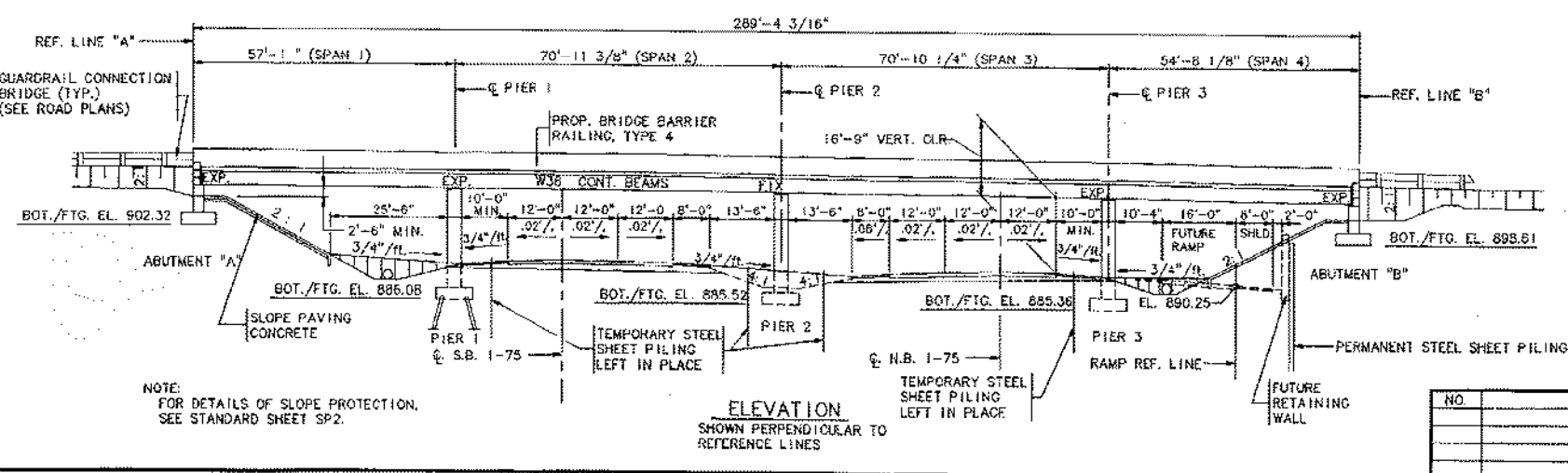
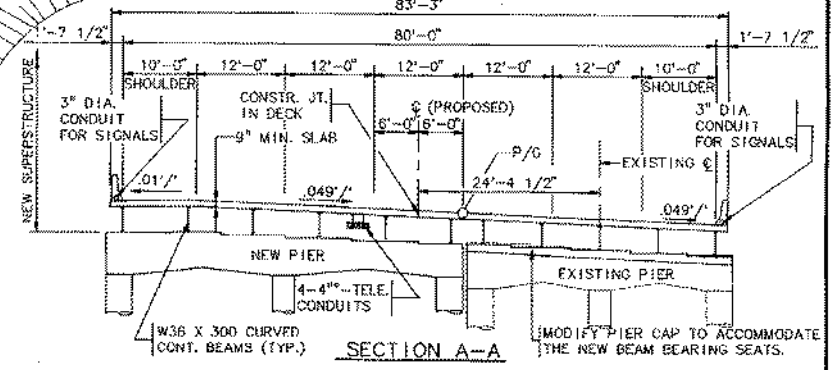
DO NOT WORK FROM THIS SHEET. THE INFORMATION SHOWN HERE IS FOR REFERENCE ONLY. NO PAY ITEMS ARE SHOWN.



**MISCELLANEOUS QUANTITIES**

DESCRIPTION	UNIT	TOTAL
UNCLASSIFIED FOUNDATION EXCAVATION	CU. YD.	1816
REMOVAL OF PORTION OF STRUCTURES	SUM	1
STRUCTURE BACKFILL (CIP)	CU. YD.	2311
SLOPE PAVING, CONCRETE	SQ. YD.	405
SLOPE PAVING HEADERS	LN. FT.	228
PERMANENT STEEL SHEET PILING	SQ. FT.	6300

(B) INCLUDES TIE BACK SYSTEM.



**GENERAL NOTES**

THE RECONSTRUCTION DESIGN IS BASED ON CURRENT AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES HS20 LOADING. LIVE LOAD PLUS IMPACT DEFLECTION DOES NOT EXCEED 1/1000 OF SPAN LENGTH AND 1/375 OF CANTILEVER ARM. THE LOAD FACTOR METHOD WAS USED FOR THIS DESIGN.

THE ALLOWABLE FATIGUE STRESS RANGE IS BASED ON A DESIGN LIFE OF 75 YEARS.

THE TOP OF ROADWAY SLAB AND TOPS OF BARRIERS ARE PARALLEL TO THE VERTICAL CURVE.

THIS STRUCTURE IS ON A HORIZONTAL CURVE. THE FASCIA BEAMS, GUTTERLINES, AND LONGITUDINAL DECK CONSTRUCTION JOINTS ARE PARALLEL TO THE CURVE.

FOR DETAILS OF SLOPE PROTECTION SEE STANDARD SHEET XI-102.

MICHIGAN DEPARTMENT OF TRANSPORTATION  
HOLLY ROAD CROSSING I-75 INTERCHANGE  
1.25 MILES S.W. OF GRAND BLANC

**GENERAL PLAN OF STRUCTURE**

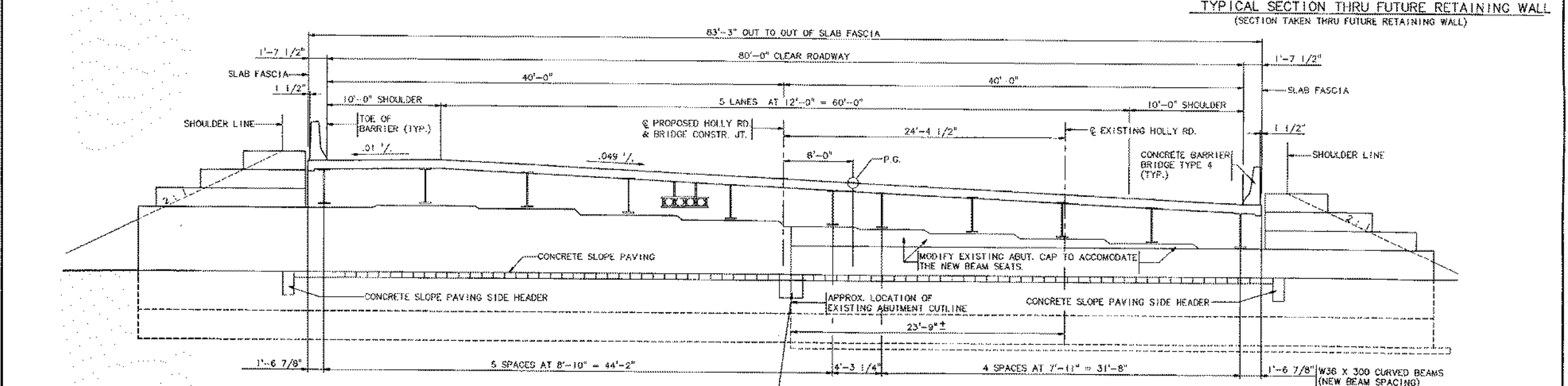
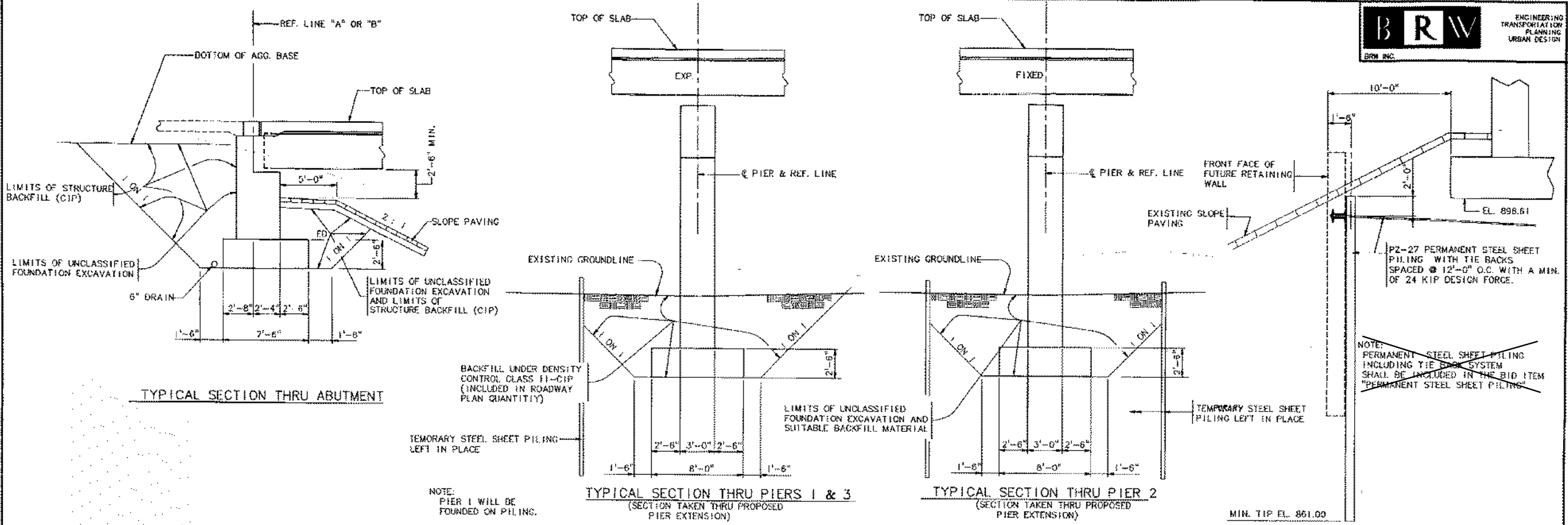
NO.	REVISIONS	DATE	BY

APPROVED: *[Signature]* 1-25-16  
CONSULTANT COORDINATION ENGINEER

CONSULTANT UNIT: AT&T  
DRAWN BY: D.S.V.  
CORRECTED BY: M.W.M.  
CHECKED BY: S.A.  
SHEET 4 OF 34 SHEET  
S03 OF 25131

37720A

DO NOT WORK FROM THIS SHEET. THE INFORMATION SHOWN HERE IS FOR REFERENCE ONLY. NO PAY ITEMS ARE SHOWN.



~~NOTE: FOR DETAILS OF SLOPE PROTECTION SEE STANDARD AT 102. MINOR REMOVAL OF EXISTING SLOPE PAVING OR HEADERS NEEDED TO EXTEND SLOPE PAVING UNDER WIDENED PORTION OF BRIDGE SHALL BE INCLUDED IN THE BID ITEM REMOVAL OF PORTIONS OF STRUCTURES.~~

**SECTION B-B**

REVISIONS			
NO.	DATE	BY	

MICHIGAN DEPARTMENT OF TRANSPORTATION  
HOLLY ROAD CROSSING I-75 INTERCHANGE  
1.25 MILES S.W. OF GRAND BLANC

**GENERAL PLAN OF STRUCTURE**

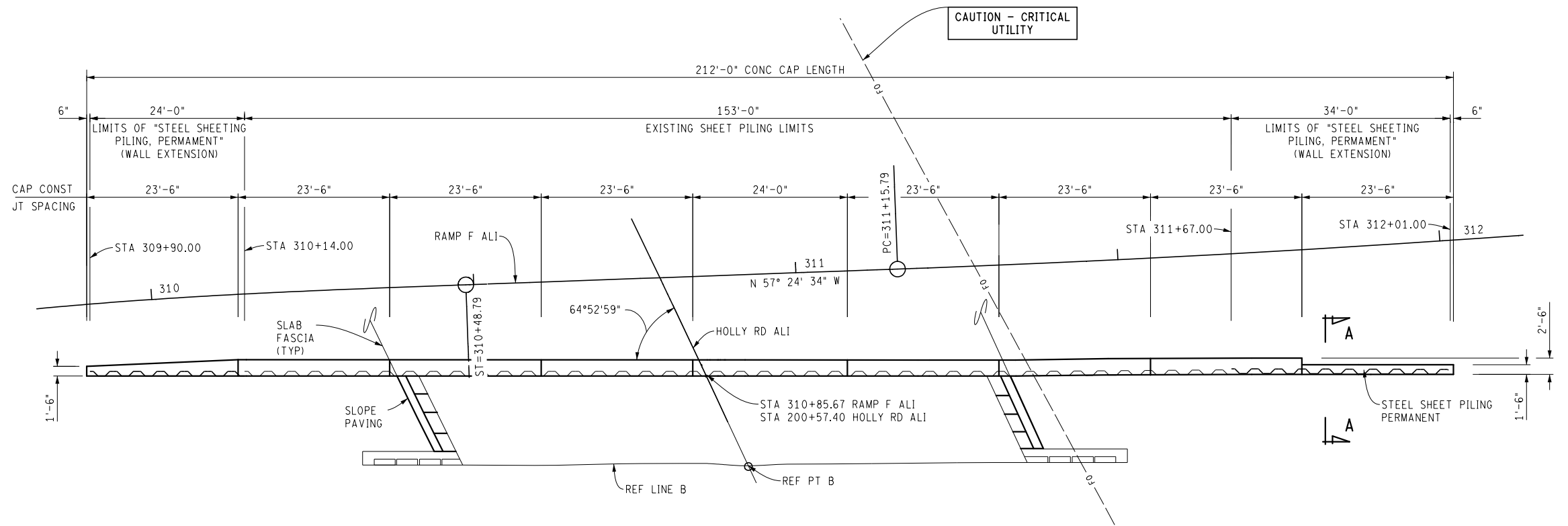
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DRAWN BY	D.A.V.
CHECKED BY	M.K.M.
APPROVED:	<i>[Signature]</i> 1-25-16
CONSULTANT COORDINATION ENGINEER	

SHEET 3 OF 34 SHEET  
**S03 OF 25131**

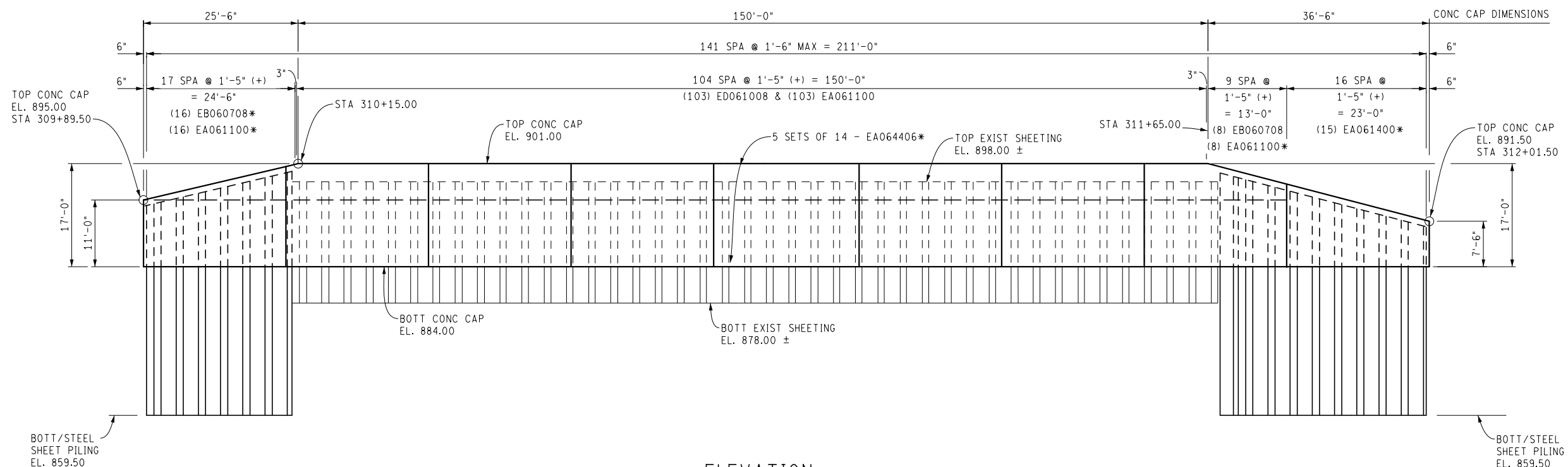
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DO NOT WORK FROM THIS SHEET. THE INFORMATION SHOWN HERE IS FOR REFERENCE ONLY. NO PAY ITEMS ARE SHOWN.

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE: )							NO SCALE	DRAWN BY: MC CHK'D BY: GP FILE: s03 25131 exinfo.dgn	DATE: 08/29/16 DESIGN UNIT: FEUERSTEIN TSC: DAIVSON	CS: S03 OF 25131 JN: 115832	EXISTING BRIDGE PLANS FOR INFORMATION ONLY I-75 UNDER HOLLY RD.	DRAWING SHEET S03 EXINFO 004 <b>95</b>
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE			AUTH	DESCRIPTION			



PLAN



ELEVATION

\* (FIELD CUT TO FIT AT WALL EXTENSIONS)  
EA06 BAR MIN LAP = 2'-6"

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

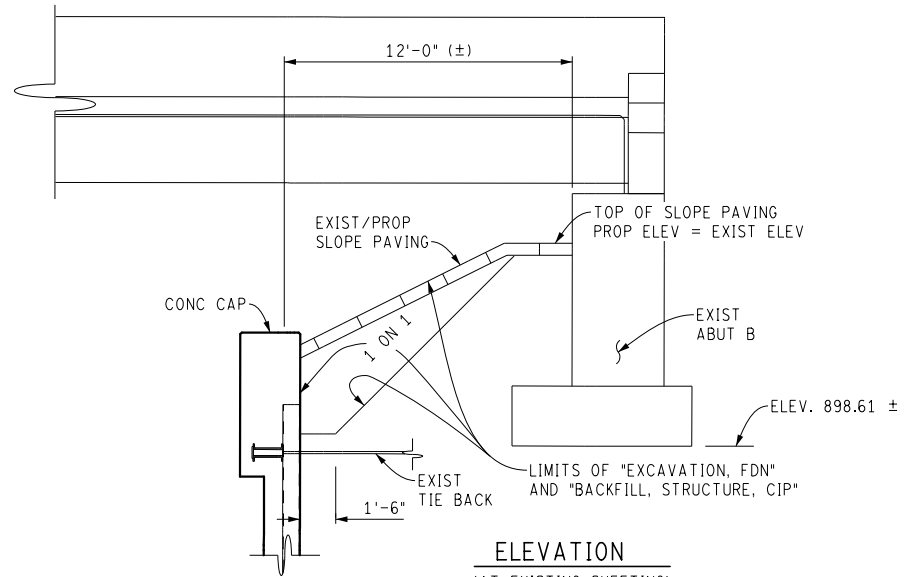


1" = 20'-0"

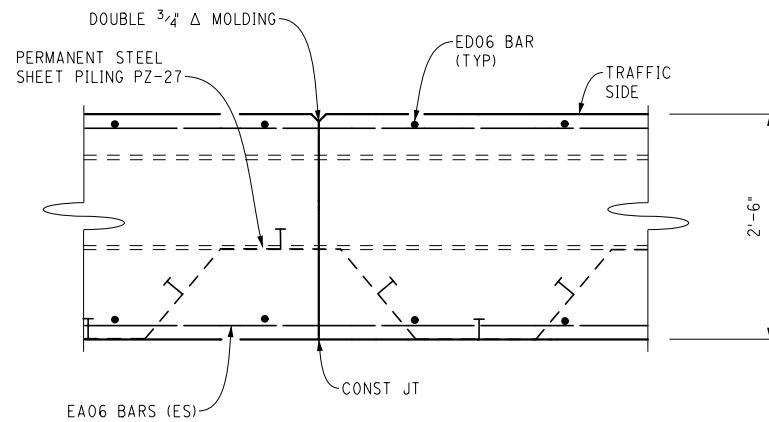
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CHK'D BY: GEF	DESIGN UNIT: FEUERSTEIN	JN: 115832A
CORR BY: MC	TSC: DAVISON	
FILE: s03 25131 retainwall 001.dgn		

RETAINING WALL DETAILS		DRAWING	SHEET
		S03 RETWL 001	SECT 2 96

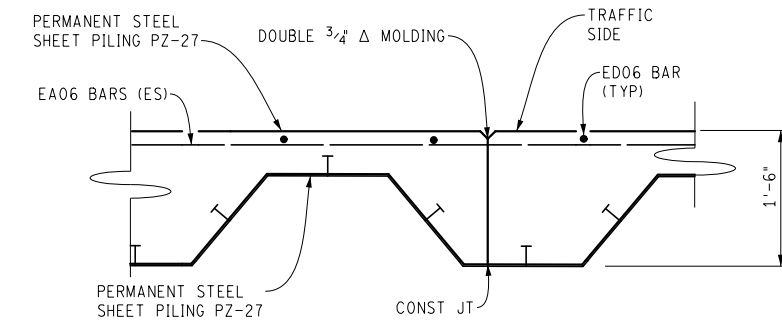




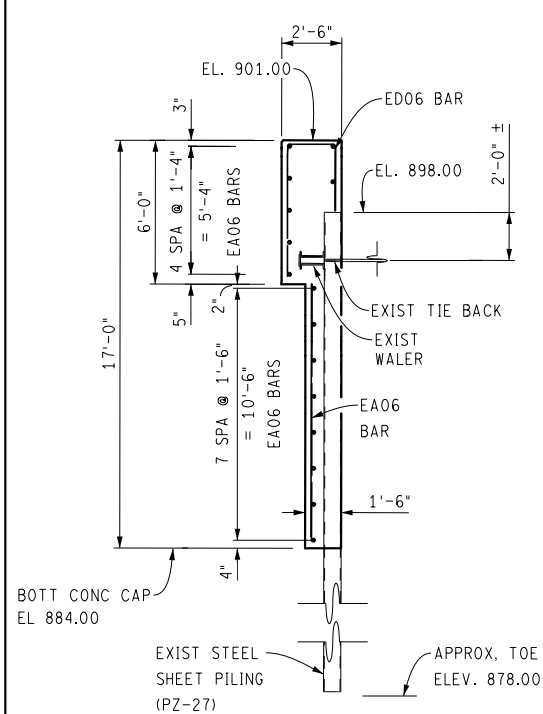
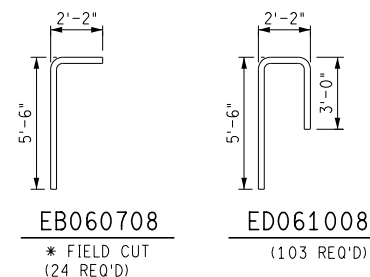
**ELEVATION**  
(AT EXISTING SHEETING)



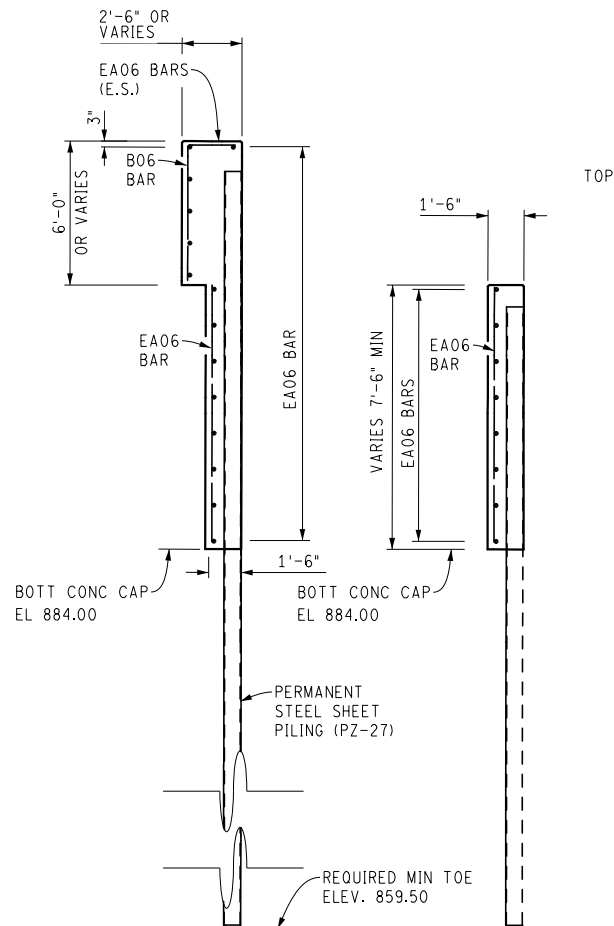
**CONCRETE CAP SECTION**  
(THE MIN. REQ'D PLACEMENT OF STUDS PER ROW IS AS SHOWN)  
(SPACE VERTICAL ROWS @ 2'-0" MAX)



**CONCRETE CAP SECTION**  
(THE MIN. REQ'D PLACEMENT OF STUDS PER ROW IS AS SHOWN)  
(SPACE VERTICAL ROWS @ 2'-0" MAX)

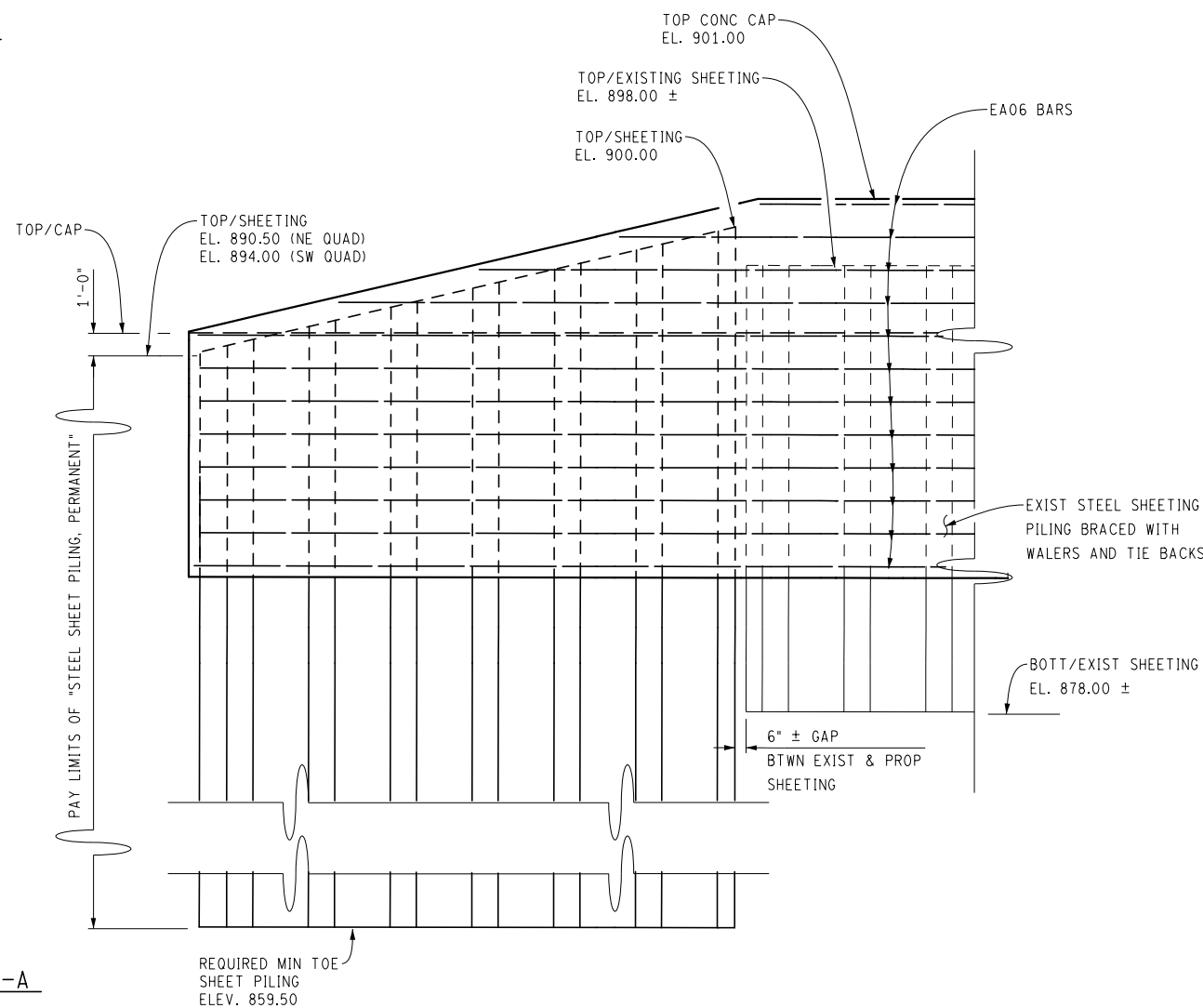


**SECTION AT**  
**EXISTING SHEETING**



**SECTION AT**  
**PROPOSED SHEETING**

**SECTION A-A**



**ELEVATION - SHEET WALL EXTENSION**  
(NE QUADRANT SHOWN, SW QUADRANT SIMILAR)

MISCELLANEOUS QUANTITIES	
225 Syd	Sidewalk, Rem
200 Syd	Excavation, Fdn
2132 Sft	Steel Sheet Piling, Permanent
150 Syd	Top Flanges and Beam Ends, Clean and Coat
1 LSUM	Shear Developers (Sheet Piling)
7000 Lb	Reinforcement, Steel, Epoxy Coated
185 Syd	Substructure Conc
200 Syd	Backfill, Structure, CIP
190 Syd	Slope Paving, Conc
35 Ft	Slope Paving Header

**NOTES:**

- ES DENOTES EACH SIDE.
- FOR STANDARD SLOPE PAVING SEE STANDARD PLAN B-102 SERIES.
- FOR BEVEL AND MOLDING DETAILS SEE STANDARD PLAN B-103-SERIES.
- SHEAR DEVELOPERS SHALL BE 3/4" DIAMETER STUDS.
- (REMOVAL OF THE SLOPE PAVING AND HEADERS AT THE NORTH ABUTMENT IS INCLUDED IN THE BID ITEM "SIDEWALK, REM").
- BLAST CLEAN EXISTING SHEET PILING WHERE DIRECTED BY THE ENGINEER. BLAST CLEAN IN ACCORDANCE WITH SSPC-SP-10. COATING IS STEEL IS NOT REQUIRED. WORK IS INCLUDED IN THE BID ITEM "TOP FLANGES AND BEAM ENDS, CLEAN AND COAT".
- THE ENGINEER WILL INSPECT THE WALER & EXPOSED LENGTH OF THE TIE BACKS FOR DAMAGE AND CORROSION PRIOR TO GIVING APPROVAL TO CAST CONCRETE.
- LOW TEMPERATURE PROTECTION OF CONCRETE SHALL BE APPLIED ACCORDING TO SECTION 706.03 J OF THE STANDARD SPECIFICATION FOR CONSTRUCTION. LOW TEMPERATURE PROTECTION OF CONCRETE WILL NOT BE PAID FOR SEPARATELY, BUT WILL INCLUDED IN THE BID ITEM "SUBSTRUCTURE, CONC".
- ALL EXPOSED CONCRETE CORNERS SHOWN SQUARE ON THE PLANS SHALL BE BEVELED WITH 1/2" TRIANGULAR MOLDINGS.
- THE SUBSTRUCTURE EXCAVATION AND CONCRETE QUANTITIES TAKE INTO CONSIDERATION THE ADDITIONAL CONCRETE AND EXCAVATION NECESSARY TO EXCAVATE AND POUR TO THE PERMANENT STEEL SHEET PILING.
- ALL PERMANENT STEEL SHEET PILING SHALL BE PZ 27. WHERE ALLOWED BY THE ENGINEER, SELECT ALTERNATE HOT ROLLED SHEET PILING WITH A NOMINAL SECTION MODULUS OF AT LEAST 25.5 IN<sup>2</sup>/FT OR COLD ROLLED SHEET PILING WITH A NOMINAL SECTION MODULUS OF AT LEAST 25.5 IN<sup>2</sup>/FT.

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



**NO SCALE**

DRAWN BY: MM

CHK'D BY: GEF CORR BY: MC

FILE: s03 25131 retainwall 002.dgn

DATE: 02-27-17

DESIGN UNIT: FEUERSTEIN

TSC: DAVISON

CS: S03 OF 25131

JN: 115832A

RETAINING WALL DETAILS

DRAWING SHEET  
S03 RETWL 002 **97**

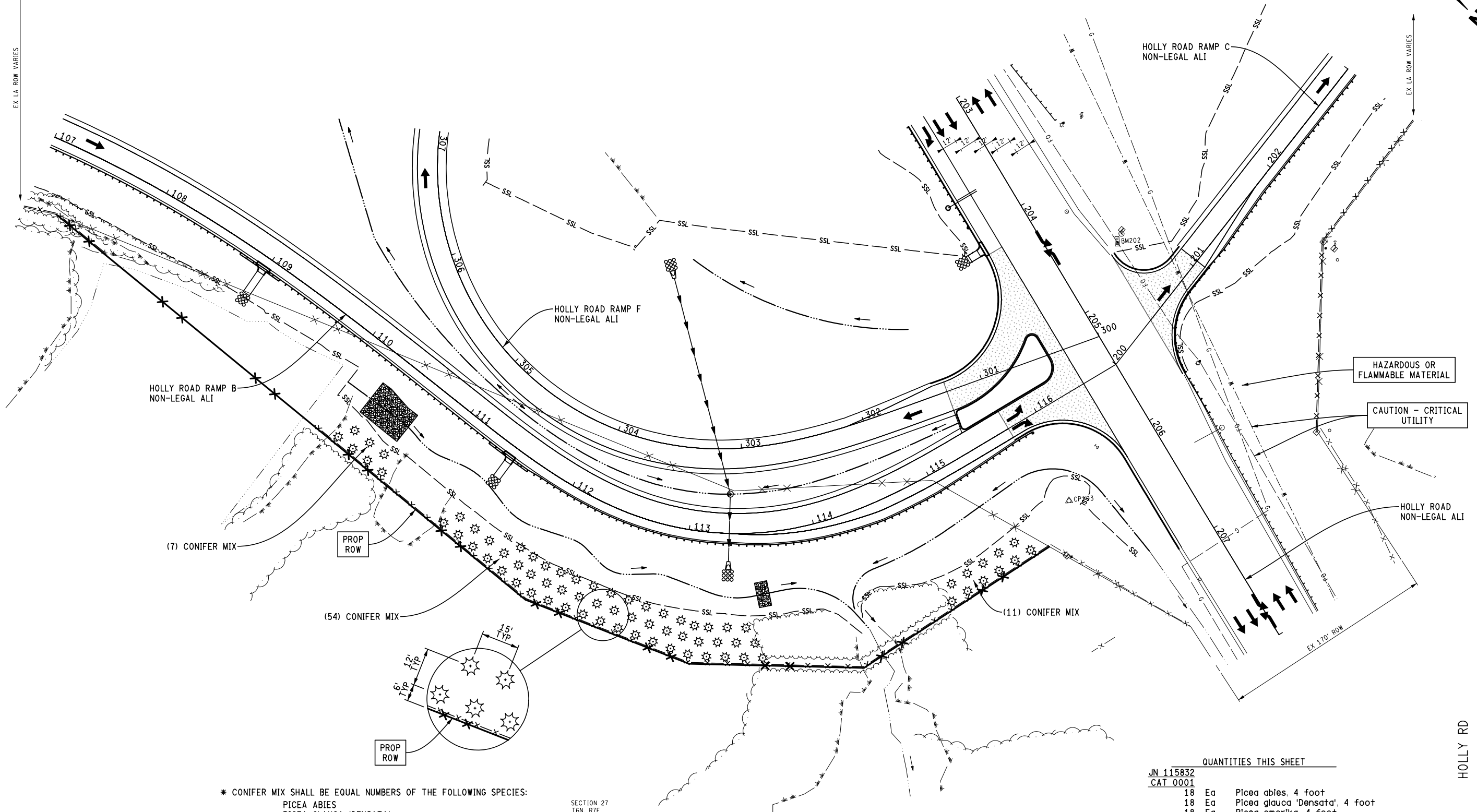
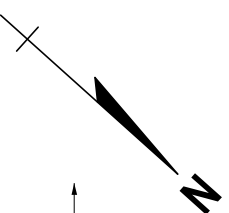
RAMP B

RAMP F

HOLLY RD

RAMP C

SECTION 28  
T6N. R7E  
GRAND BLANC TOWNSHIP



HOLLY ROAD RAMP B  
NON-LEGAL ALI

HOLLY ROAD RAMP F  
NON-LEGAL ALI

HOLLY ROAD RAMP C  
NON-LEGAL ALI

HAZARDOUS OR  
FLAMMABLE MATERIAL

CAUTION - CRITICAL  
UTILITY

HOLLY ROAD  
NON-LEGAL ALI

(7) CONIFER MIX

(54) CONIFER MIX

(11) CONIFER MIX

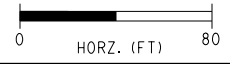
\* CONIFER MIX SHALL BE EQUAL NUMBERS OF THE FOLLOWING SPECIES:  
PICEA ABIES  
PICEA GLAUCA 'DENSATA'  
PICEA OMORIKA  
PICEA PUNGENS

SECTION 27  
T6N. R7E  
GRAND BLANC TOWNSHIP

QUANTITIES THIS SHEET		
JN 115832		
CAT 0001		
18	Ea	Picea abies, 4 foot
18	Ea	Picea glauca 'Densata', 4 foot
18	Ea	Picea omorika, 4 foot
18	Ea	Picea pungens, 4 foot

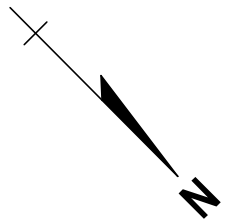
HOLLY RD

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

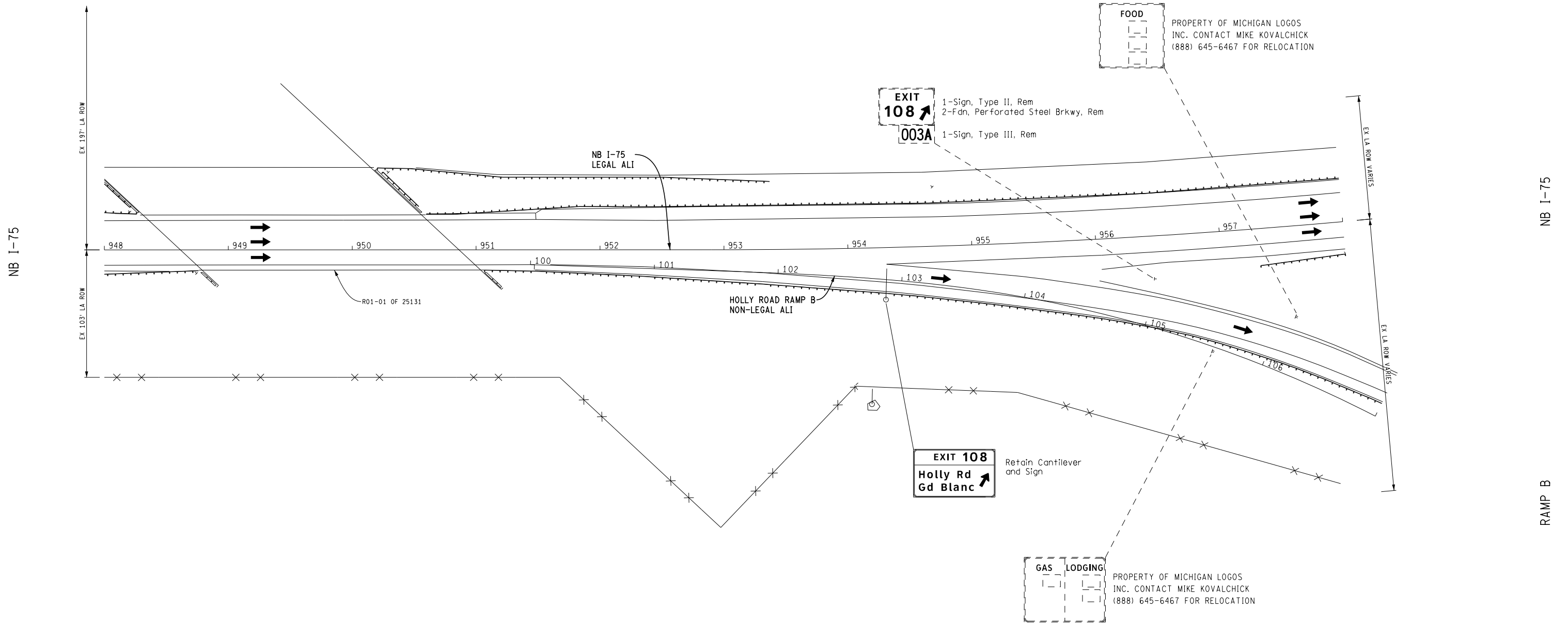


DATE: 03/10/17	CS: 25131	LANDSCAPING SHEET		DRAWING	SHEET
DESIGN UNIT: PETHERS	JN: 115832A	RAMP B STA 107+00 TO STA 114+00		LNDCSP	SECT 1
TSC: DAVISON				001	98

FILE: 115832\_Landscaping\_001.dgn



SECTION 27  
T6N. R7E  
GRAND BLANC TOWNSHIP

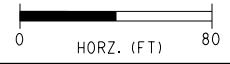


QUANTITIES THIS SHEET

JN 115832			
CAT 0001			
2	Ea	Fdn, Perforated Steel Square Tube Sign Breakaway System, Rem	
1	Ea	Sign, Type II, Rem	
1	Ea	Sign, Type III, Rem	

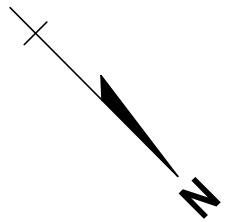
SECTION 27  
T6N. R7E  
GRAND BLANC TOWNSHIP

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

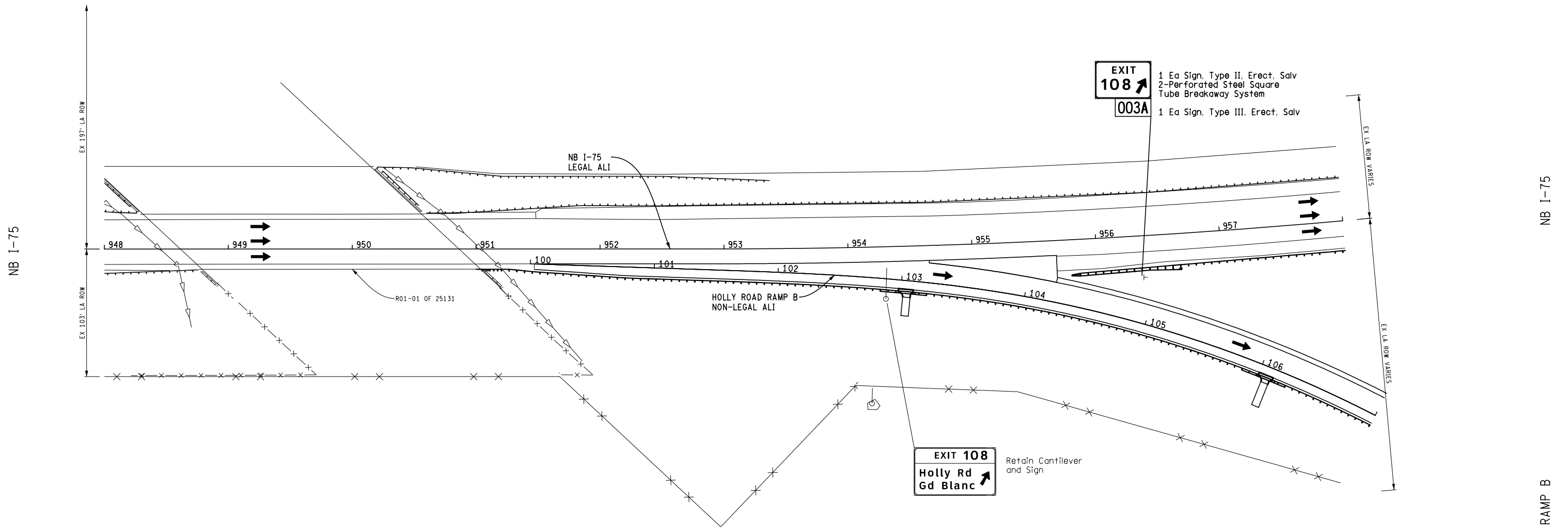


DATE: 03/10/17	CS: 25131
DESIGN UNIT: PETHERS	JN: 115832A
TSC: DAVISON	
FILE: 115832_175_949SignRem.dgn	

SIGNING REMOVAL SHEET		DRAWING	SHEET
NB I-75 STA 949+00 TO STA 958+00		175	SECT 1
		SIGNREM	99
		001	



SECTION 27  
T6N, R7E  
GRAND BLANC TOWNSHIP

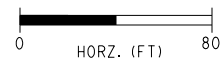


SECTION 27  
T6N, R7E  
GRAND BLANC TOWNSHIP

QUANTITIES THIS SHEET

JN 115832		
CAT 0001		
2	Ea	Perforated Steel Square Tube Breakaway System
1	Ea	Sign, Type II, Erect, Salv
1	Ea	Sign, Type III, Erect, Salv

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



FILE: 115832\_175\_949SignCon.dgn

DATE: 03/10/17  
DESIGN UNIT: PETHERS  
TSC: DAVISON

CS: 25131  
JN: 115832A

SIGNING CONSTRUCTION SHEET  
NB I-75 STA 949+00 TO STA 958+00

DRAWING	SHEET
175 SIGNCON 002	SECT 1 100

RAMP B

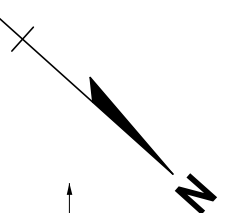
RAMP F

HOLLY RD

RAMP C

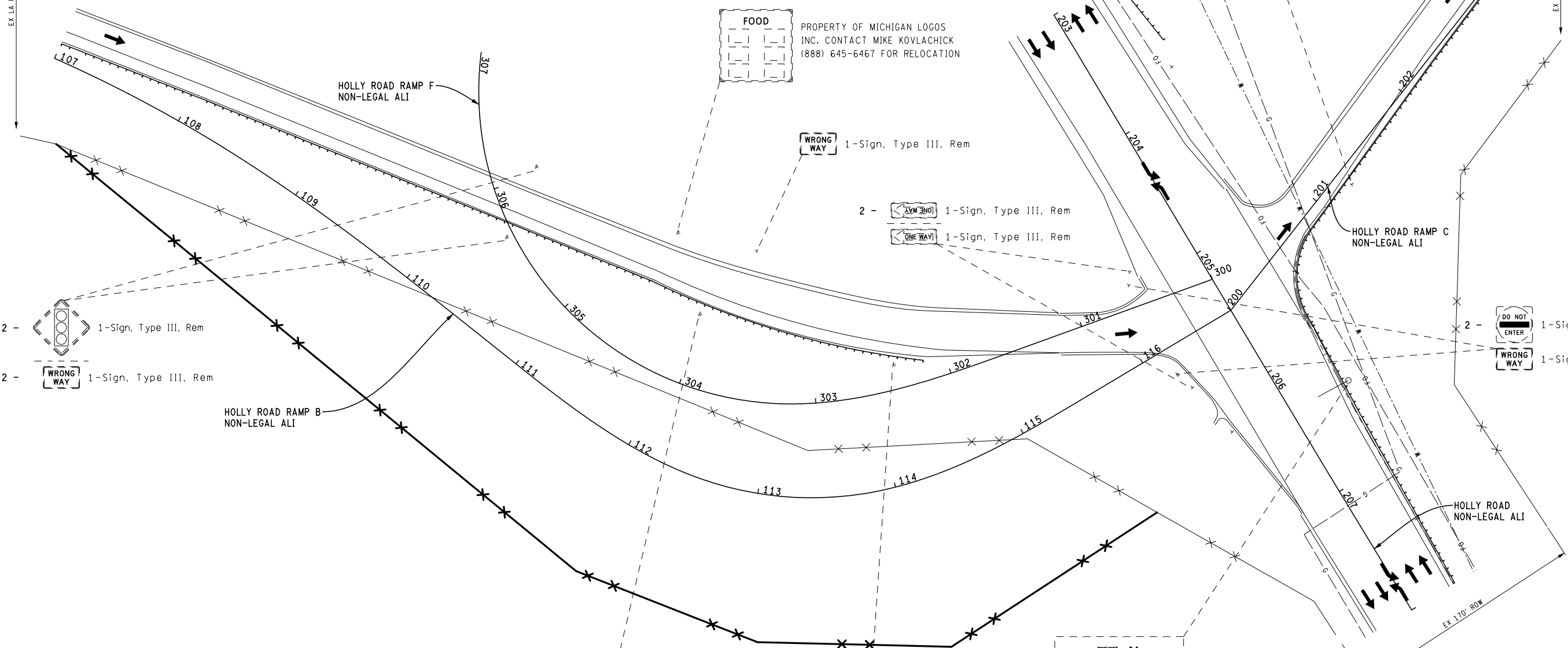
SECTION 28  
T6N, R7E  
GRAND BLANC TOWNSHIP

SECTION 27  
T6N, R7E  
GRAND BLANC TOWNSHIP



EX LA ROW VARIES

EX LA ROW VARIES



**FOOD**  
PROPERTY OF MICHIGAN LOGOS  
INC. CONTACT MIKE KOVLACHICK  
(888) 645-6467 FOR RELOCATION

**WRONG WAY** 1-Sign, Type III, Rem

2 - **ASYM ENO** 1-Sign, Type III, Rem  
1 - **ONE WAY** 1-Sign, Type III, Rem

**MOTOR VEHICLES ONLY** 1-Sign, Type III, Rem  
**NO**  
MOTORCYCLES UNDER 250CC  
FARM TRACTORS  
SELF PROPELLED FARM IMPLEMENTS  
**017B** 1-Sign, Type III, Rem  
1-Fdn, Wood Support, Rem

**DO NOT ENTER** 1-Sign, Type III, Rem  
**WRONG WAY** 1-Sign, Type III, Rem

**Holly** 1-Sign, Type II, Rem  
**Gd Blanc** 2-Fdn, Wood Support, Rem

**75 NORTH** 1-Sign, Type I, Rem  
**Flint**

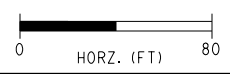
**GREAT LKS CEMETERY** 1-Sign, Type II, Rem  
**GENESYS** 1-Sign, Type II, Rem

**75 NORTH** 1-Sign, Type I, Rem  
**75 SOUTH** 1-Sign, Type I, Rem  
Retain Cantilever and Sign

QUANTITIES THIS SHEET

JN 115832		
CAT 0001		
3	Ea	Fdn, Wood Support, Rem
1	Ea	Sign, Type I, Rem
3	Ea	Sign, Type II, Rem
16	Ea	Sign, Type III, Rem

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



FILE: 115832\_RampB\_107SignRem.dgn

DATE: 03/10/17  
DESIGN UNIT: PETHERS  
TSC: DAVISON

CS: 25131  
JN: 115832A

SIGNING REMOVAL SHEET		DRAWING	SHEET
RAMP B STA 107+00 TO STA 117+00		RAMPB SIGNREM 001	SECT 1 101

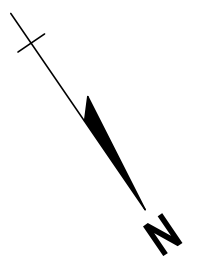


HOLLY RD

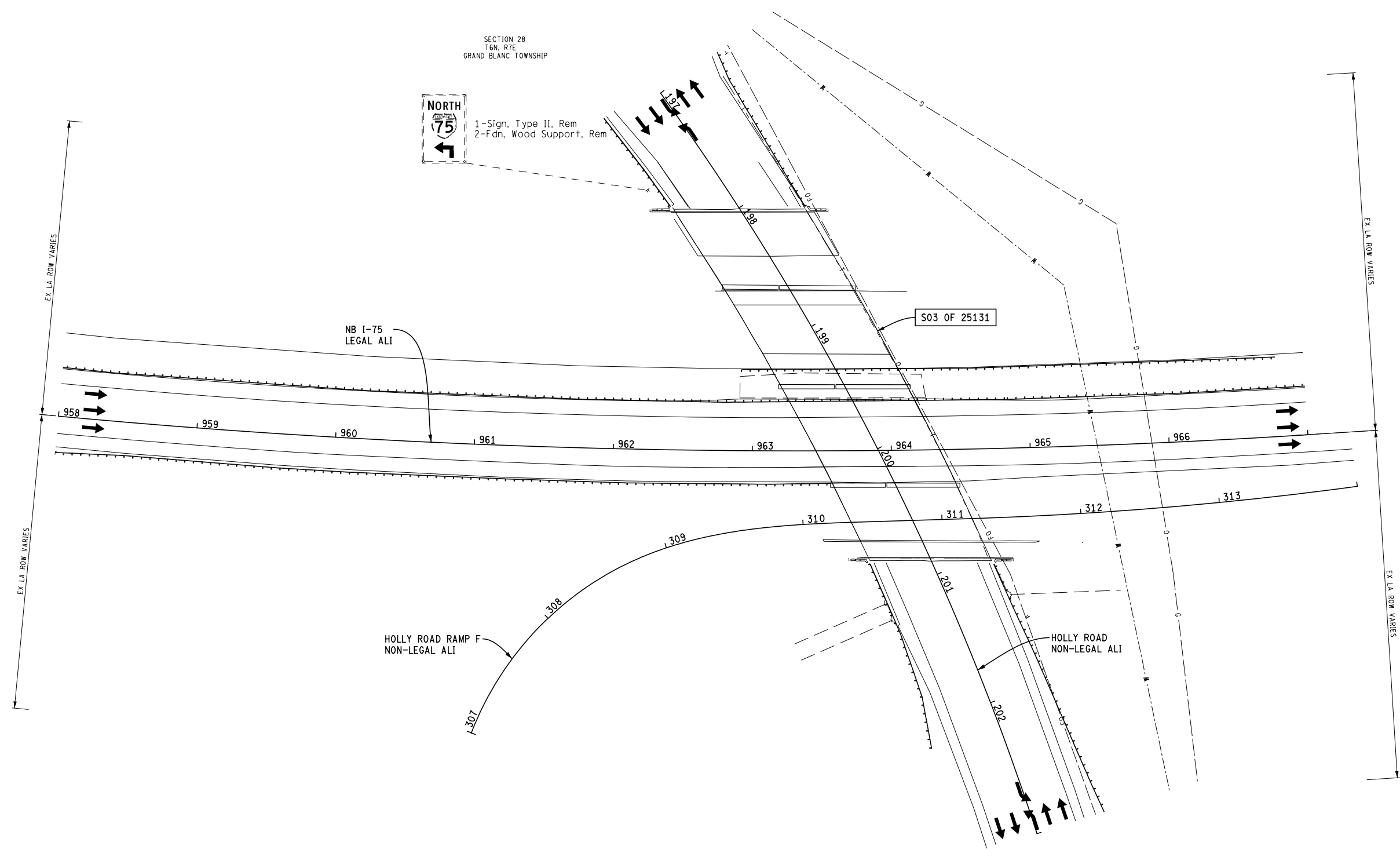
SECTION 28  
T6N. R7E  
GRAND BLANC TOWNSHIP



- 1-Sign, Type II, Rem
- 2-Fdn, Wood Support, Rem



NB I-75



EX. LA. ROW VARIES

EX. LA. ROW VARIES

RAMP F NB I-75

HOLLY ROAD RAMP F  
NON-LEGAL ALI

HOLLY ROAD  
NON-LEGAL ALI

SECTION 28  
T6N. R7E  
GRAND BLANC TOWNSHIP

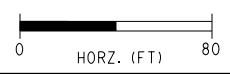
RAMP F

HOLLY RD

QUANTITIES THIS SHEET

JN 115832		
CAT 0001		
2	Ea	Fdn, Wood Support, Rem
1	Ea	Sign, Type II, Rem

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



DATE: 03/10/17  
DESIGN UNIT: PETHERS  
TSC: DAVISON  
FILE: 115832\_175\_958SignRem.dgn

CS: 25131  
JN: 115832A

SIGNING REMOVAL SHEET  
NB I-75 STA 958+00 TO STA 967+00

DRAWING	SHEET
175 SIGNREM 001	SECT 1 103

HOLLY RD

SECTION 28  
T6N, R7E  
GRAND BLANC TOWNSHIP



M8-1c (42" X 66")  
19.25 Sft Sign, Type IIA  
34 Ft 2-Post, Wood, 4 inch by 6 inch



W4-1R (48")  
9 Sft Sign, Type VB  
32 Ft 2-Post, Steel, 3 lb



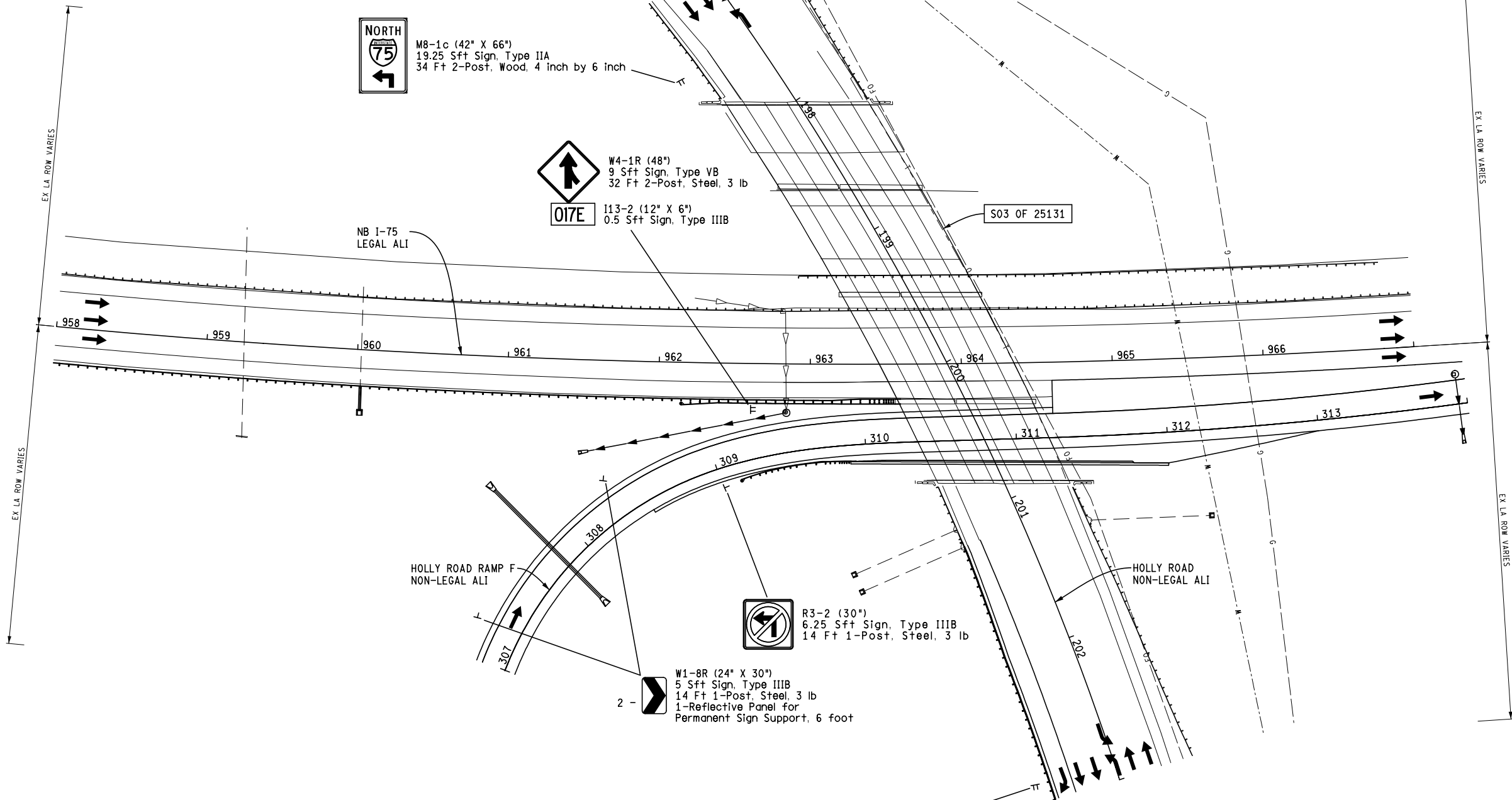
I13-2 (12" X 6")  
0.5 Sft Sign, Type IIIIB

NB I-75  
LEGAL ALI

S03 OF 25131

NB I-75

NB I-75



HOLLY ROAD RAMP F  
NON-LEGAL ALI

HOLLY ROAD  
NON-LEGAL ALI



R3-2 (30")  
6.25 Sft Sign, Type IIIIB  
14 Ft 1-Post, Steel, 3 lb



W1-8R (24" X 30")  
5 Sft Sign, Type IIIIB  
14 Ft 1-Post, Steel, 3 lb  
1-Reflective Panel for  
Permanent Sign Support, 6 foot



R3-7R MOD (36")  
9 Sft Sign, Type IIIIB  
30 Ft 2-Post, Steel, 3 lb

SECTION 28  
T6N, R7E  
GRAND BLANC TOWNSHIP

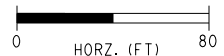
QUANTITIES THIS SHEET

JN 115832 CAT 0001	
104	Ft Post, Steel, 3 lb
34	Ft Post, Wood, 4 inch by 6 inch
20	Sft Sign, Type IIA
26	Sft Sign, Type IIIIB
9	Sft Sign, Type VB
2	Ea Reflective Panel for Permanent Sign Support, 6 foot

RAMP F

HOLLY RD

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



FILE: 115832\_175\_958SignCon.dgn

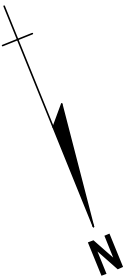
DATE: 03/10/17  
DESIGN UNIT: PETHERS  
TSC: DAVISON

CS: 25131  
JN: 115832A

SIGNING CONSTRUCTION SHEET  
NB I-75 STA 958+00 TO STA 967+00

DRAWING	SHEET
175 SIGNCON 002	SECT 1 104



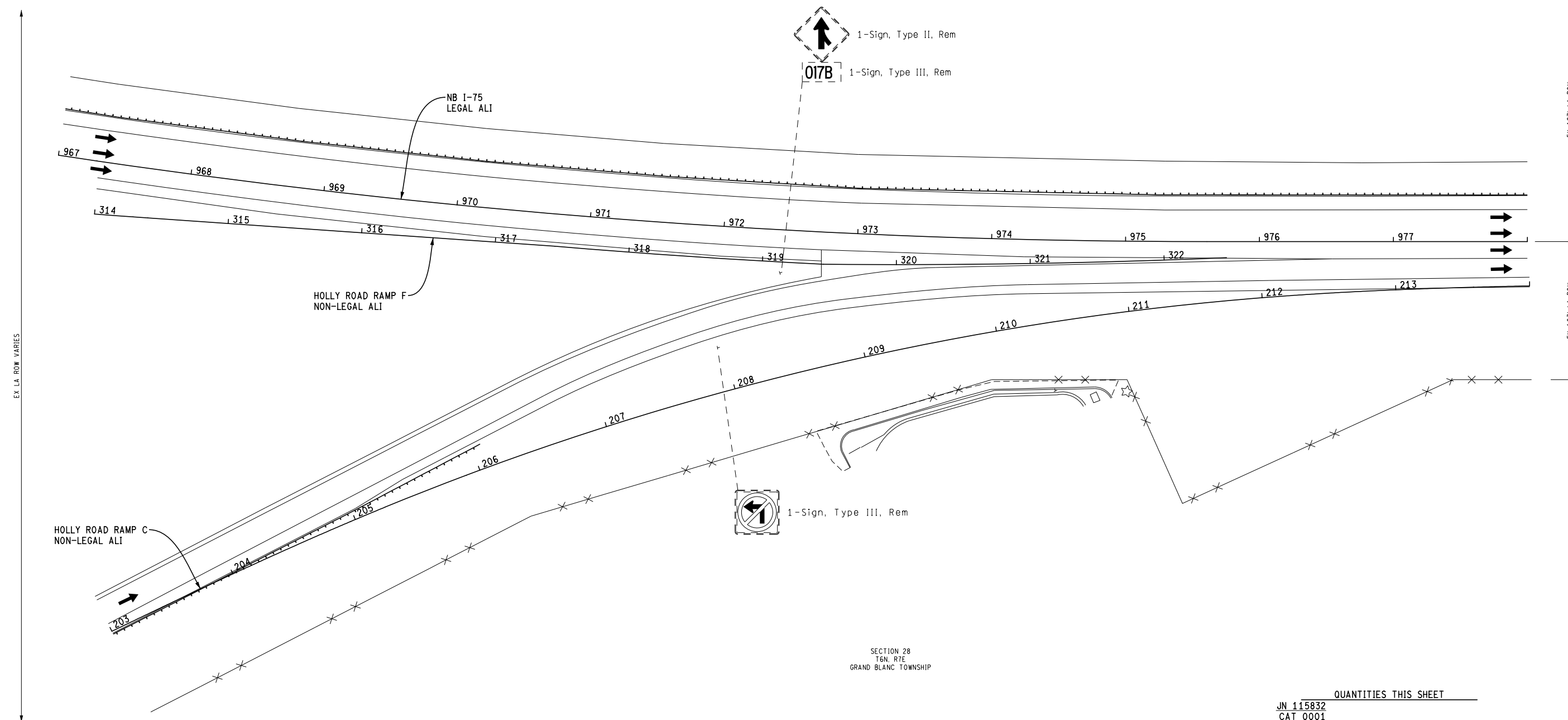


SECTION 28  
T6N, R7E  
GRAND BLANC TOWNSHIP

RAMP F NB I-75

RAMP C

RAMP C NB I-75

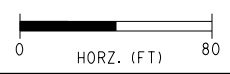


SECTION 28  
T6N, R7E  
GRAND BLANC TOWNSHIP

QUANTITIES THIS SHEET

JN 115832		
CAT 0001		
1	Ea	Sign, Type II, Rem
2	Ea	Sign, Type III, Rem

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

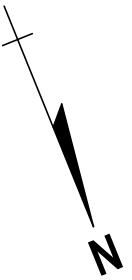


DATE: 03/10/17  
DESIGN UNIT: PETHERS  
TSC: DAVISON  
FILE: 115832\_175\_967SignRem.dgn

CS: 25131  
JN: 115832A

SIGNING REMOVAL SHEET  
NB I-75 STA 967+00 TO STA 978+00

DRAWING	SHEET
175 SIGNREM 001	SECT 1 105



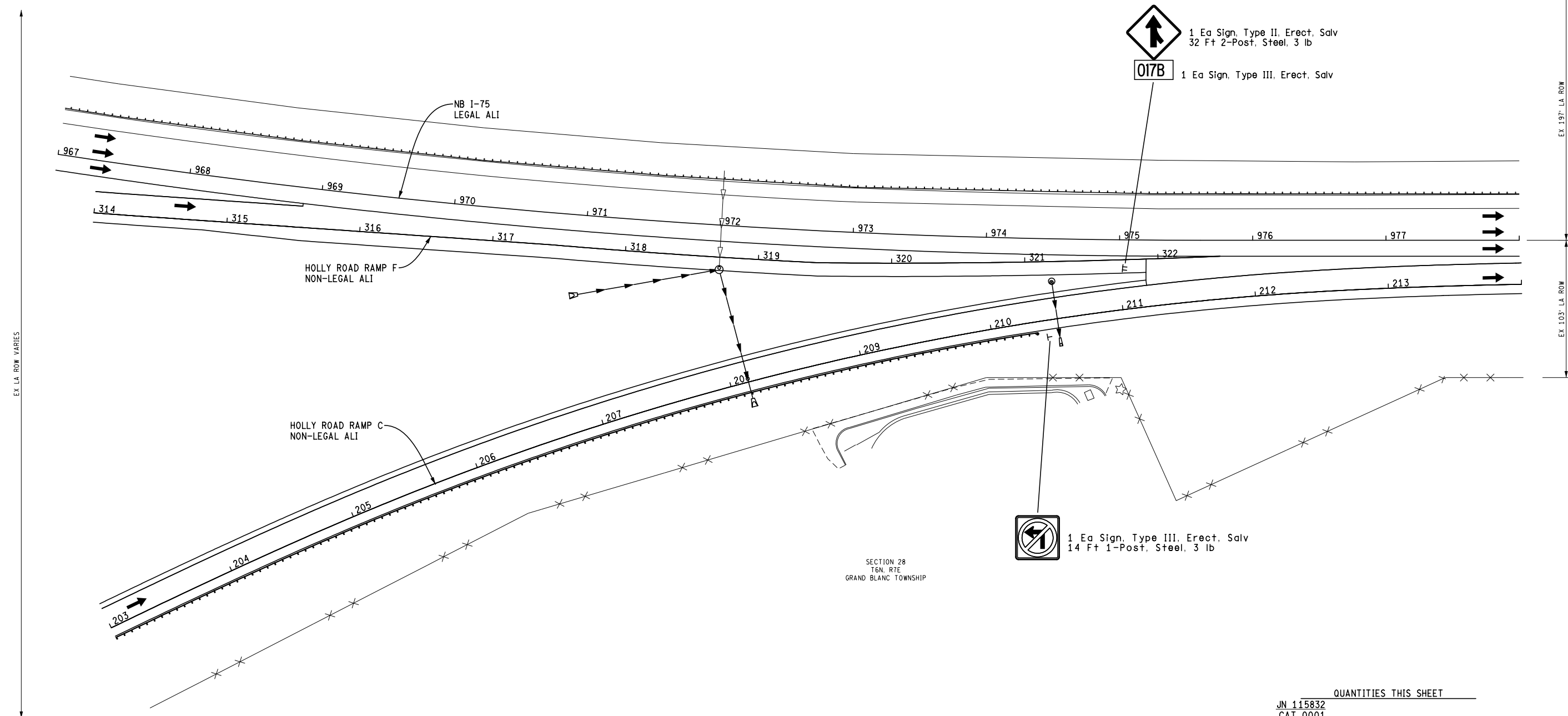
SECTION 28  
T6N, R7E  
GRAND BLANC TOWNSHIP

SECTION 28  
T6N, R7E  
GRAND BLANC TOWNSHIP

RAMP F NB I-75

RAMP C

RAMP C NB I-75

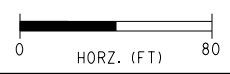


QUANTITIES THIS SHEET

JN 115832  
CAT 0001

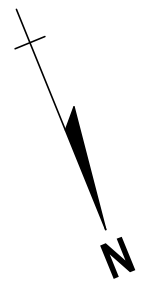
46	Ft	Post, Steel, 3 lb
1	Ea	Sign, Type II, Erect, Salv
2	Ea	Sign, Type III, Erect, Salv

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



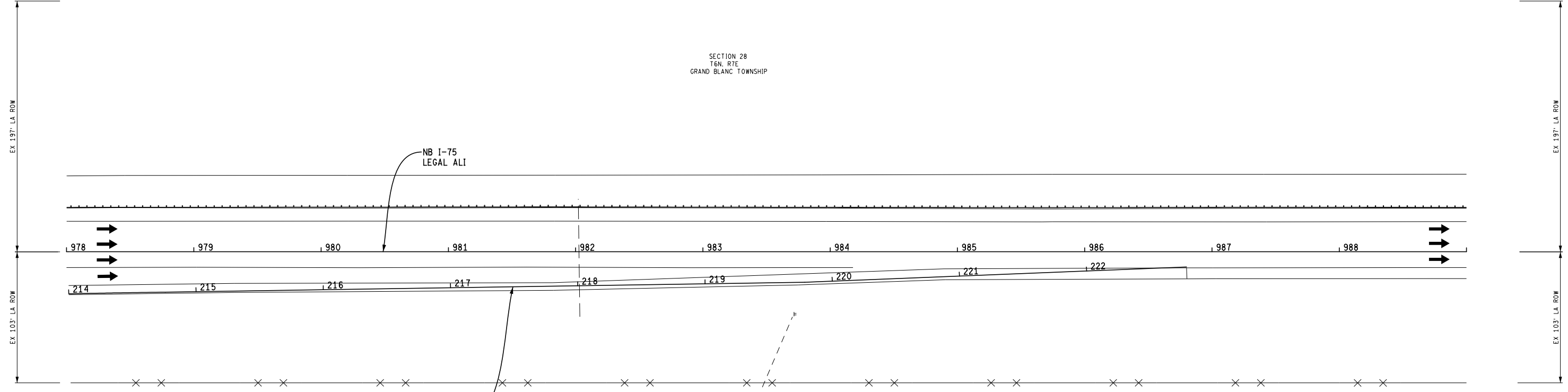
DATE: 03/10/17	CS: 25131
DESIGN UNIT: PETHERS	JN: 115832A
TSC: DAVISON	FILE: 115832_175_967SignCon.dgn

SIGNING CONSTRUCTION SHEET		DRAWING	SHEET
NB I-75 STA 967+00 TO STA 978+00		175 SIGNCON 002	SECT 1 106



SECTION 28  
T6N, R7E  
GRAND BLANC TOWNSHIP

RAMP C NB I-75



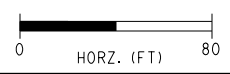
RAMP C NB I-75

HOLLY ROAD RAMP C  
NON-LEGAL ALI

**FOOD**  
PROPERTY OF MICHIGAN LOGOS  
INC. CONTACT MIKE KOVALCHICK  
(888) 645-6467 FOR RELOCATION

SECTION 28  
T6N, R7E  
GRAND BLANC TOWNSHIP

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



FILE: 115832\_175\_978SignRem.dgn  
TSC: DAVISON

DATE: 03/10/17  
DESIGN UNIT: PETHERS  
CS: 25131  
JN: 115832A

SIGNING REMOVAL SHEET  
NB I-75 STA 978+00 TO STA 989+00

DRAWING	SHEET
I75 SIGNREM 001	SECT 1 107

U.S. & MICHIGAN				
SIGN	SIGN NO.	SIZE	SIGN AREA AREA	SIGN TYPE
	M1-4	2' x 2'	4	111B
	M1-4	2.5' x 2.5'	5	111B
	M1-4a	2.5' x 2.5'	6.25	111B
	M1-4a	3' x 2.5'	7.5	111B
	M1-4a	3' x 3'	9	111B
	M1-4a	3.75' x 3'	11.25	111B
	M1-6	2' x 2'	4	111B
	M1-6	2.5' x 2.5'	5	111B
	M1-6	3' x 3'	9	111B
	M1-6	3.75' x 3'	11.25	111B
	M1-6a	2.5' x 2.5'	6.25	111B
	M1-6a	3' x 2.5'	7.5	111B
	M1-6a	3' x 3'	9	111B
	M1-6a	3.77' x 2.83'	10.67	111B
M1-6a	4.57' x 3.92'	17.88	111B	
JCT	M2-1	1.75' x 1.25'	2.2	111B
NORTH	M3-1	2' x 1'	2	111B
	M3-1	2.5' x 1.25'	3.1	111B
EAST	M3-2	2' x 1'	2	111B
	M3-2	2.5' x 1.25'	3.1	111B
SOUTH	M3-3	2' x 1'	2	111B
	M3-3	2.5' x 1.25'	3.1	111B
WEST	M3-4	2' x 1'	2	111B
	M3-4	2.5' x 1.25'	3.1	111B
BUSINESS	M4-3	2' x 1'	2	111B
	M4-3	2.5' x 1.25'	3.1	111B
TO	M4-5	2' x 1'	2	111B
	M4-5	2.5' x 1.25'	3.1	111B
END	M4-6	2' x 1'	2	111B
	M4-6	2.5' x 1.25'	3.1	111B
TEMPORARY	M4-7	2' x 1'	2	111B
	M4-7	2.5' x 1.25'	3.1	111B
	M5-1	1.75' x 1.25'	2.2	111B
	M5-1	2.5' x 1.75'	4.4	111B
	M5-2	1.75' x 1.25'	2.2	111B
	M5-2	2.5' x 1.75'	4.4	111B
	M6-1	1.75' x 1.25'	2.2	111B
	M6-1	2.5' x 1.75'	4.4	111B
	M6-2	1.75' x 1.25'	2.2	111B
	M6-2	2.5' x 1.75'	4.4	111B
	M6-3	1.75' x 1.25'	2.2	111B
	M6-3	2.5' x 1.75'	4.4	111B
	M6-4	1.75' x 1.25'	2.2	111B
	M6-4	2.5' x 1.75'	4.4	111B
	M6-5	1.75' x 1.25'	2.2	111B
	M6-5	2.5' x 1.75'	4.4	111B
	M6-6	1.75' x 1.25'	2.2	111B
	M6-6	2.5' x 1.75'	4.4	111B
	M6-7	1.75' x 1.25'	2.2	111B
	M6-7	2.5' x 1.75'	4.4	111B

<p>PREPARED BY DESIGN DIVISION DRAWN BY: <u>AKJ</u> CHECKED BY: <u>AJU</u></p>	DEPARTMENT DIRECTOR Kirk T. Steudle	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR <b>STANDARD ROUTE MARKER INSTALLATIONS</b>		
	APPROVED BY: _____ DIRECTOR, BUREAU OF FIELD SERVICES	(SPECIAL DETAIL) 03/31/2016 SIGN-110-E SHEET 1 OF 5 F.H.W.A. APPROVAL PLAN DATE		
	APPROVED BY: _____ DIRECTOR, BUREAU OF HIGHWAY DEVELOPMENT	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR <b>STANDARD ROUTE MARKER INSTALLATIONS</b>		
	APPROVED BY: _____ DIRECTOR, BUREAU OF HIGHWAY DEVELOPMENT	(SPECIAL DETAIL) 03/31/2016 SIGN-110-E SHEET 1 OF 5 F.H.W.A. APPROVAL PLAN DATE		

INTERSTATE				
SIGN	SIGN NO.	SIZE	SIGN AREA ft2	SIGN TYPE
	M1-1	2' x 2'	4	111A
	M1-1	2.5' x 2.5'	5	111A
	M1-1	2.5' x 2.5'	6.25	111A
	M1-1	3' x 2.5'	7.5	111A
	M1-1	3' x 3'	9	111A
M1-1	3.75' x 3'	11.25	111A	
JCT	M2-1a	1.75' x 1.25'	2.2	111A
NORTH	M3-1a	2' x 1'	2	111A
	M3-1a	2.5' x 1.25'	3.1	111A
EAST	M3-2a	2' x 1'	2	111A
	M3-2a	2.5' x 1.25'	3.1	111A
SOUTH	M3-3a	2' x 1'	2	111A
	M3-3a	2.5' x 1.25'	3.1	111A
WEST	M3-4a	2' x 1'	2	111A
	M3-4a	2.5' x 1.25'	3.1	111A
TO	M4-5a	2' x 1'	2	111A
	M4-5a	2.5' x 1.25'	3.1	111A
END	M4-6a	2' x 1'	2	111A
	M4-6a	2.5' x 1.25'	3.1	111A
TEMPORARY	M4-7a	2' x 1'	2	111A
	M4-7a	2.5' x 1.25'	3.1	111A
	M5-1a	1.75' x 1.25'	2.2	111A
	M5-1a	2.5' x 1.75'	4.4	111A
	M5-2a	1.75' x 1.25'	2.2	111A
	M5-2a	2.5' x 1.75'	4.4	111A
	M6-1a	1.75' x 1.25'	2.2	111A
	M6-1a	2.5' x 1.75'	4.4	111A
	M6-2a	1.75' x 1.25'	2.2	111A
	M6-2a	2.5' x 1.75'	4.4	111A
	M6-3a	1.75' x 1.25'	2.2	111A
	M6-3a	2.5' x 1.75'	4.4	111A
	M6-4a	1.75' x 1.25'	2.2	111A
	M6-4a	2.5' x 1.75'	4.4	111A
	M6-5a	1.75' x 1.25'	2.2	111A
	M6-5a	2.5' x 1.75'	4.4	111A
	M6-6a	1.75' x 1.25'	2.2	111A
	M6-6a	2.5' x 1.75'	4.4	111A
	M6-7a	1.75' x 1.25'	2.2	111A
	M6-7a	2.5' x 1.75'	4.4	111A

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OFF-INTERSTATE LOOP OR SPUR

SIGN	SIGN NO.	SIZE	SIGN AREA ft <sup>2</sup>	SIGN TYPE
	M1-2	2' x 2'	4	111A
	M1-2	2.5' x 2'	5	111A
	M1-2	2.5' x 2.5'	6.25	111A
	M1-2	3' x 2.5'	7.5	111A
	M1-2	3' x 3'	9	111A
	M1-3	2' x 2'	4	111A
	M1-3	2.5' x 2'	5	111A
	M1-3	2.5' x 2.5'	6.25	111A
	M1-3	3' x 2.5'	7.5	111A
	M1-3	3' x 3'	9	111A
	M2-1b	1.75' x 1.25'	2.2	111A
	M3-1b	2' x 1'	2	111A
	M3-1b	2.5' x 1.25'	3.1	111A
	M3-2b	2' x 1'	2	111A
	M3-2b	2.5' x 1.25'	3.1	111A
	M3-3b	2' x 1'	2	111A
	M3-3b	2.5' x 1.25'	3.1	111A
	M3-4b	2' x 1'	2	111A
	M3-4b	2.5' x 1.25'	3.1	111A
	M4-5b	2' x 1'	2	111A
	M4-5b	2.5' x 1.25'	3.1	111A
	M4-6b	2' x 1'	2	111A
	M4-6b	2.5' x 1.25'	3.1	111A
	M5-1b	1.75' x 1.25'	2.2	111A
	M5-1b	2.5' x 1.75'	4.4	111A
	M5-2b	1.75' x 1.25'	2.2	111A
	M5-2b	2.5' x 1.75'	4.4	111A
	M6-1b	1.75' x 1.25'	2.2	111A
	M6-1b	2.5' x 1.75'	4.4	111A
	M6-2b	1.75' x 1.25'	2.2	111A
	M6-2b	2.5' x 1.75'	4.4	111A
	M6-3b	1.75' x 1.25'	2.2	111A
	M6-3b	2.5' x 1.75'	4.4	111A
	M6-4b	1.75' x 1.25'	2.2	111A
	M6-4b	2.5' x 1.75'	4.4	111A
	M6-5b	1.75' x 1.25'	2.2	111A
	M6-5b	2.5' x 1.75'	4.4	111A
	M6-6b	1.75' x 1.25'	2.2	111A
	M6-6b	2.5' x 1.75'	4.4	111A
	M6-7b	1.75' x 1.25'	2.2	111A
	M6-7b	2.5' x 1.75'	4.4	111A

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(SPECIAL DETAIL)  
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PLAN DATE

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STEEL SUPPORTS

WOOD SUPPORTS

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
	1	3 lbs	14	7	1	4 in x 6 in	16	7
			16	7			18	7
					1	4 in x 6 in	16	7
							18	7
	1	3 lbs	15	7				
			16	7				
					1	4 in x 6 in	16	7
							18	7
	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
	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

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







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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

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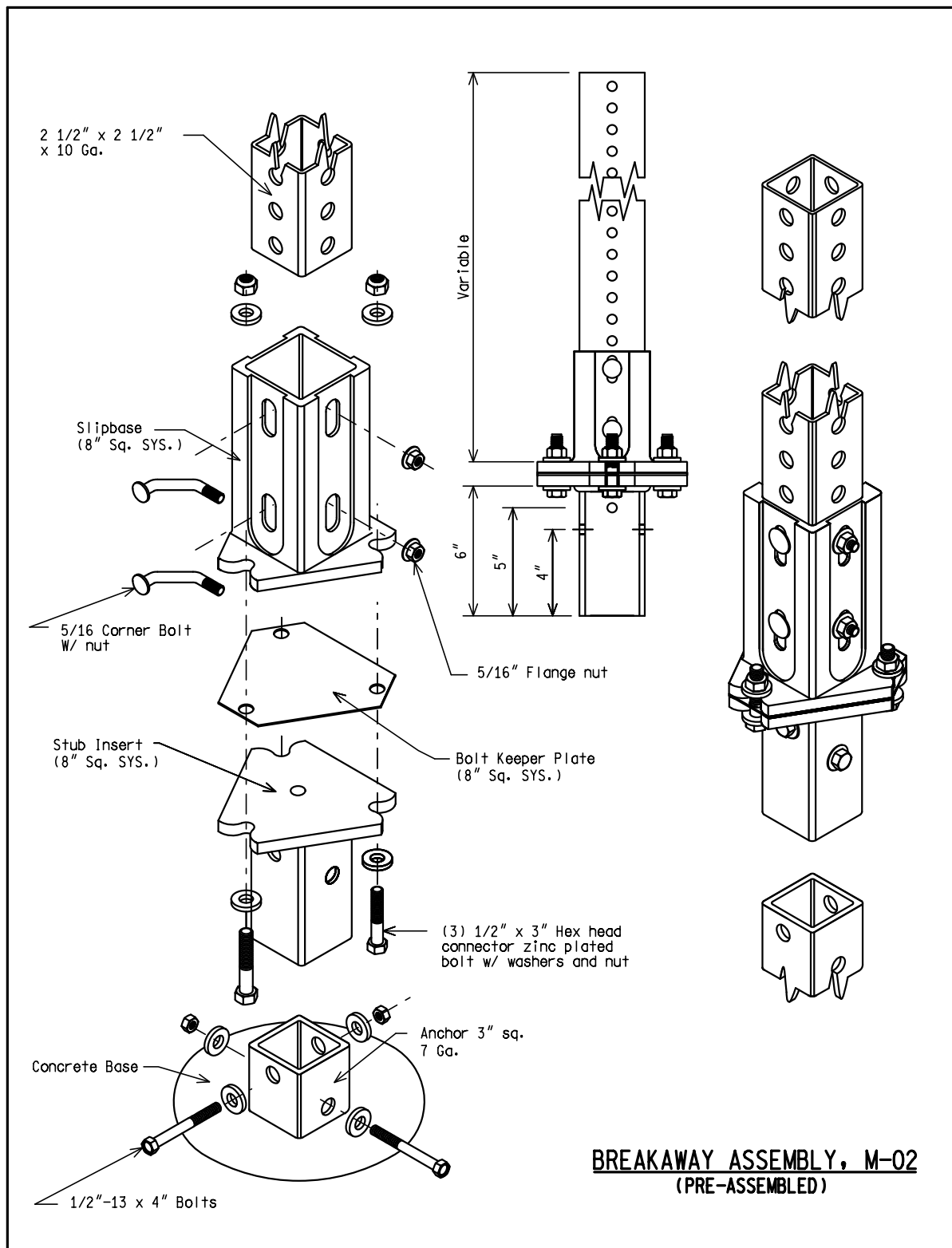
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**BREAKAWAY ASSEMBLY, M-02  
(PRE-ASSEMBLED)**

 Michigan Department of Transportation	DEPARTMENT DIRECTOR Kirk T. Stuedle	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR	
PREPARED BY DESIGN DIVISION DRAWN BY: <u>DD</u> CHECKED BY: <u>AJU</u>	APPROVED BY: _____ DIRECTOR, BUREAU OF FIELD SERVICES	<b>PERFORATED STEEL SQUARE TUBE SIGN BREAKAWAY SYS</b>	
APPROVED BY: _____ DIRECTOR, BUREAU OF HIGHWAY DEVELOPMENT	(SPECIAL DETAIL) F.H.W.A. APPROVAL	<u>07/19/16</u> PLAN DATE	<u>SIGN-207-D</u> SHEET 1 OF 15

MDOT PART NUMBER	LIST OF MATERIALS
M-01	Slipbase (8" Sq. SYS.) - Northwest Pipe part #31209
M-02	Stub Insert (8" Sq. SYS.)
M-03	Post, Inner 2 1/2" sq. x variable length 10 ga.
M-04	Insert Anchor 3" sq. x 36" 7 ga.
M-05	5/16"- 18 Grade 5, 3" corner bolt
M-05a	5/16"- 18 Steel flange nuts
M-06	1/2"- 13 x 3" Grade 5 zinc plated flange bolts
M-06a	1/2"- 13 Flange nuts
M-06b	1/2" Flat washers, 3/16" thick, 9/16 I.D., 1-3/8 O.D.
M-07	1/2"- 13 x 4" Hot dipped galvanized Grade 8 hex head bolts with 1" of thread
M-07a	1/2"- 13 Hot dipped galvanized Grade 8 nut
M-07b	1/2" Hot dipped galvanized flat washers 1" O.D.
M-07c	1/2" Hot dipped galvanized lock washers 13/16" O.D.
M-08	Slipbase Bolt Keeper Plate (8" Sq. SYS.)

**NOTES:**

1. Refer to the wind-load charts (sheet 11 of 14) for appropriate sign post installation.
2. The anchor M-04 is for concrete installation.
3. Quantity of materials used for the single post installation will be increased according to the number of posts required for proper sign placement.

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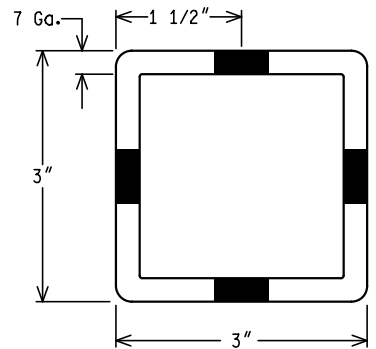
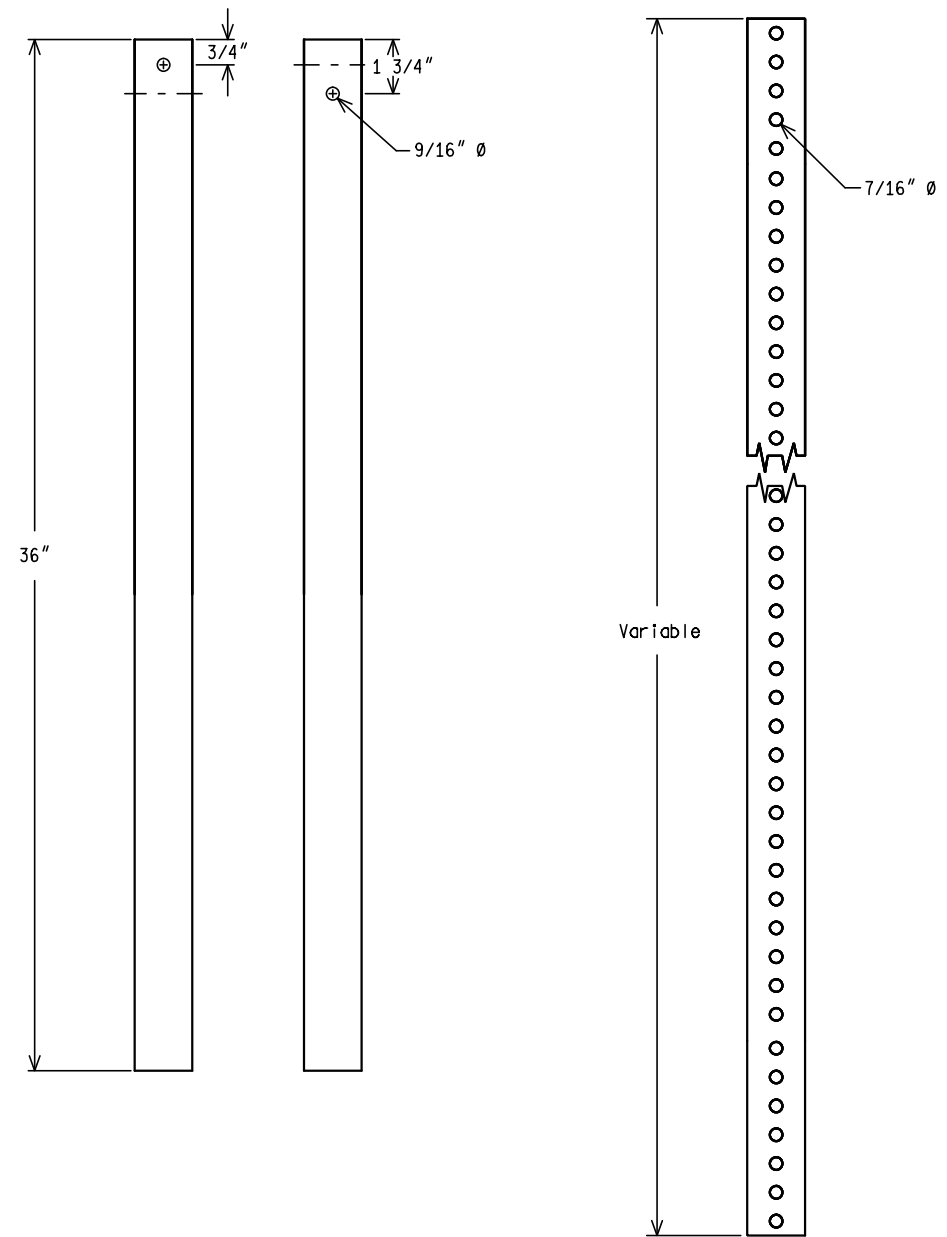
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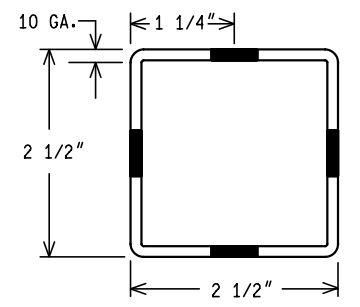
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**INSERT ANCHOR, M-04**



**PERFORATED SQUARE STEEL POST, M-03**

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BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN

(SPECIAL DETAIL)  
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PLAN DATE

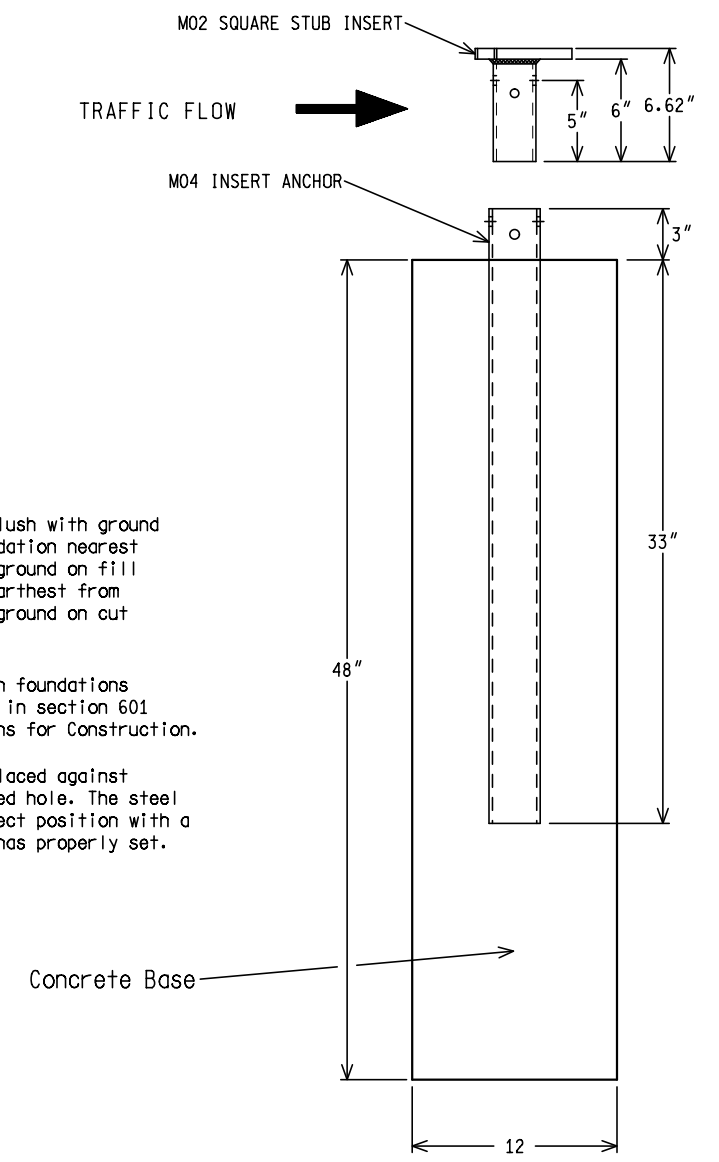
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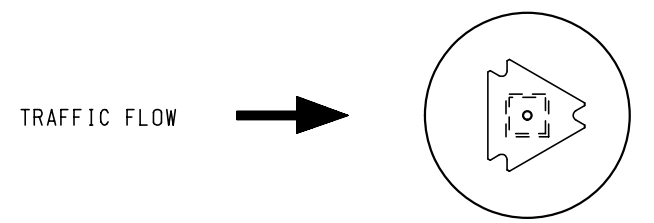
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**NOTES:**

1. Top of foundation shall be flush with ground on flat slopes. edge of foundation nearest roadway shall be flush with ground on fill slopes. edge of foundation farthest from roadway shall be flush with ground on cut slopes.
2. Concrete for breakaway column foundations must be grade M as specified in section 601 of the Standard Specifications for Construction.
3. Concrete shall be used and placed against undisturbed soil in an augered hole. The steel anchor shall be held in correct position with a template until the concrete has properly set.



**Elevation View**



**Top View  
CONCRETE BASE  
.12 Cu. Yds.**

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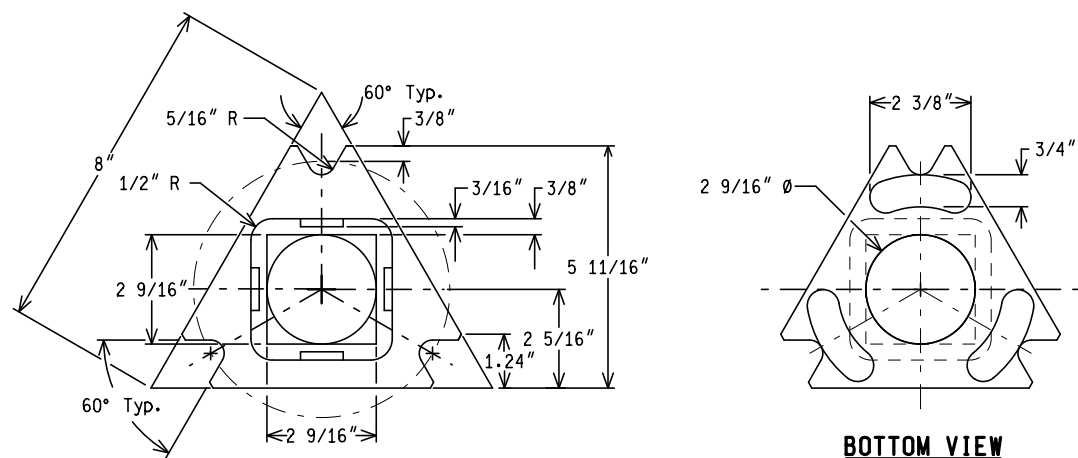
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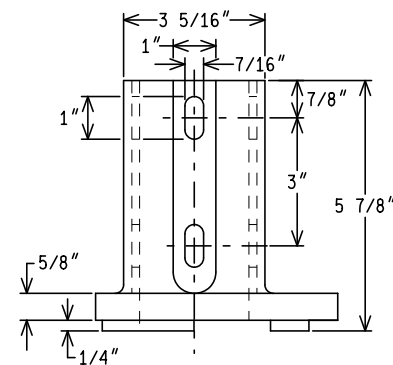
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**TOP VIEW**

**BOTTOM VIEW**



**SIDE VIEW**

**SLIPBASE  
(8" SQUARE SYSTEM)**

**NOTES:**

1. Material: ASTM A-536 Grade 65-45-12 ductile iron.
2. Hot dip galvanize per ASTM A-153.
3. Clean bore I.D. and counterbore after galvanizing to remove excess zinc.
4. Casting part number-31209.
5. Unless noted: all radii and fillets are 1/4".
6. Square hole tapers from 2 9/16" to 2 1/2" at the bottom.

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BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN

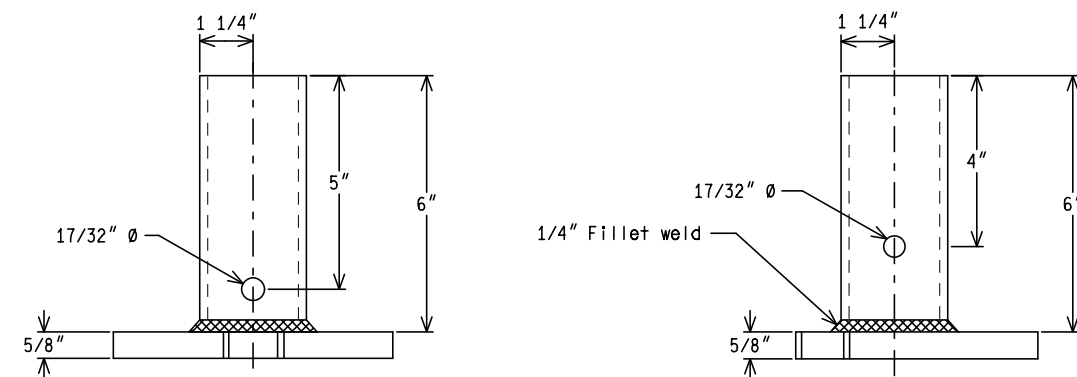
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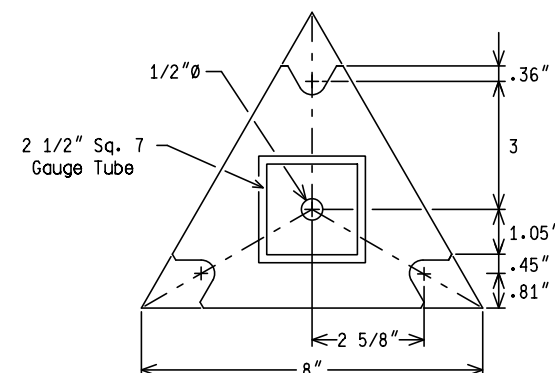
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**TOP VIEW**

**SIDE VIEW**



**END VIEW**

**SLIPBASE STUB INSERT  
(8" SQUARE SYSTEM)**

**NOTES:**

1. Tube shall conform to ASTM A53 GR B or A500.
2. All fabrication shall be completed prior to galvanization according to ASTM A 123 G85 min.
3. Hole in Sliplate is to provide escape path for gasses during hot dip galvanization. Exact hole placement may vary as needed.
4. Sliplate shall be fabricated from ASTM A36 or A572 steel plate.
5. All welding to be performed in accordance with ANSI/AWI D1.1 specifications.

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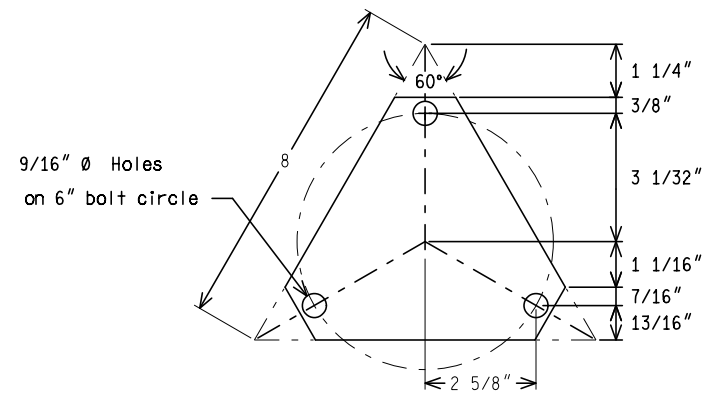
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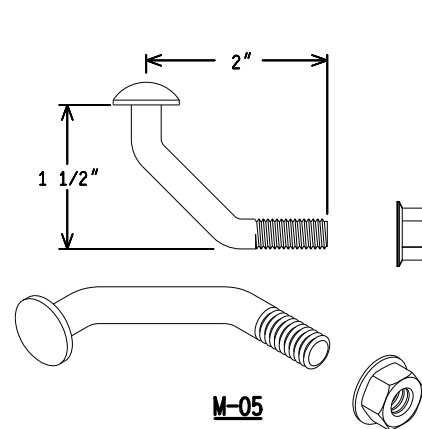
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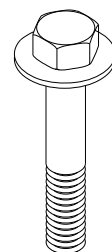
Stamp Bolt Keeper Plate Spacer from galvanized sheet  
26-30 ga. ASTM A-563 G-90 coating



**BOLT KEEPER PLATE  
(8" SQUARE SYSTEM)**



- (2) 5/16" - 18 Grade 5 large corner steel bolt
- (2) 5/16" - 18 Hex flange steel nut



**M-08**

- (3) 1/2" - 13 x 3" Hex flange head zinc plated bolt
- (3) 1/2" - 13 Hex flange zinc plated nut
- (6) 1/2" x 3/32" Heavy duty zinc plated flat washer

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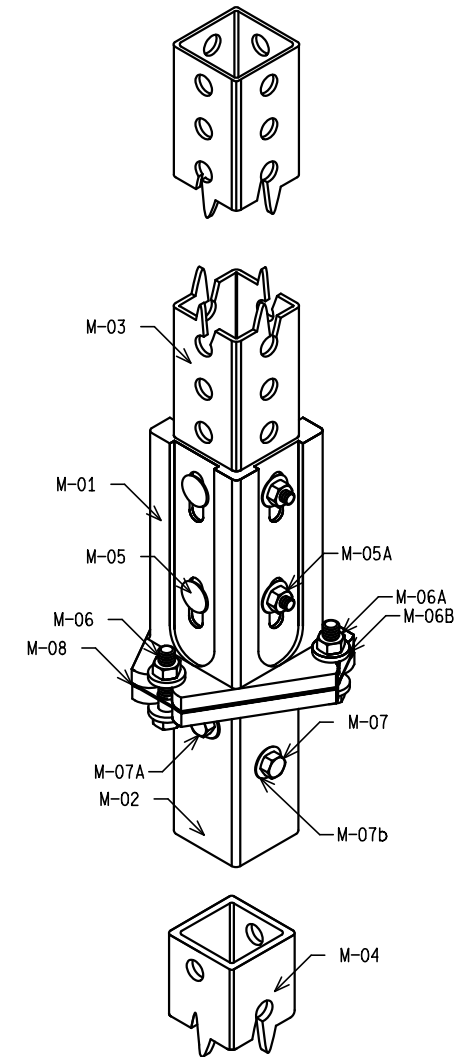
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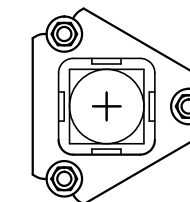
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**INSTALLATION CHECKLIST**

1. Install the anchor assembly (M0-4) into the concrete base and align with the traffic flow (see figure 1).
  - a) For concrete installation (required in weak soil), a 48" deep and 12" minimum diameter hole is required for concrete footings.
2. Install anchor assembly allowing only two holes above grade.(3" max.)
3. Slide 6" stub (M0-2) of breakaway assembly into anchor having the bolt location align with traffic flow (see figure 1) and fasten with two 1/2" x 4" bolts (M-07) washers (M0-7b) and nuts (M-07a).
4. If breakaway assembly is pre-assembled, proceed to step 14.
5. Place the Slipbase bolt keeper plate (M-08) on the 6" stub (M02).
6. Place the square Slipbase (M01) on top of the bolt keeper (M08) with the 3 hole side facing on coming traffic.
7. Align the Slipbase (M01), the bolt keeper (M-08) and the 6" stub insert (M02).
8. Slide each flat washer (M-06b) on each of the three inverted 1/2" x 3" steel bolts (M-06).
9. Insert above bolt (M-06) with flat washer (M-06c) up through notched hole of assembly (M-01).
10. Place the second flat washer (M-06b) down on to the above bolts (M-06).
11. Complete by fastening the nut (M-06b) to the steel bolt (M-06) and tighten snugly down against the top flat washer (M-06b).
12. Repeat step 9, 10 & 11 on the two remaining notched holes of the triangular points.
13. After fastening all hardware, torque the three 1/2" nuts (M-06b) in a circular pattern to 80 ft-lbs maximum.
14. Slide appropriate upright post (M03), (refer to the allowable sign area per post/wind load charts), into the 8" Slipbase (M01) of breakaway assembly and fasten with two 5/16" corner bolts (M-05) and flange nuts (M-05a).



TRAFFIC FLOW



**FIGURE 1**

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### INSTALLATION INSTRUCTIONS

1. Check with utility companies to mark anchor and post location
2. Drill 12" hole 48" deep install concrete foundation.
3. Orientate anchor for correct sign placement (see figure 1, sheet 8 of 14).
4. Continue to install anchor until two holes are remaining above surface level.
5. Check anchor for plumb and square.
6. Install sign on post using MDOT approved hardware for Type II signs and aluminum rivets for Type III signs.
7. Insert post with sign into Slipbase six holes deep.
8. See Sign-100-Series and Sign-120-Series for appropriate bottom height.
9. Use corner bolt to fasten anchor and post.
10. Following these procedures the post and anchor will be installed according to NCHRP 350.

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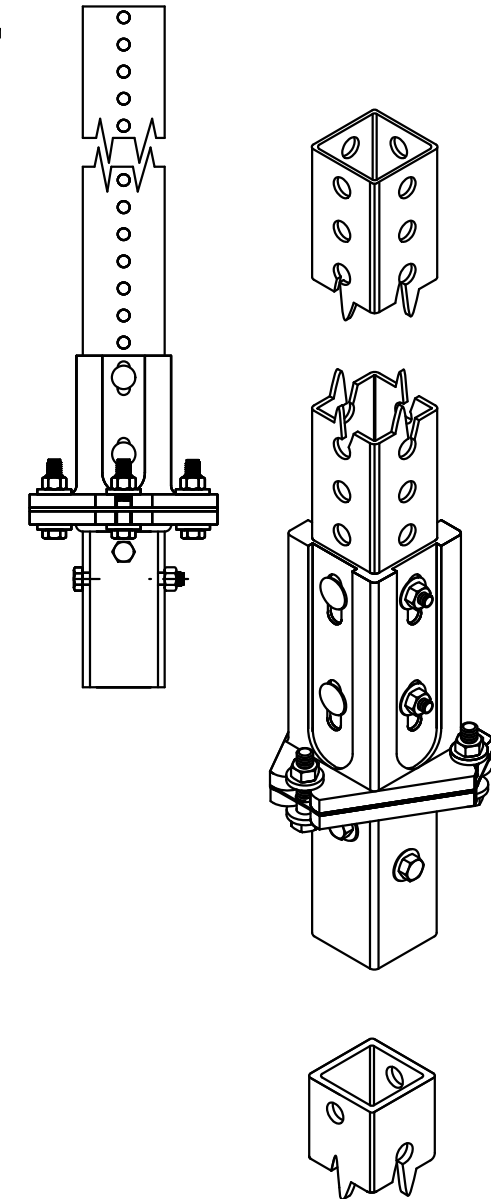
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### PERFORATED STEEL SQUARE TUBE SIGN BREAKAWAY SYSTEM SPECIFICATIONS

The breakaway system is designed to allow a traffic sign to breakaway near ground level upon impact by a vehicle. The breakaway system conforms to NCHRP 350 standards for breakaway sign supports.

**BASIC COMPONENTS:** Top coupling, middle bolt keeper plate, bottom coupling, and clamping bolts including nuts and flat washers.

1. Top casting consists of a 8" triangular ASTM A-536 Grade 65-45-12 ductile iron casting with a minimum yield strength of 45,000 psi.
2. Bottom coupling consists of a 2 1/2" square steel tube (3/16" wall @ 6" long) welded to a 5/8" triangular steel plate.
3. The bottom steel tubing is structural ASTM A-53 Grade B with a minimum Yield Strength of 46,000 psi.
4. The bottom 5/8" thick triangular steel plate is structural ASTM A572 Grade 50 with a minimum Yield Strength of 50,000 psi.
5. Both top and bottom couplings are hot-dip galvanized (zinc coated) finished.
6. Top and bottom triangular steel plates have a bolt circle diameter of 6".
7. Middle bolt keeper galvanized sheet, plate thickness: 26-30 gauge.
8. Clamping bolt type: Grade 5, zinc plated flanged bolt.
9. Clamping bolt size: 1/2" diameter and 3" in length.
10. Steel nuts are 1/2", zinc plated flanged nut.
11. Flat washers are 3/16" thick, 17/32" I.D., 1-1/8" O.D.
12. Clamping bolt torque: 80 lbs-ft maximum.
13. No scheduled re-torque is required.
14. Periodic inspection is recommended.



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BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN

(SPECIAL DETAIL)  
F.H.W.A. APPROVAL

07/19/16  
PLAN DATE

SIGN-207-D

SHEET  
10 OF 15

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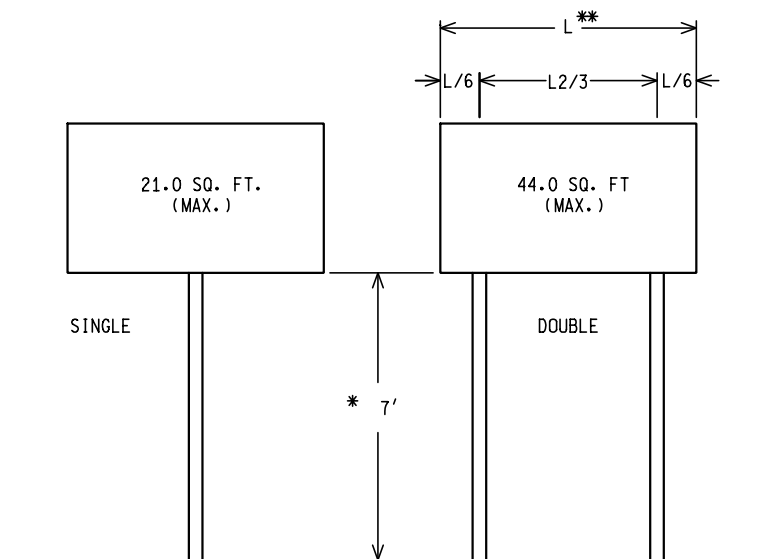
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DESIGN UNIT:	JN:		
FILE:	TSC:		115

**PERFORATED STEEL SQUARE  
TUBE SIGN BREAKAWAY SYSTEM  
FOR  
90 MPH WIND SPEED**



\*\*\* The bottom height is defined as height from the near edge of the travel lane pavement to the bottom of the sign panel. See Sign-100-Series and Sign-120-Series for required minimum bottom height and support spacings.

**NOTE:**

For signs over 44 sft. use the charts on SIGN-150-SERIES.

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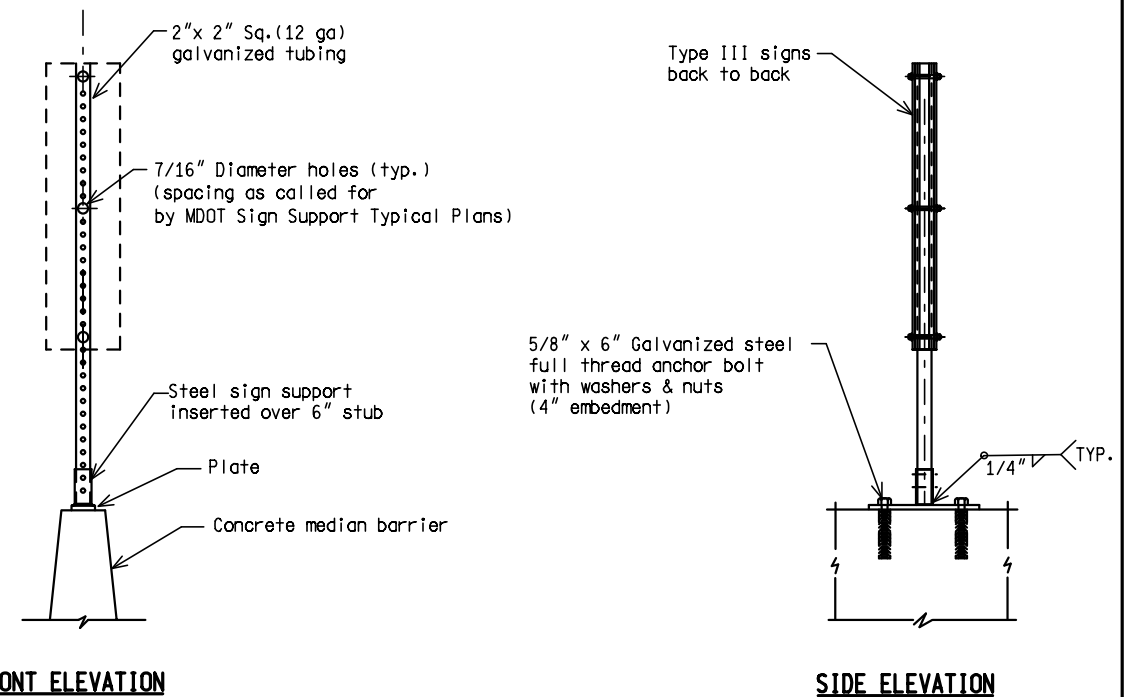
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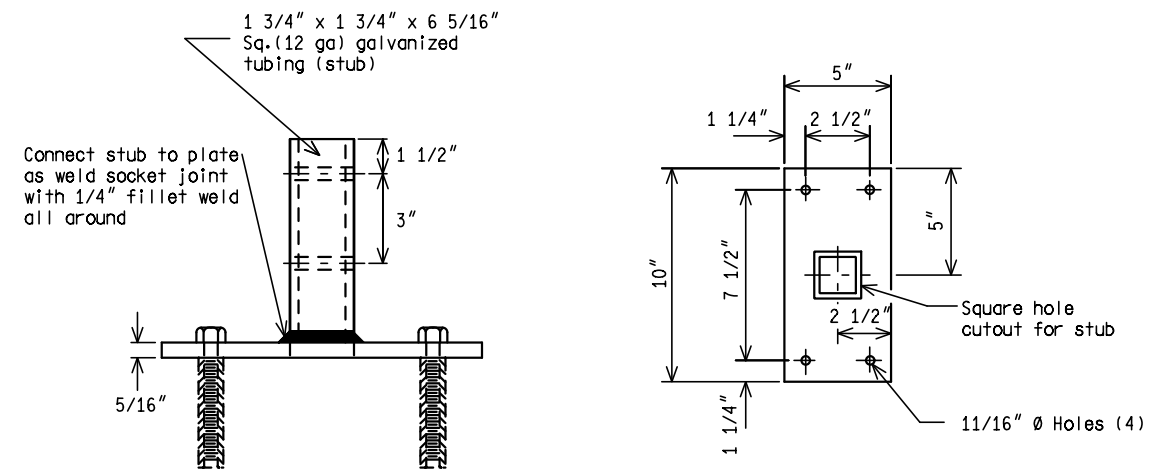
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11 OF 15

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**CONCRETE MEDIAN BARRIER CONNECTION  
(SQUARE TUBE SUPPORT)**



**BASE PLATE DETAILS**

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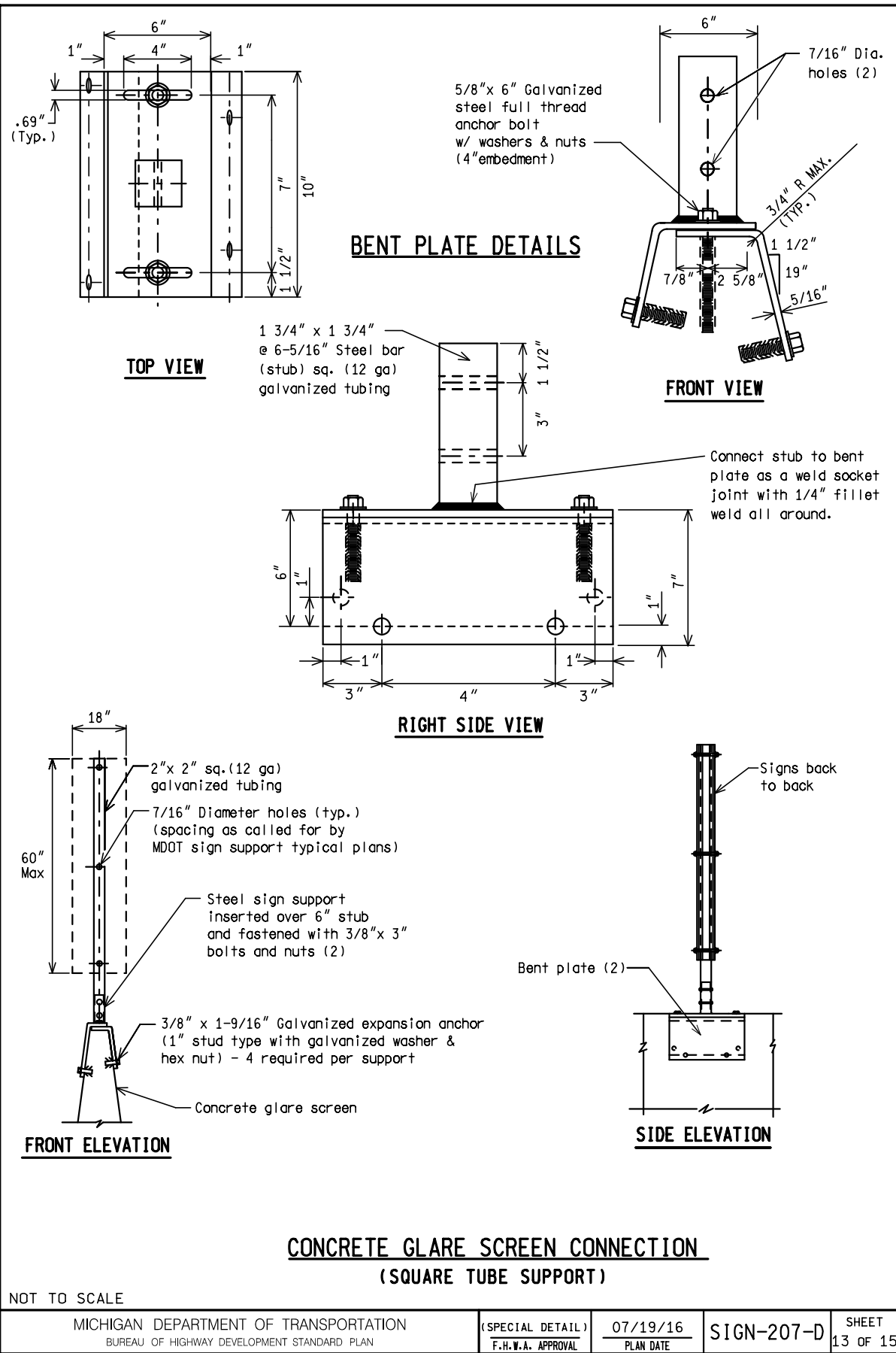
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**NOTES:**

1. The materials and galvanized finish for the connection components (steel pipe, channels, square tube, stub & plate) shall be per the current MDOT Standard Specifications for Construction after fabrication. (section 919)
2. All fastening hardware (bolts, nuts and washers) shall be galvanized to ASTM 153, full thread anchor bolt manufactured to ASTM A36 Mod55. Hex bolt manufactured to A307.
3. The adhesive anchoring system tested to ASTM E488.
4. Square tube support suitable for single sign connection with a maximum of 9 sft. Back to back sign connections have a maximum of 18 sft.
5. Sign substrates shall be aluminum for barrier connections per section 919 of the Standard Specifications for Construction.
6. Use the concrete median barrier connection (square tube support) when installing signs on concrete barriers having a top width of 6 inches or wider.
7. Glare screen and barrier connections must be installed to ensure that either a pipe support or a square tube is plumb on the glare screen or concrete barrier wall.

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14 OF 15

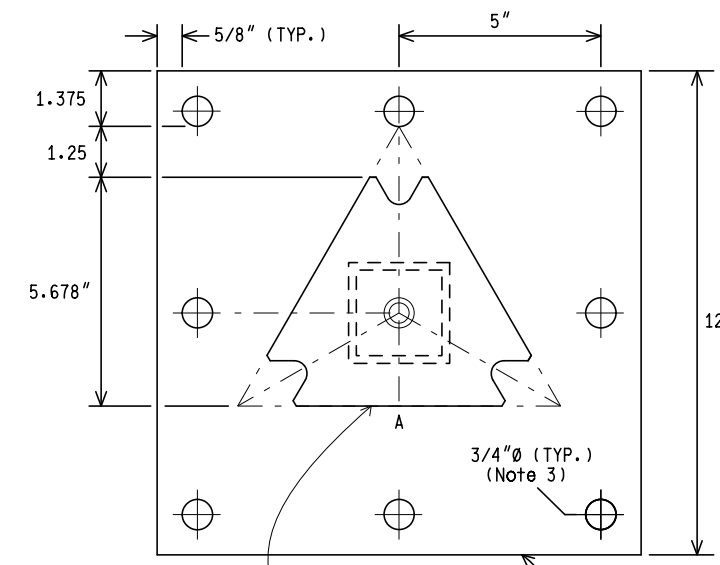
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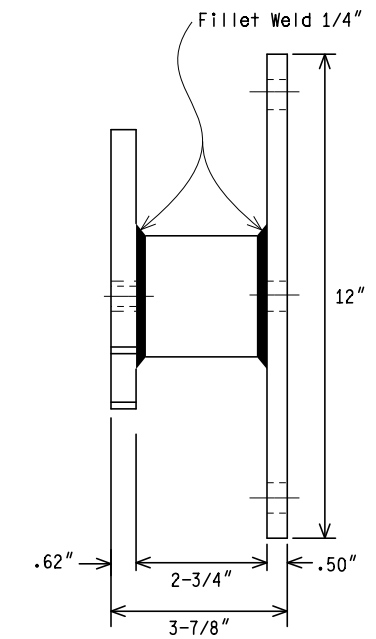


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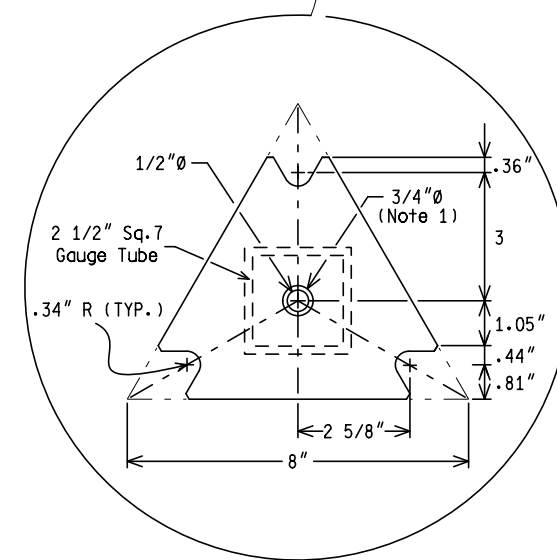
### SQUARE BOLTDOWN STUB



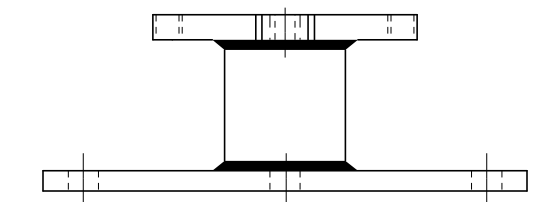
**TOP VIEW**



**SIDE VIEW**



**DETAIL A**



**FRONT VIEW**

**NOTES:**

1. The hole in the bottom base is 3/4" dia. for escape of zinc and gasses during the hot dip galvanizing. This hole should be located under the 1/2" hole in the top plate, but may vary as needed. The tolerance on this hole dia. is + - .125"
2. Base plate 1/2" ASTM A-36, 441 OR 572 Steel plate pipe stub 3" square tubing nominal 7 gauge, ASTM A-52 GRB fabricate and galvanize to ASTM A-123.
3. 300 series stainless steel wedge anchor bolt with stainless steel lockwasher and nut. Refer to 2012 Specifications for Construction Section 919.02.

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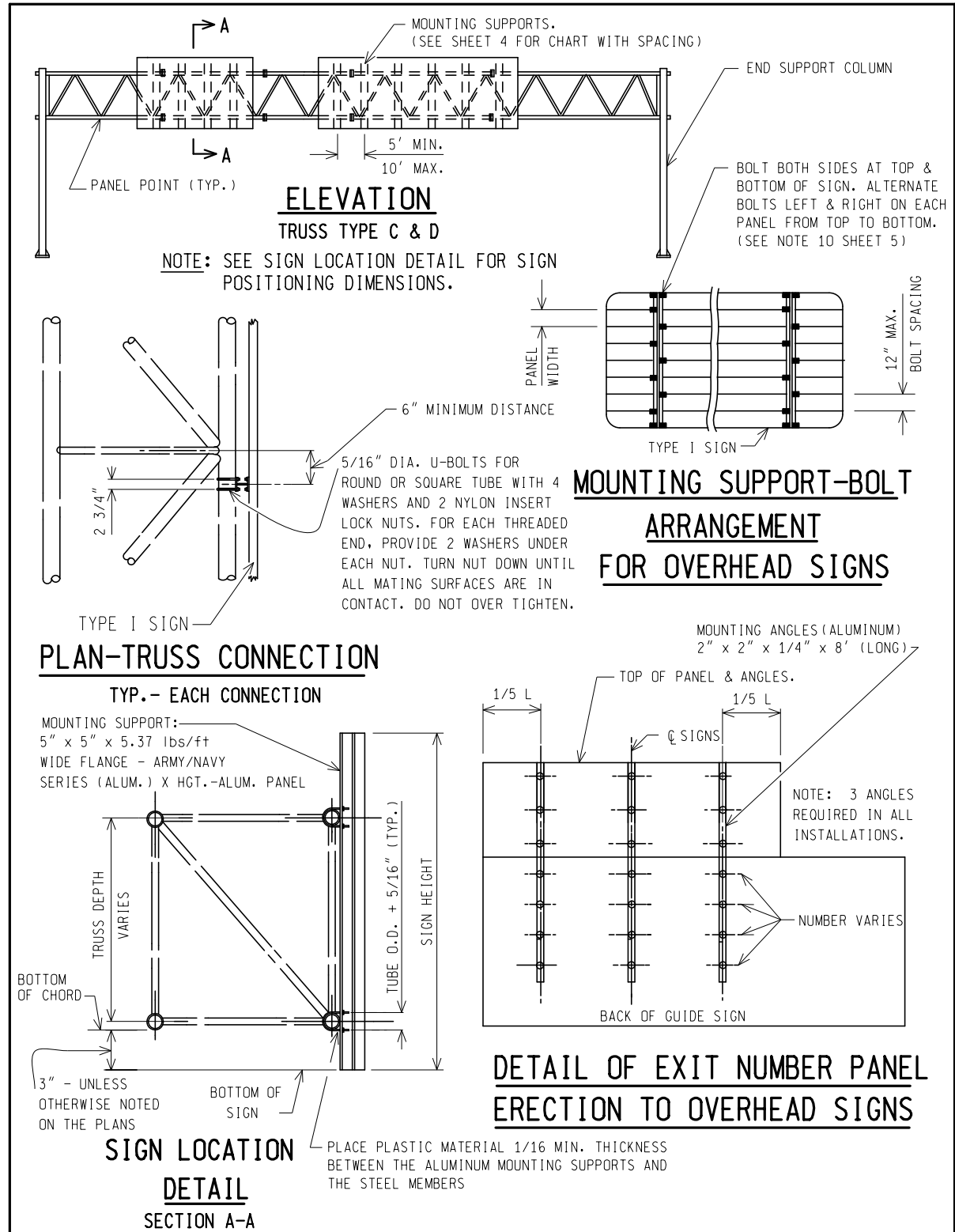
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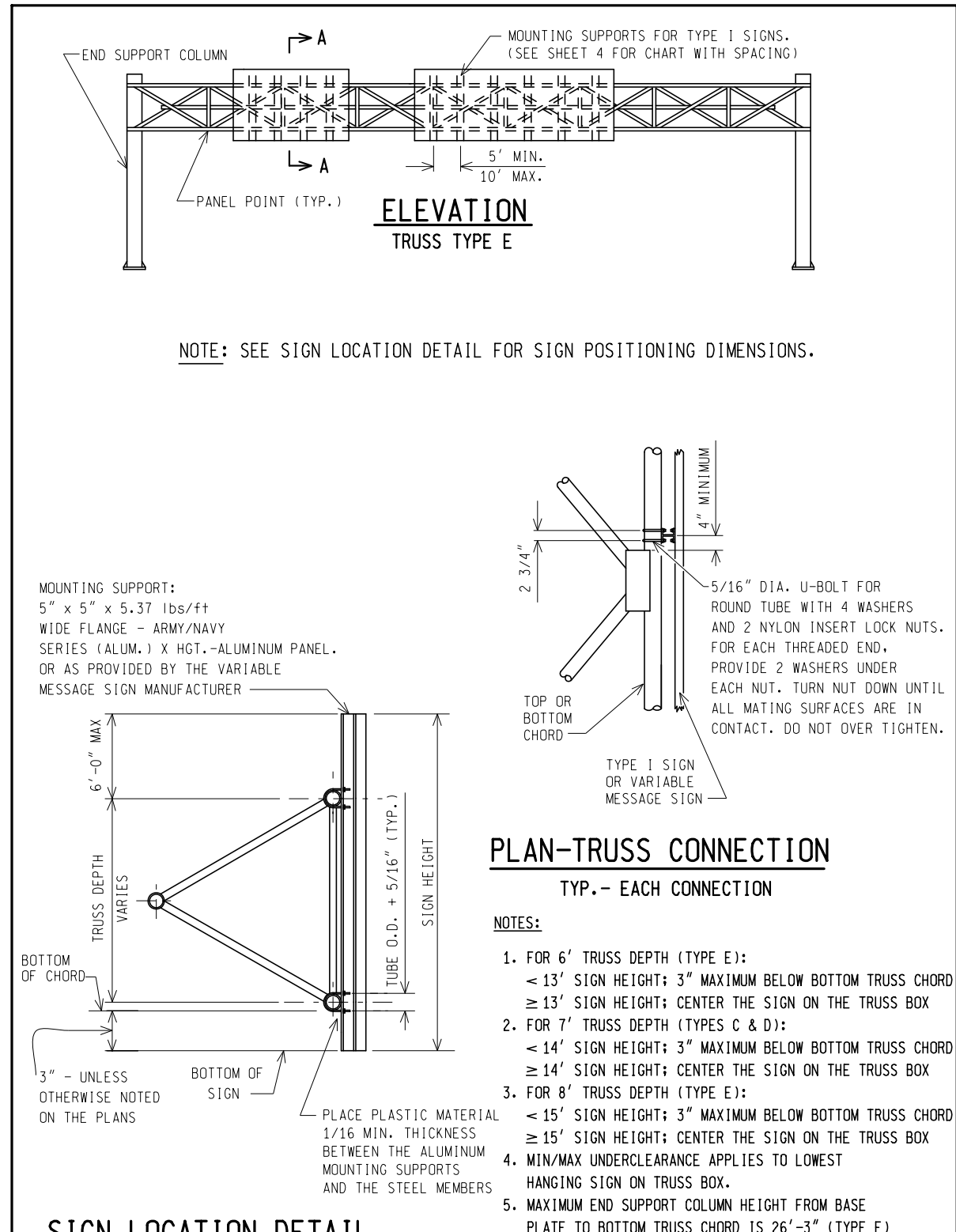
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<p>PREPARED BY DESIGN DIVISION</p> <p>DRAWN BY: <u>DHD</u></p> <p>CHECKED BY: <u>AJU</u></p>	DEPARTMENT DIRECTOR Kirk T. Steudle	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR <b>TRUSS, CANTILEVER, COLUMN AND EXIT NUMBER CONNECTION DETAILS</b>	SHEET 1 OF 5
	APPROVED BY: _____ DIRECTOR, BUREAU OF FIELD SERVICES	(SPECIAL DETAIL) 01/25/16 SIGN-700-D F.H.W.A. APPROVAL PLAN DATE	SHEET 1 OF 5
	APPROVED BY: _____ DIRECTOR, BUREAU OF HIGHWAY DEVELOPMENT	(SPECIAL DETAIL) 01/25/16 SIGN-700-D F.H.W.A. APPROVAL PLAN DATE	SHEET 1 OF 5
	APPROVED BY: _____ DIRECTOR, BUREAU OF HIGHWAY DEVELOPMENT	(SPECIAL DETAIL) 01/25/16 SIGN-700-D F.H.W.A. APPROVAL PLAN DATE	SHEET 1 OF 5



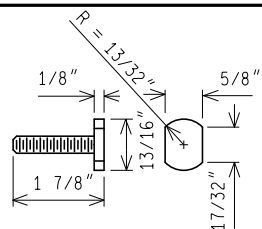
<p>PREPARED BY DESIGN DIVISION</p> <p>DRAWN BY: <u>DHD</u></p> <p>CHECKED BY: <u>AJU</u></p>	DEPARTMENT DIRECTOR Kirk T. Steudle	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR <b>TRUSS, CANTILEVER, COLUMN AND EXIT NUMBER CONNECTION DETAILS</b>	SHEET 2 OF 5
	APPROVED BY: _____ DIRECTOR, BUREAU OF FIELD SERVICES	(SPECIAL DETAIL) 01/25/16 SIGN-700-D F.H.W.A. APPROVAL PLAN DATE	SHEET 2 OF 5
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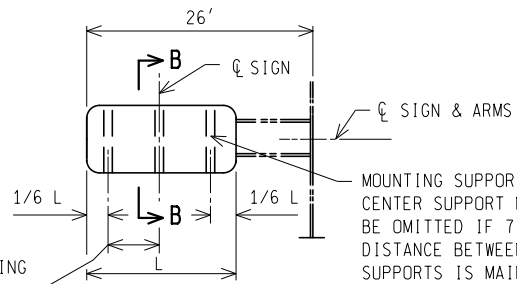


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**RECTANGULAR FLAT HEAD  
BOLT DETAIL**



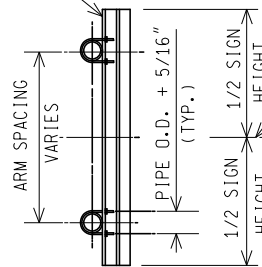
7' MAX.  
C TO C MOUNTING  
SUPPORTS (TYP.)



MOUNTING SUPPORTS NOTE:  
CENTER SUPPORT MAY  
BE OMITTED IF 7' MAX.  
DISTANCE BETWEEN  
SUPPORTS IS MAINTAINED.

**ELEVATION  
CANTILEVER**

MOUNTING SUPPORT:  
5" x 5" x 5.37 lbs/ft  
WIDE FLANGE - ARMY/NAVY SERIES (ALUM.)  
X HGT. -ALUM.  
OR PLYWOOD PANEL.



5/16" DIAMETER U-BOLT WITH  
4 WASHERS AND 2 NYLON  
INSERT LOCK NUTS. FOR EACH  
THREADED END, PROVIDE  
2 WASHERS UNDER EACH NUT.  
TURN NUT DOWN UNTIL ALL  
MATING SURFACES ARE IN  
CONTACT.  
DO NOT OVER TIGHTEN.

**SECTION B-B  
CANTILEVER**

CANTILEVER ARM PIPE  
O.D. VARIES

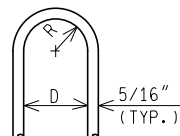
**PLAN-CANTILEVER CONNECTION**

TYP. EACH CONNECTION

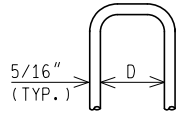
"U"-BOLT DIMENSIONS				
TRUSS TYPE	CANTILEVER TYPE	INSIDE BEND DIAMETER (D)	INSIDE BEND RADIUS (R)	U-BOLT LENGTH
C(70') STEEL		4"		17 1/4"
C(100') STEEL		5"		20 1/4"
D(125') STEEL		5"		20 1/2"
E	E	10 3/4"	5 3/8"	32"
	J	6"	3"	20 1/4"

ALL U-BOLTS SHALL HAVE 2" THREAD LENGTH. (MIN.)

TYPE E TRUSS &  
CANTILEVER U-BOLT



STEEL TRUSS U-BOLT



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BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN

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01/25/16  
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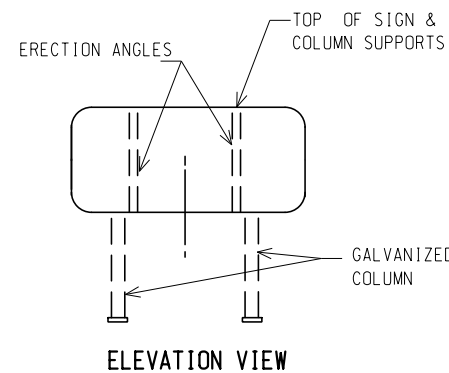
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**TRUSS MOUNTING SUPPORT SPACING**

SIGN LENGTH L (ft)	NUMBER OF MOUNTING SUPPORTS	EDGE OF SIGN TO NEAREST SUPPORT (ft)	DISTANCE BETWEEN SUPPORTS (ft)
$L \leq 8.0$	2	$\frac{L-5}{2}$	5
$8.5 \leq L \leq 16.5$	2	0.2L	0.6L
$17.0 \leq L \leq 28.5$	3	0.15L	0.35L
$29.0 \leq L \leq 43.0$	4	0.15L	$\frac{L-0.30L}{3}$

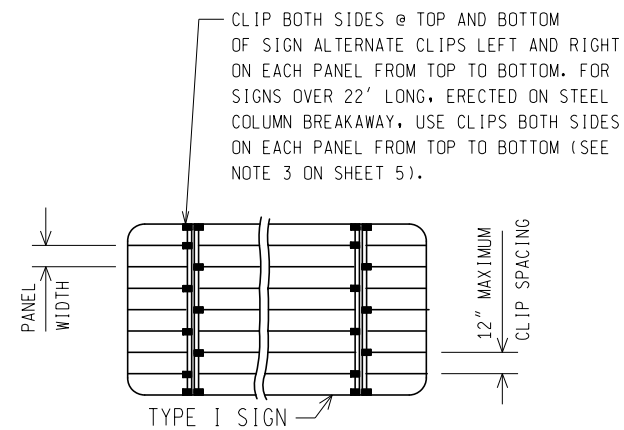
NOTE:

THE DIMENSIONS ABOVE SERVE AS AN INITIAL STARTING POINT TO DETERMINE MOUNTING SUPPORT LOCATIONS. THE FABRICATOR SHOULD ADJUST SUPPORTS SLIGHTLY TO AVOID TRUSS "PANEL POINTS" WHILE MAINTAINING AS CLOSE AS POSSIBLE THE CHART SPACING AND ADHERING TO THE 5' MIN. - 10' MAX. SPACING RULE.

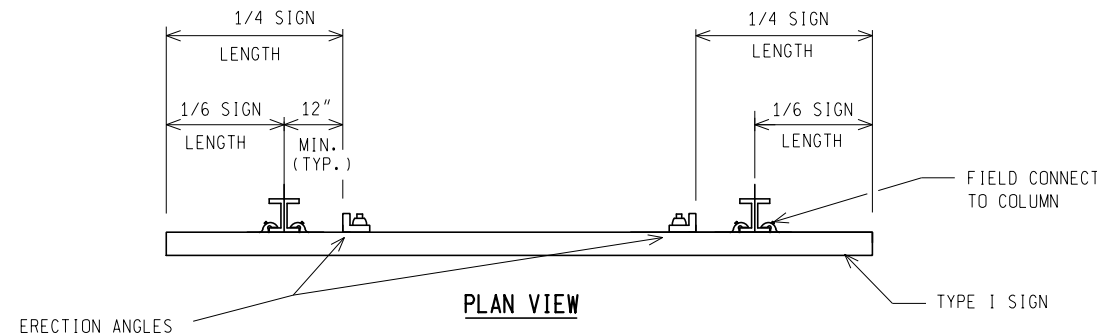


**STEEL COLUMN BREAKAWAY**

ERECTION ANGLES TO REMAIN IN PLACE (2 REQ'D.)  
L2" x 2" x 1/4" (ALUM) X SIGN HEIGHT -  
SHOP CONNECT BY DIRECT BOLTING ON EACH PANEL.  
(SEE SHEET 3 FOR RECTANGULAR FLAT HEAD BOLT DETAIL).  
1/2" x 3/4" ELONGATED HOLES MAY BE USED TO FACILITATE  
ALIGNMENT OF ERECTION ANGLES.



**SIGN SUPPORT CLIP OR BOLT  
ARRANGEMENT FOR STEEL  
COLUMN BREAKAWAY**



**STEEL COLUMN BREAKAWAY**

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION  
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN

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F.H.W.A. APPROVAL

01/25/16  
PLAN DATE

SIGN-700-D

SHEET  
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NOTES FOR EXIT NUMBER PANEL ERECTION:

1. ALL MOUNTING ANGLES AND CONNECTIONS ARE INCLUDED IN THE PAY ITEM "SIGN, TYPE \_".
2. SHIFT MOUNTING ANGLES A MINIMUM DISTANCE TO AVOID CONFLICT WITH GUIDE SIGN SUPPORTS.
3. WHERE GUIDE SIGN IS LESS THAN 6' IN HEIGHT, SHORTEN MOUNTING ANGLES TO MATCH BOTTOM OF GUIDE SIGN.
4. EXIT NUMBER PANEL SHALL BE DIRECT BOLTED AT TOP, MIDDLE AND BOTTOM TO MOUNTING ANGLE (3 BOLTS REQUIRED PER MOUNTING ANGLE). USE STAINLESS STEEL 3/8" DIAMETER RECTANGULAR FLAT HEAD BOLTS, FLAT WASHERS AND NYLON INSERT LOCKNUTS. 1/2" X 3/4" ELONGATED BOLT HOLES MAY BE USED TO FACILITATE ALIGNMENT OF MOUNTING SUPPORTS.
5. REFER TO PLAN SHEET FOR PLACEMENT OF RIGHT OR LEFT EXIT SIGN PANEL.
6. GUIDE SIGN STIFFENER ANGLES AND/OR ERECTION ANGLES SHALL NOT BE EXTENDED TO SERVE AS EXIT NUMBER PANEL MOUNTING ANGLES.

NOTES FOR OVERHEAD SIGN SUPPORT:

7. NEW WIDE FLANGE MOUNTING SUPPORTS SHALL BE SHOP CONNECTED TO ALL SIGNS BEFORE HANDLING FINISHED SIGN. (ARE INCLUDED IN THE PAY ITEM "SIGN, TYPE \_".)
8. SIGNS TOO TALL TO BE SHIPPED IN ONE PIECE SHALL HAVE TEMPORARY SUPPORT ANGLES ATTACHED TO EACH PIECE PRIOR TO HANDLING. THE TEMPORARY SUPPORT ANGLES SHALL REMAIN ON THE SIGN UNTIL THE PERMANENT WIDE FLANGE MOUNTING SUPPORTS ARE ATTACHED. TEMPORARY SUPPORTS SHALL BE STEEL OR ALUMINUM ANGLES.
9. FOR ATTACHMENT OF TYPE I SIGN TO OVERHEAD SIGN MOUNTING SUPPORTS, USE STAINLESS STEEL 3/8" DIAMETER RECTANGULAR FLAT HEAD BOLTS, FLAT WASHERS AND NYLON INSERT LOCKNUTS. 1/2" X 3/4" ELONGATED BOLT HOLES MAYBE USED TO FACILITATE ALIGNMENT OF MOUNTING ONLY.
10. ALL U-BOLTS, BOLTS, AND ALL NYLON INSERT LOCKNUTS SHALL BE PER MDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.

NOTES FOR VARIABLE MESSAGE SIGNS:

11. TYPE I SIGNS SHALL NOT BE USED ON THE SAME TYPE E TRUSS AS VARIABLE MESSAGE SIGNS.
12. ATTACH VARIABLE MESSAGE SIGNS ON THE TYPE E TRUSS PER THE MANUFACTURERS RECOMMENDATIONS.

GENERAL NOTES :

13. NEW ERECTION ANGLES SHALL BE SHOP CONNECTED TO ALL SIGNS BEFORE HANDLING FINISHED SIGN. THEY ARE INCLUDED IN THE PAY ITEM "SIGN, TYPE \_".
14. ALL CONNECTIONS ARE INCLUDED IN THE PAY ITEM "SIGN, TYPE \_".
15. FOR SIGN PANEL CONNECTIONS, 3/8" DIAMETER STAINLESS STEEL BOLTS AND HEX NUTS AT 24" O.C SHALL BE USED.
16. TO ATTACH TYPE I SIGNS TO ROADSIDE STEEL COLUMN BREAKAWAYS, USE SIGN SUPPORT CLIPS ONLY.

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN	(SPECIAL DETAIL) F.H.W.A. APPROVAL	01/25/16 PLAN DATE	SIGN-700-D	SHEET 5 OF 5
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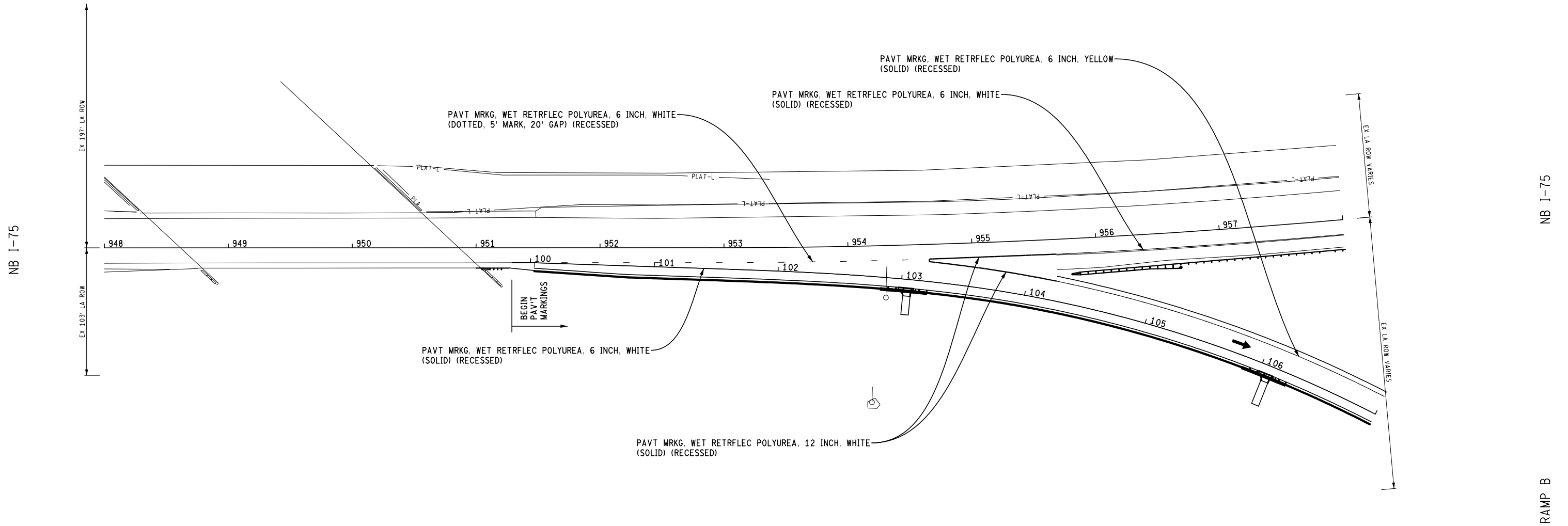
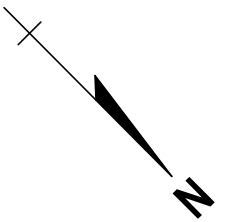
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SECTION 27  
T6N, R7E  
GRAND BLANC TOWNSHIP

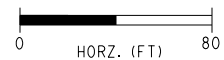


QUANTITIES THIS SHEET

JN 115832			
CAT 0001			
1510	Ft	Recessing Pavement Markings, Longit	
1015	Ft	Pavt Mrkg, Wet Retrflec Polyurea, 6 inch, White	
210	Ft	Pavt Mrkg, Wet Retrflec Polyurea, 12 inch, White	
285	Ft	Pavt Mrkg, Wet Retrflec Polyurea, 6 inch, Yellow	

SECTION 27  
T6N, R7E  
GRAND BLANC TOWNSHIP

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



DATE: 03/10/17	CS: 25131
DESIGN UNIT: PETHERS	JN: 115832A
TSC: DAVISON	

PAVEMENT MARKING SHEET		DRAWING	SHEET
NB I-75 STA 949+00 TO STA 958+00		175	SECT 1
		PVMK	122
		001	

FILE: 115832\_175\_949pvmk.dgn

RAMP B

EX. LA. ROW VARIES

RAMP F

HOLLY RD

RAMP C

SECTION 28  
T6N, R7E  
GRAND BLANC TOWNSHIP

PAVT MRKG, WET RETRFLEC POLYUREA, 6 INCH, YELLOW  
(SOLID) (RECESSED)

PAVT MRKG, WET RETRFLEC POLYUREA, 4 INCH, WHITE  
(SOLID) (RECESSED)

PAVT MRKG, WET RETRFLEC POLYUREA, 4 INCH, YELLOW  
(SOLID) (DOUBLE) (RECESSED)

PAVT MRKG, WET RETRFLEC POLYUREA, 4 INCH, WHITE  
(BROKEN, 12.5' MARK, 37.5' GAP) (RECESSED)

PAVT MRKG, WET RETRFLEC POLYUREA, 6 INCH, YELLOW  
(SOLID) (RECESSED)

PAVT MRKG, OVLY COLD PLASTIC,  
12 INCH, CROSS HATCHING, YELLOW  
(30' SPACING AT 45°)

PAVT MRKG, WET RETRFLEC POLYUREA, 6 INCH, WHITE  
(SOLID) (RECESSED)

PAVT MRKG, OVLY COLD PLASTIC, 12 INCH, CROSS HATCHING, YELLOW  
(30' SPACING AT 45°)

PAVT MRKG, WET RETRFLEC POLYUREA, 6 INCH, WHITE  
(SOLID) (RECESSED)

PAVT MRKG, OVLY COLD PLASTIC, 24 INCH, STOP BAR (TYP)

PAVT MRKG, WET RETRFLEC POLYUREA, 4 INCH, YELLOW  
(SOLID) (DOUBLE) (RECESSED)

PAVT MRKG, WET RETRFLEC POLYUREA, 4 INCH, WHITE  
(BROKEN, 12.5' MARK, 37.5' GAP) (RECESSED)

PAVT MRKG, OVLY COLD PLASTIC, WRONG WAY ARROW SYMBOL

PAVT MRKG, WET RETRFLEC POLYUREA,  
6 INCH, WHITE (SOLID) (RECESSED)

PAVT MRKG, OVLY COLD PLASTIC, LT TURN ARROW SYMBOL

PAVT MRKG, OVLY COLD PLASTIC, RT TURN ARROW SYMBOL (TYP)

PAVT MRKG, WET RETRFLEC POLYUREA, 4 INCH, WHITE  
(SOLID) (RECESSED)

PAVT MRKG, OVLY COLD PLASTIC, 12 INCH, CROSS HATCHING, YELLOW  
(30' SPACING AT 45°)

SECTION 27  
T6N, R7E  
GRAND BLANC TOWNSHIP

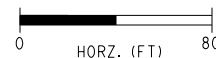
QUANTITIES THIS SHEET

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CAT 0001

230	Ft	Pavt Mrkg, Ovly Cold Plastic, 12 inch, Cross Hatching, Yellow
90	Ft	Pavt Mrkg, Ovly Cold Plastic, 24 inch, Stop Bar
1	Ea	Pavt Mrkg, Ovly Cold Plastic, Wrong Way Arrow Symbol
1	Ea	Pavt Mrkg, Ovly Cold Plastic, Lt Turn Arrow Sym
3	Ea	Pavt Mrkg, Ovly Cold Plastic, Rt Turn Arrow Sym
6005	Ft	Recessing Pavement Markings, Longit
1020	Ft	Pavt Mrkg, Wet Retrflec Polyurea, 4 inch, White
1790	Ft	Pavt Mrkg, Wet Retrflec Polyurea, 6 inch, White
1350	Ft	Pavt Mrkg, Wet Retrflec Polyurea, 4 inch, Yellow
1845	Ft	Pavt Mrkg, Wet Retrflec Polyurea, 6 inch, Yellow

HOLLY RD

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



FILE: 115832\_RampB\_107Pvmk.dgn

DATE: 03/10/17

DESIGN UNIT: PETHERS

TSC: DAVISON

CS: 25131

JN: 115832A

PAVEMENT MARKING SHEET

RAMP B STA 107+00 TO STA 117+00

DRAWING	SHEET
RAMPB PVMK 002	SECT 1 123

HOLLY RD

SECTION 28  
T&N, RTE  
GRAND BLANC TOWNSHIP

PAVT MRKG. WET RETRFLEC POLYUREA, 12 INCH, WHITE  
(SOLID) (RECESSED)

PAVT MRKG. WET RETRFLEC POLYUREA, 6 INCH, WHITE  
(SOLID) (RECESSED)

PAVT MRKG. WET RETRFLEC POLYUREA, 6 INCH, WHITE  
(SOLID) (RECESSED)

PAVT MRKG. WET RETRFLEC POLYUREA, 6 INCH, YELLOW  
(SOLID) (RECESSED)

PAVT MRKG. WET RETRFLEC POLYUREA, 4 INCH, WHITE  
(SOLID) (RECESSED)

PAVT MRKG. OVLY COLD PLASTIC, 12 INCH, CROSS HATCHING, YELLOW  
(30' SPACING AT 45°)

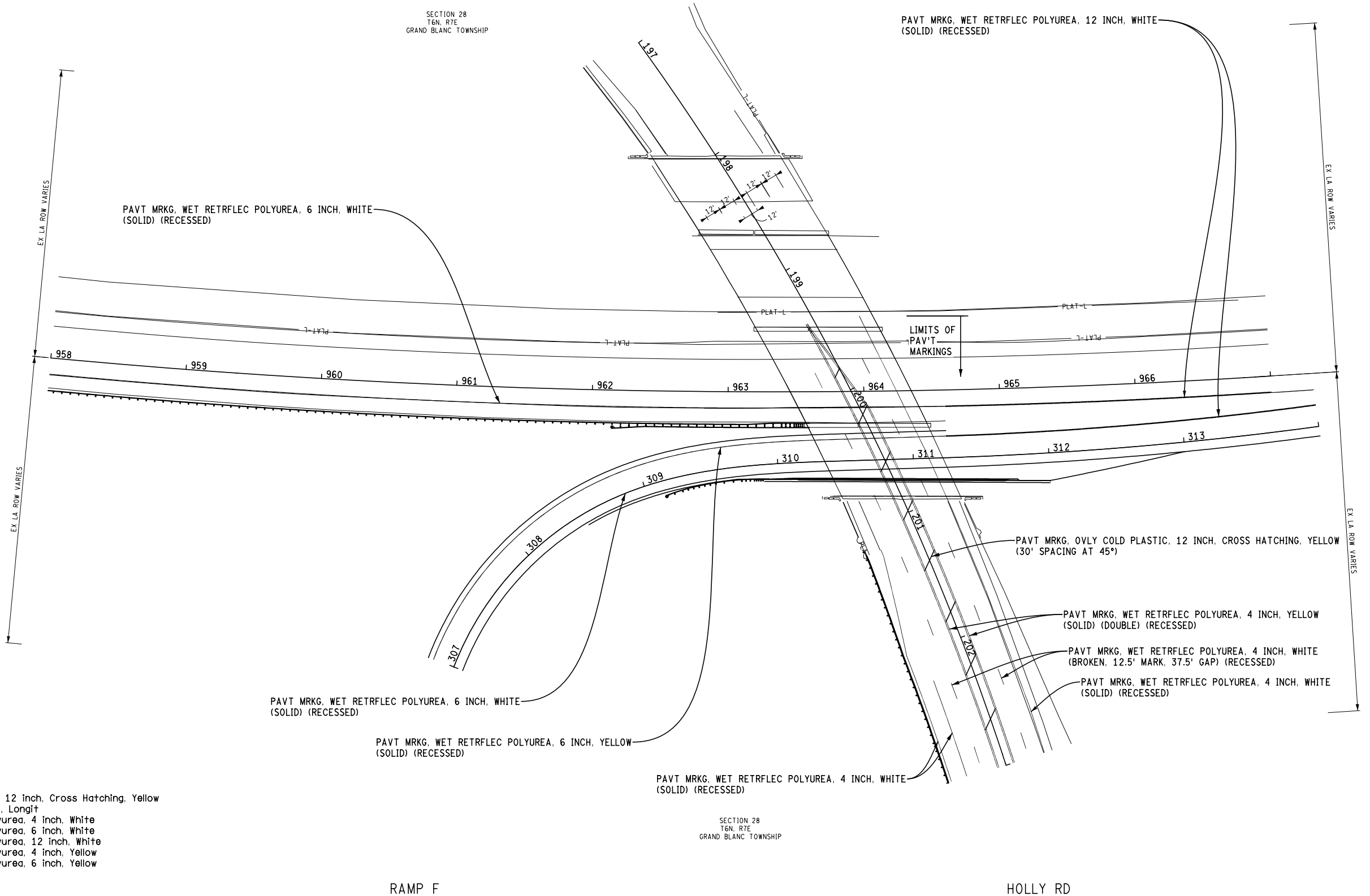
PAVT MRKG. WET RETRFLEC POLYUREA, 4 INCH, YELLOW  
(SOLID) (DOUBLE) (RECESSED)

PAVT MRKG. WET RETRFLEC POLYUREA, 4 INCH, WHITE  
(BROKEN, 12.5' MARK, 37.5' GAP) (RECESSED)

PAVT MRKG. WET RETRFLEC POLYUREA, 4 INCH, WHITE  
(SOLID) (RECESSED)

NB I-75

RAMP F NB I-75



QUANTITIES THIS SHEET

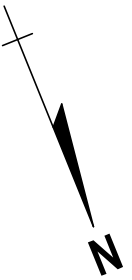
NO.	DATE	AUTH	DESCRIPTION
JN 115832			
CAT 0001			
135	Ft		Pav't Mrkg, Ovly Cold Plastic, 12 inch, Cross Hatching, Yellow
4580	Ft		Recessing Pavement Markings, Longit
815	Ft		Pav't Mrkg, Wet Retrflec Polyurea, 4 inch, White
1365	Ft		Pav't Mrkg, Wet Retrflec Polyurea, 6 inch, White
515	Ft		Pav't Mrkg, Wet Retrflec Polyurea, 12 inch, White
1440	Ft		Pav't Mrkg, Wet Retrflec Polyurea, 4 inch, Yellow
445	Ft		Pav't Mrkg, Wet Retrflec Polyurea, 6 inch, Yellow

SECTION 28  
T&N, RTE  
GRAND BLANC TOWNSHIP

RAMP F

HOLLY RD

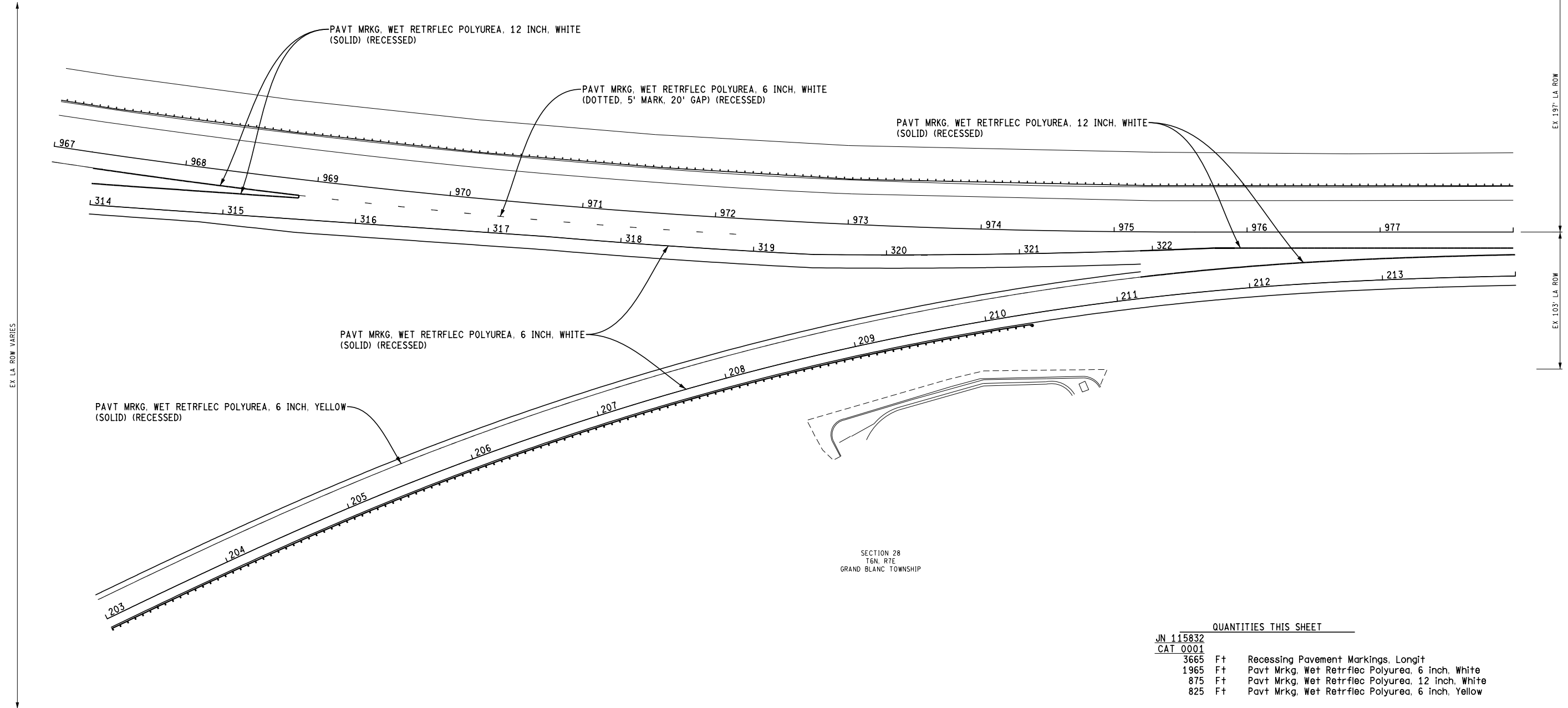
FINAL ROW PLAN REVISIONS (SUBMITTAL DATE: )										DATE: 03/10/17 DESIGN UNIT: PETHERS TSC: DAVISON		CS: 25131 JN: 115832A		PAVEMENT MARKING SHEET NB I-75 STA 958+00 TO STA 967+00		DRAWING SHEET 175 PVMK 003 124	
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION	FILE: 115832_175_958Pvmk.dgn									



SECTION 28  
T6N, R7E  
GRAND BLANC TOWNSHIP

RAMP F  
NB I-75

RAMP C  
NB I-75



EX. LA. ROW VARIES

EX. 197' LA. ROW

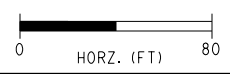
EX. 103' LA. ROW

SECTION 28  
T6N, R7E  
GRAND BLANC TOWNSHIP

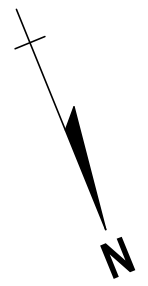
QUANTITIES THIS SHEET

JN 115832		
CAT 0001		
3665 Ft		Recessing Pavement Markings, Longit
1965 Ft		Pavt Mrkg, Wet Retrflc Polyurea, 6 inch, White
875 Ft		Pavt Mrkg, Wet Retrflc Polyurea, 12 inch, White
825 Ft		Pavt Mrkg, Wet Retrflc Polyurea, 6 inch, Yellow

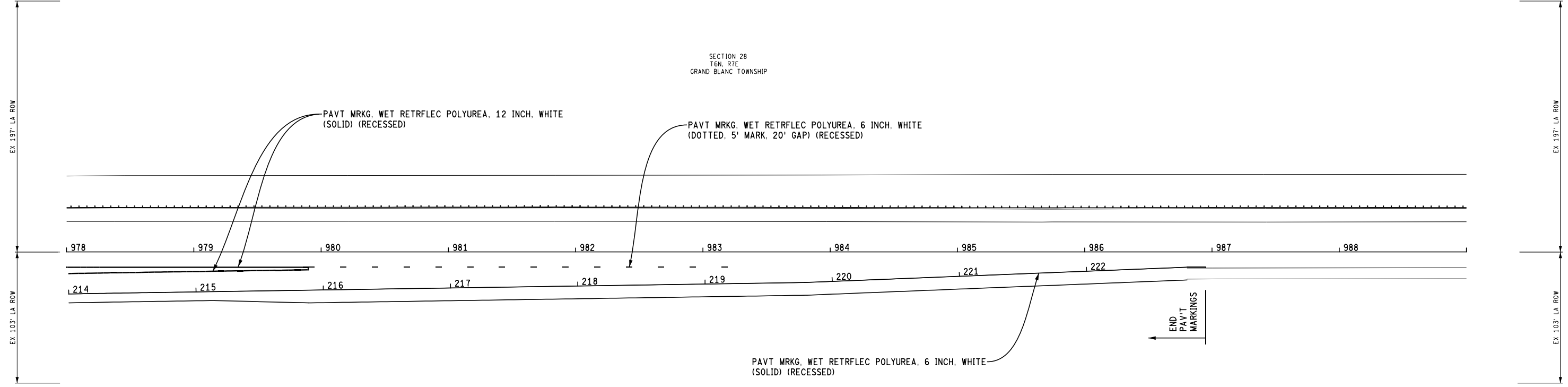
FINAL ROW PLAN REVISIONS				(SUBMITTAL DATE: )			
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION



DATE: 03/10/17	CS: 25131	PAVEMENT MARKING SHEET	DRAWING	SHEET
DESIGN UNIT: PETHERS	JN: 115832A	NB I-75 STA 967+00 TO STA 978+00	I75 PVMK 004	SECT 1 125
TSC: DAVISON	FILE: 115832_175_967Pvmk.dgn			



RAMP C NB I-75



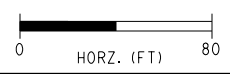
SECTION 28  
T6N, R7E  
GRAND BLANC TOWNSHIP

SECTION 28  
T6N, R7E  
GRAND BLANC TOWNSHIP

QUANTITIES THIS SHEET

<u>JN 115832</u>		
<u>CAT 0001</u>		
1345	Ft	Recessing Pavement Markings, Longit
964	Ft	Pavt Mrkg, Wet Retrflec Polyurea, 6 inch, White
381	Ft	Pavt Mrkg, Wet Retrflec Polyurea, 12 inch, White

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







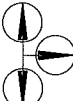
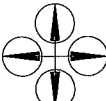

DATE: 03/10/17  
 DESIGN UNIT: PETHERS  
 TSC: DAVISON  
 FILE: 115832\_175\_978Pvmk.dgn

CS: 25131  
 JN: 115832A




PAVEMENT MARKING SHEET  
 NB I-75 STA 978+00 TO STA 989+00

DRAWING SHEET  
 175 PVMK 005 126






TRAFFIC SIGNAL HEAD SYMBOLS

-  12" L.E.D. VEHICLE TRAFFIC SIGNAL (ONE WAY)
-  BAGGED OR COVERED 12" L.E.D. VEHICLE TRAFFIC SIGNAL (ONE WAY)
-  12" L.E.D. VEHICLE TRAFFIC SIGNAL (ONE WAY) WITH SPECIAL TURNING MOVEMENT (LEFT TURN SHOWN)
-  12" L.E.D. VEHICLE TRAFFIC SIGNAL (TWO WAY: BACK TO BACK)
-  12" L.E.D. VEHICLE TRAFFIC SIGNAL (THREE WAY)
-  12" L.E.D. VEHICLE TRAFFIC SIGNAL (FOUR WAY)
-  12" L.E.D. PROGRAMMABLE VEHICLE TRAFFIC SIGNAL (ONE WAY)



PEDESTRIAN RELATED SYMBOLS

-  12" L.E.D. PEDESTRIAN TRAFFIC SIGNAL (ONE WAY)
-  12" L.E.D. PEDESTRIAN TRAFFIC SIGNAL (TWO WAY: AT ANGLE TO EACH OTHER)
-  PEDESTRIAN PUSHBUTTON



IN GROUND TRAFFIC SIGNAL EQUIPMENT

-  30 INCH ROUND PRECAST TRAFFIC SIGNAL HANDHOLE
-  36 INCH ROUND PRECAST TRAFFIC SIGNAL HANDHOLE
-  OTHER TRAFFIC SIGNAL HANDHOLE
-  ALUMINUM PEDESTRIAN PEDESTAL
-  ANCHOR BASE STEEL STRAIN POLE AND FOUNDATION (POLE LENGTH & FOUNDATION SIZE AS CALLED OUT)










TRAFFIC CONTROLLER SYMBOLS

-  BASE MOUNTED TRAFFIC CONTROLLER
-  POLE MOUNTED TRAFFIC CONTROLLER





CASE SIGN SYMBOLS

-  CASE SIGN (1 WAY OR 2 WAY)
-  CASE SIGN (3 WAY OR 4 WAY)




VEHICLE DETECTION SYMBOLS

-  VEHICLE DETECTION CAMERA
-  OMNI-DIRECTIONAL ANTENNA
-  RADIO RECIEVER FOR WIRELESS VEHICLE DETECTION
-  UNI-DIRECTIONAL ANTENNA
-  WIRELESS VEHICLE DETECTION SENSOR
-  TRAFFIC VEHICLE DETECTION LOOP
-  OPTICOM PRE-EMPTION
-  WIRELESS LINK - EXISTING
-  WIRELESS LINK







MISCELLANEOUS (PLAN VIEW)

-  ROAD SIGN WITH FLASHING SIGN OPTICAL (ONE WAY)
-  SIDEWALK TURNING SPACE, PROPOSED. (2% MAX GRADE WITH 2% MAX CROSS SLOPE)
-  A.D.A DETECTABLE WARNING SURFACE
-  PUSHBUTTON LANDING, PROPOSED. (2% MAX GRADE WITH 2% MAX CROSS SLOPE) POSITION WITH SIDEWALK DIRECTION








RAILROAD SYMBOLS

-  RAIL ROAD CONTROL BOX
-  RAIL ROAD SIGNAL ON POLE
-  RAIL ROAD SIGNAL ON CANTILEVER

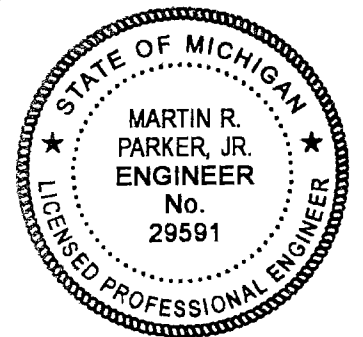
CABLE DIAGRAM SYMBOLS



-  COILED UP WIRE (FOR CONNECTION BY OTHERS)
-  STAINLESS STEEL SERVICE DISCONNECT
-  METERED ELECTRIC SERVICE
-  ELECTRIC GROUND
- T.S. #  SIGNAL HEAD
- C.S. #  ILLUMINATED CASE SIGN

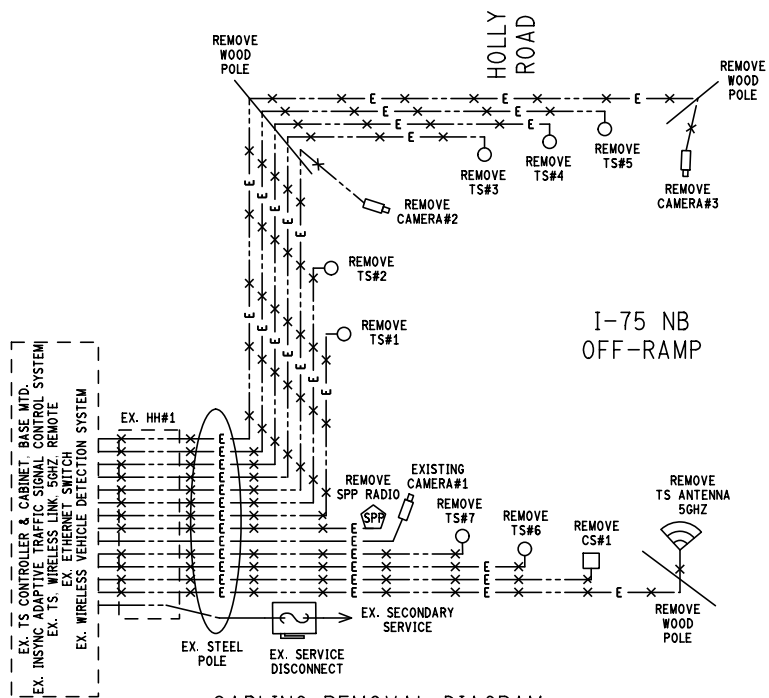
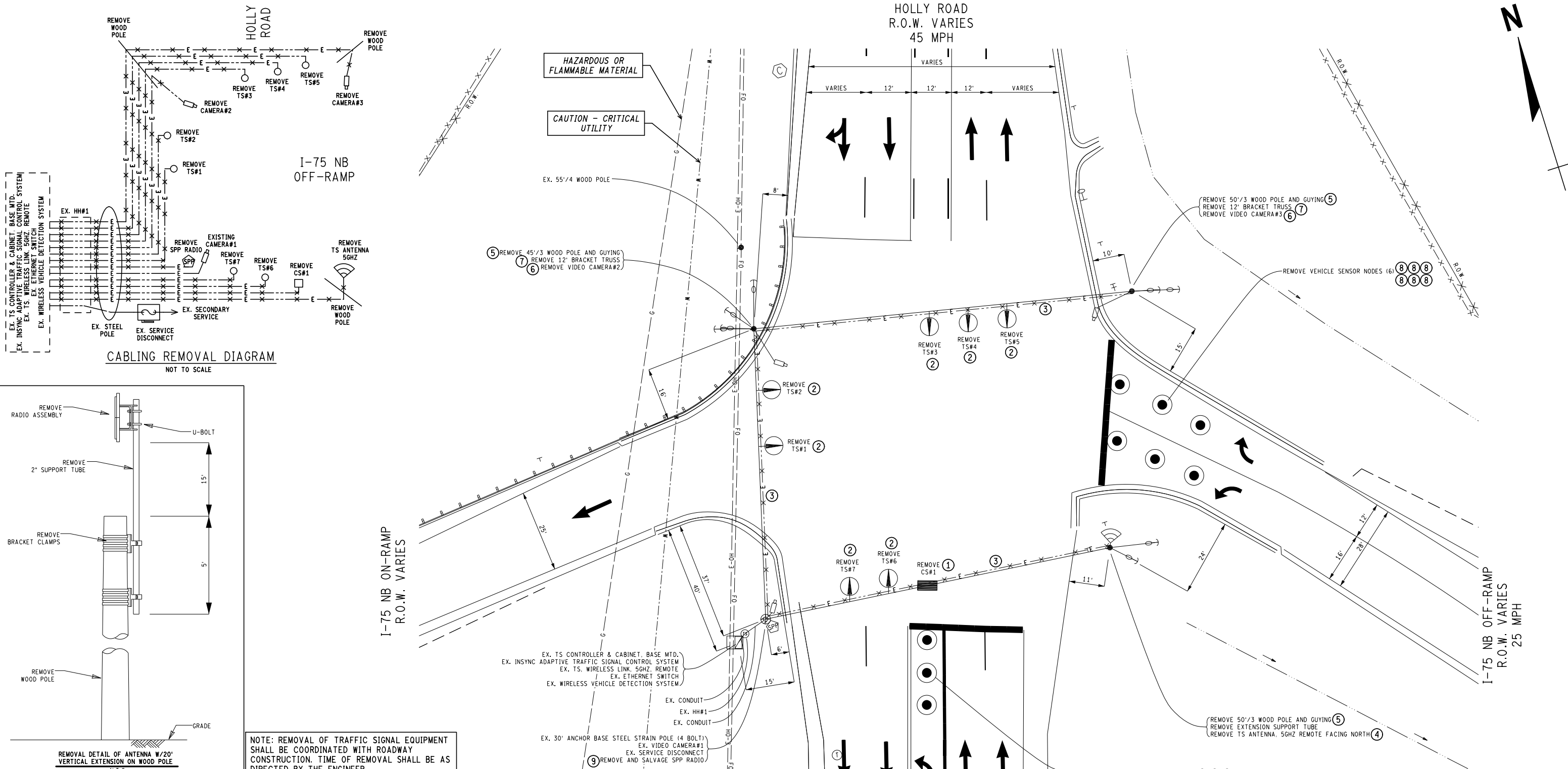
ELECTRICAL LINE STYLES

-  CABLE, OVERHEAD
-  CABLE, EXISTING TO BE REMOVED
-  CABLE, EXISTING TO BE ABANDONED
-  CABLE, TWISTED PAIR
-  CONDUIT, EXISTING
-  CONDUIT, EXISTING TO BE ABANDONED
-  CONDUIT, PROPOSED

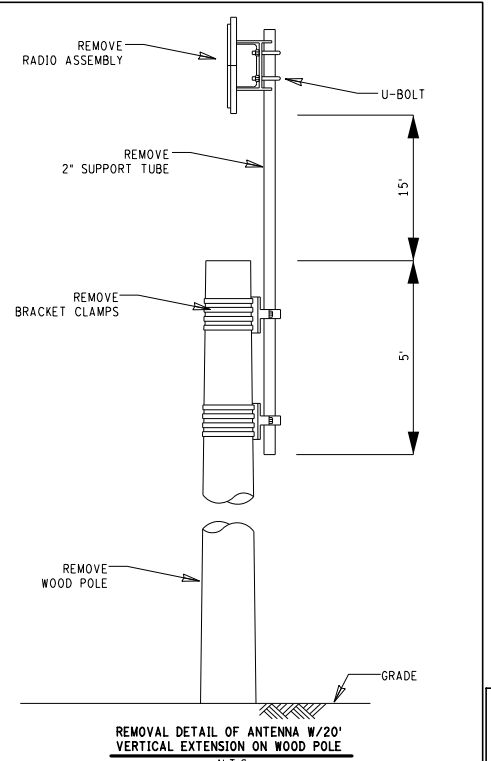
*For sheets 127-135*  
*Martin R. Parker*



FINAL ROW PLAN REVISIONS (SUBMITTAL DATE: )				 		NO SCALE	INT CS:	INT SPOT:	DATE: 03/08/17	CS: 25131	TRAFFIC SIGNAL	DRAWING	SHEET
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESIGNED BY: WADETRIM	DESIGN UNIT: SIGNALS	JN: 115832A	LEGEND SHEET	LEGEND	SECT 1	
							FILE: 115832_LEGEND.dgn	TSC: DAVISON			001	127	



**CABLING REMOVAL DIAGRAM**  
NOT TO SCALE



NOTE: REMOVAL OF TRAFFIC SIGNAL EQUIPMENT SHALL BE COORDINATED WITH ROADWAY CONSTRUCTION. TIME OF REMOVAL SHALL BE AS DIRECTED BY THE ENGINEER.

NOTE: REMOVAL OF EX. SUPPORT TUBE AND BRACKET CLAMPS SHALL BE INCLUDED IN THE PAY ITEM "TS. ANTENNA. REM" AND WILL NOT BE PAID FOR SEPARATELY.

NOTE: EX. RADIO & VIDEO EQUIPMENT TO BE REMOVED SHALL BE SALVAGED AND RE-INSTALLED ON NEW WOOD POLES.

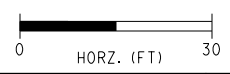
LIST OF MATERIAL			
NO.	ITEM	QUANTITIES	ITEM CODE
1	Case Sign, Rem	1 Ea	8200020
2	TS. Span Wire Mtd. Rem	7 Ea	8200182
3	Span Wire, Rem	3 Ea	8200141
4	TS. Antenna, Rem	1 Ea	8200368
5	Wood Pole, Rem	3 Ea	8190505
6	Video Traffic Detection Camera, Rem	2 Ea	8200384
7	Bracket, Truss, Rem	2 Ea	8200388
8	Wireless Vehicle Sensor Node, Rem	9 Ea	8200426
9	Serial Port Protocol Radio, Rem and Salv	1 Ea	8007050

**TRAFFIC ADAPTIVE SYSTEM (INSYNC) NOTES:**  
EX. MASTER PROCESSOR: ON STREET MASTER IS LOCATED AT E. COOK ROAD & HOLLY ROAD

R.O.W. ON THE SW AND SE QUADRANTS IS BEYOND THE LIMIT OF THIS PLAN SHEET.

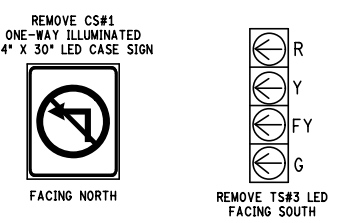
**WADETRIM**  
www.wadetrिम.com  
Taylor, Michigan

**MDOT**  
Michigan Department of Transportation  
MDT 2357.03N



INT CS:25131 INT SPOT:102 DATE:03/08/17 CS: 25131  
DESIGNED BY: WADETRIM DESIGN UNIT: SIGNALS JUN: 115832A  
FILE: 115832\_2513101102\_REM001.dgn TSC: DAVISON

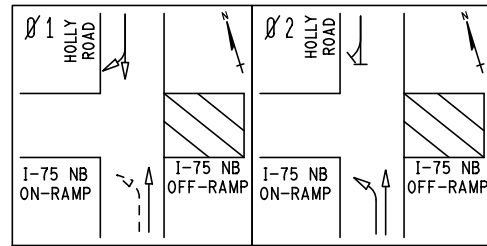
PRE-STAGE 2 REMOVAL  
TRAFFIC SIGNAL REMOVAL SHEET  
I-75 NB RAMPS @ HOLLY ROAD  
GRAND BLANC TWP, GENESEE COUNTY



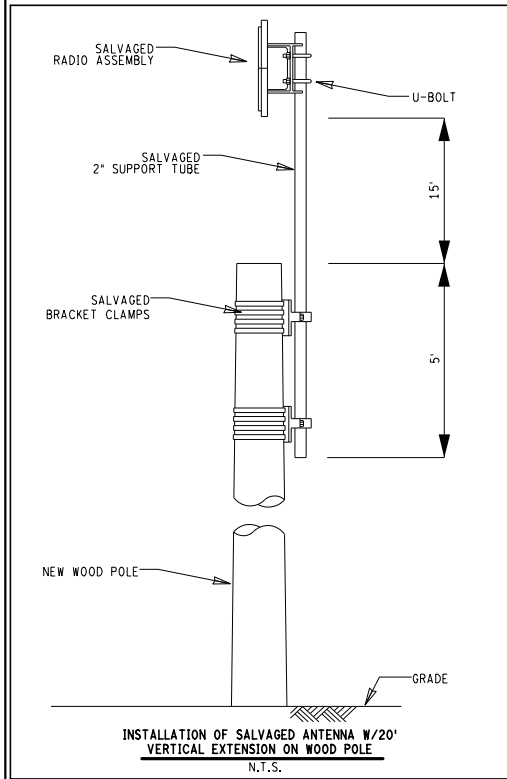
SIGNALS	
OPENINGS:	26
CYCLIC WATTS:	290
STEADY WATTS:	45
PLAN:	25131-01-102

DRAWING SHEET	
SIG LOC 001	SECT 1
<b>128</b>	





PHASING DIAGRAM - STAGE 2



TRAFFIC ADAPTIVE SYSTEM (INSYNC) NOTES:

EX. MASTER PROCESSOR: ON STREET MASTER IS LOCATED AT E. COOK ROAD & HOLLY ROAD

NOTE: EX. VEHICLE DETECTION SHALL BE DEACTIVATED DURING CONSTRUCTION. MDOT SHALL REPROGRAM THE TS CONTROLLER AS NECESSARY.

NOTE: INSTALLATION OF SALVAGED SUPPORT TUBE AND BRACKET CLAMPS SHALL BE INCLUDED IN THE PAY ITEM "TS, ANTENNA, SALV" AND WILL NOT BE PAID FOR SEPARATELY.

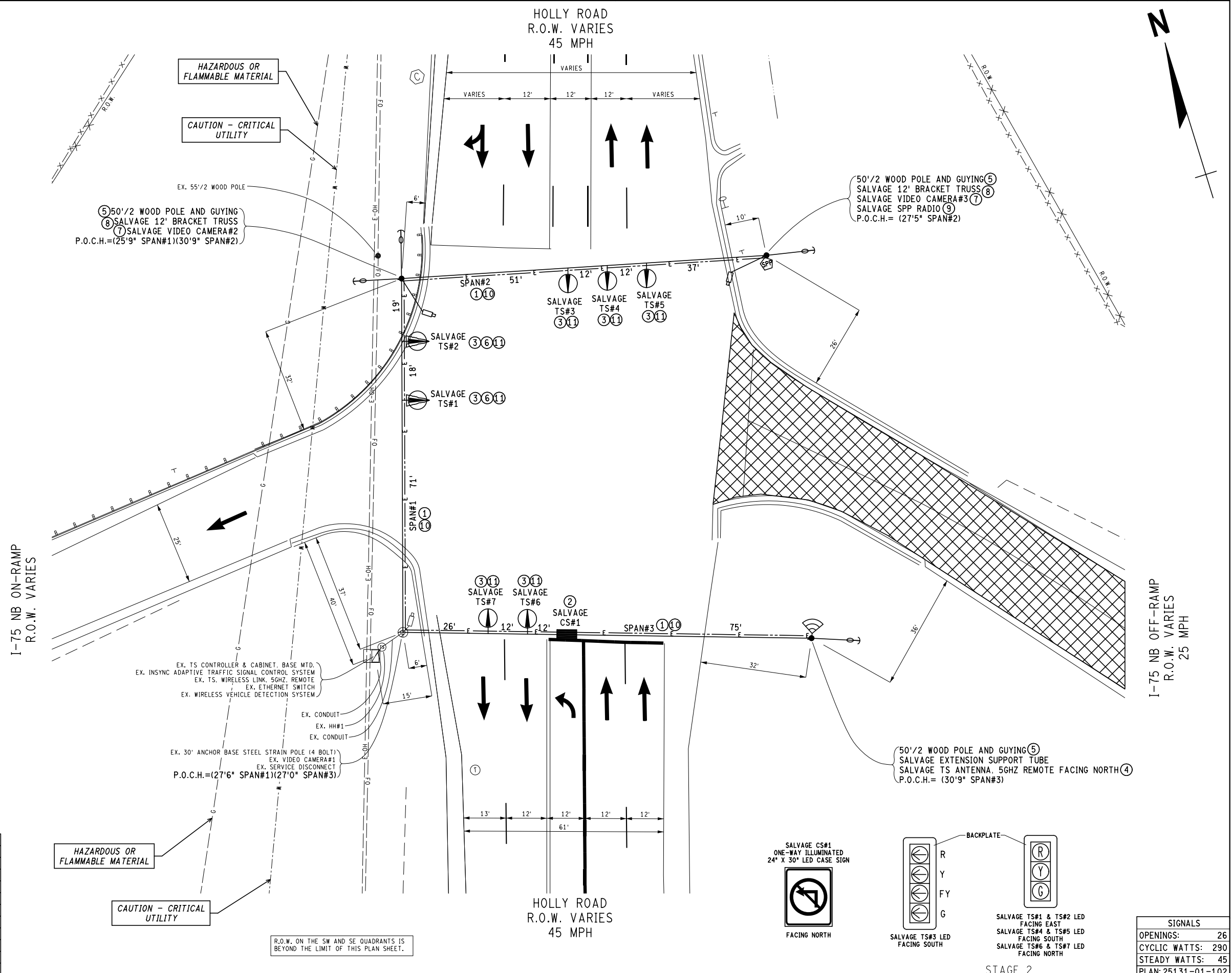
BAGGING/UNBAGGING FOR STAGE 2: BAG TS#1 & TS#2 FACING EAST

NOTE: TIME OF BAGGING AND UNBAGGING OF TRAFFIC SIGNALS TO BE AS DIRECTED BY THE ENGINEER.

LIST OF MATERIAL

NO.	ITEM	QUANTITIES	ITEM CODE
1	Span Wire	3 Ea	8200140
2	Case Sign, Salv	1 Ea	8200039
3	TS, One Way Span Wire Mtd, Salv	7 Ea	8200191
4	TS, Antenna, Salv	1 Ea	8200369
5	Wood Pole	3 Ea	8190465
6	TS, Bag	2 Ea	8200450
7	Video Traffic Detection Camera, Salv	2 Ea	8200440
8	Bracket, Truss, Salv	2 Ea	8200385
9	Serial Port Protocol Radio, Reinstall Salv	1 Ea	8007050
10	Span Wire Tether	3 Ea	8200142
11	Backplate, TS	7 Ea	8200501

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

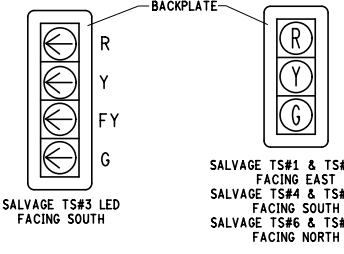
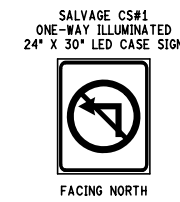
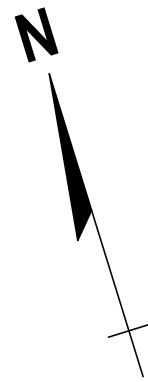


I-75 NB ON-RAMP  
R.O.W. VARIES

I-75 NB OFF-RAMP  
R.O.W. VARIES  
25 MPH

HOLLY ROAD  
R.O.W. VARIES  
45 MPH

HOLLY ROAD  
R.O.W. VARIES  
45 MPH



SIGNALS	
OPENINGS:	26
CYCLIC WATTS:	290
STEADY WATTS:	45
PLAN:	25131-01-102



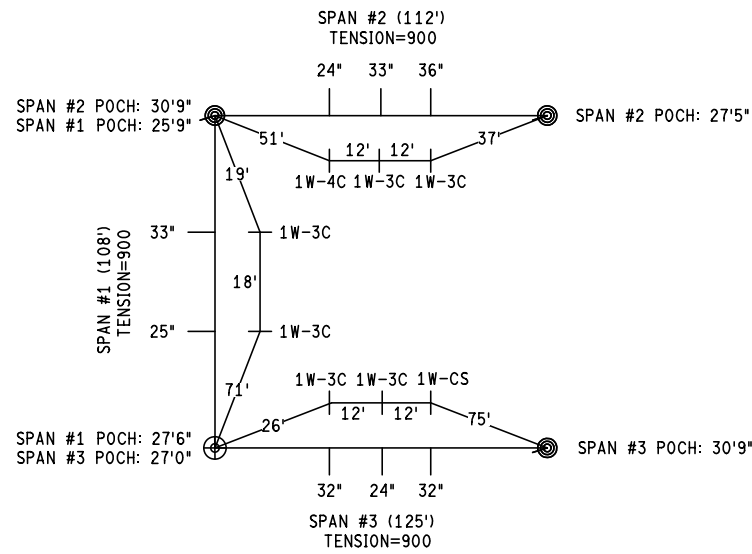
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DESIGNED BY: WADETRIM  
FILE: 115832\_2513101102\_CON001.dgn

DATE: 03/08/17  
DESIGN UNIT: SIGNALS  
TSC: DAVISON

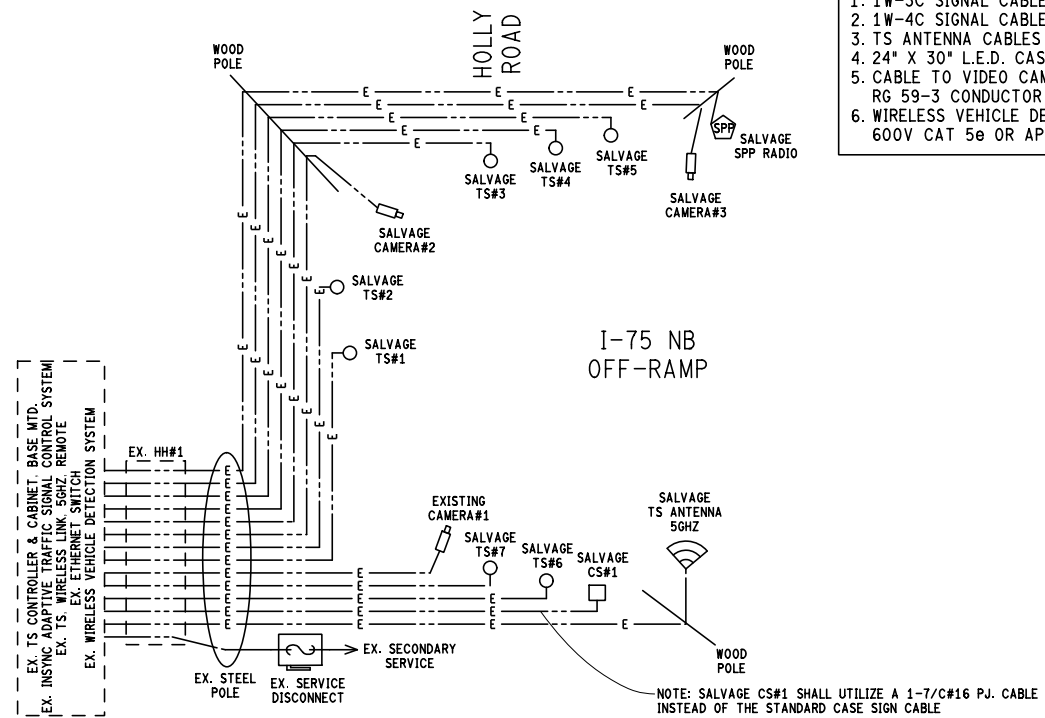
CS: 25131  
JN: 115832A

STAGE 2  
TRAFFIC SIGNAL PLAN SHEET  
I-75 NB RAMPS @ HOLLY ROAD  
GRAND BLANC TWP, GENESEE COUNTY  
DRAWING SHEET  
SIG LOC 001  
SECT 1  
129

**BOX SPAN CALCULATIONS (TOP-TETHERED)**  
NOT TO SCALE



- CABLES TO BE USED UNLESS SPECIFIED OTHERWISE**
- 1W-3C SIGNAL CABLES ARE 5/C#16 PJ.
  - 1W-4C SIGNAL CABLES ARE 7/C#16 PJ.
  - TS ANTENNA CABLES ARE 600V CAT 5e OR APPROVED EQUAL.
  - 24" X 30" L.E.D. CASE SIGNS ARE 7/C#16 PJ.
  - CABLE TO VIDEO CAMERAS TO BE COMBINATION COAXIAL/POWER CABLE RG 59-3 CONDUCTOR 16AWG.
  - WIRELESS VEHICLE DETECTION, SPP RADIO CABLES ARE 600V CAT 5e OR APPROVED EQUAL.



**CABLING INSTALLATION DIAGRAM**  
NOT TO SCALE

I-75 NB OFF-RAMP

HOLLY ROAD

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

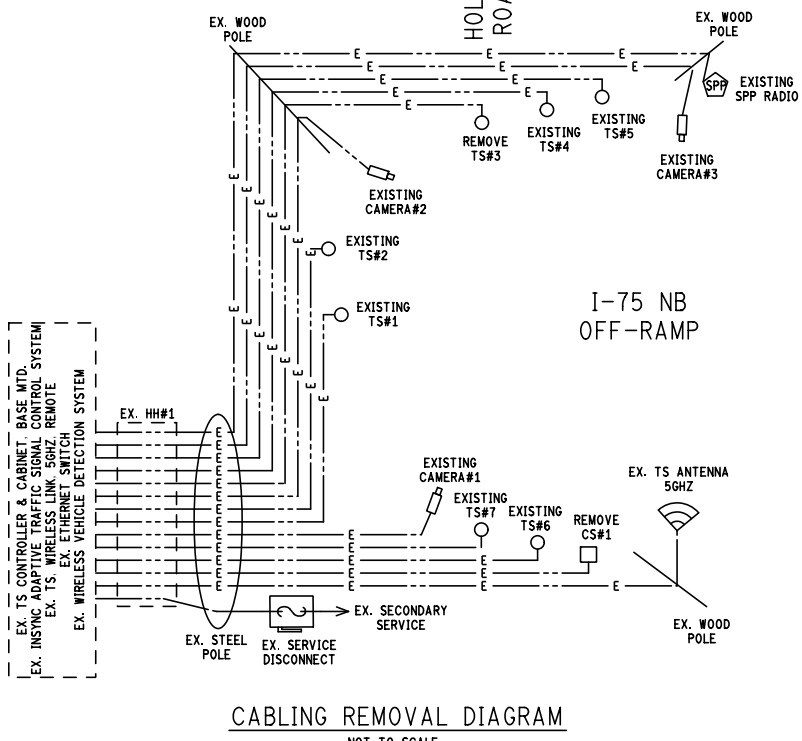
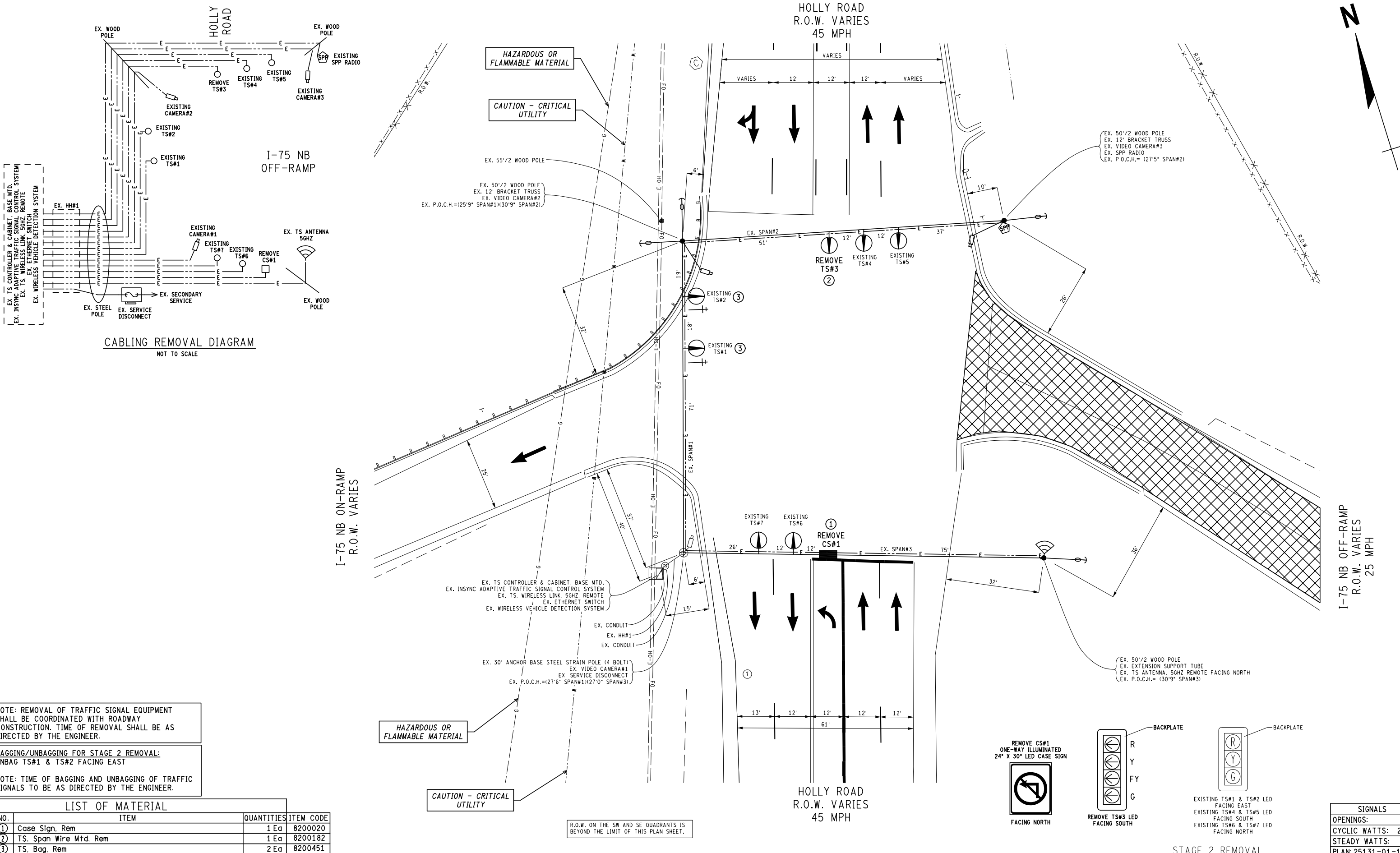


**NO SCALE**

INT CS:25131	INT SPOT:102	DATE:03/08/17	CS: 25131
DESIGNED BY: WADETRIM	DESIGN UNIT: SIGNALS	JN: 115832A	
FILE: 115832_2513101102_CON001.dgn	TSC: DAVISON		

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TRAFFIC SIGNAL PLAN SHEET		DRAWING	SHEET
I-75 NB RAMPS @ HOLLY ROAD		SIG LOC 001	SECT 1
GRAND BLANC TWP, GENESEE COUNTY			<b>130</b>



CABLING REMOVAL DIAGRAM  
NOT TO SCALE

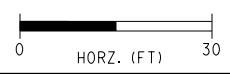
NOTE: REMOVAL OF TRAFFIC SIGNAL EQUIPMENT SHALL BE COORDINATED WITH ROADWAY CONSTRUCTION. TIME OF REMOVAL SHALL BE AS DIRECTED BY THE ENGINEER.

BAGGING/UNBAGGING FOR STAGE 2 REMOVAL:  
UNBAG TS#1 & TS#2 FACING EAST

NOTE: TIME OF BAGGING AND UNBAGGING OF TRAFFIC SIGNALS TO BE AS DIRECTED BY THE ENGINEER.

LIST OF MATERIAL			
NO.	ITEM	QUANTITIES	ITEM CODE
①	Case Sign, Rem	1 Ea	8200020
②	TS, Span Wire Mtd, Rem	1 Ea	8200182
③	TS, Bag, Rem	2 Ea	8200451

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

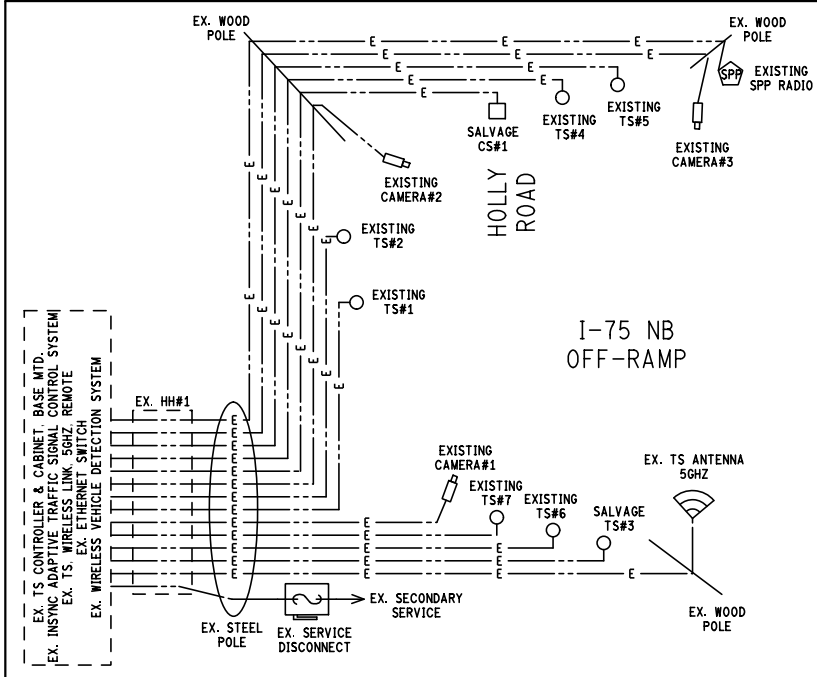


INT CS:25131 INT SPOT:102 DATE:03/08/17 CS: 25131  
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 FILE: 115832\_2513101102\_REM002.dgn TSC: DAVISON

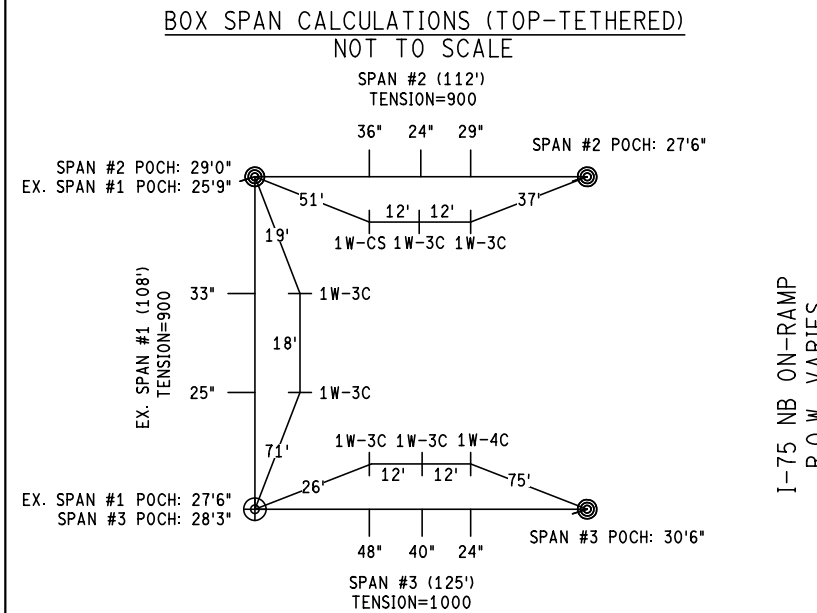
STAGE 2 REMOVAL  
 TRAFFIC SIGNAL REMOVAL SHEET  
 I-75 NB RAMPS @ HOLLY ROAD  
 GRAND BLANC TWP, GENESEE COUNTY

DRAWING SHEET	
SIG LOC 001	SECT 1 131

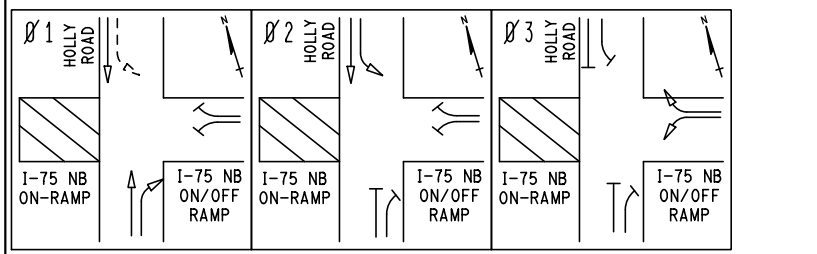
SIGNALS	
OPENINGS:	26
CYCLIC WATTS:	290
STEADY WATTS:	45
PLAN:	25131-01-102



**CABLING INSTALLATION DIAGRAM**  
NOT TO SCALE



NOTE: SPAN WIRE CONTACT HEIGHTS MAY REQUIRE ADJUSTING AS DIRECTED BY THE ENGINEER TO MAINTAIN A 17'0" MINIMUM UNDERCLEARANCE AT ALL TIMES. ANY ADJUSTMENTS TO CONTACT HEIGHTS SHALL BE INCLUDED IN THE PAY ITEMS "CASE SIGN, SALV" & "TS, ONE WAY SPAN WIRE MTD, SALV" AND WILL NOT BE PAID FOR SEPARATELY.

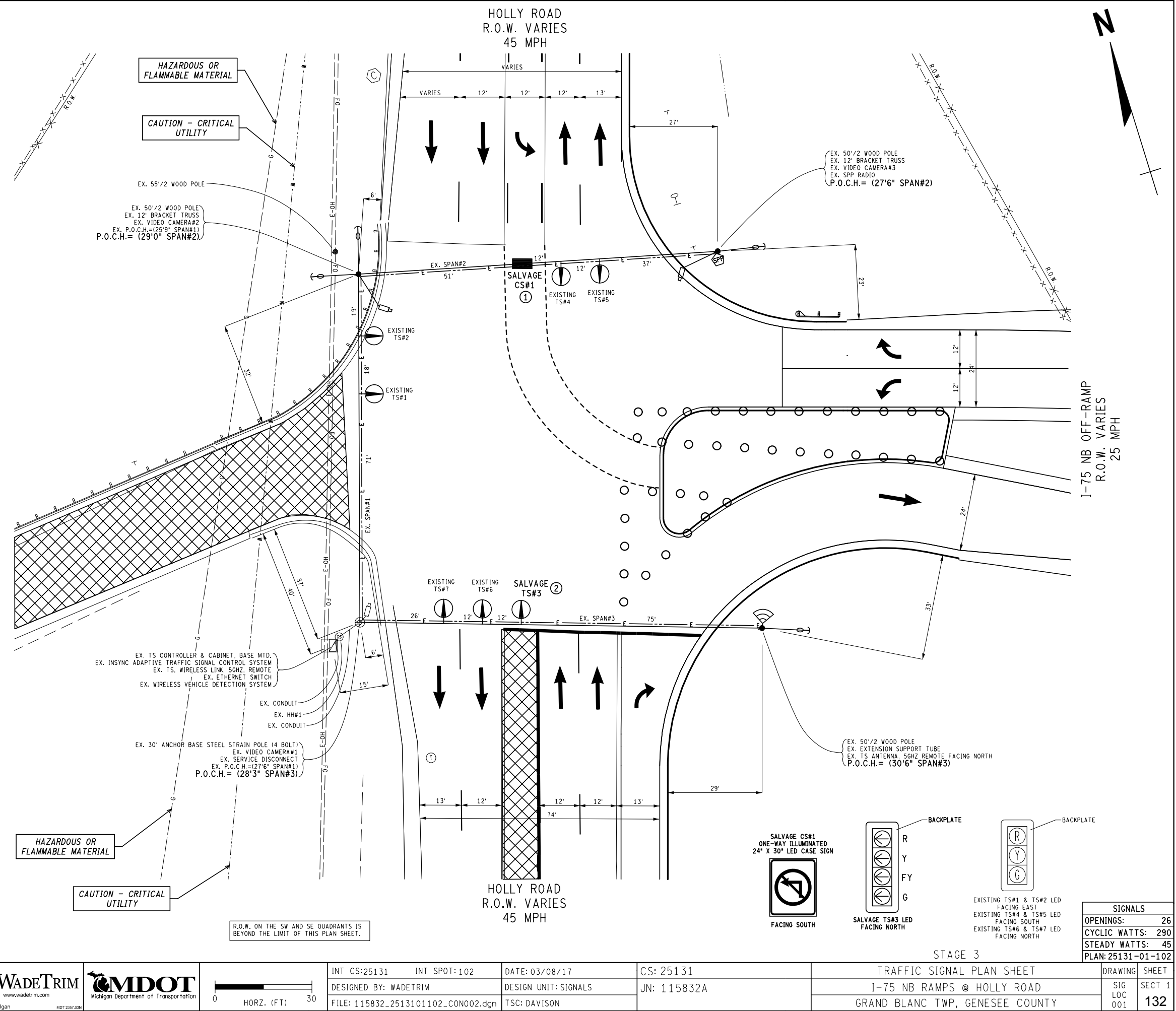


**LIST OF MATERIAL**

NO.	ITEM	QUANTITIES	ITEM CODE
①	Case Sign, Salv	1 Ea	8200039
②	TS, One Way Span Wire Mtd, Salv	1 Ea	8200191

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE: )

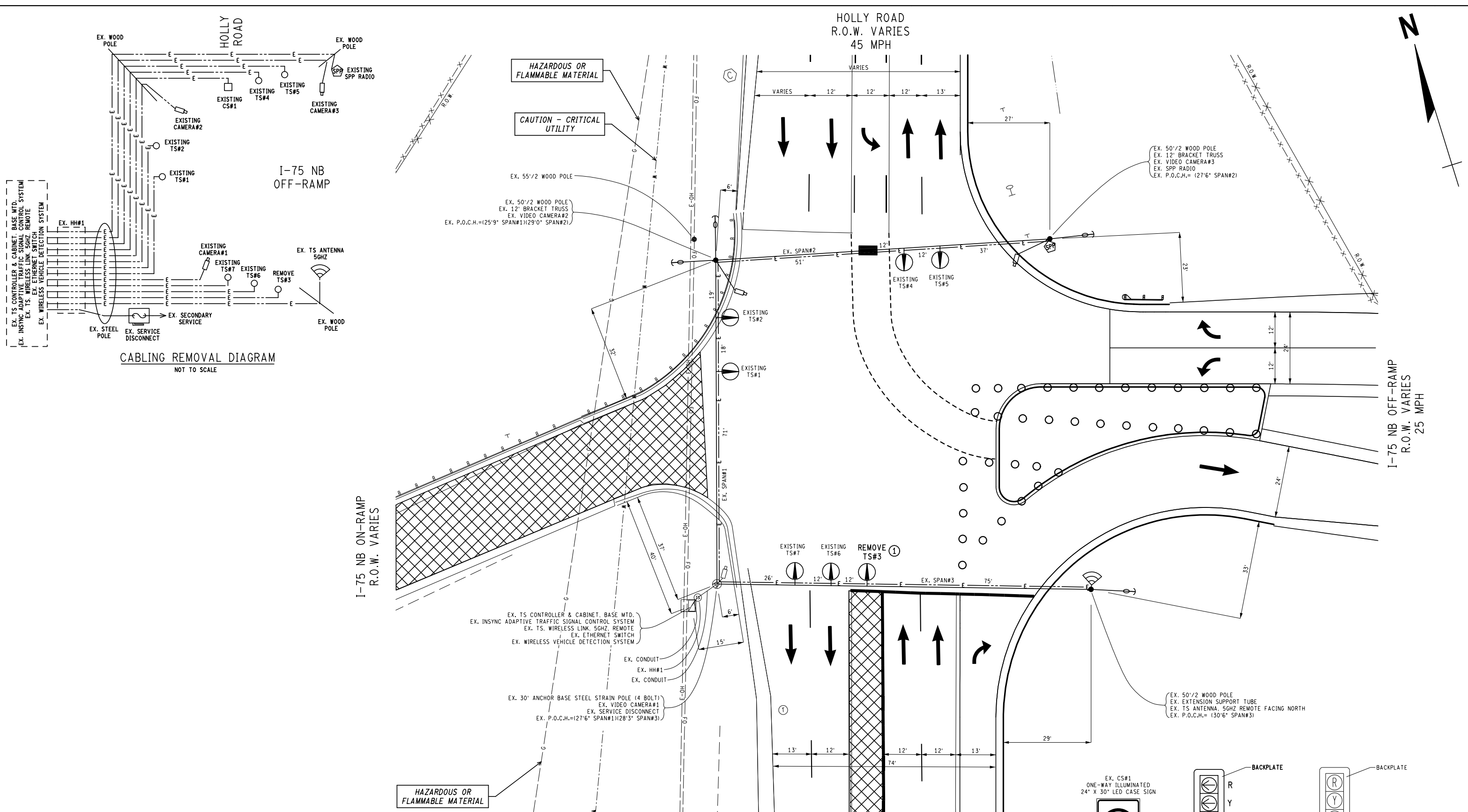
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION



**SIGNALS**

OPENINGS:	26
CYCLIC WATTS:	290
STEADY WATTS:	45
PLAN:	25131-01-102

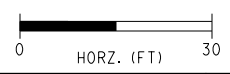




NOTE: REMOVAL OF TRAFFIC SIGNAL EQUIPMENT SHALL BE COORDINATED WITH ROADWAY CONSTRUCTION. TIME OF REMOVAL SHALL BE AS DIRECTED BY THE ENGINEER.

LIST OF MATERIAL			
NO.	ITEM	QUANTITIES	ITEM CODE
1	TS, Span Wire Mtd. Rem	1 Ea	8200182

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



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 DESIGNED BY: WADETRIM  
 FILE: 115832\_2513101102\_REM003.dgn

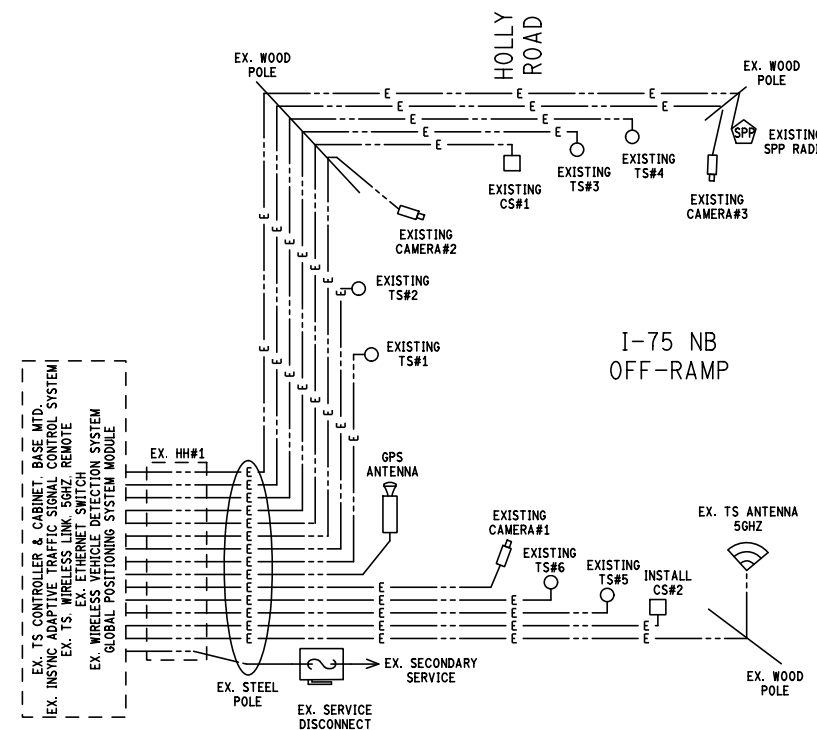
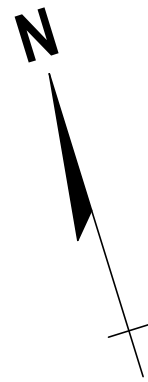
DATE: 03/08/17  
 DESIGN UNIT: SIGNALS  
 TSC: DAIVSON

CS: 25131  
 JN: 115832A

STAGE 3 REMOVAL  
 TRAFFIC SIGNAL REMOVAL SHEET  
 I-75 NB RAMPS @ HOLLY ROAD  
 GRAND BLANC TWP, GENESEE COUNTY

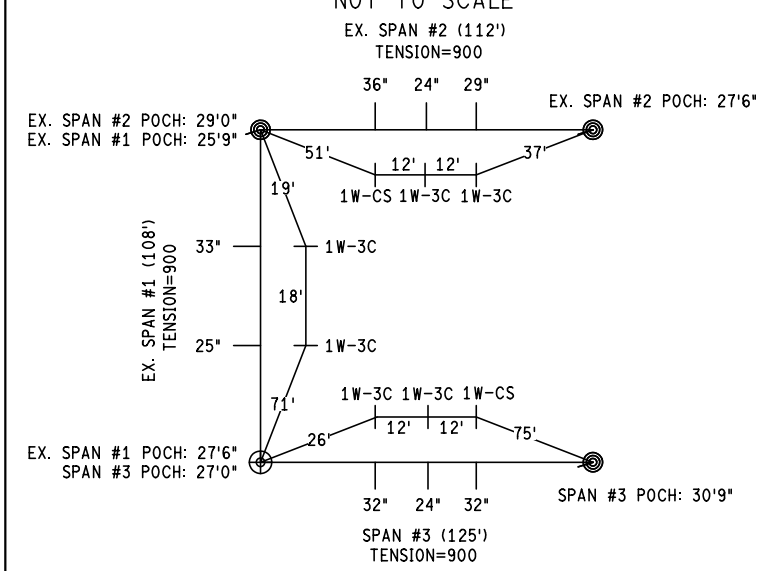
SIGNALS	
OPENINGS:	26
CYCLIC WATTS:	290
STEADY WATTS:	45
PLAN:	25131-01-102

DRAWING SHEET  
 SIG LOC 001  
 SECT 1  
 133



**CABLING INSTALLATION DIAGRAM**  
NOT TO SCALE

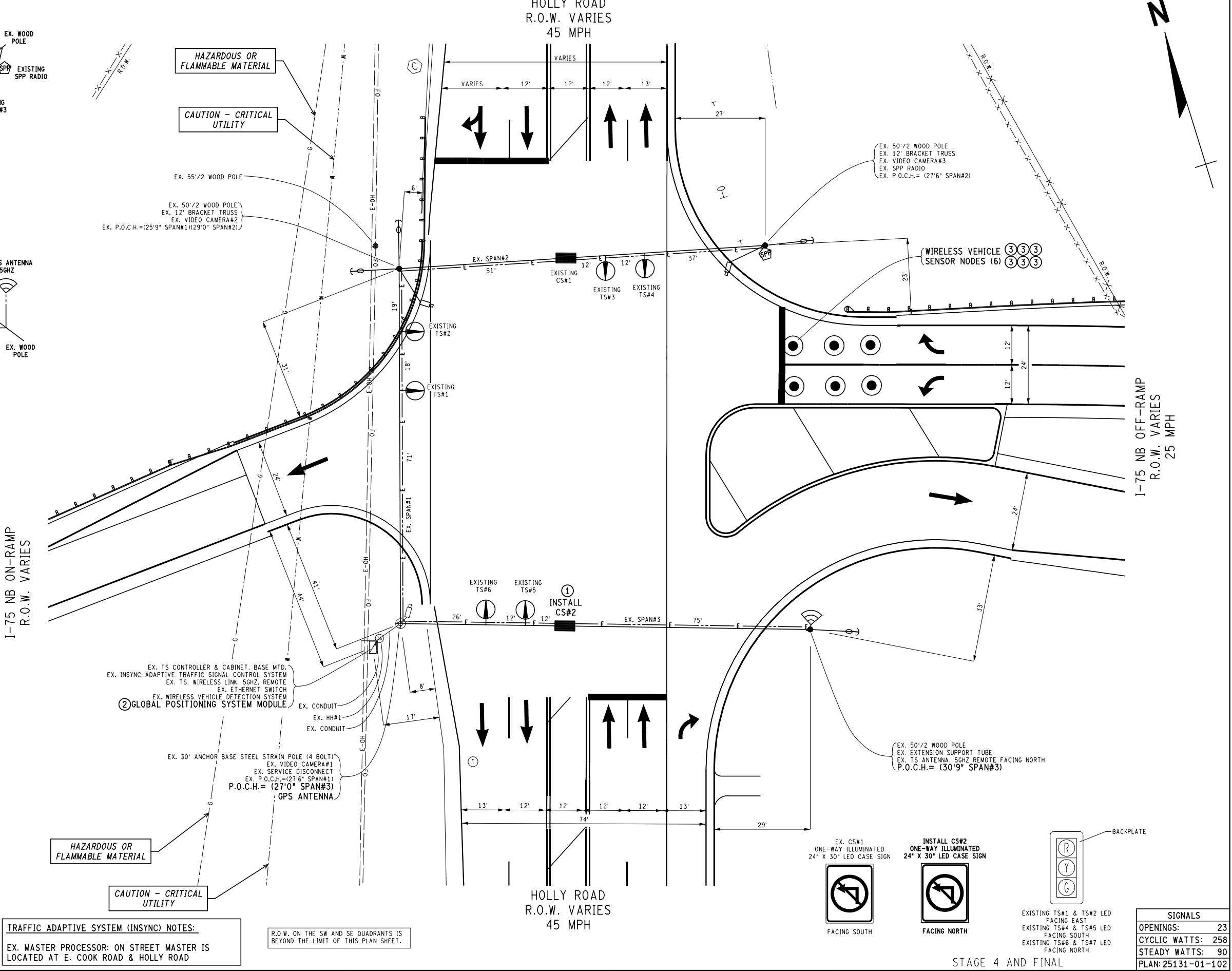
**BOX SPAN CALCULATIONS (TOP-TETHERED)**  
NOT TO SCALE



NOTE: SPAN WIRE CONTACT HEIGHTS MAY REQUIRE ADJUSTING AS DIRECTED BY THE ENGINEER TO MAINTAIN A 17'0" MINIMUM UNDERCLEARANCE AT ALL TIMES. ANY ADJUSTMENTS TO CONTACT HEIGHTS SHALL BE INCLUDED IN THE PAY ITEM \*CASE SIGN (LED), ONE WAY, 24 INCH BY 30 INCH\* AND WILL NOT BE PAID FOR SEPARATELY.

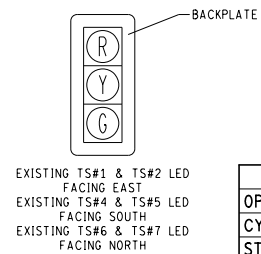
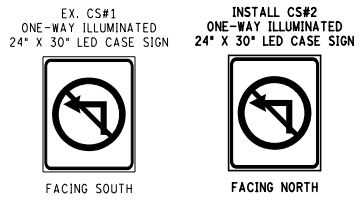
NOTE: WIRELESS VEHICLE DETECTION SYSTEM LOCATIONS TO BE DETERMINED BY THE STATEWIDE SIGNAL INSPECTOR, JIM KWAPISZEWSKI AT (517) 242-1486. PLEASE PROVIDE FIVE WORKING DAYS NOTICE.

LIST OF MATERIAL			
NO.	ITEM	QUANTITIES	ITEM CODE
①	Case Sign (LED), One Way, 24 inch by 30 inch	1 Ea	8200029
②	Global Positioning System Module	1 Ea	8200050
③	Wireless Vehicle Sensor Node	6 Ea	8200425



TRAFFIC ADAPTIVE SYSTEM (INSYNC) NOTES:  
EX. MASTER PROCESSOR: ON STREET MASTER IS LOCATED AT E. COOK ROAD & HOLLY ROAD

R.O.W. ON THE SW AND SE QUADRANTS IS BEYOND THE LIMIT OF THIS PLAN SHEET.

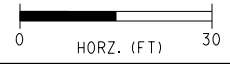


SIGNALS	
OPENINGS:	23
CYCLIC WATTS:	258
STEADY WATTS:	90
PLAN:	25131-01-102

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

**WADETRIM**  
www.wadefirm.com  
Taylor, Michigan

**MDOT**  
Michigan Department of Transportation



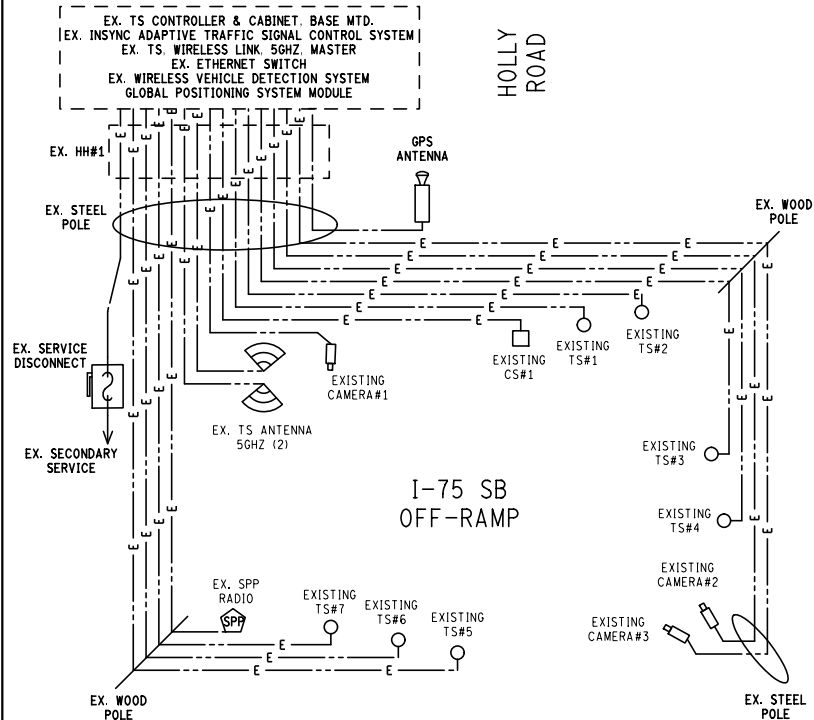
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DESIGNED BY: WADETRIM DESIGN UNIT: SIGNALS JUN: 115832A  
FILE: 115832\_2513101102\_CON003.dgn TSC: DAVISON

STAGE 4 AND FINAL  
TRAFFIC SIGNAL PLAN SHEET  
I-75 NB RAMPS @ HOLLY ROAD  
GRAND BLANC TWP, GENESEE COUNTY

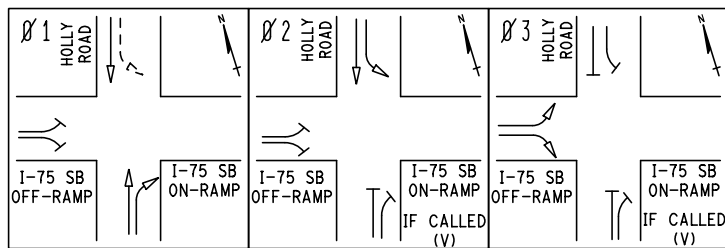
DRAWING	SHEET
SIG LOC 001	134

CABLES TO BE USED  
UNLESS SPECIFIED OTHERWISE

1. GPS MODULE CABLES ARE FOIL SHIELDED 8/C#28 AWG



CABLING INSTALLATION DIAGRAM  
NOT TO SCALE



PHASING DIAGRAM

TRAFFIC ADAPTIVE SYSTEM (INSYNC) NOTES:

EX. MASTER PROCESSOR: ON STREET MASTER IS LOCATED AT E. COOK ROAD & HOLLY ROAD

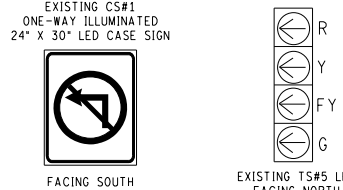
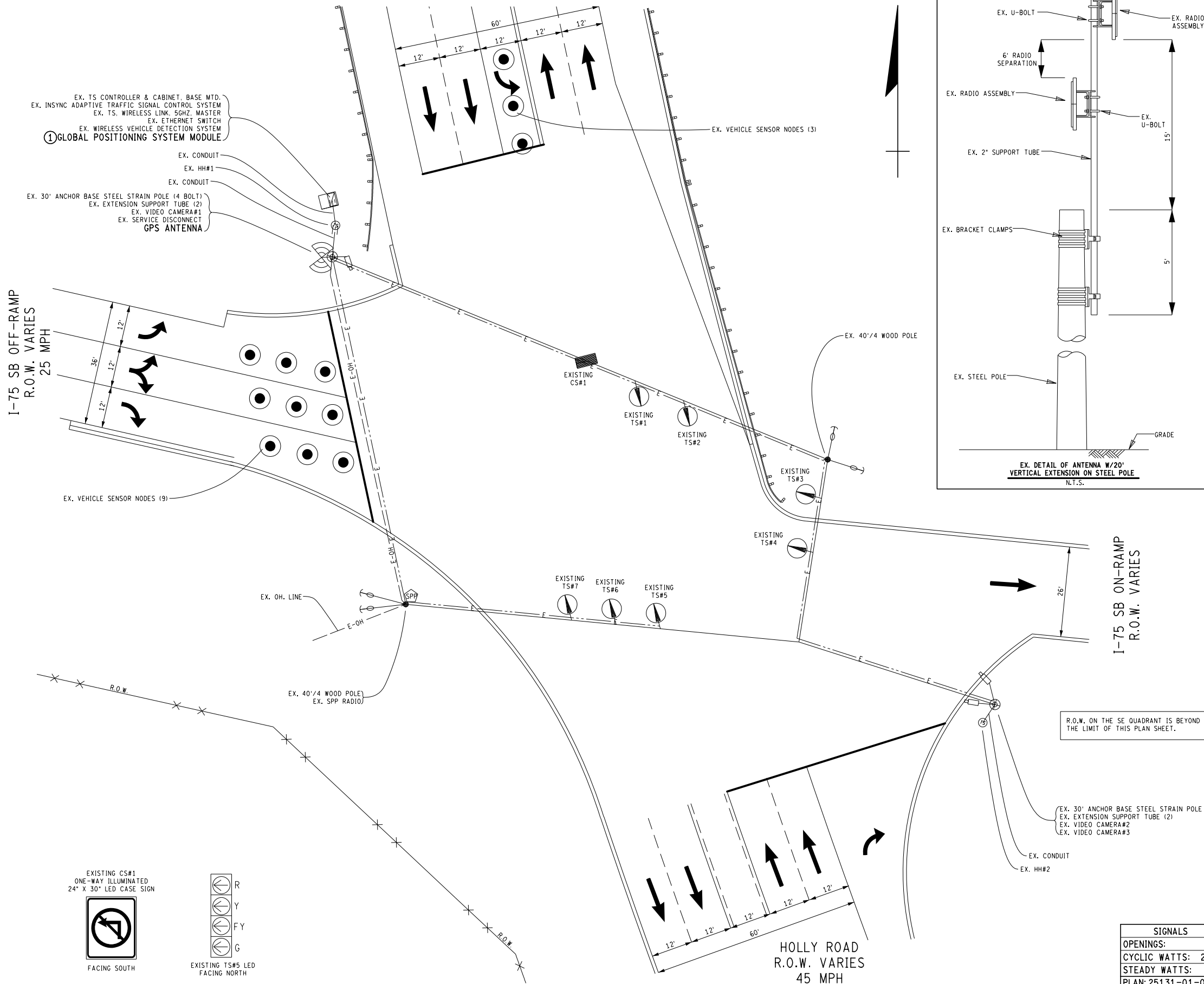
NOTE: DRAWING IS NOT TO SCALE. DIMENSIONS AND R.O.W. SHOWN ARE APPROXIMATE AND FOR REFERENCE ONLY.

LIST OF MATERIAL

NO.	ITEM	QUANTITIES	ITEM CODE
①	Global Positioning System Module	1 Ea	8200050

R.O.W. ON THE NW & NE QUADRANTS IS BEYOND THE LIMIT OF THIS PLAN SHEET.

HOLLY ROAD  
R.O.W. VARIES  
45 MPH



R.O.W. ON THE SE QUADRANT IS BEYOND THE LIMIT OF THIS PLAN SHEET.

SIGNALS	
OPENINGS:	23
CYCLIC WATTS:	290
STEADY WATTS:	45
PLAN:	25131-01-002

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



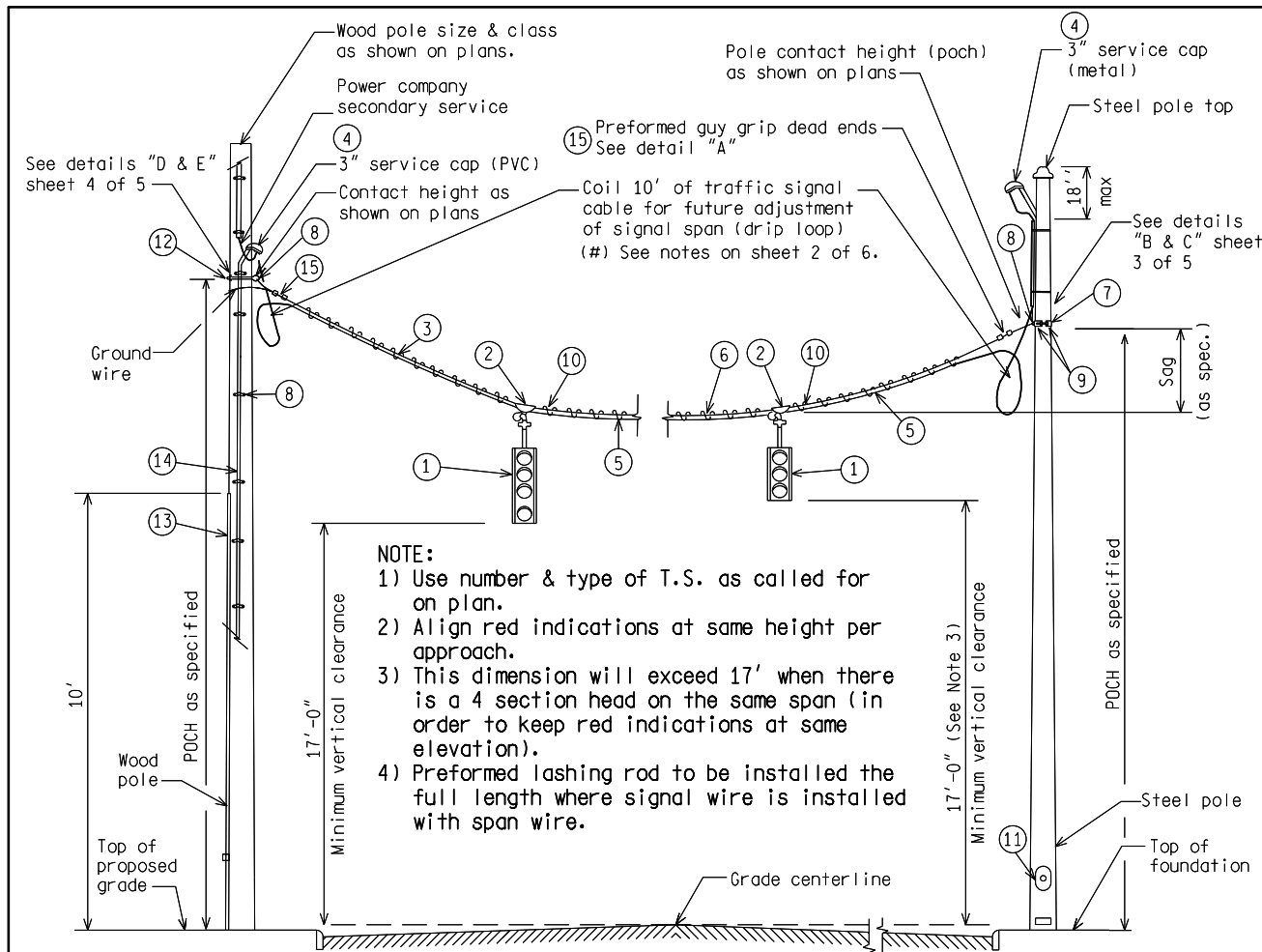
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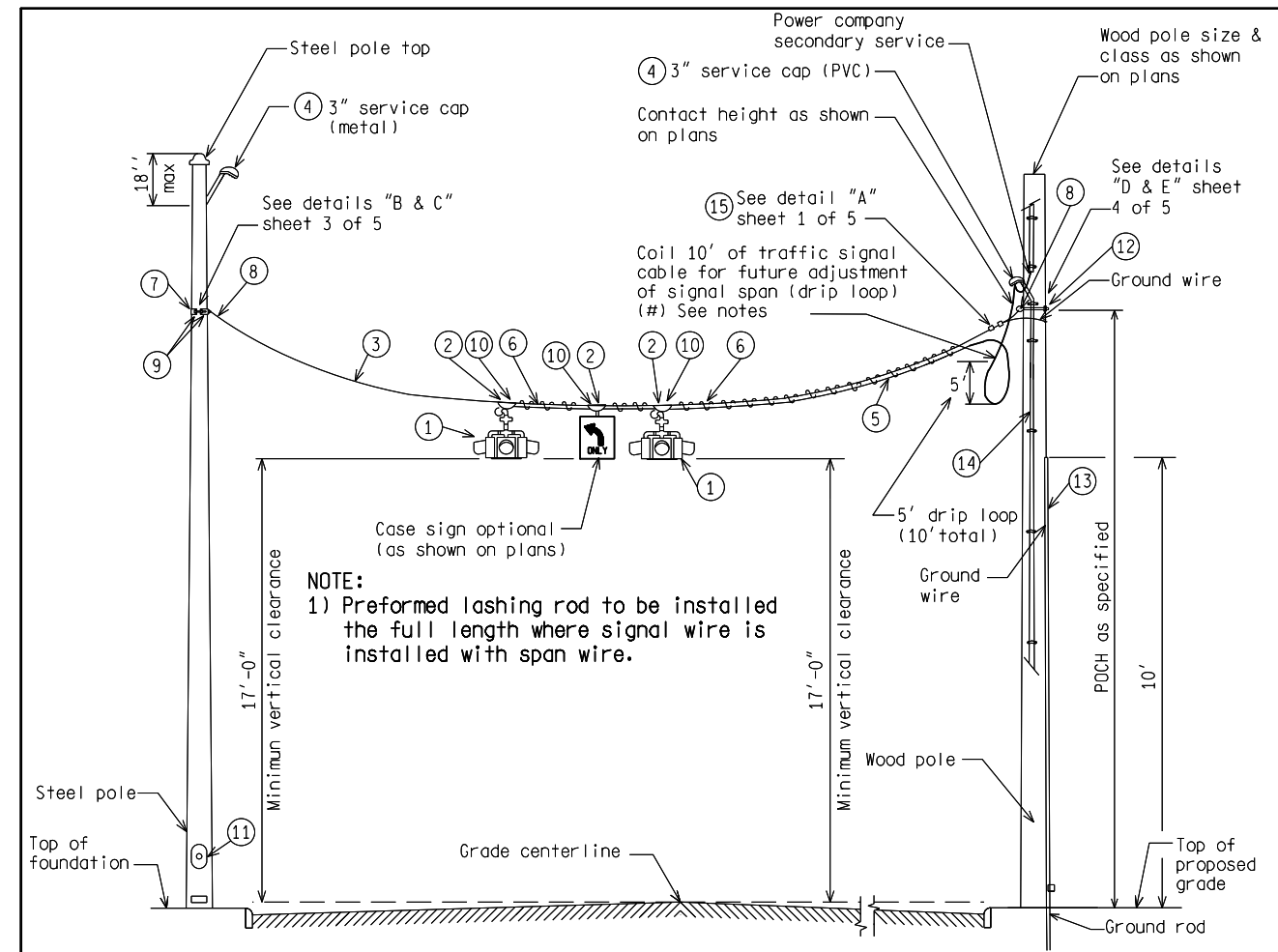
DATE: 03/08/17  
DESIGN UNIT: SIGNALS  
TSC: DAVISON

CS: 25131  
JN: 115832A  
TRAFFIC SIGNAL PLAN SHEET  
I-75 SB RAMPS @ HOLLY ROAD  
GRAND BLANC TWP, GENESEE COUNTY

DRAWING SHEET  
SIG LOC 002  
SECT 1  
135

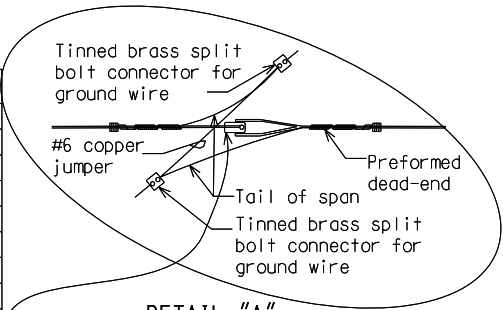


TYPICAL SPAN WIRE INSTALLATION T.S. ON STEEL AND WOOD POLES



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	3" schedule 80 PVC or rigid metal (*) See note on sheet 2 of 5
15	Preformed guy grip dead ends



DETAIL "A"

NOTE: COPPER JUMPER  
 Porcelain strain insulator (if required shall meet the codes and placement requirements of the local utility co.)

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.

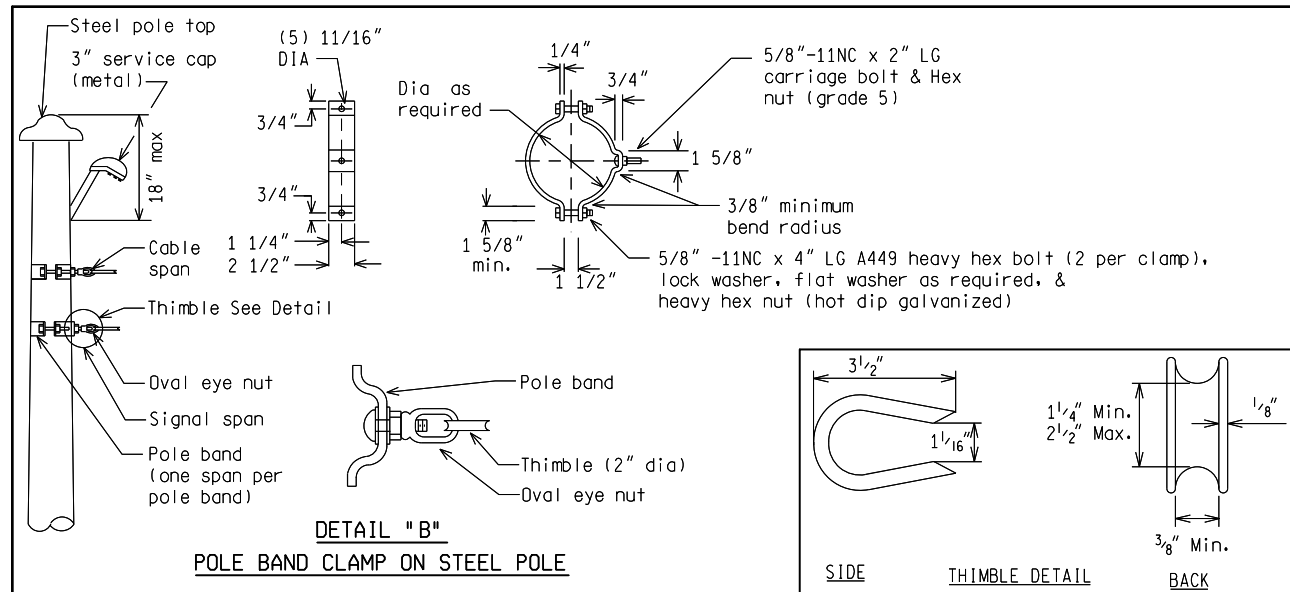
NOT TO SCALE

File: RefDoc/TR/Signals/Web/Sp Det/Fin/SIG010A.dgn Rev. 02/16/17

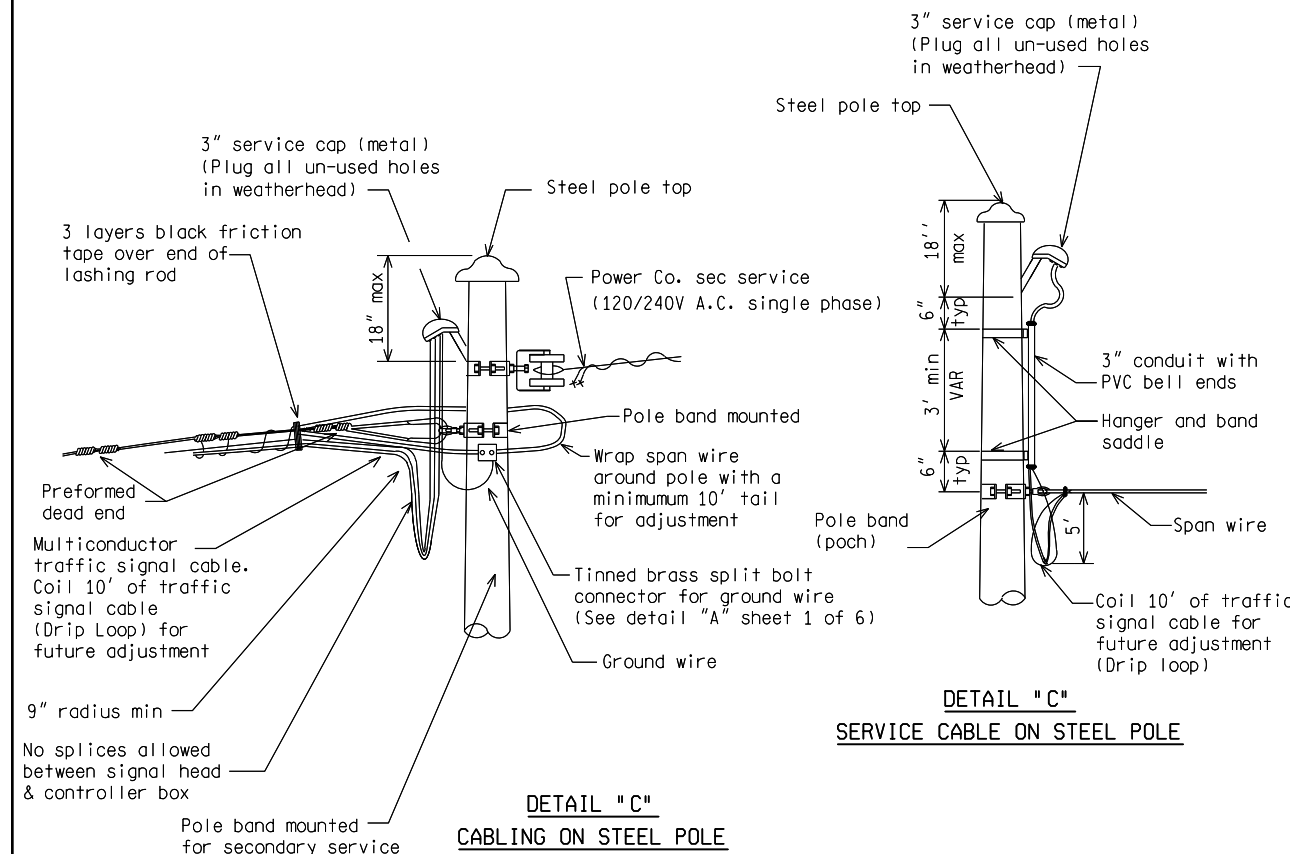
<p>PREPARED BY TRAFFIC AND SAFETY</p> <p>DRAWN BY: DJF</p> <p>CHECKED BY:</p>	<p>ENGINEER OF DELIVERY</p> <hr/> <p>ENGINEER OF DEVELOPMENT</p> <p>(SPECIAL DETAIL)</p> <p>FHWA APPROVAL DATE</p>	<p>MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR</p> <p><b>ALL SPAN WIRE T.S. ON STEEL AND WOOD POLES</b></p>	<p>PLAN DATE</p> <p>SIG-010-A</p> <p>SHEET 1 of 7</p>
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<p>MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN</p>	<p>(SPECIAL DETAIL) FHWA APPROVAL DATE</p>	<p>PLAN DATE</p> <p>SIG-010-A</p>	<p>SHEET 2 of 7</p>
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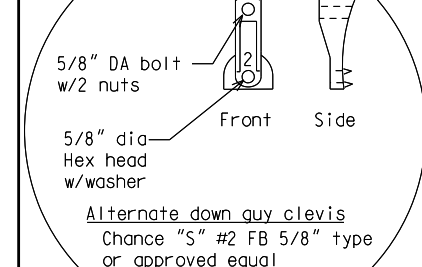
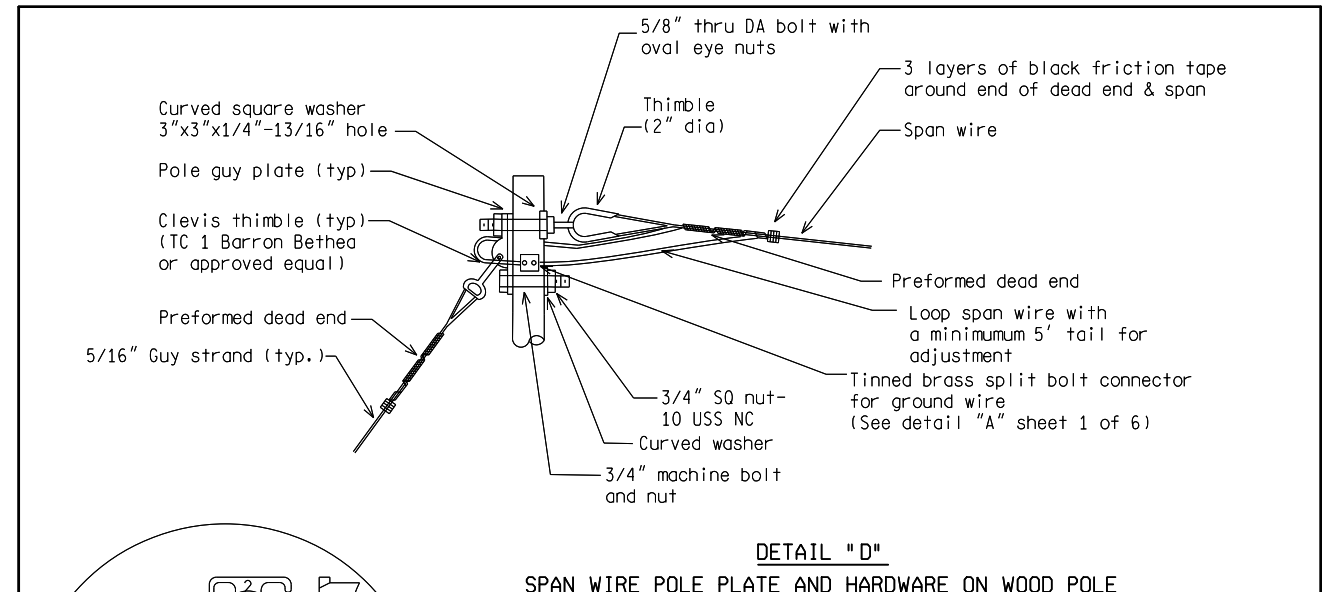




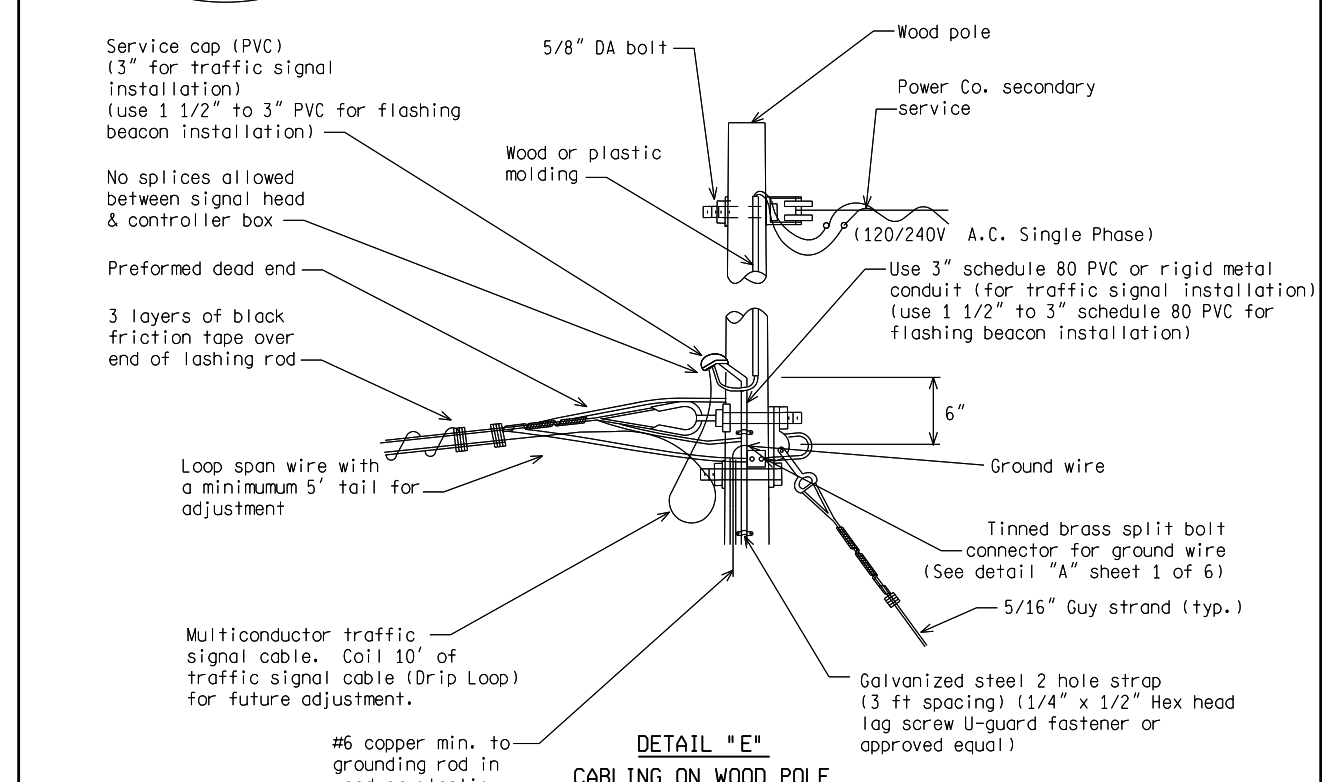
ASTM A36 steel pole band clamps must be stamped with identification that is traceable back to the manufacturer, which can be used to determine the month and year of clamp manufacture. The stamping method must be a low stress stamping method. The stamp cannot be located near the bolted flange, must be 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.



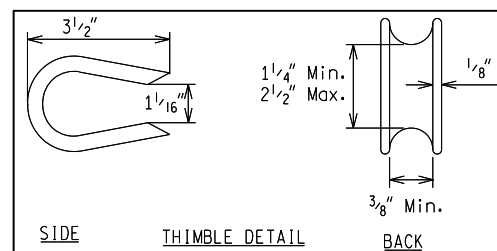
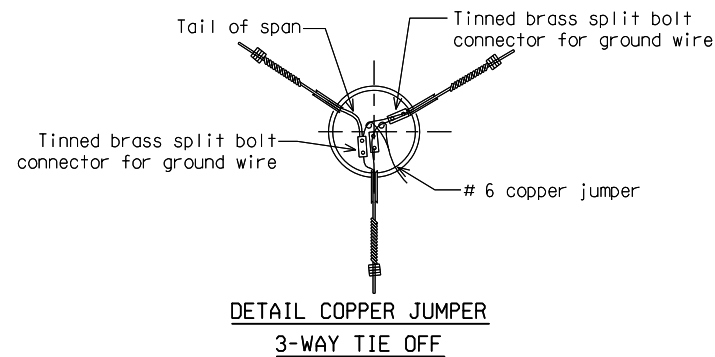
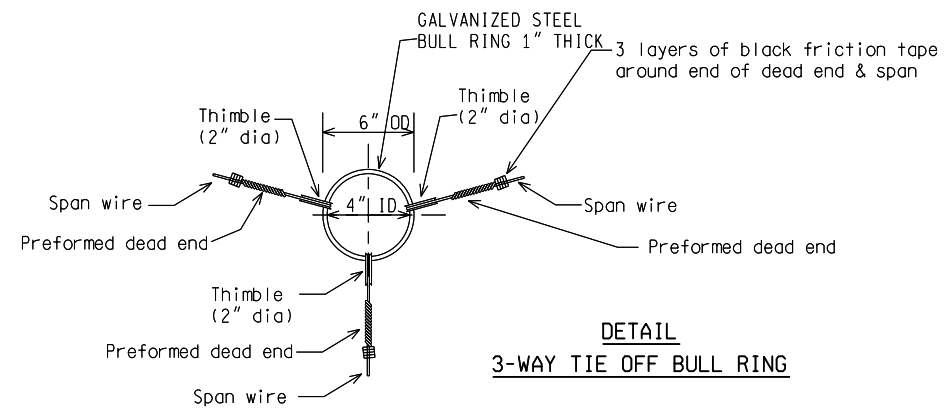
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File: RefDoc/TR/Signals/Web/Sp Det/F in/SIG010A.dgn				Rev. 02/16/17																			



NOTE:  
Porcelain strain insulator (if required) shall meet the codes and placement requirements of the local utility co.

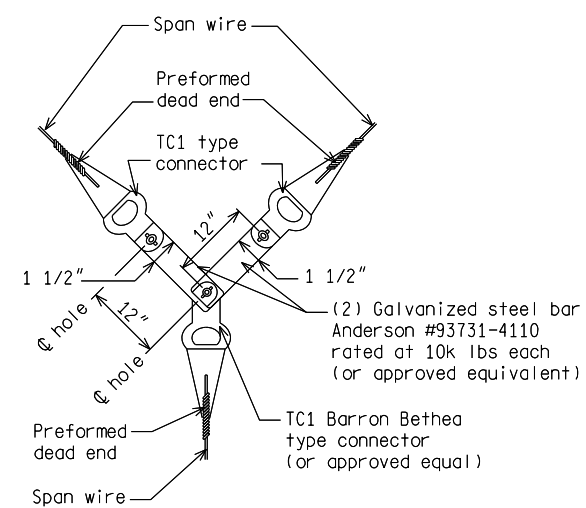


NOT TO SCALE				MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN				(SPECIAL DETAIL) FHWA APPROVAL DATE				PLAN DATE				SIG-010-A				SHEET 4 of 7			
File: RefDoc/TR/Signals/Web/Sp Det/F in/SIG010A.dgn				Rev. 02/16/17																			

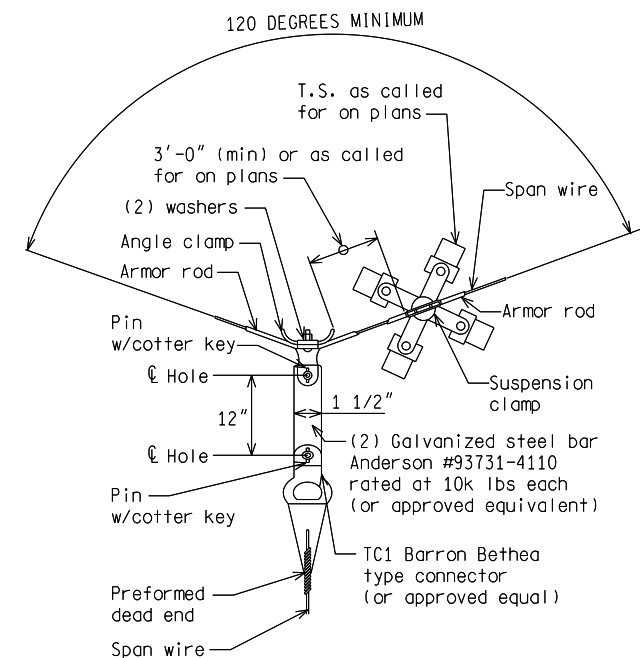


NOT TO SCALE

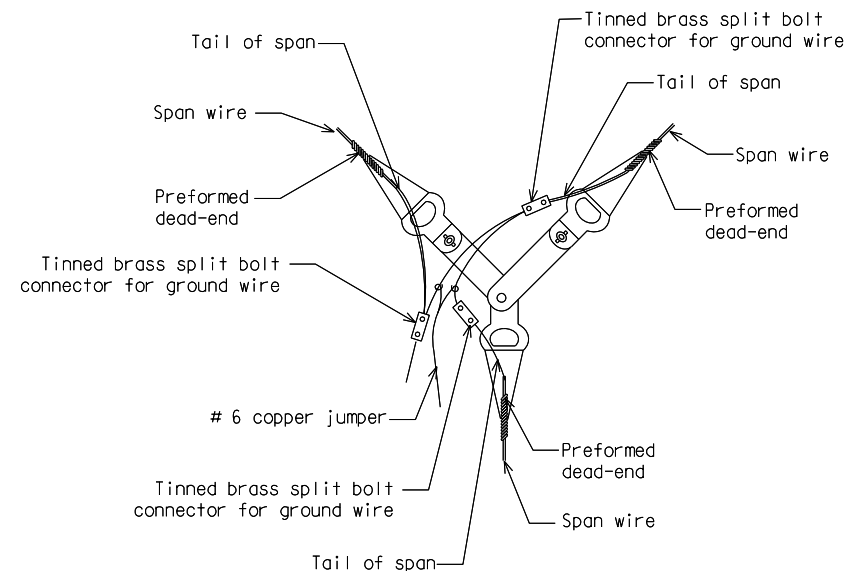
MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN			(SPECIAL DETAIL) FHWA APPROVAL DATE			PLAN DATE	SIG-010-A	SHEET 5 of 7
File: RefDoc/TR/Signals/Web/Sp Det/F in/SIG010A.dgn			Rev. 02/16/17					



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

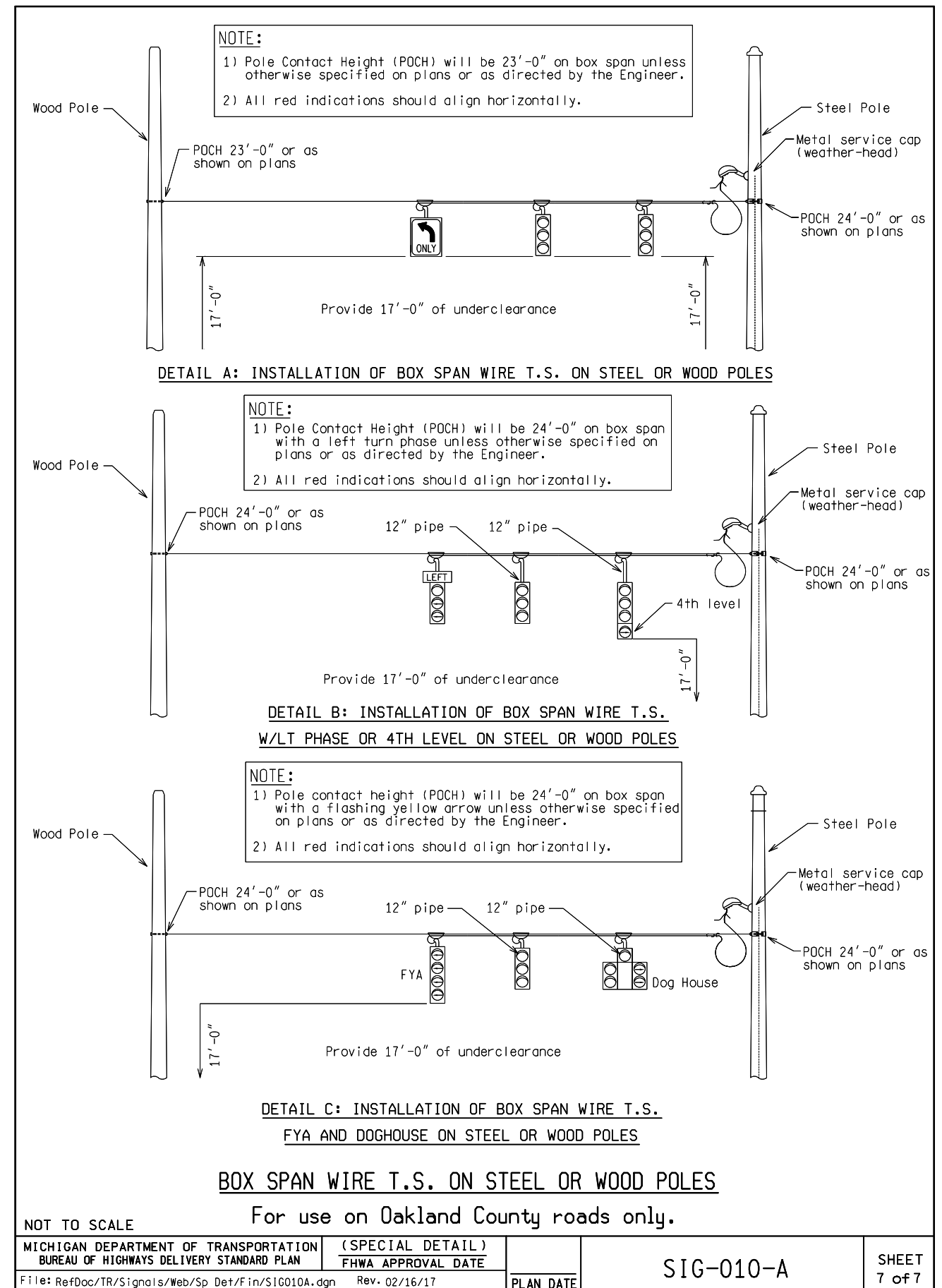
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MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN			(SPECIAL DETAIL) FHWA APPROVAL DATE			PLAN DATE	SIG-010-A	SHEET 6 of 7
File: RefDoc/TR/Signals/Web/Sp Det/F in/SIG010A.dgn			Rev. 02/16/17					

AS-LET PLAN REVISIONS							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION



DATE: 03/10/17	CS: 25131	DRAWING	SHEET
DESIGN UNIT:	JN: 115832A		
FILE:	TSC: DAVISON		138

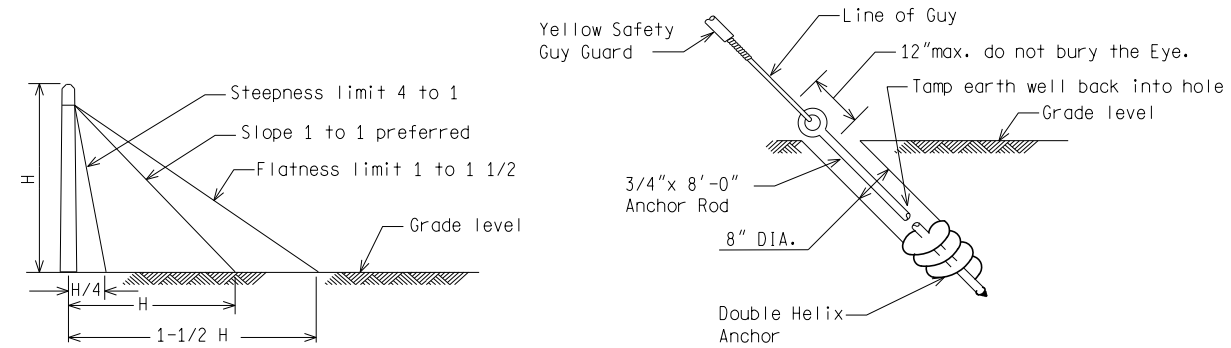


AS-LET PLAN REVISIONS							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

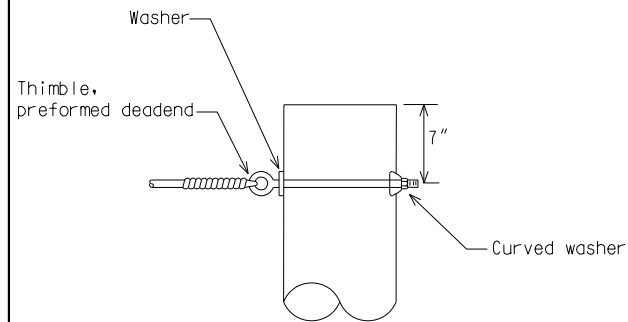


DATE: 03/10/17	CS: 25131	DRAWING	SHEET
DESIGN UNIT:	JN: 115832A		
TSC: DAIVSON			139

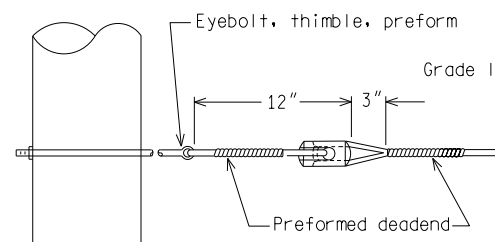
MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	(SPECIAL DETAIL) FHWA APPROVAL DATE	PLAN DATE	SIG-010-A	SHEET 7 of 7
File: RefDoc/TR/Signals/Web/Sp Det/F in/SIG010A.dgn Rev. 02/16/17				



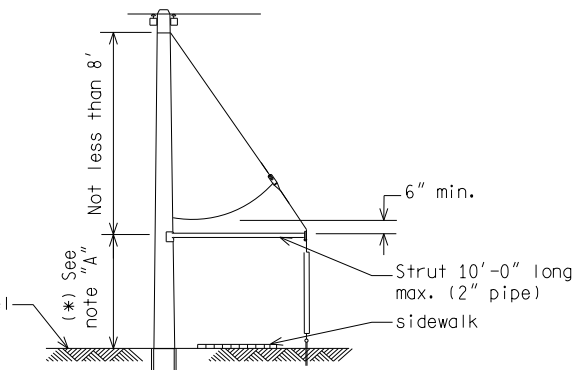
**SLOPE LIMITS FOR ANCHOR GUYS**



**POLE GUY**

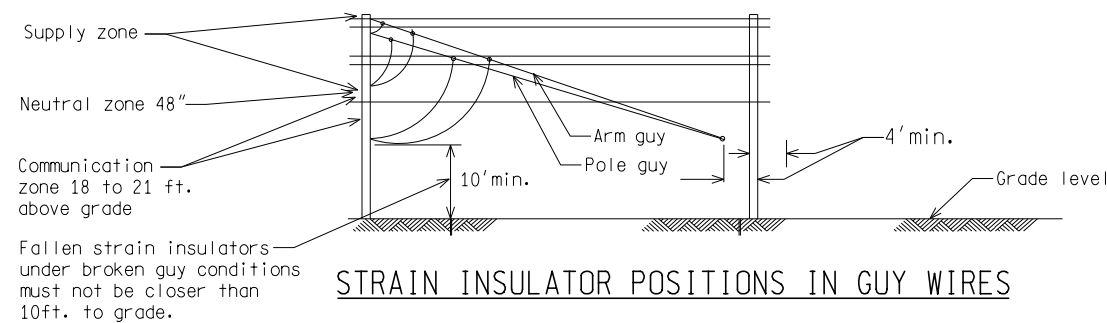


**ARM GUY**



**GUY STRUT**

(\* NOTE: "A"  
This dimension to be 10' unless otherwise specified.



**STRAIN INSULATOR POSITIONS IN GUY WIRES**

NOT TO SCALE

File: RefDoc/TR/Signals/Web/Sp Det/F in/SIG050A.dgn Rev. 02/16/17



PREPARED BY  
TRAFFIC AND SAFETY

DRAWN BY: DJF

CHECKED BY:

ENGINEER OF DELIVERY

ENGINEER OF DEVELOPMENT

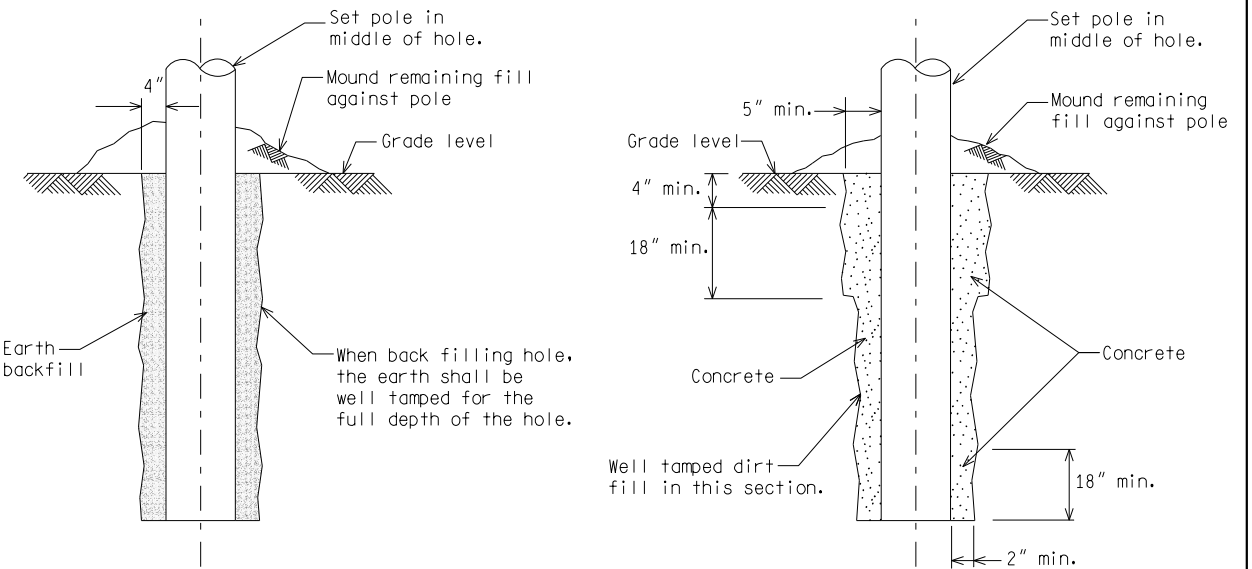
(SPECIAL DETAIL)  
FHWA APPROVAL DATE

MICHIGAN DEPARTMENT OF TRANSPORTATION  
BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR

**WOOD POLE GUYS  
AND SETTING DEPTH**

SIG-050-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: RefDoc/TR/Signals/Web/Sp Det/F in/SIG050A.dgn Rev. 02/16/17

PLAN DATE

SIG-050-A

SHEET  
2 of 2

AS-LET PLAN REVISIONS

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION



FILE:

DATE: 03/10/17

DESIGN UNIT:

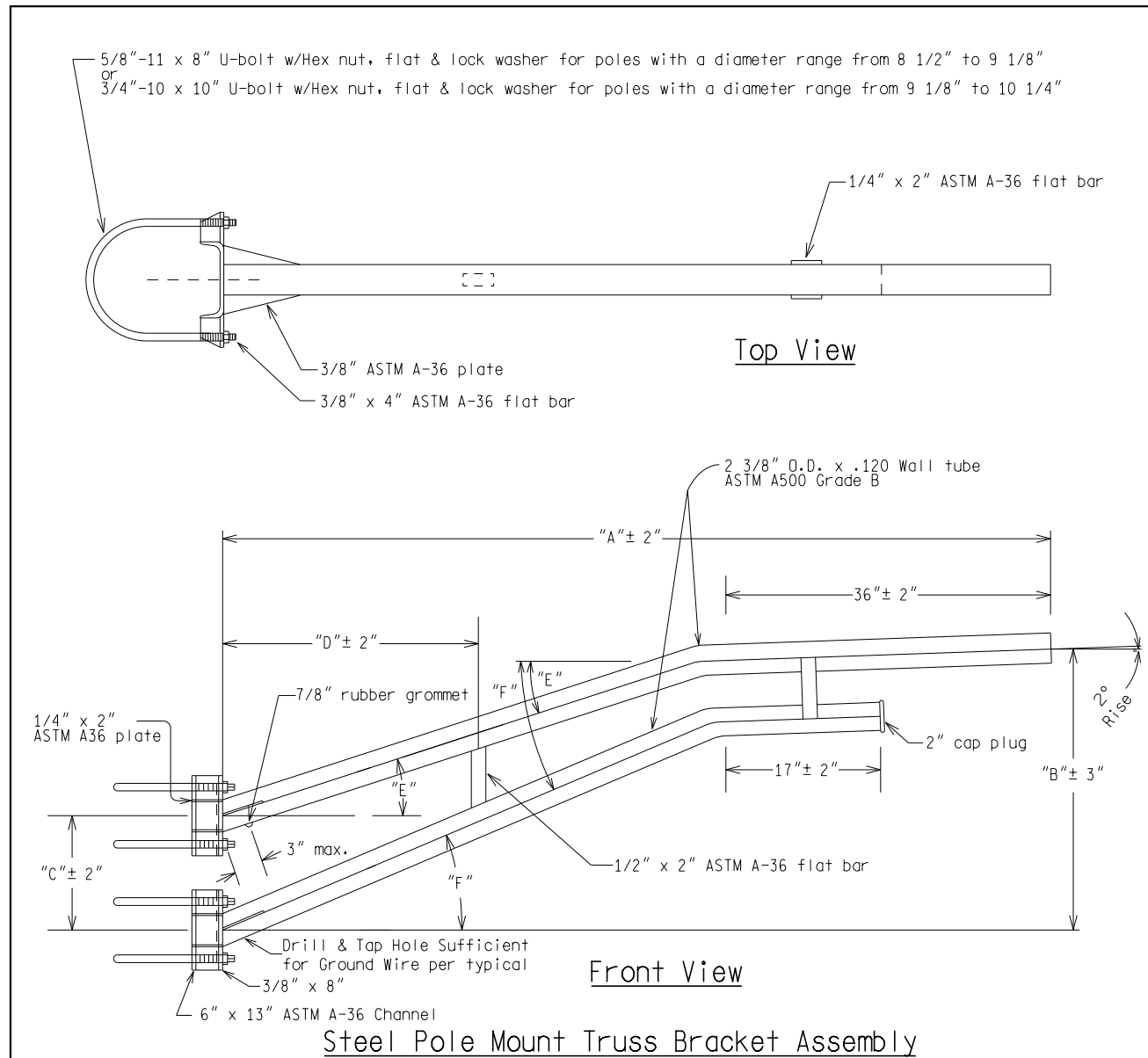
TSC: DAVISON

CS: 25131

JN: 115832A

DRAWING SHEET

140



"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: RefDoc/TR/Signals/Web/Sp Det/F in/SIG060A.dgn Rev. 02/16/17



PREPARED BY  
TRAFFIC AND SAFETY

DRAWN BY: JAM

CHECKED BY:

ENGINEER OF DELIVERY

ENGINEER OF DEVELOPMENT

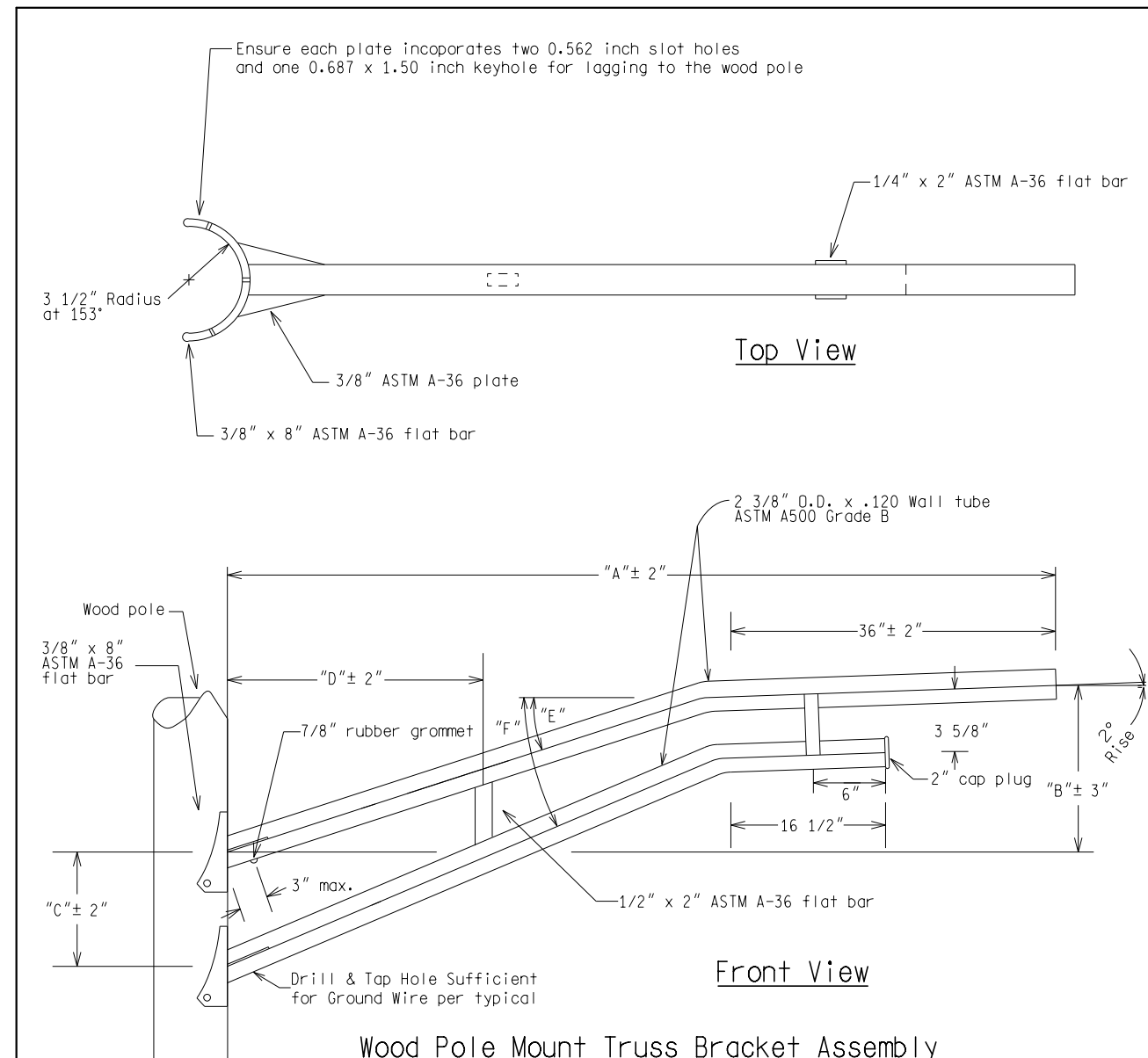
(SPECIAL DETAIL)

FHWA APPROVAL DATE

MICHIGAN DEPARTMENT OF TRANSPORTATION  
 BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR  
 STEEL TRUSS BRACKETS

SIG-060-A

SHEET  
1 of 3



"Dimensions" Size Table

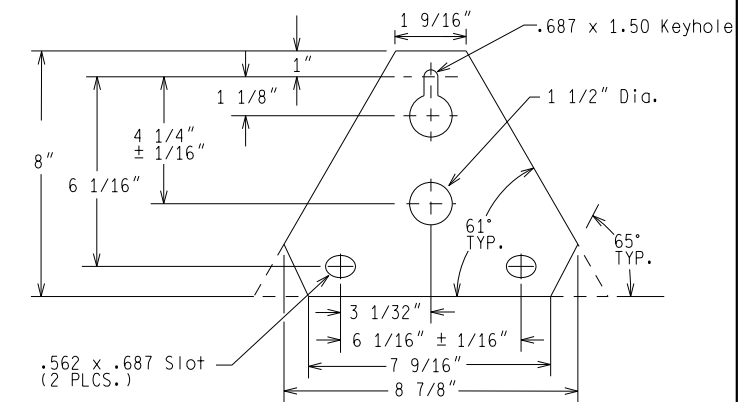
A	B	C	D	E	F
15'-0"	47 3/4"	18"	66"	18°	23°
12'-0"	36"	14 3/8"	48"	18°	23°
9'-0"	26 3/8"	12"	36"	18°	23°
6'-0"	12 1/2"	8 1/2"	18"	18°	23°

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION  
 BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN

FHWA APPROVAL DATE

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Mounting Plate Detail

SIG-060-A

SHEET  
2 of 3

AS-LET PLAN REVISIONS

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FILE:

DATE: 03/10/17

DESIGN UNIT:

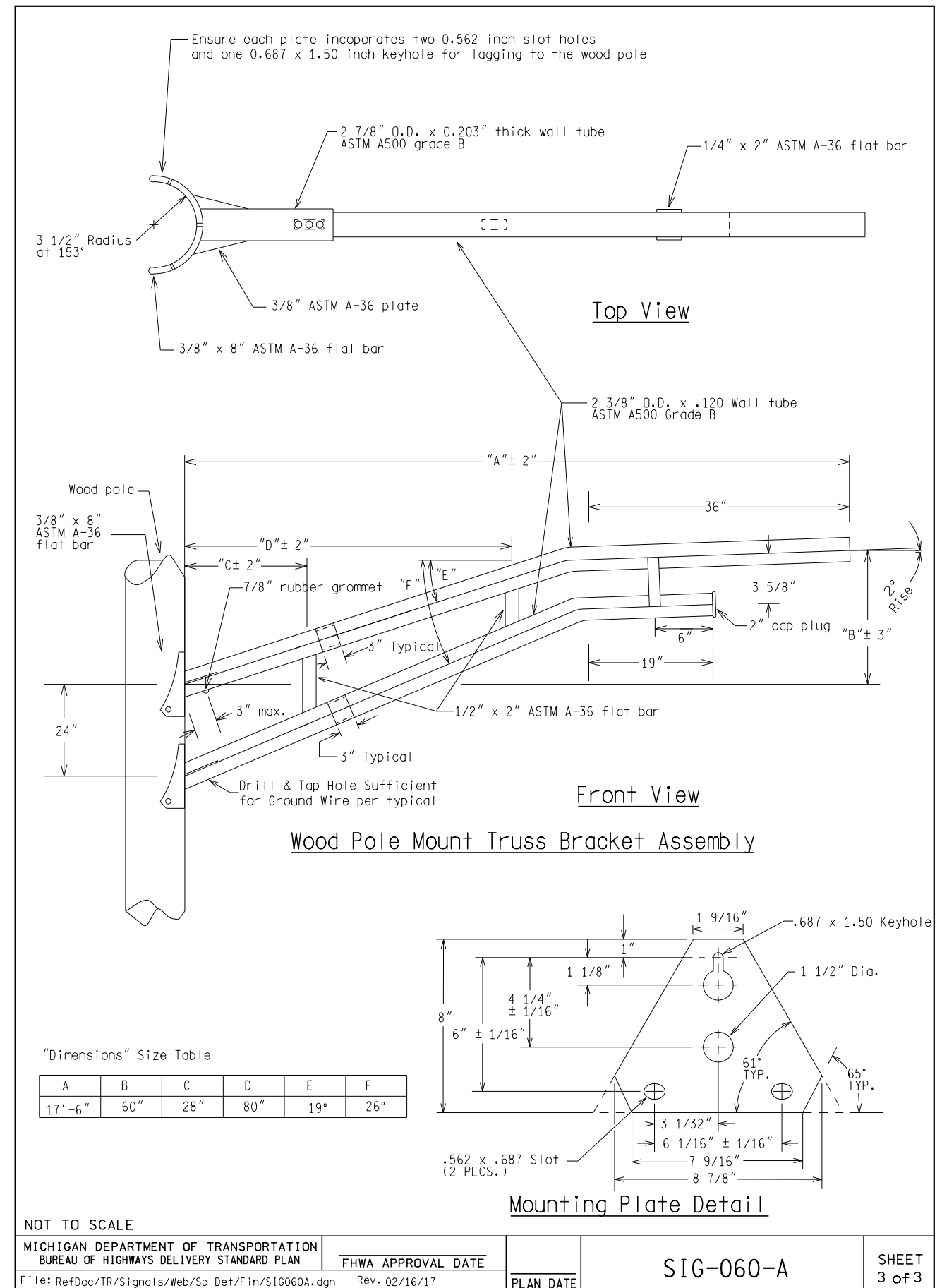
TSC: DAVISON

CS: 25131

JN: 115832A

DRAWING SHEET

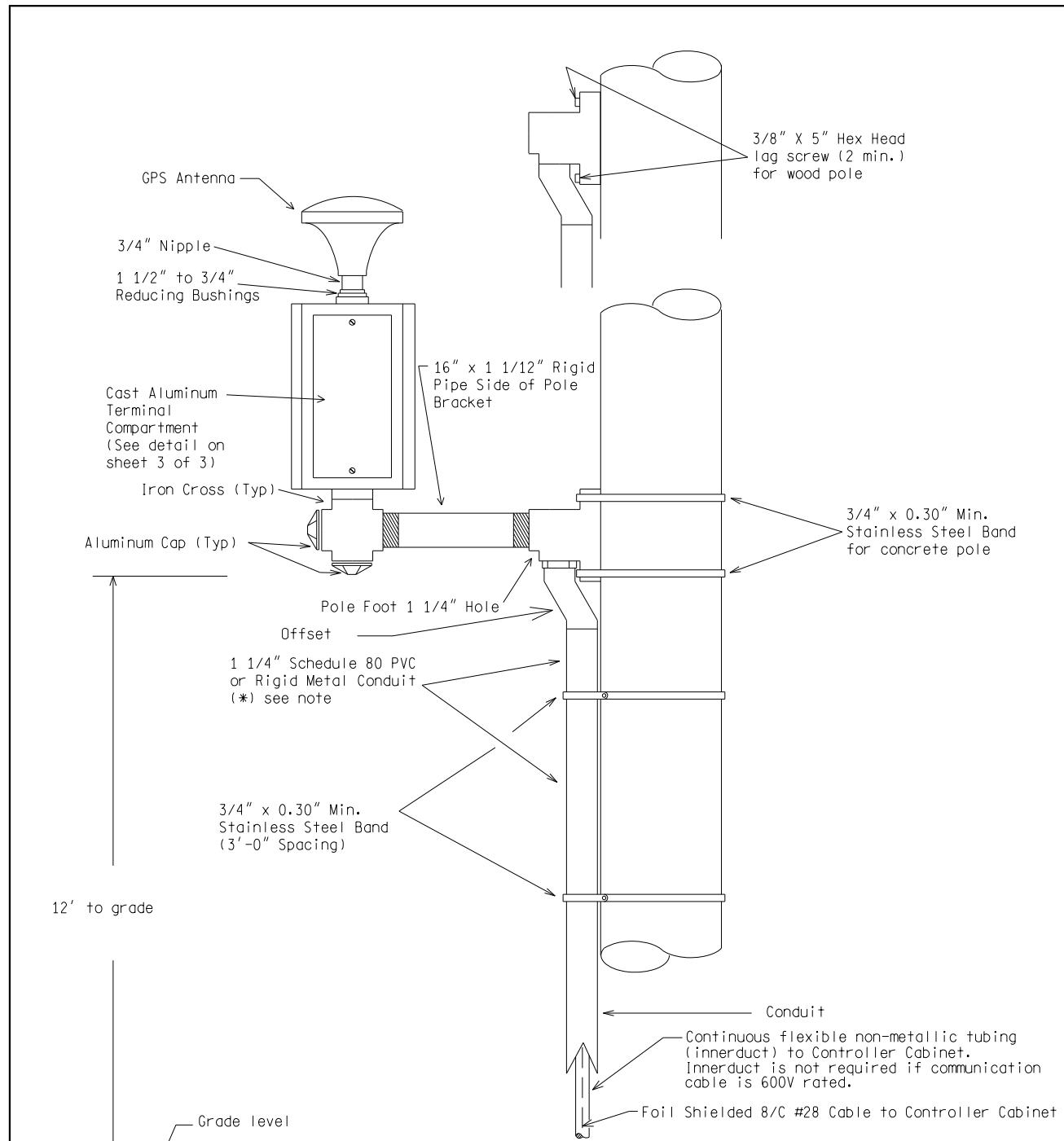
141



AS-LET PLAN REVISIONS							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION



FILE:	DATE: 03/10/17	CS: 25131	DRAWING	SHEET
TSC: DAIVSON	DESIGN UNIT:	JN: 115832A		
	FHWA APPROVAL DATE			
	Rev. 02/16/17			
	PLAN DATE			
				142



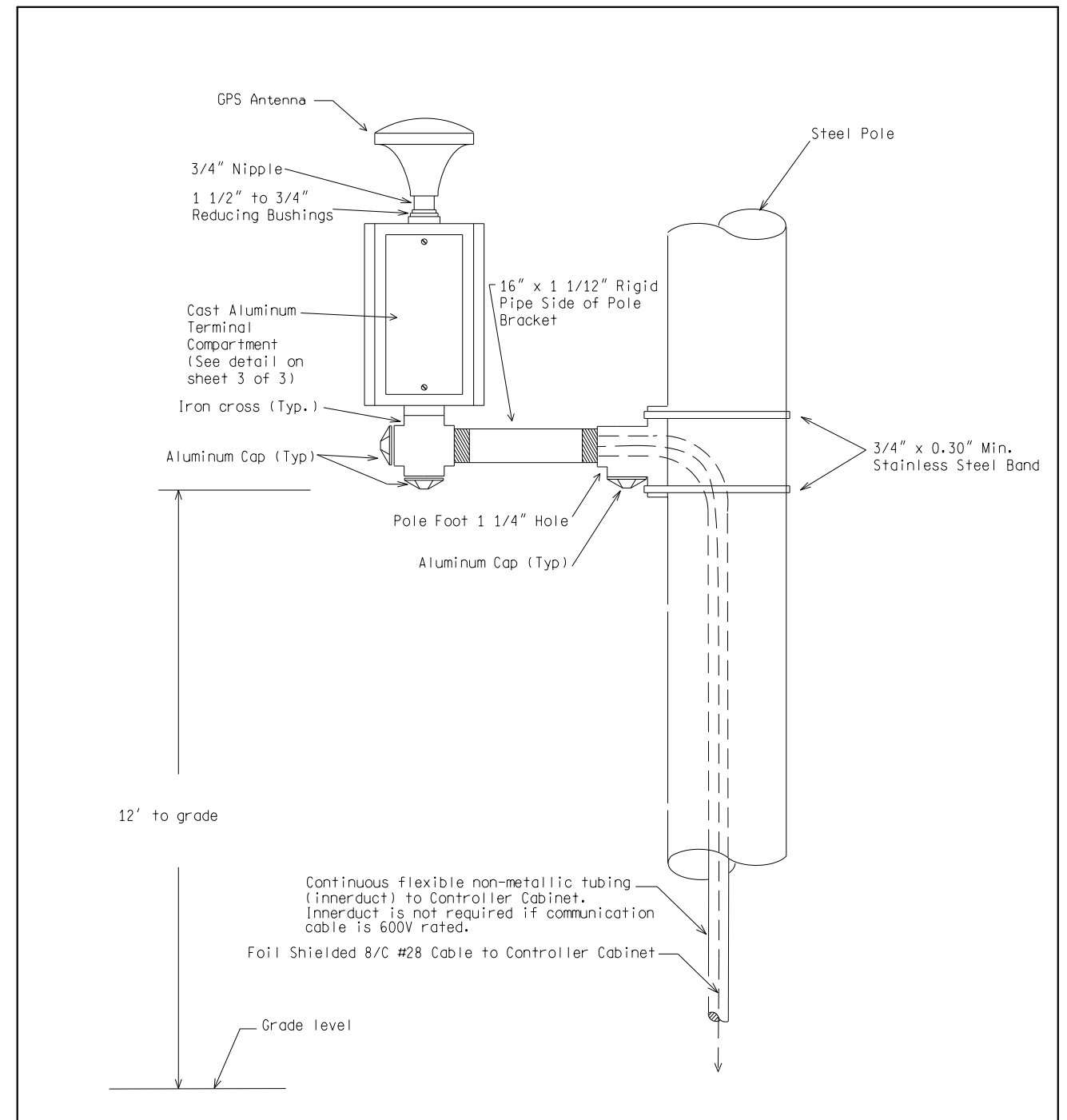
Note: For projects maintained by the Wayne Co. Department of Public Services (WCDPS), use rigid metal for conduit(s) from grade level to 10' (min.) above grade or as directed by the Engineer.

**GLOBAL POSITIONING SYSTEM (GPS) MODULE MOUNTED ON WOOD/CONCRETE POLE**

NOT TO SCALE

File: RefDoc/TR/Signals/Web/Sp Det/Fin/SIG120A.dgn Rev. 02/16/17

<p>MICHIGAN DEPARTMENT OF TRANSPORTATION</p>	ENGINEER OF DELIVERY	<p>MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR</p> <p><b>GLOBAL POSITIONING SYSTEM (GPS) MODULE</b></p>	<p>PLAN DATE</p>	<p>SIG-120-A</p>	<p>SHEET 1 of 3</p>
	<p>PREPARED BY TRAFFIC AND SAFETY</p>				
<p>DRAWN BY: JJE</p>	(SPECIAL DETAIL)				
<p>CHECKED BY:</p>	FHWA APPROVAL DATE				



**GLOBAL POSITIONING SYSTEM (GPS) MODULE MOUNTED ON STEEL POLE**

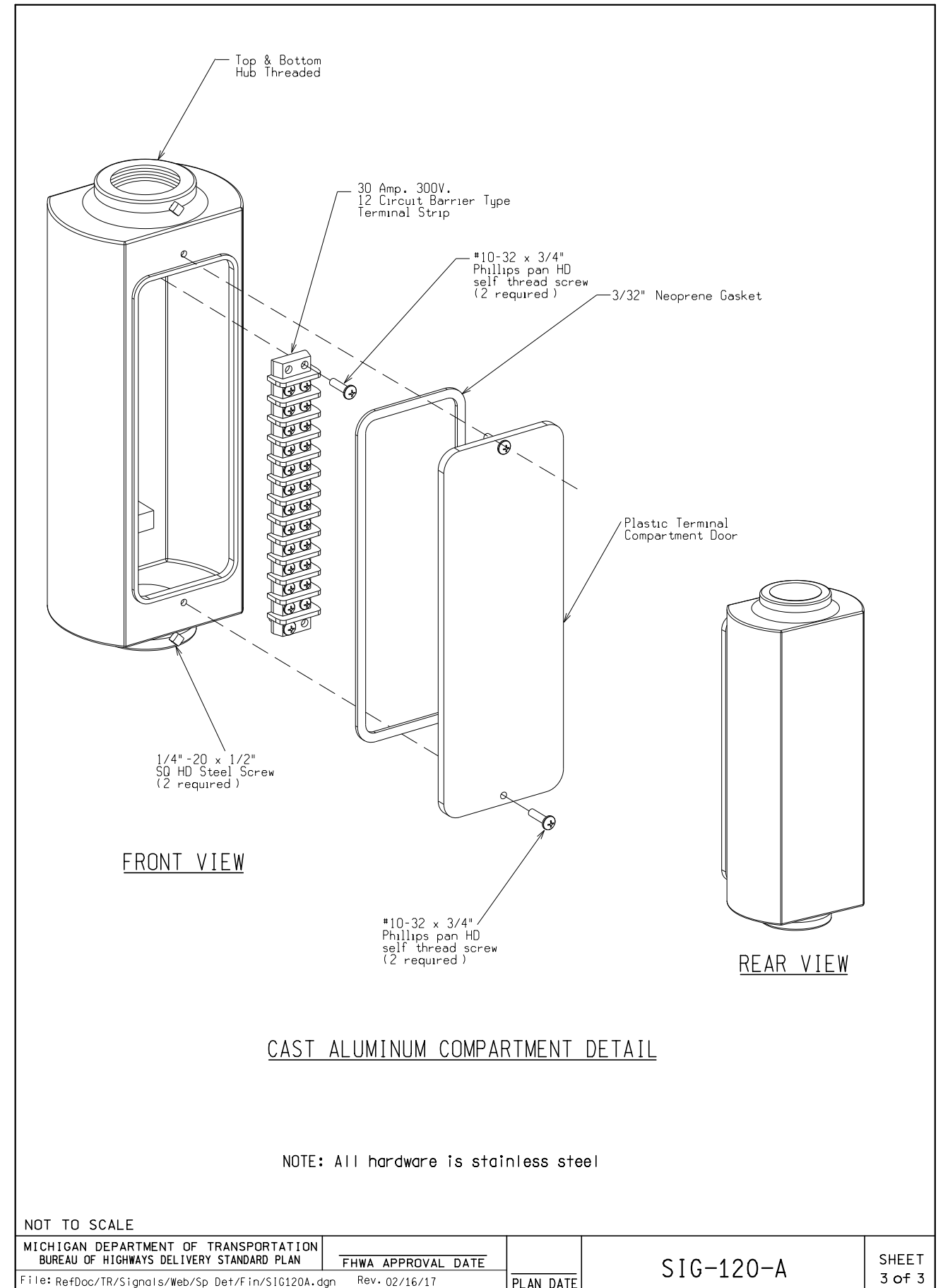
NOT TO SCALE

<p>MICHIGAN DEPARTMENT OF TRANSPORTATION</p>	ENGINEER OF DELIVERY	<p>MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN</p> <p><b>SIG-120-A</b></p>	<p>PLAN DATE</p>	<p>SIG-120-A</p>	<p>SHEET 2 of 3</p>
	<p>PREPARED BY TRAFFIC AND SAFETY</p>				
<p>DRAWN BY: JJE</p>	(SPECIAL DETAIL)				
<p>CHECKED BY:</p>	FHWA APPROVAL DATE				

AS-LET PLAN REVISIONS							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION



DATE: 03/10/17	CS: 25131	DRAWING	SHEET
DESIGN UNIT:	JN: 115832A		
TSC: DAVISON			143

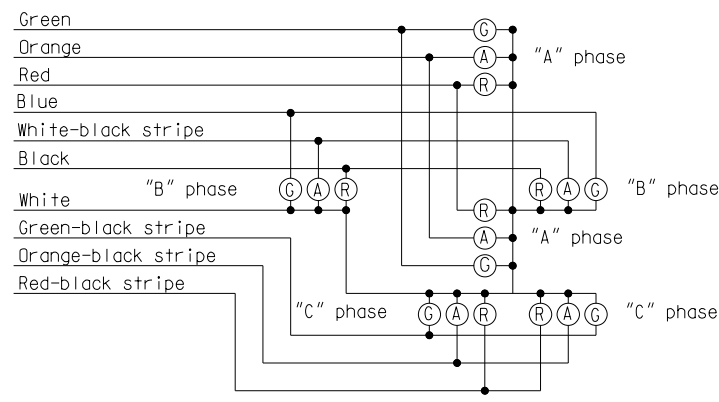


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NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION



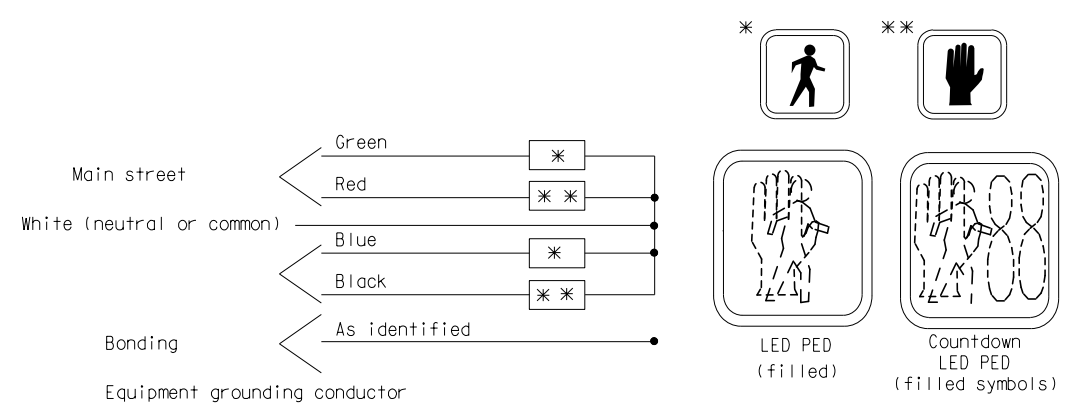
DATE: 03/10/17	CS: 25131	DRAWING	SHEET
DESIGN UNIT:	JN: 115832A		
TSC: DAVISON			144





**COLOR CODE FOR WIRING CONNECTING TRAFFIC SIGNAL LAMPS**

NOTE: No splices allowed between traffic signal head and controller.

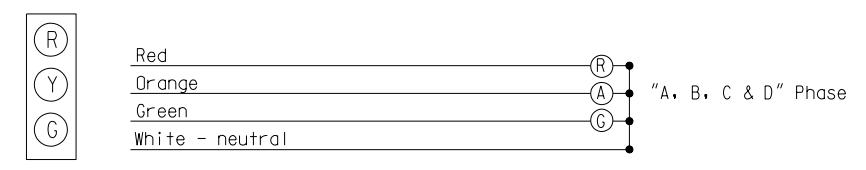


**COLOR CODE FOR WIRING CONNECTING PEDESTRIAN SIGNAL LAMPS  
( WALKING PERSON - HAND SYMBOL )**

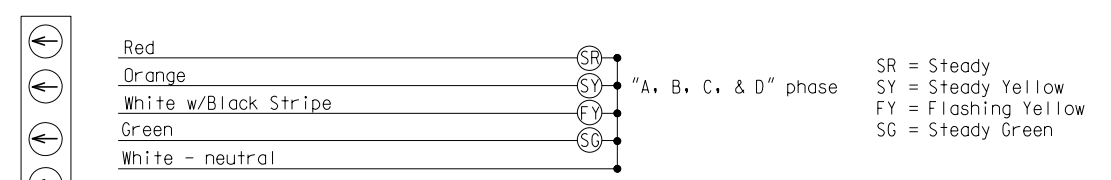
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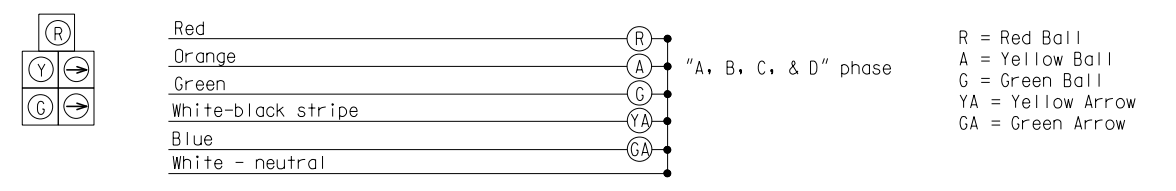
<p>MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR</p>	ENGINEER OF DELIVERY	<p><b>COLOR CODE WIRING/ EQUIPMENT GROUNDING</b></p>	<p>PLAN DATE</p>	<p>SIG-230-A</p>	<p>SHEET 1 of 6</p>
	ENGINEER OF DEVELOPMENT				
<p>PREPARED BY TRAFFIC AND SAFETY</p>	(SPECIAL DETAIL)				
<p>DRAWN BY: DJF</p>	FHWA APPROVAL DATE				
<p>CHECKED BY:</p>					



**STANDARD - 3 COLOR SIGNAL DISPLAY**



**FLASHING YELLOW ARROW (FYA) - 4 COLOR SIGNAL DISPLAY**



**DOG HOUSE W/RIGHT TURNS - 5 COLOR SIGNAL DISPLAY**

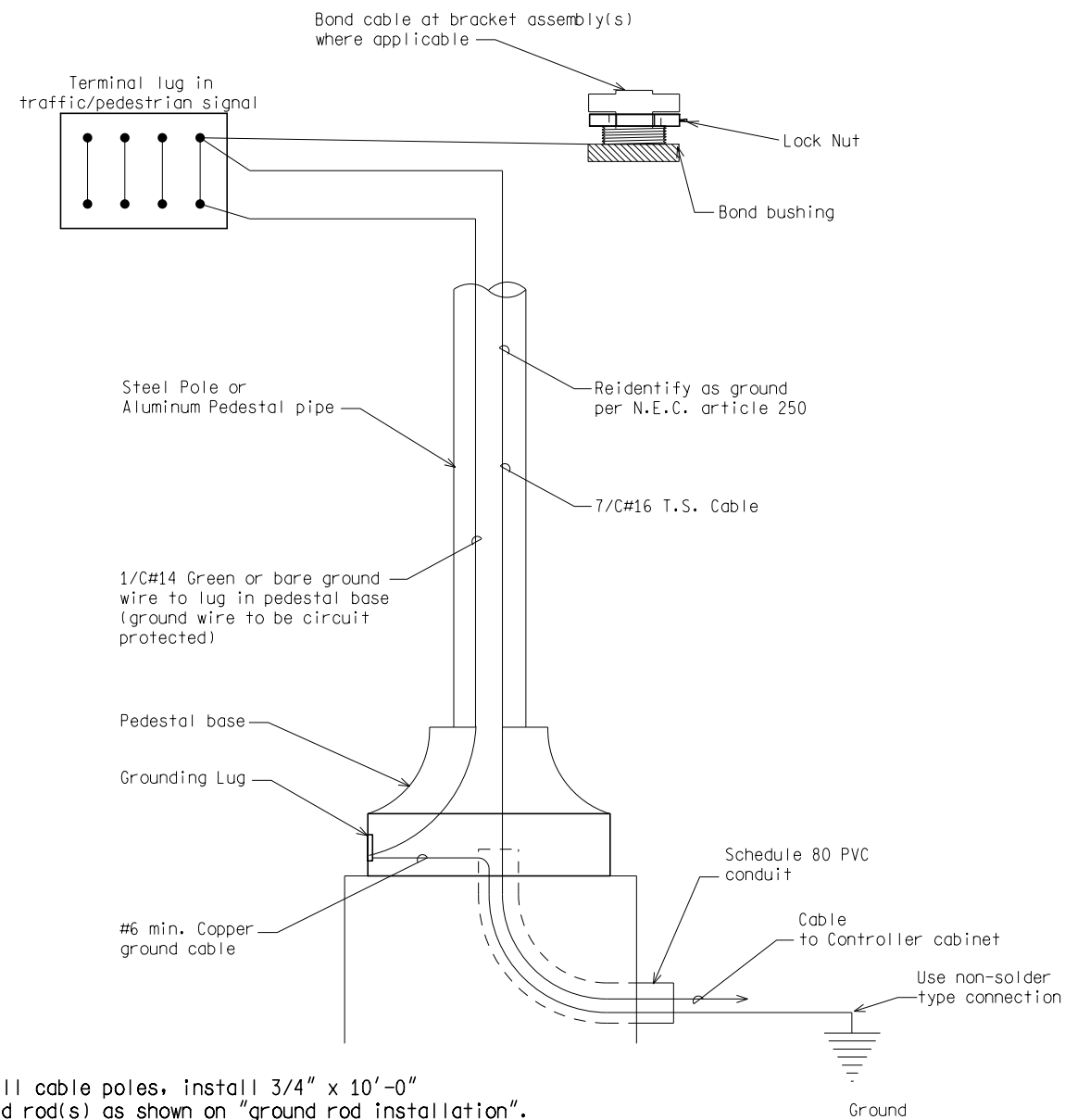
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NOT TO SCALE

File: RefDoc/TR/Signals/Web/Sp Det/Fin/SIG230A.dgn Rev. 02/16/17

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	FHWA APPROVAL DATE			
<p>DATE: 03/10/17</p>	CS: 25131			
<p>DESIGN UNIT:</p>	JN: 115832A			
<p>FILE:</p>	TSC: DAVISON			

AS-LET PLAN REVISIONS									<p>DATE: 03/10/17</p>	<p>CS: 25131</p>	<p>DRAWING</p>	<p>SHEET</p>
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION					
								FILE:	TSC: DAVISON	JN: 115832A		145

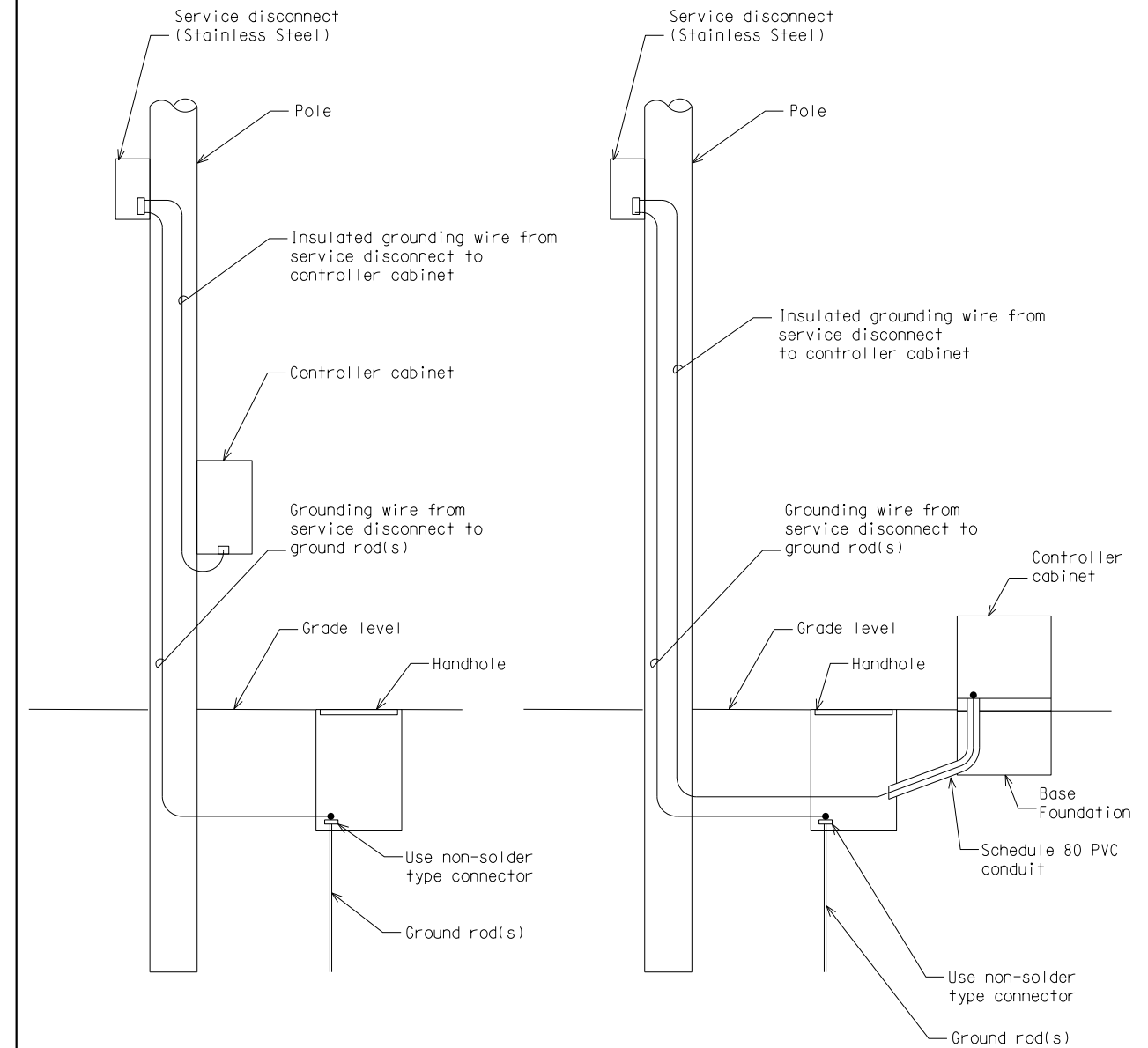


NOTE:  
 For all cable poles, install 3/4" x 10'-0"  
 ground rod(s) as shown on "ground rod installation".  
 Connect ground rod(s) with #6 min. copper wire to  
 messenger wire with non-solder type connection.

STEEL POLE/PEDESTAL GROUNDING DETAIL

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	(SPECIAL DETAIL ) FHWA APPROVAL DATE		SIG-230-A	SHEET 3 of 6
File: RefDoc/TR/Signals/Web/Sp Det/Fin/SIG230A.dgn Rev. 02/16/17		PLAN DATE		



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

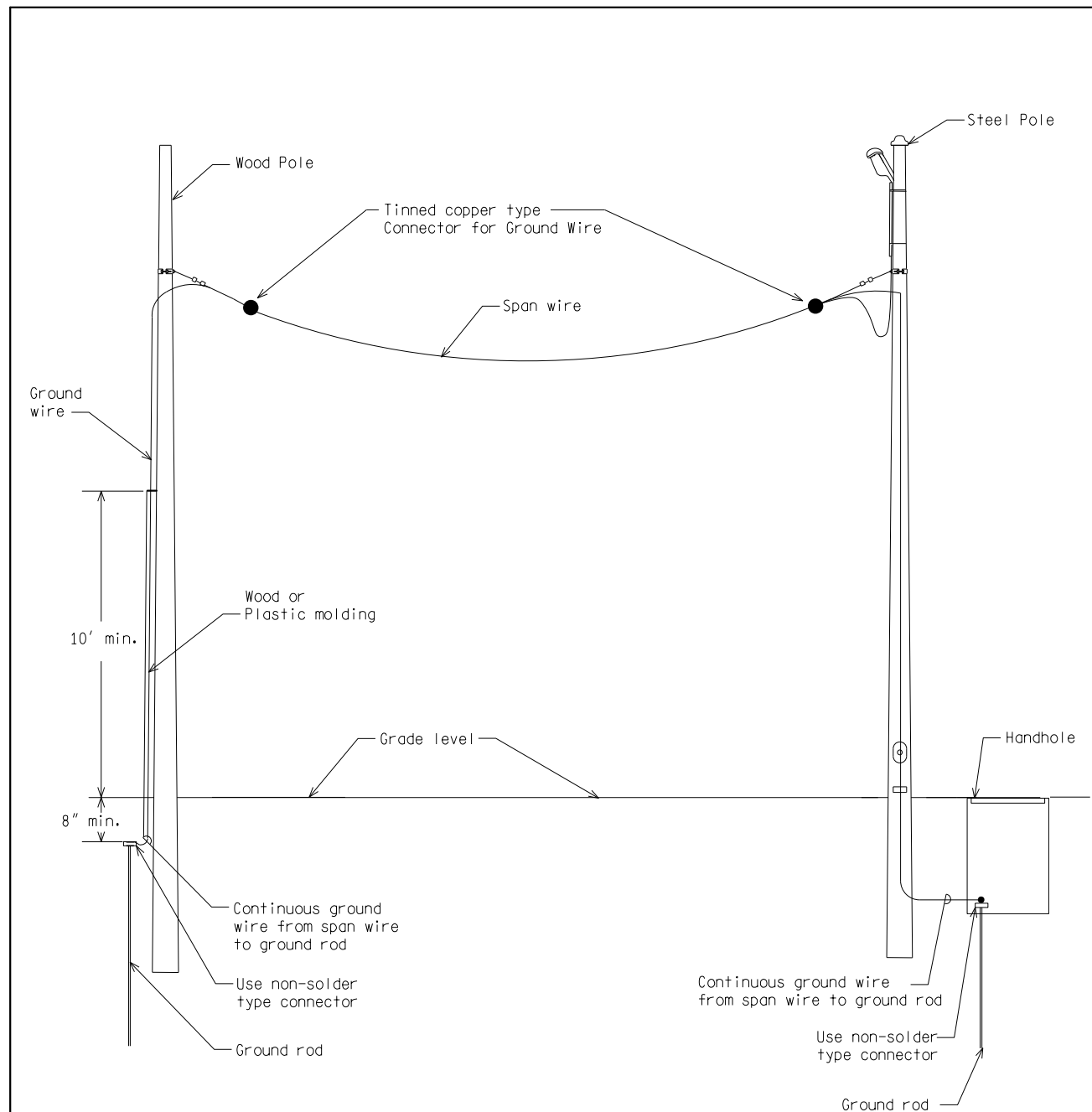
NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	(SPECIAL DETAIL ) FHWA APPROVAL DATE		SIG-230-A	SHEET 4 of 6
File: RefDoc/TR/Signals/Web/Sp Det/Fin/SIG230A.dgn Rev. 02/16/17		PLAN DATE		

AS-LET PLAN REVISIONS							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION



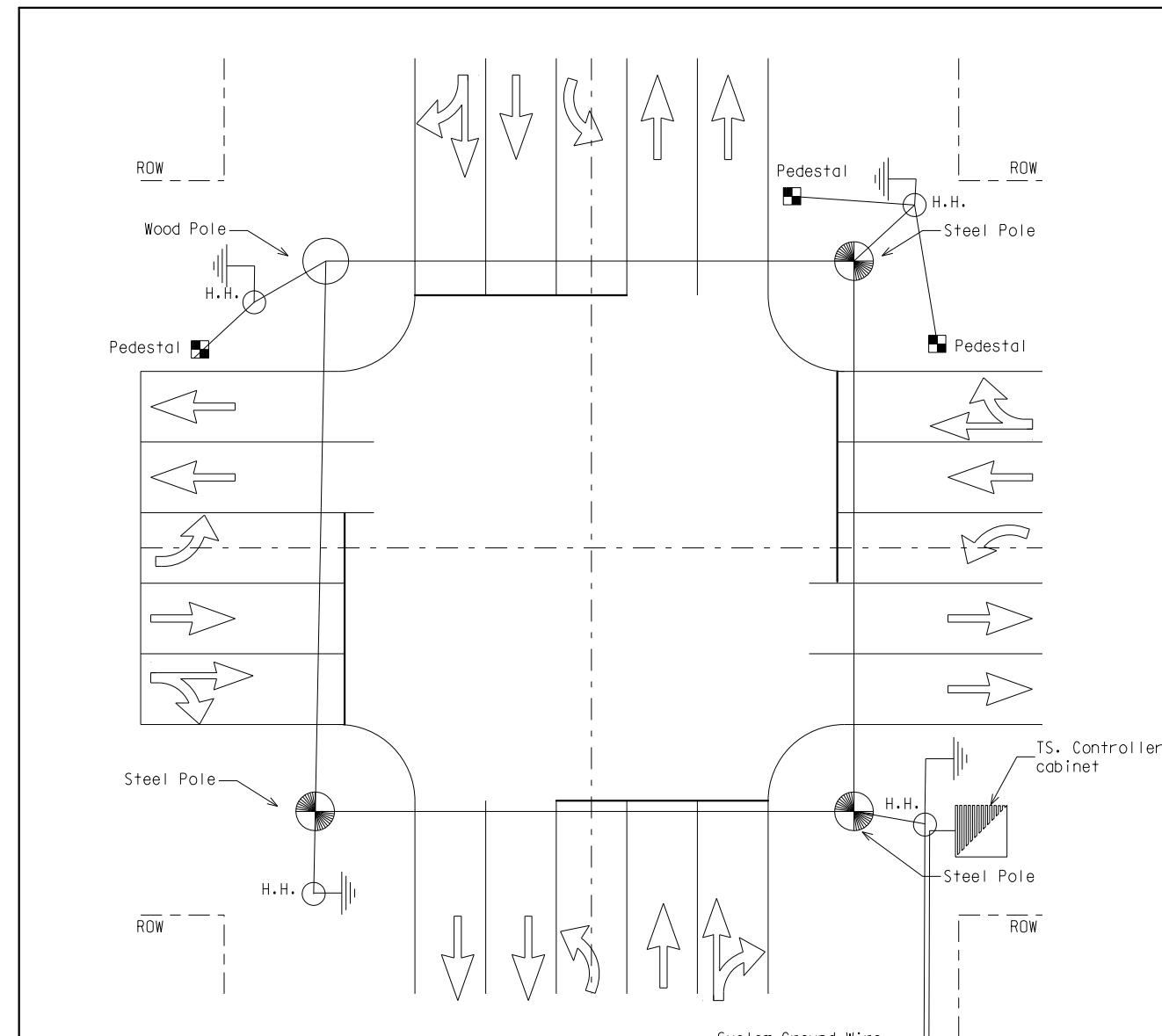
DATE: 03/10/17	CS: 25131	DRAWING	SHEET
DESIGN UNIT:	JN: 115832A		
FILE:	TSC: DAVISON		146



SPAN WIRE GROUNDING DETAIL

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	(SPECIAL DETAIL) FHWA APPROVAL DATE	PLAN DATE	SIG-230-A	SHEET 5 of 6
File: RefDoc/TR/Signals/Web/Sp Det/Fin/SIG230A.dgn Rev. 02/16/17				



- 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 DETAIL

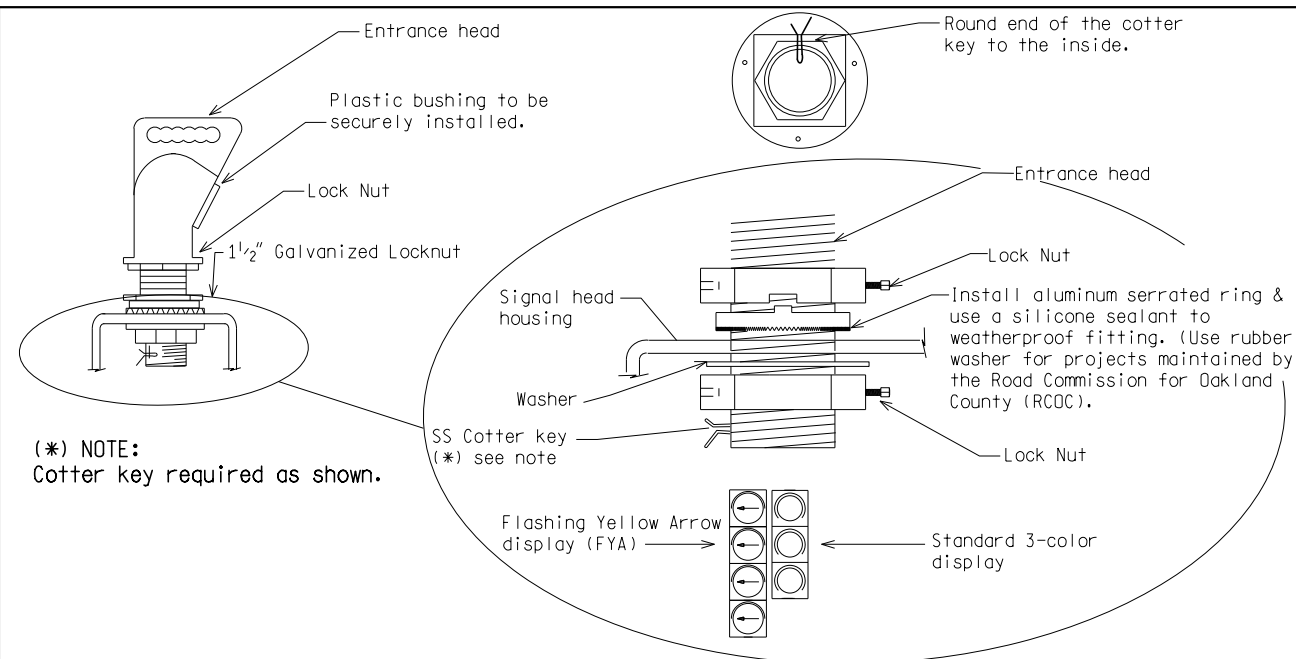
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MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	(SPECIAL DETAIL) FHWA APPROVAL DATE	PLAN DATE	SIG-230-A	SHEET 6 of 6
File: RefDoc/TR/Signals/Web/Sp Det/Fin/SIG230A.dgn Rev. 02/16/17				

AS-LET PLAN REVISIONS							
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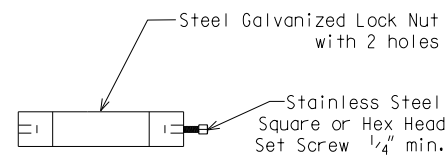


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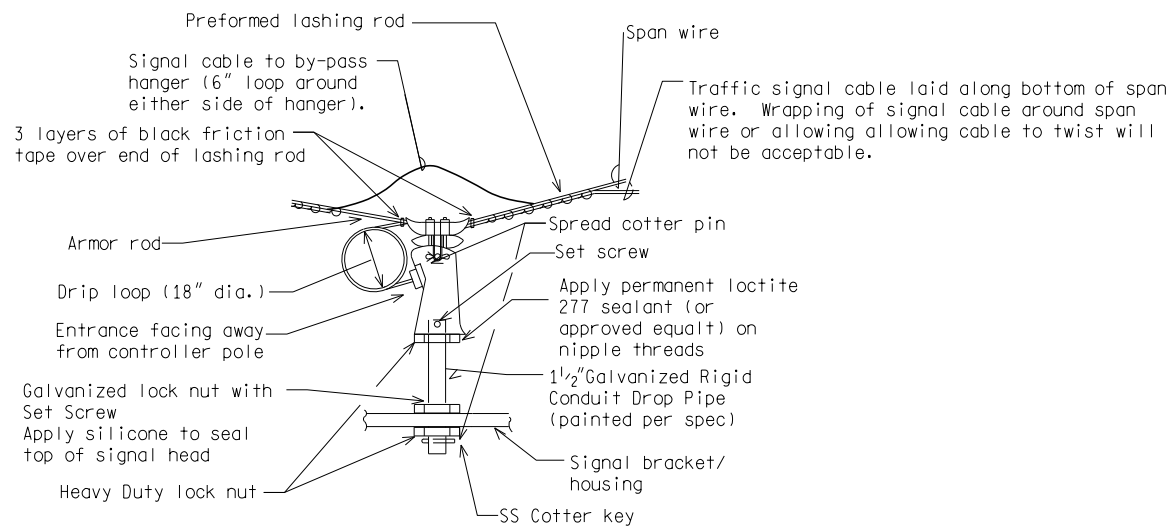


(\* NOTE:  
Cotter key required as shown.

**ONE-WAY TRAFFIC SIGNAL HEAD**



**OH SIGNAL LOCK NUT DETAIL**



**HANGER ATTACHMENT**

NOT TO SCALE

File: RefDoc/TR/Signals/Web/Sp Det/Fin/SIG300A.dgn Rev. 02/16/17



PREPARED BY  
TRAFFIC AND SAFETY

DRAWN BY: DJF

CHECKED BY:

ENGINEER OF DELIVERY

ENGINEER OF DEVELOPMENT

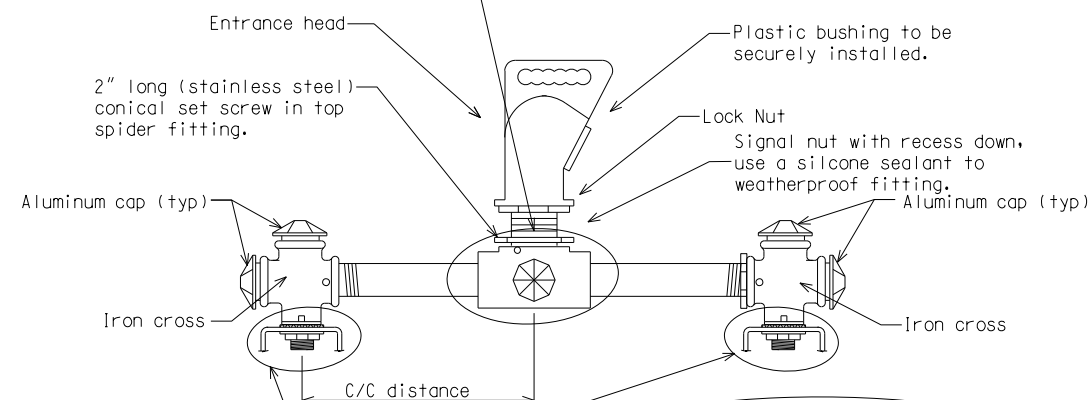
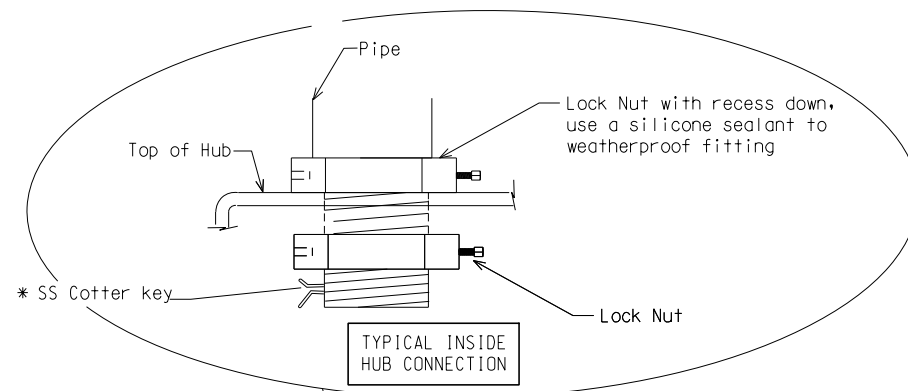
(SPECIAL DETAIL)  
FHWA APPROVAL DATE

MICHIGAN DEPARTMENT OF TRANSPORTATION  
BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR

**SPAN WIRE MOUNTED  
T.S. BRACKET ASSEMBLY**

SIG-300-A

SHEET  
1 of 3



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 assembly 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  $\pm 1/8$  inch for all bracketing.

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION  
BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN (SPECIAL DETAIL)  
FHWA APPROVAL DATE

File: RefDoc/TR/Signals/Web/Sp Det/Fin/SIG300A.dgn Rev. 02/16/17

PLAN DATE

SIG-300-A

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2 of 3

AS-LET PLAN REVISIONS

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION



FILE:

DATE: 03/10/17

DESIGN UNIT:

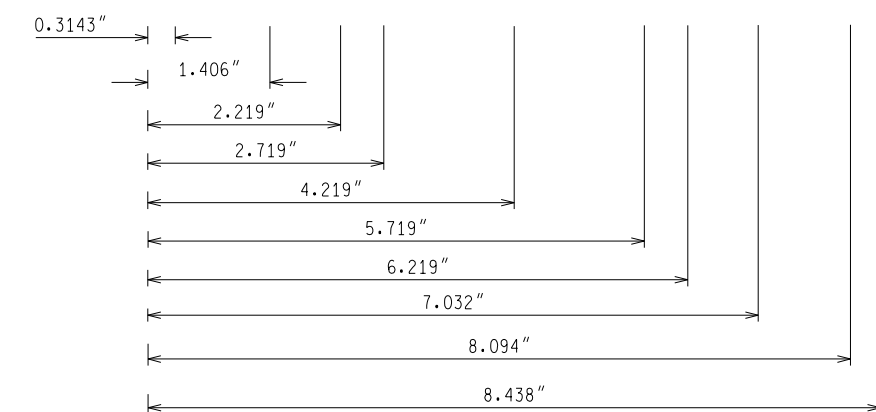
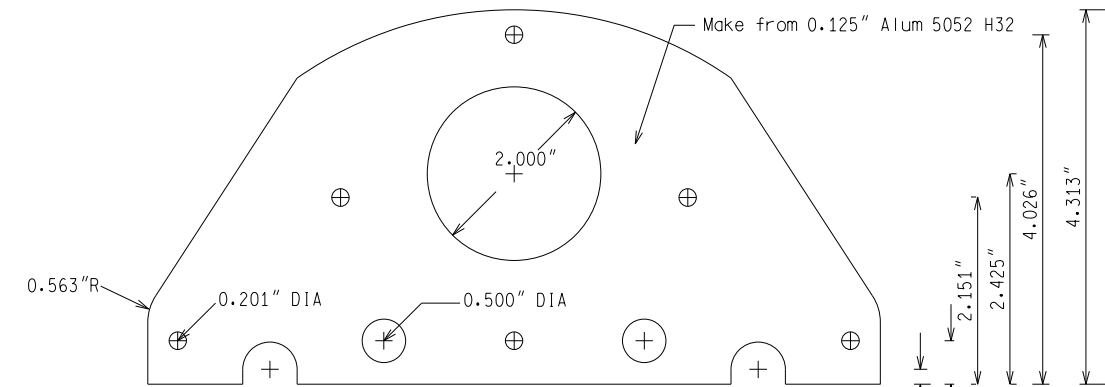
TSC: DAVISON

CS: 25131

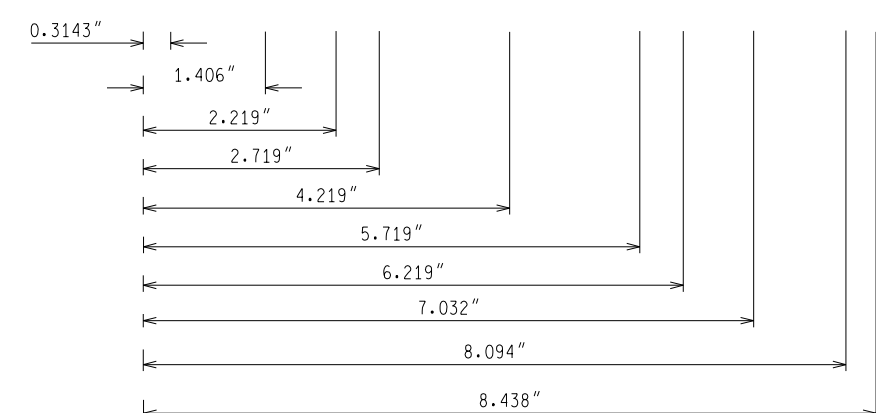
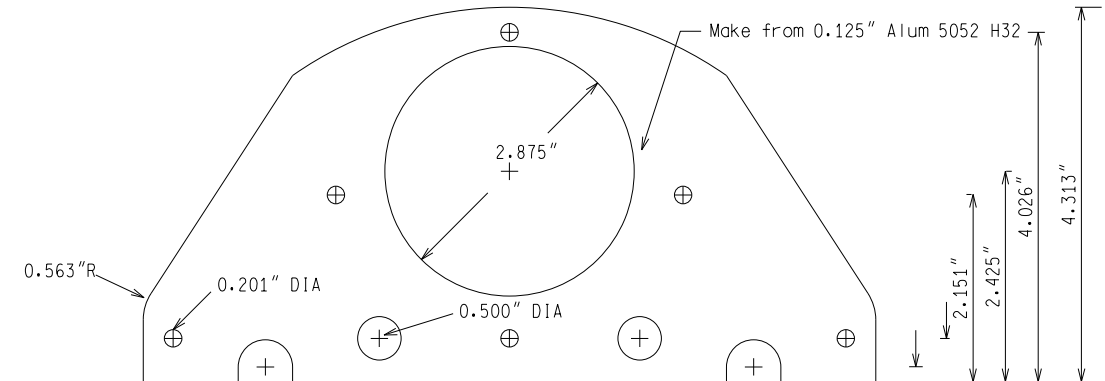
JN: 115832A

DRAWING SHEET

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INSIDE SIGNAL HOUSING



OUTSIDE SIGNAL HOUSING

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	(SPECIAL DETAIL) FHWA APPROVAL DATE	PLAN DATE	SIG-300-A	SHEET 3 of 3
File: RefDoc/TR/Signals/Web/Sp Det/Fin/SIG300A.dgn Rev. 02/16/17				

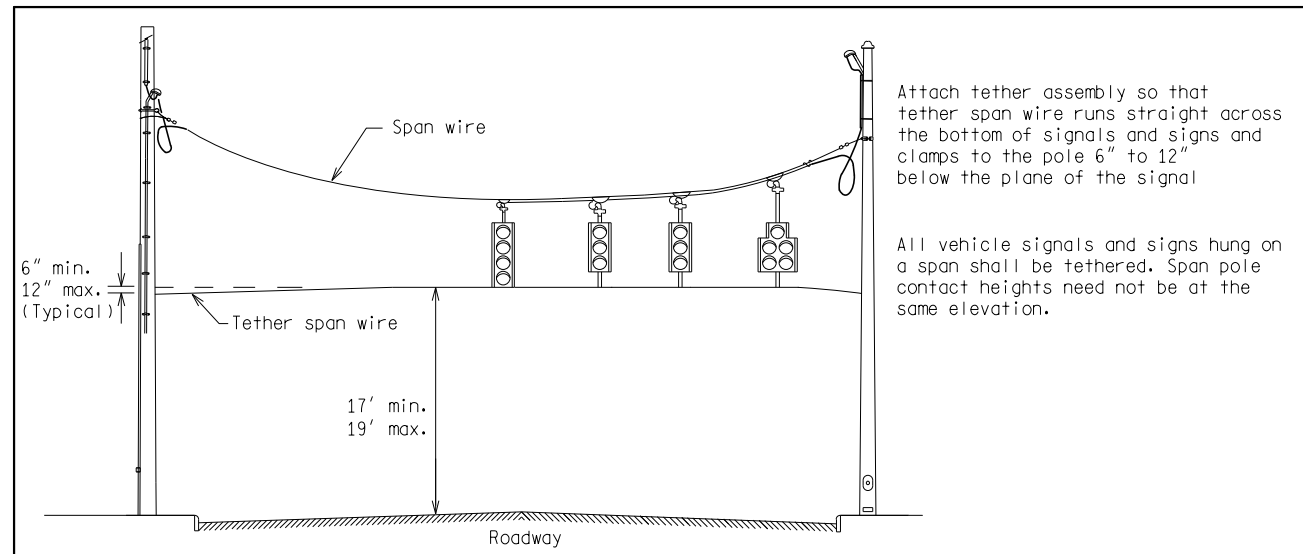
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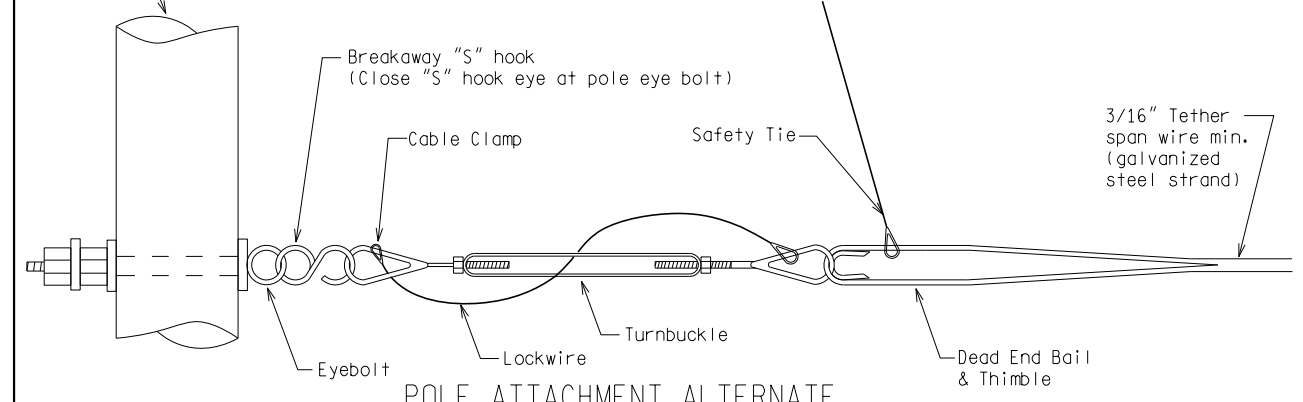
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DESIGN UNIT:	JN: 115832A		
TSC: DAVISON			149



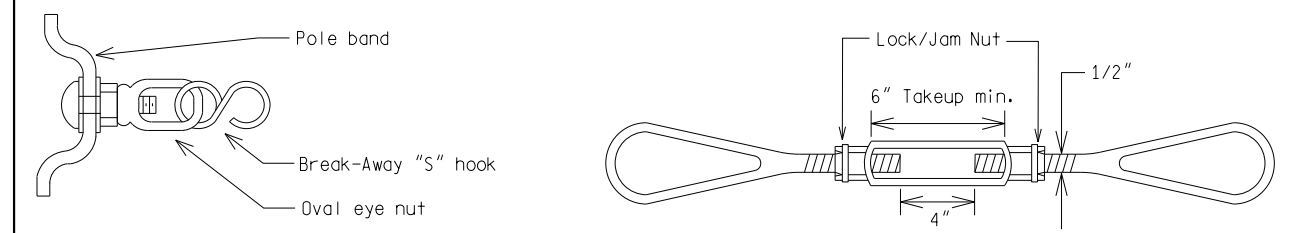




ELEVATION VIEW: BOTTOM TETHER INSTALLATION

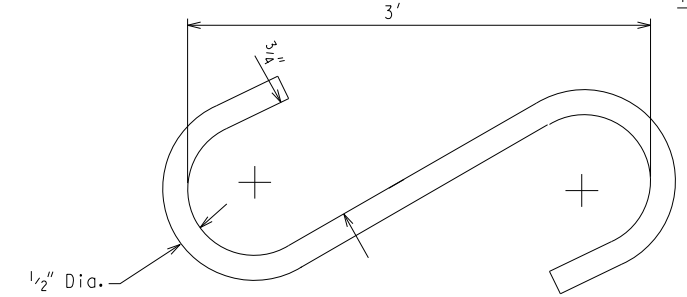


POLE ATTACHMENT ALTERNATE



POLE BAND CLAMP ON STEEL POLE

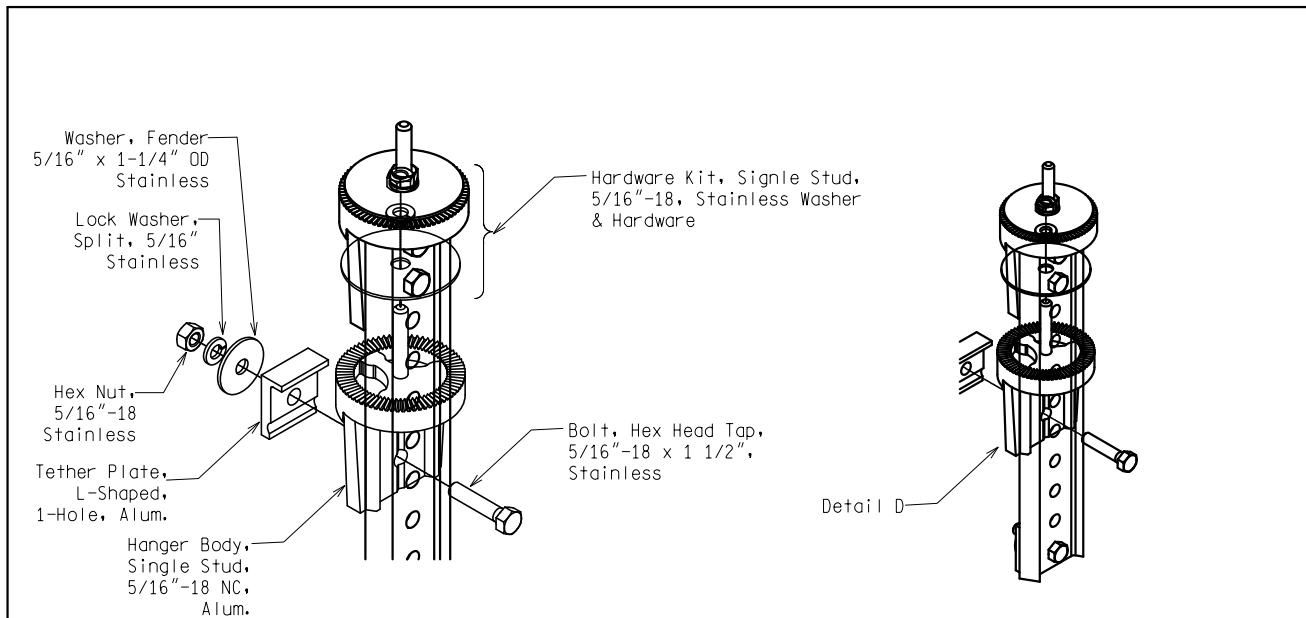
TURNBUCKLE DETAIL



TETHER WIRE S-HOOK  
1/2" Dia. ASTM A36 Galvanized 9380T15 or approved Equal

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN		FHWA APPROVAL DATE		PLAN DATE		SIG-305-A		SHEET 3 of 4	
File: RefDoc/TR/Signals/Web/Sp Det/Fin/SIG350A.dgn		Rev. 02/16/17							



DETAIL "D": TETHER ASSEMBLY SINGLE STUD BREAK-A-WAY

EXTENDER OPTION  
6", 11", 19", 30", & 72"  
(CUT TO LENGTH)

NOTES

1. S-Hook is matched to the strain pole design number (see table). S-Hook and turnbuckle are required only at one end of simple spans, all ends of complex spans. S-Hook shall be closed at pole end. If S-Hook begins to yield during installation, it shall be removed and replaced. The wire tension shall be adjusted to minimize movement of signal heads in high winds. Typical tension is 300 lbs.
2. Lock wire shall be stainless steel, 1/8 inch soft temper, wound to prevent turning of the turnbuckle body. Finished span shall have at least 2" of space for turnbuckle adjustment. Turnbuckle shall not be overtightened. Use 8" hand tools, maximum.
3. If signal orientation is not perpendicular to span and tether wire, then use an anchor extension. Clamp assembly must be attached to the flat side of the extender bar.
4. Install safety tie at each turnbuckle. This wire shall be 1 x 19, 1/8" stainless steel. Tie should be slack, but not so slack as to contact pole. Use 3 clips per end at 3-1/4 inch spacing.
5. Tether wire shall be 7-strand ASTM A475 HS 3/16 inch. On all spans, install tether horizontally. Maintain clearance of 17' over roadway.
6. Safety tie anchor height above tether is adjusted in the field before S-Hook is installed. Dimension X (Safety Tie Height) shall be adjusted so that the minimum vertical clearance of the sagging tether wire above the pavement without the S-Hook installed is at least 14'. Minimum distance between the safety tie clamp and tether clamp shall be 1.5' and contain enough slack for head to sway in high winds. Safety tie anchor may be any galvanized or stainless steel pole clamp assembly rated at 3000 pounds or higher.

NOT TO SCALE

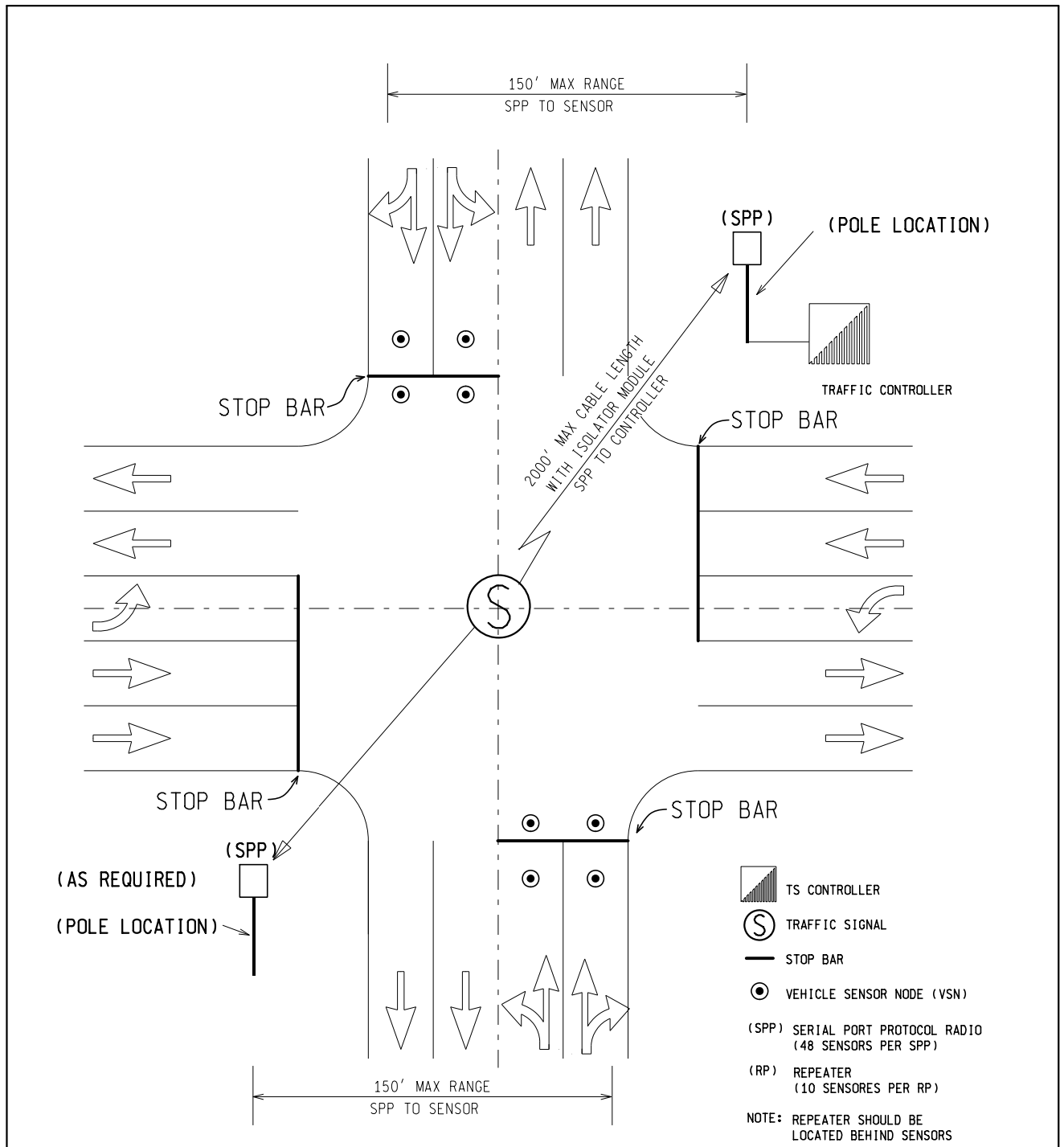
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File: RefDoc/TR/Signals/Web/Sp Det/Fin/SIG350A.dgn		Rev. 02/16/17							

AS-LET PLAN REVISIONS							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION



DATE: 03/10/17	CS: 25131	DRAWING	SHEET
DESIGN UNIT:	JN: 115832A		
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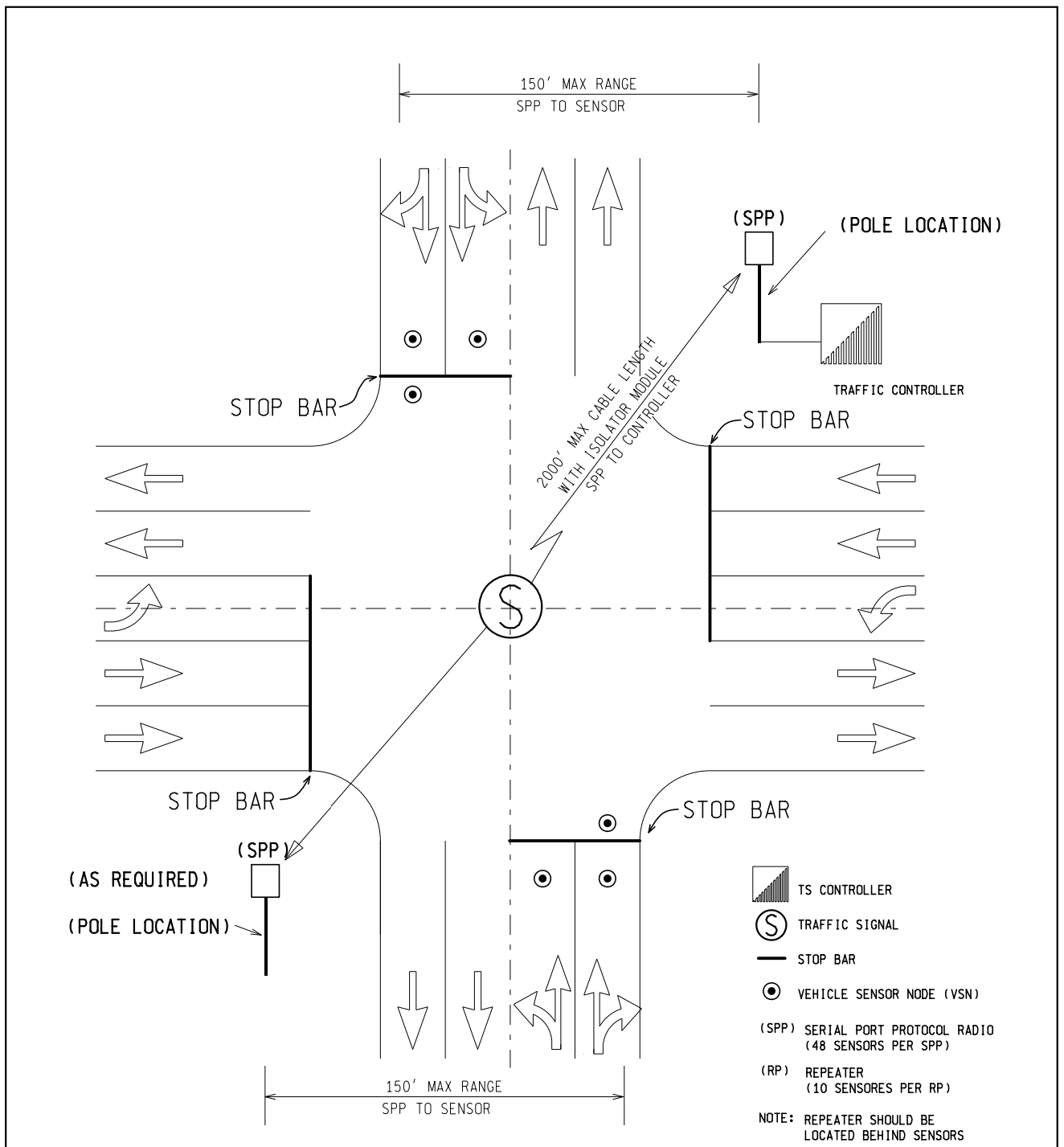




TYPICAL VEHICLE SENSOR NODE CONFIGURATION  
INTERSECTION DETECTION CROSS ROAD ACTIVATED (NON-LOCKING)

NOT TO SCALE File: PW:RD/T&S/Standards/Signals/mdot\_420a.dgn Rev. 06/18/2013

<p>PREPARED BY TRAFFIC AND SAFETY</p>	ENGINEER OF DELIVERY	<p>MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR</p> <p><b>WIRELESS VEHICLE DETECTION SYSTEM</b></p>	SHEET 1 of 10
	ENGINEER OF DEVELOPMENT (SPECIAL DETAIL) FHWA APPROVAL DATE		
DRAWN BY: KMZ	PLAN DATE		
CHECKED BY:			



TYPICAL VEHICLE SENSOR NODE CONFIGURATION  
INTERSECTION DETECTION CROSS ROAD ACTIVATED (LOCKING)

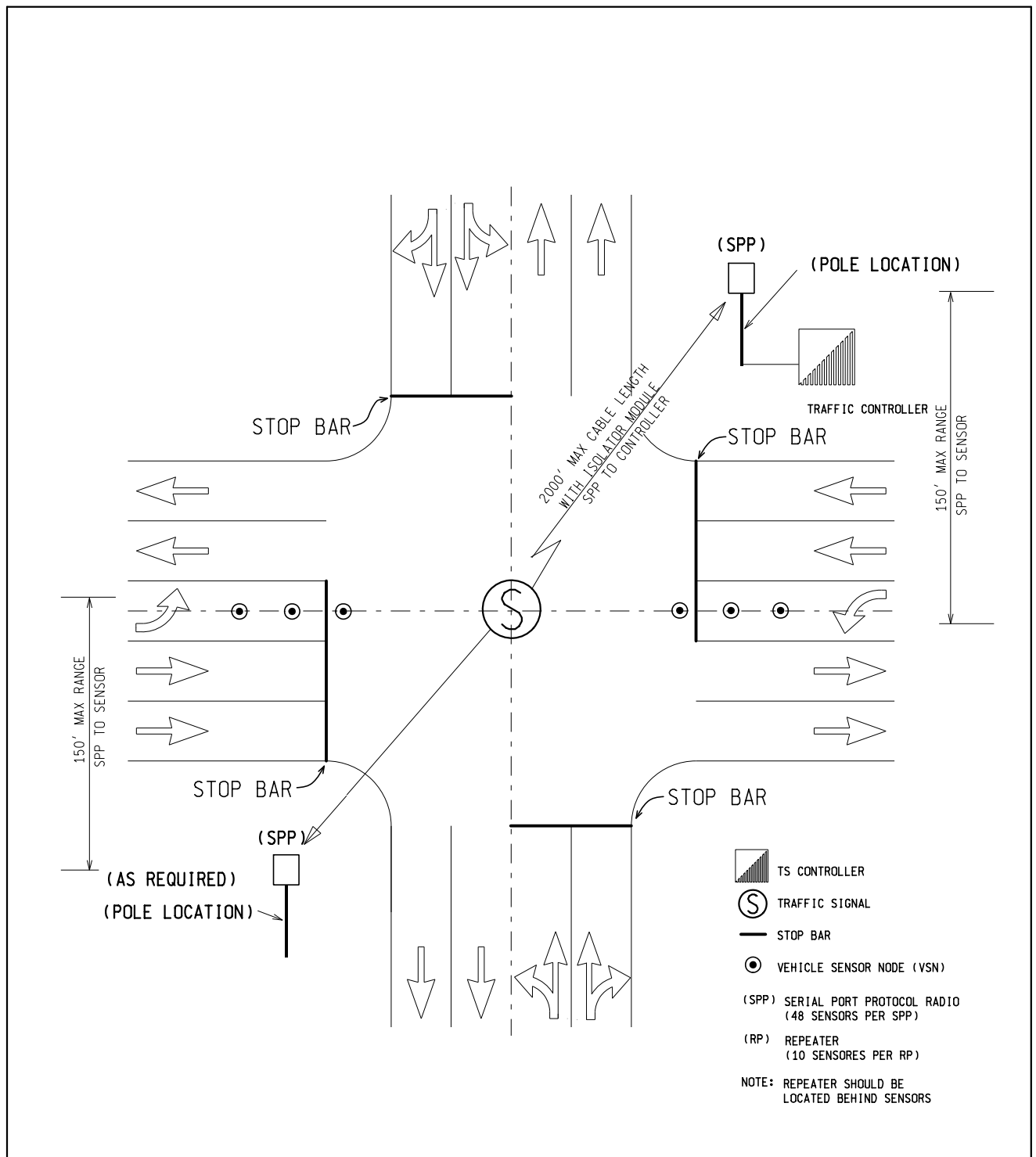
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<p>PREPARED BY TRAFFIC AND SAFETY</p>	ENGINEER OF DELIVERY	<p>MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN</p> <p>(SPECIAL DETAIL) FHWA APPROVAL DATE</p>	SHEET 2 of 10
	ENGINEER OF DEVELOPMENT (SPECIAL DETAIL) FHWA APPROVAL DATE		
DRAWN BY: KMZ	PLAN DATE		
CHECKED BY:			

AS-LET PLAN REVISIONS							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION



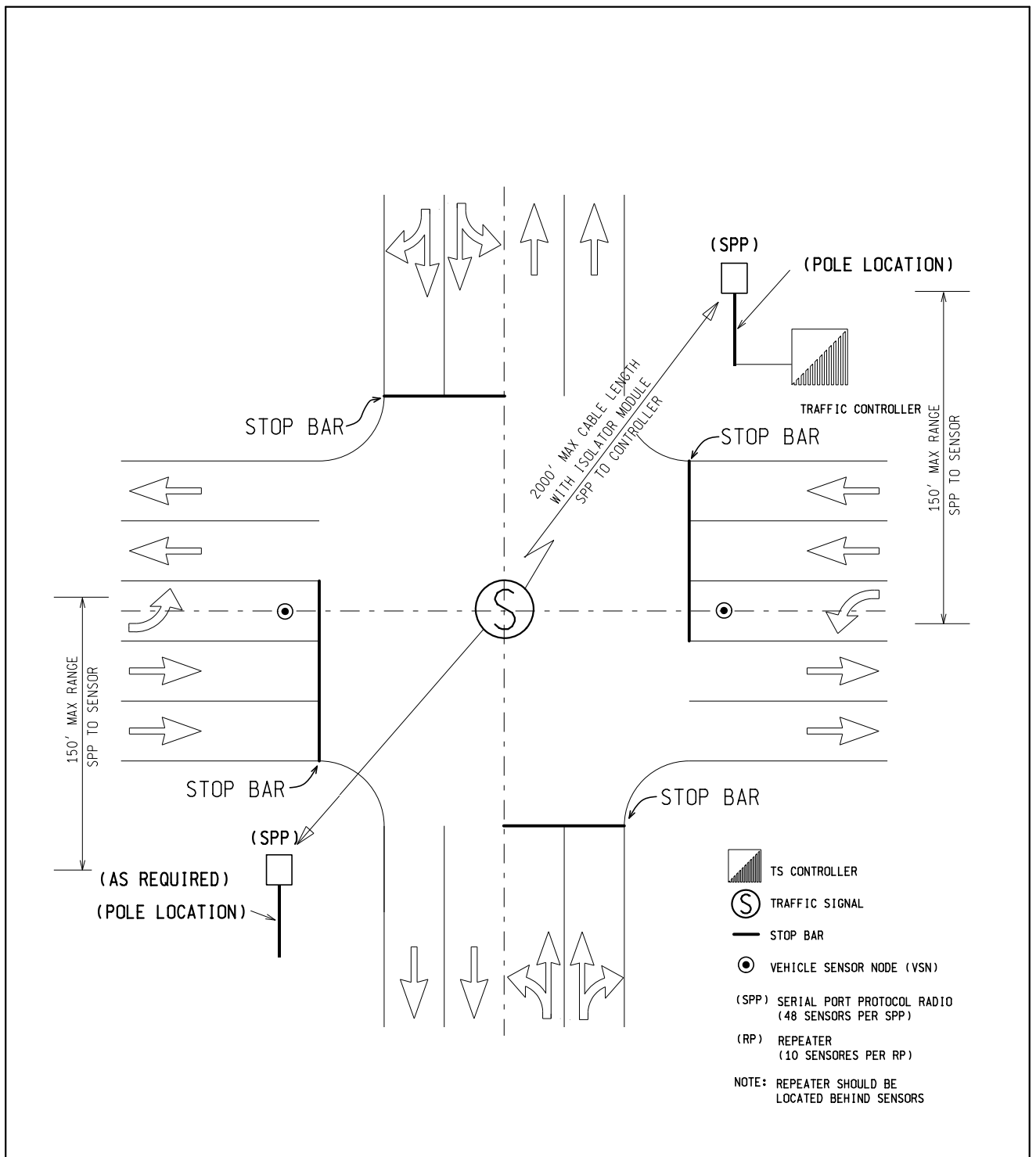
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DESIGN UNIT:	JN: 115832A
FILE:	TSC: DAVISON



**TYPICAL VEHICLE SENSOR NODE CONFIGURATION**  
 INTERSECTION DETECTION LEFT-TURN ACTIVATED  
 PERMISSIVE PROTECTED (NON-LOCKING)

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	(SPECIAL DETAIL) FHWA APPROVAL DATE	PLAN DATE	SIG-420-A	SHEET 3 of 10
File: PW:RD/T&S/Standards/Signals/mdot_420a.dgn	Rev. 06/18/2013			



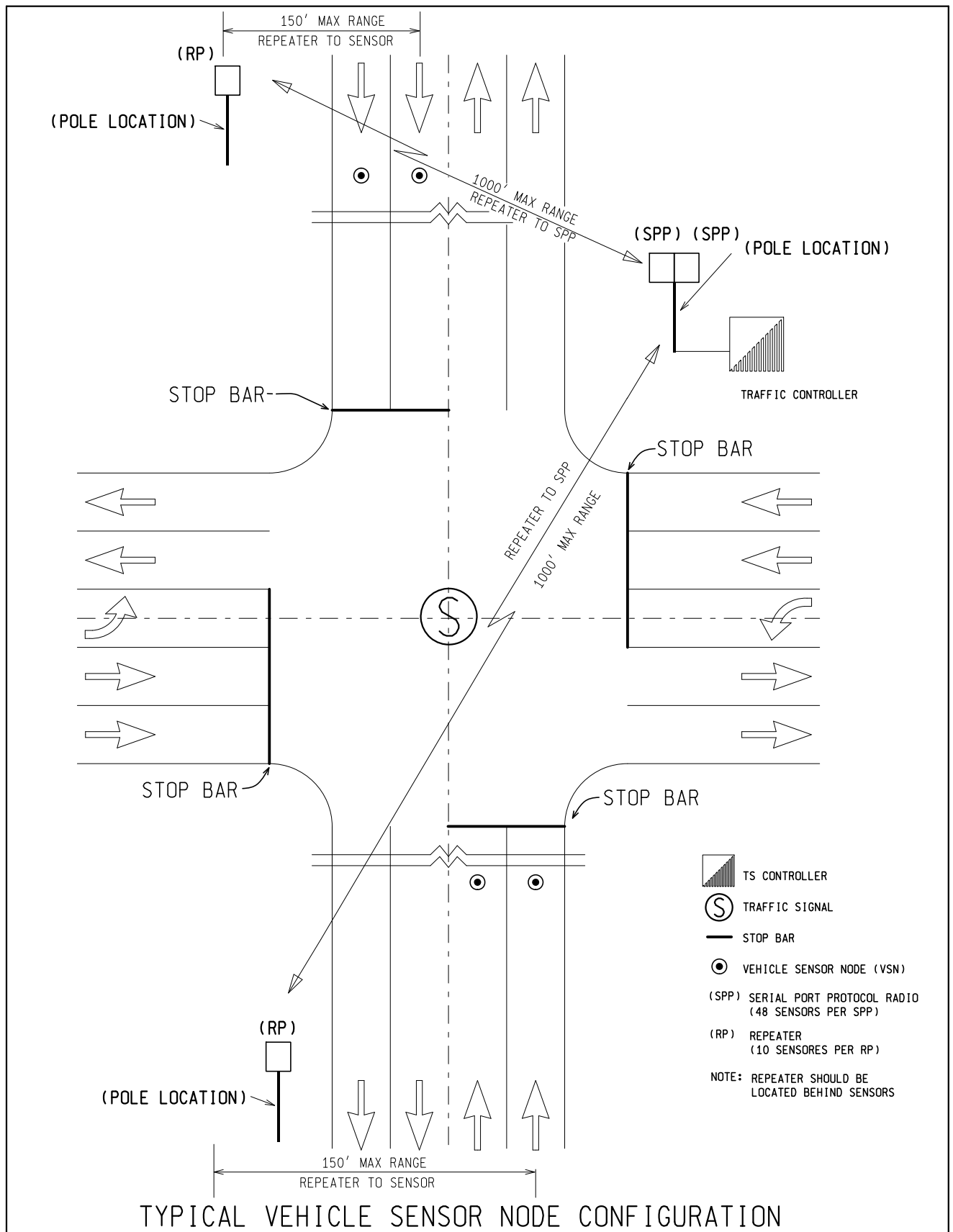
**TYPICAL VEHICLE SENSOR NODE CONFIGURATION**  
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 PROTECTED ONLY (LOCKING)

NOT TO SCALE

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File: PW:RD/T&S/Standards/Signals/mdot_420a.dgn	Rev. 06/18/2013			

AS-LET PLAN REVISIONS								MDOT Michigan Department of Transportation	DATE: 03/10/17	CS: 25131	DRAWING	SHEET
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION					

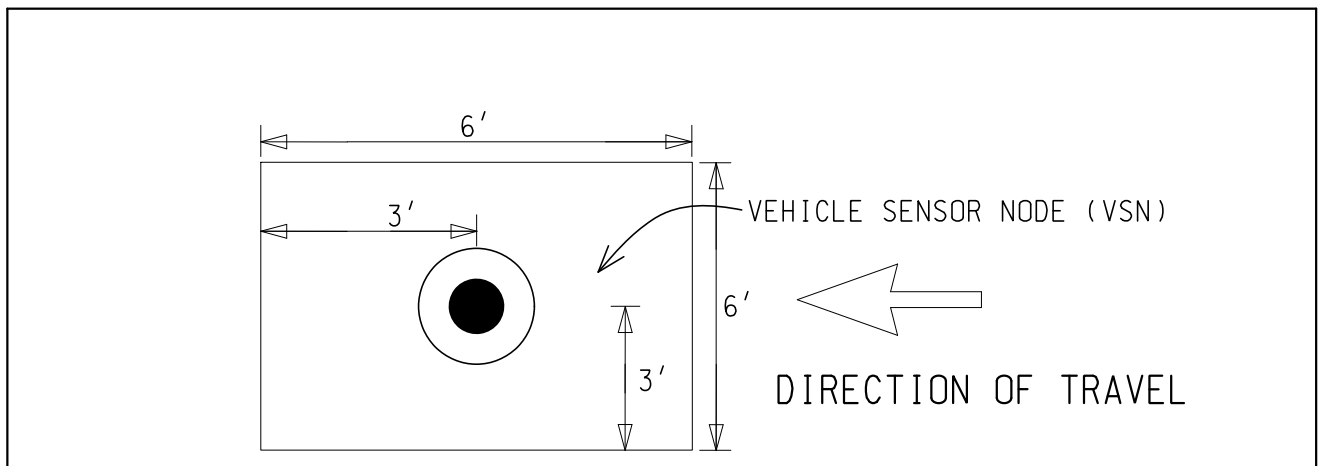
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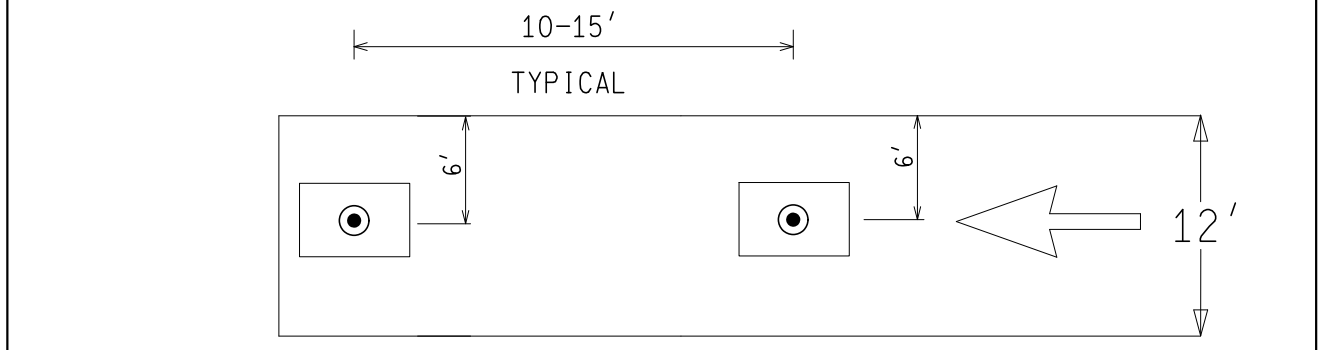
TYPICAL VEHICLE SENSOR NODE CONFIGURATION

NOT TO SCALE

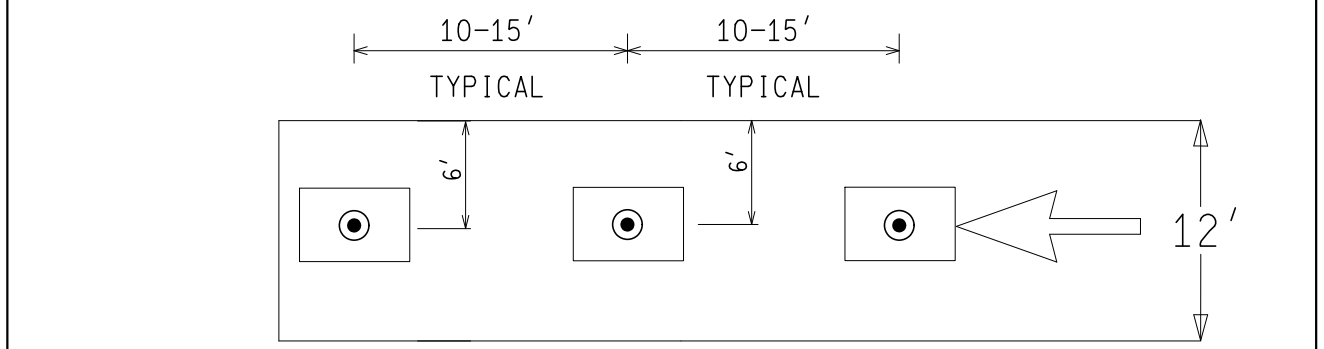
MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN		(SPECIAL DETAIL) FHWA APPROVAL DATE	PLAN DATE	SIG-420-A	SHEET 5 of 10
File: PW:RD/T&S/Standards/Signals/mdot_420a.dgn		Rev. 06/18/2013			



TYPICAL 6' X 6' DETECTION ZONE



TYPICAL 6' X 20' DETECTION ZONE



TYPICAL 6' X 30' DETECTION ZONE

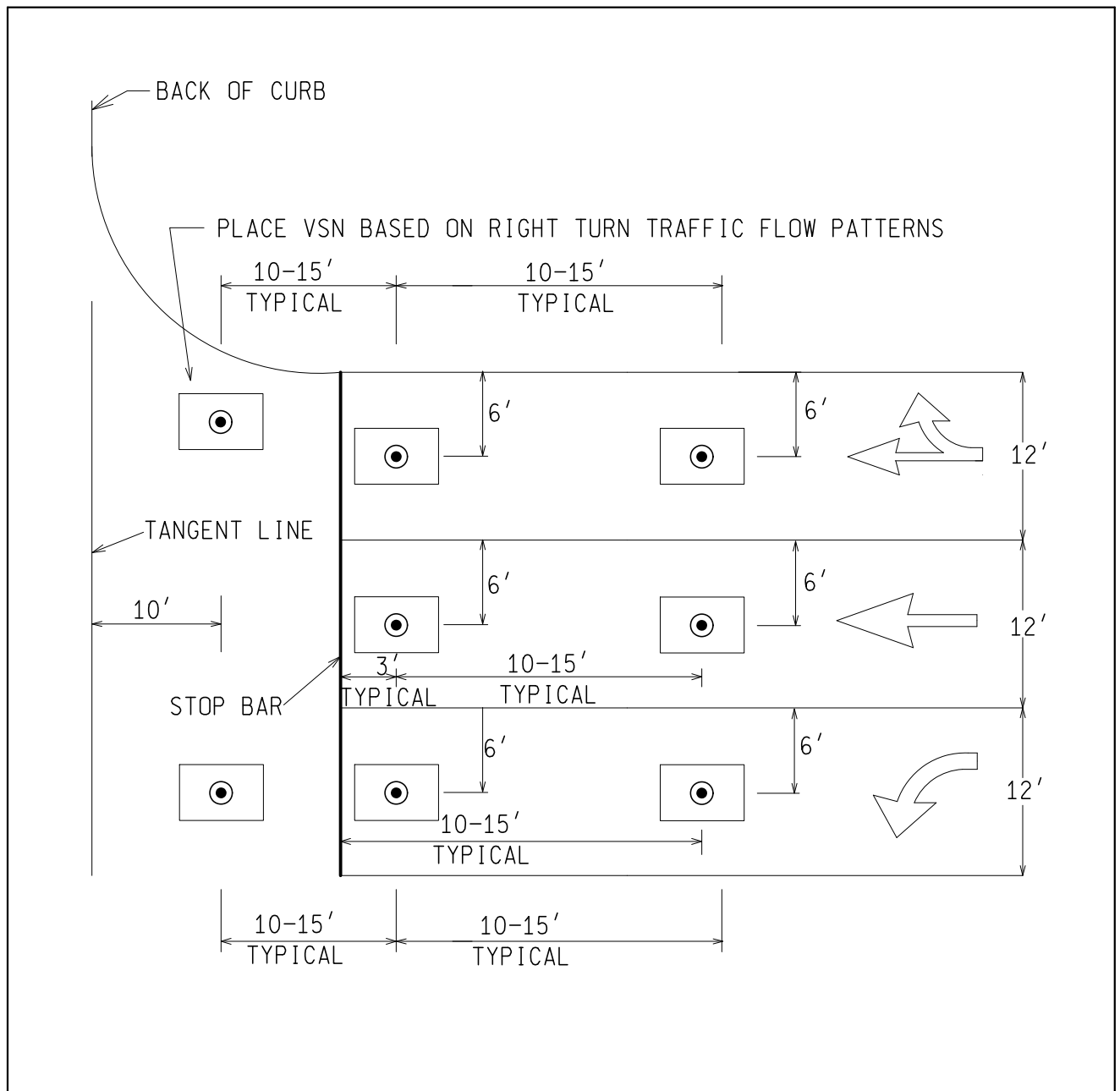
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MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN		(SPECIAL DETAIL) FHWA APPROVAL DATE	PLAN DATE	SIG-420-A	SHEET 6 of 10
File: PW:RD/T&S/Standards/Signals/mdot_420a.dgn		Rev. 06/18/2013			

AS-LET PLAN REVISIONS							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION



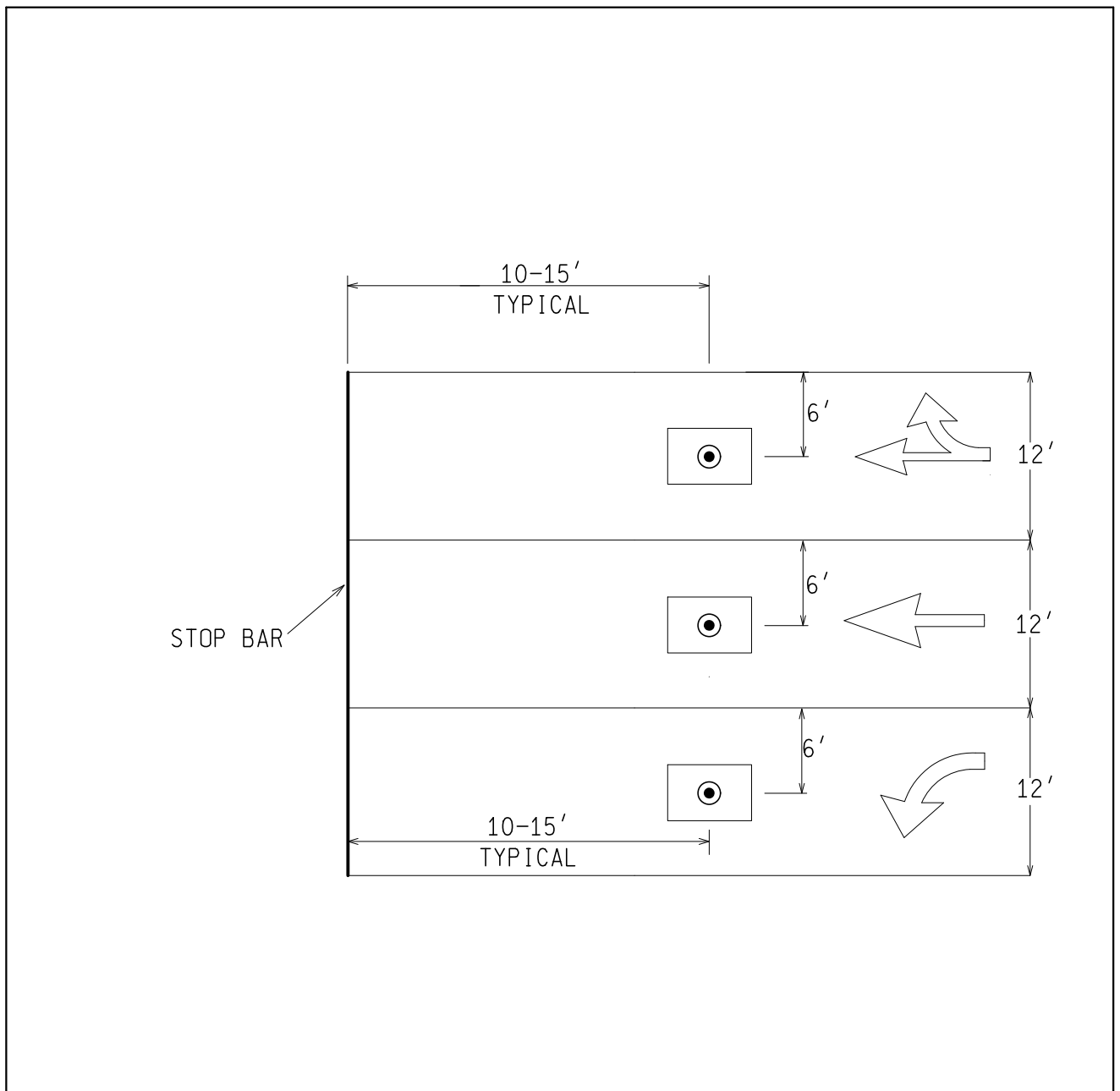
DATE: 03/10/17	CS: 25131	DRAWING	SHEET
DESIGN UNIT:	JN: 115832A		
FILE:	TSC: DAVISON		155



**TYPICAL VEHICLE SENSOR NODE (NON-LOCKING) INSTALLATION DIAGRAM**  
 FOR A TWO PHASE (NON-COORDINATED) APPROACH WITH (NON-LOCKING) PERMISSIVE OR  
 PERMISSIVE-PROTECTED LEFT TURN PHASING

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN		(SPECIAL DETAIL) FHWA APPROVAL DATE	Rev. 06/18/2013	PLAN DATE	SIG-420-A	SHEET 7 of 10
File: PW:RD/T&S/Standards/Signals/mdot_420a.dgn						



**TYPICAL VEHICLE SENSOR NODE (LOCKING) INSTALLATION DIAGRAM**  
 FOR AT TWO PHASE APPROACH WITH (LOCKING)  
 PROTECTED ONLY LEFT TURN PHASING

NOT TO SCALE

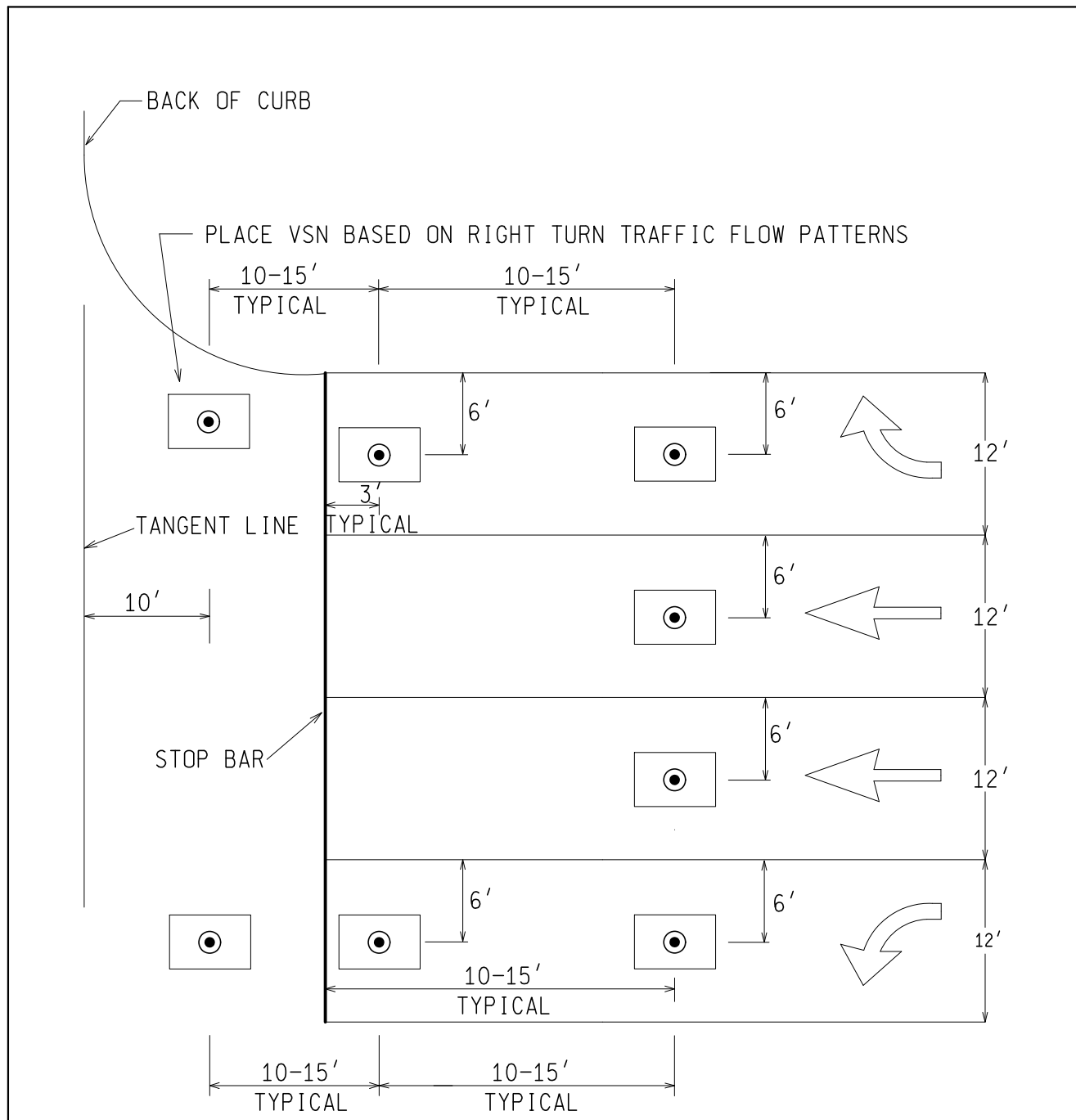
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File: PW:RD/T&S/Standards/Signals/mdot_420a.dgn						

AS-LET PLAN REVISIONS							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION



DATE: 03/10/17	CS: 25131
DESIGN UNIT:	JN: 115832A
FILE:	TSC: DAVISON

DRAWING	SHEET
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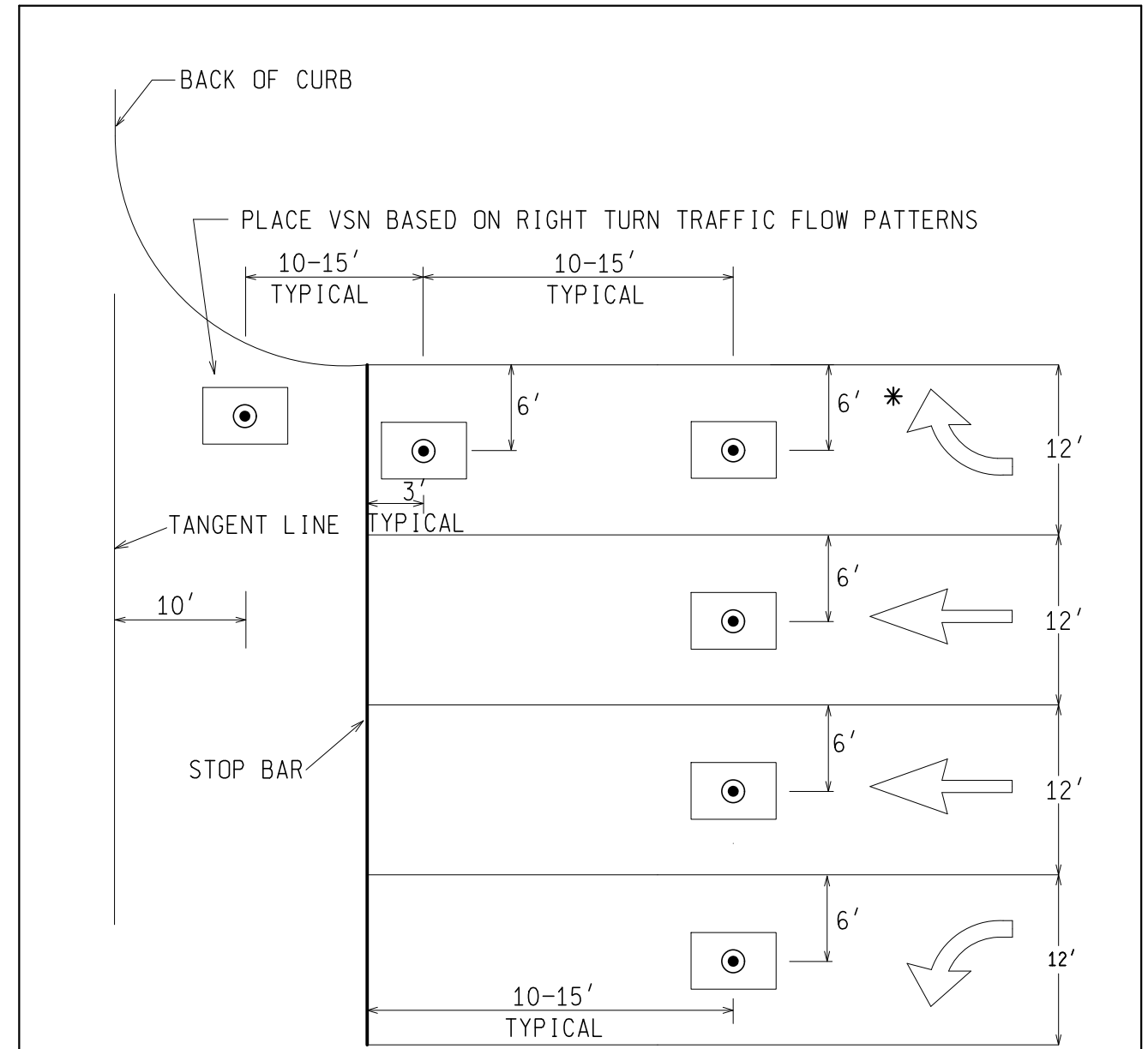


**TYPICAL VEHICLE SENSOR NODE (NON-LOCKING) INSTALLATION DIAGRAM**

FOR A TWO PHASE (COORDINATED) APPROACH WITH (NON-LOCKING) PERMISSIVE OR PERMISSIVE-PROTECTED LEFT TURN PHASING

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN		FHWA APPROVAL DATE	SIG-420-A	SHEET 9 of 10
File: PW:RD/T&S/Standards/Signals/mdot_420a.dgn	Rev. 06/18/2013	PLAN DATE		



**TYPICAL VEHICLE SENSOR NODE (LOCKING) INSTALLATION DIAGRAM**

FOR A TWO PHASE APPROACH WITH PROTECTED ONLY LEFT TURN PHASING  
\* RIGHT TURNS MAY BE NON-LOCKING OR LOCKING WITH RIGHT TURN DELAYS

NOT TO SCALE

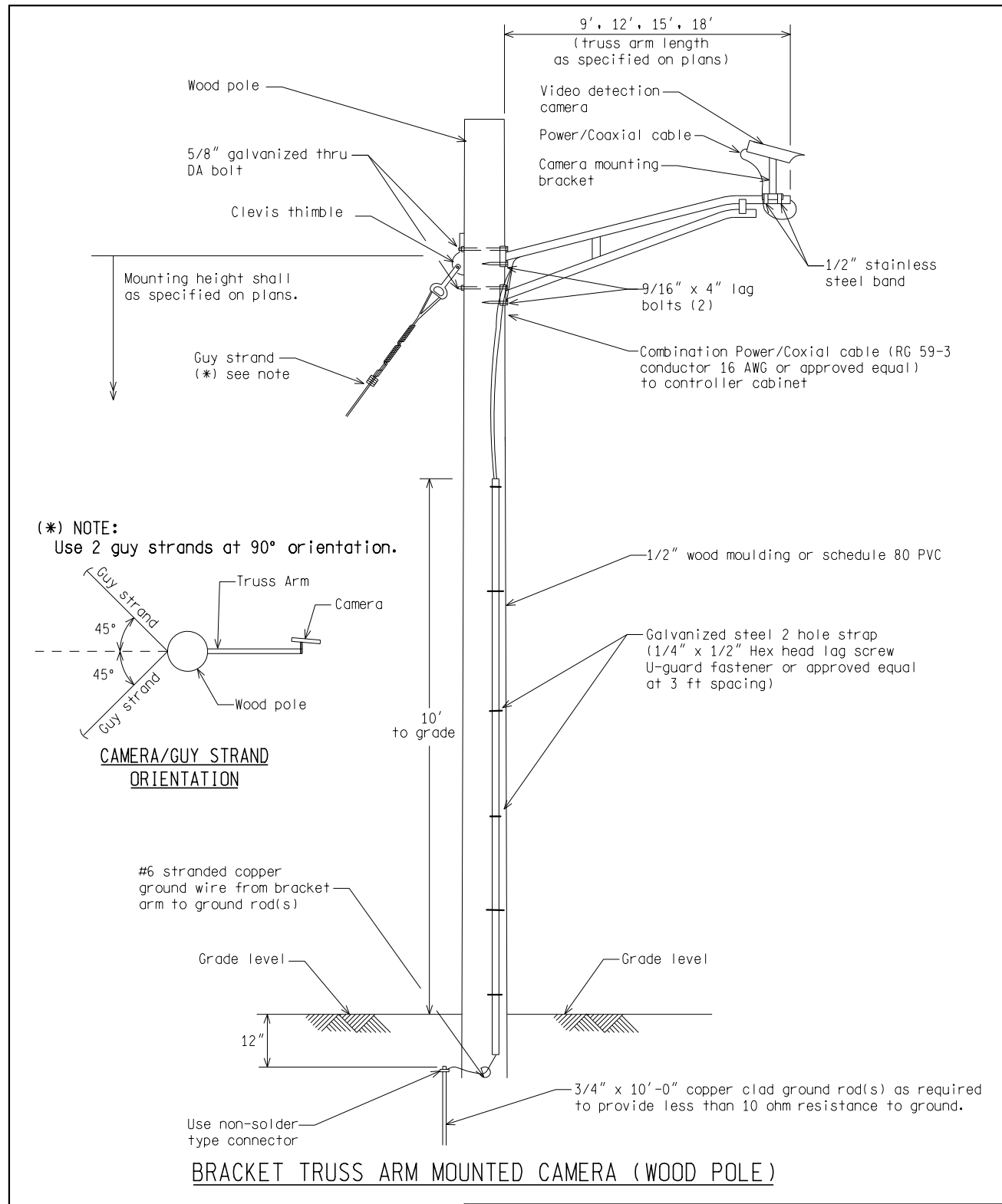
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File: PW:RD/T&S/Standards/Signals/mdot_420a.dgn	Rev. 06/18/2013	PLAN DATE		

AS-LET PLAN REVISIONS							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION



DATE: 03/10/17	CS: 25131
DESIGN UNIT:	JN: 115832A
FILE:	TSC: DAVISON

DRAWING	SHEET
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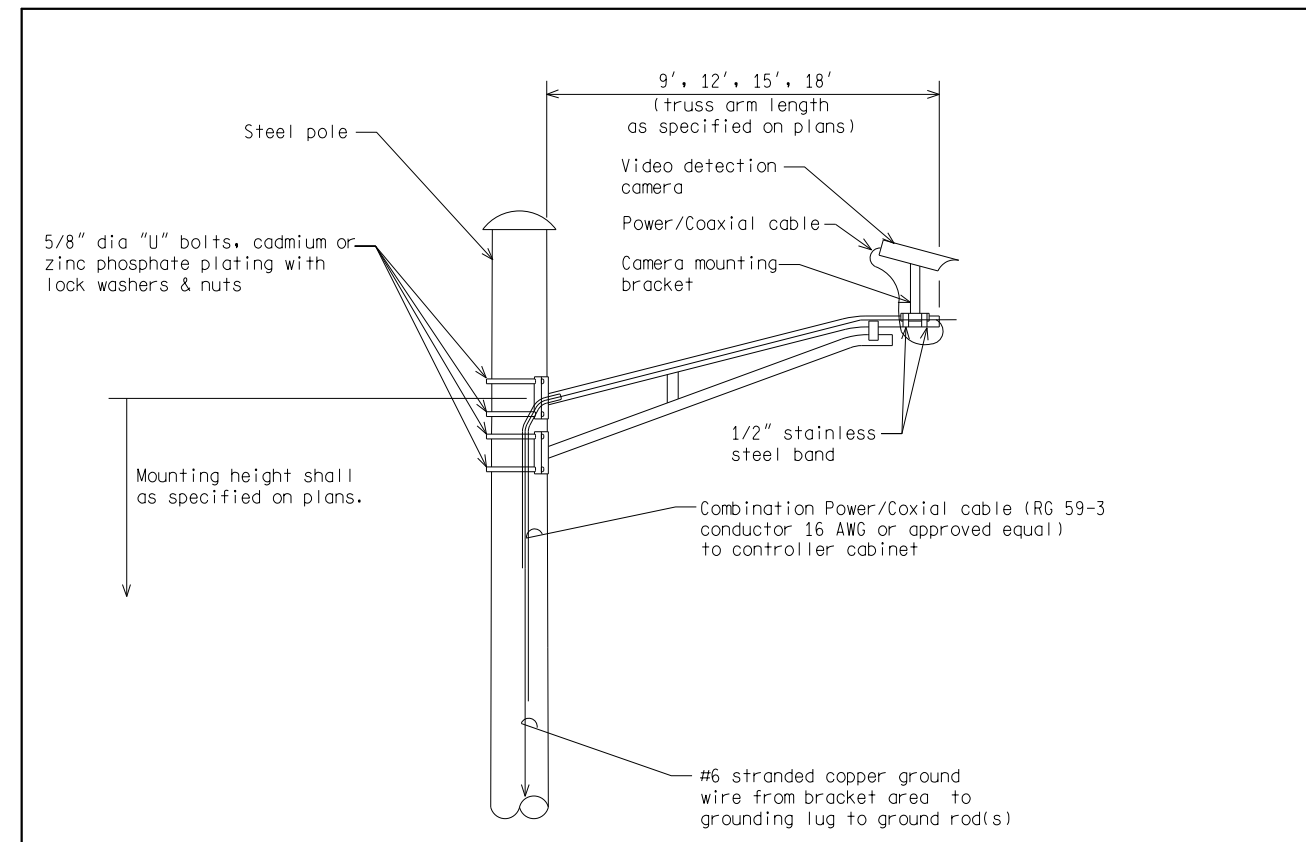


BRACKET TRUSS ARM MOUNTED CAMERA (WOOD POLE)

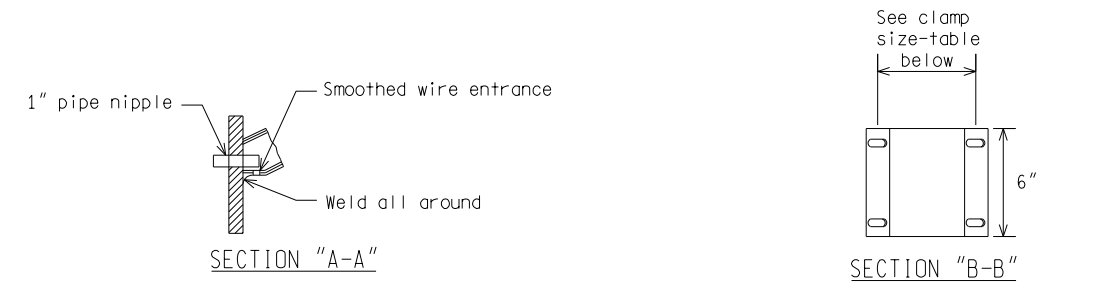
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<p>MICHIGAN DEPARTMENT OF TRANSPORTATION</p>	ENGINEER OF DELIVERY	<p>MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR</p> <p><b>VIDEO DETECTION CAMERA</b></p>	<p>SHEET 1 of 2</p>
	<p>PREPARED BY TRAFFIC AND SAFETY</p> <p>DRAWN BY: DJF</p> <p>CHECKED BY:</p>		

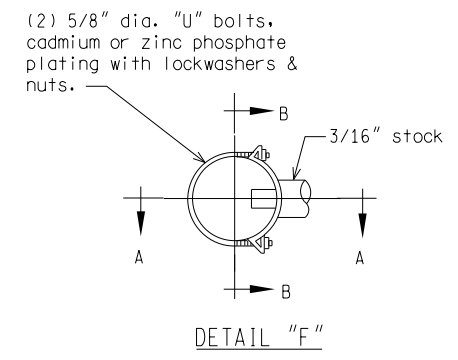


BRACKET TRUSS ARM MOUNTED CAMERA (STEEL POLE)



CLAMP SIZE TABLE

TYPE	POLE DIAMETER
A	3.6" - 4.5"
B	6.1" - 6.9"



NOT TO SCALE

File: RefDoc/TR/Signals/Web/Sp Det/Fin/SIG430A.dgn Rev. 02/16/17

<p>MICHIGAN DEPARTMENT OF TRANSPORTATION</p>	(SPECIAL DETAIL)	<p>SHEET 2 of 2</p>
	<p>BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN</p> <p>FHWA APPROVAL DATE</p>	

TEST HOLE NO. B 1	TEST HOLE NO. B 2	TEST HOLE NO. B 3	TEST HOLE NO. B 4
LOCATION: I-75 NORTHBOUND OFF RAMP TO HOLLY RD GRASS ROW LATITUDE: 42.894431, LONGITUDE: -83.630154, NORTHING: 509032, EASTING: 13320710 OFFSET: 17 FEET LEFT OF I-75 NB OFF RAMP CENTERLINE ELEVATION: 0.0 ft	LOCATION: I-75 NORTHBOUND OFF RAMP TO HOLLY RD GRASS ROW LATITUDE: 42.895668, LONGITUDE: -83.630447, NORTHING: 509482, EASTING: 13320627 OFFSET: 97 FEET RIGHT OF I-75 NB OFF RAMP CENTERLINE ELEVATION: 0.0 ft	LOCATION: I-75 NORTHBOUND OFF RAMP TO HOLLY RD GRASS ROW LATITUDE: 42.895615, LONGITUDE: -83.631223, NORTHING: 509461, EASTING: 13320419 OFFSET: 105 FEET LEFT OF I-75 NB OFF RAMP CENTERLINE ELEVATION: 0.0 ft	LOCATION: I-75 NORTHBOUND OFF RAMP TO HOLLY RD GRASS ROW LATITUDE: 42.896868, LONGITUDE: -83.631027, NORTHING: 509918, EASTING: 13320468 OFFSET: 120 FEET RIGHT OF I-75 NB OFF RAMP CENTERLINE ELEVATION: 0.0 ft
TEST HOLE DATE 6/2/16 MC %    HP (ksf)	TEST HOLE DATE 5/23/16 MC %    HP (ksf)    TV (ksf)	TEST HOLE DATE 6/1/16 MC %    HP (ksf)    TV (ksf)	TEST HOLE DATE 5/23/16 MC %    HP (ksf)
END OF TEST HOLE AT 5 FEET.  NOTES: 1. GROUNDWATER WAS NOT ENCOUNTERED DURING OR UPON COMPLETION OF TEST HOLE ACTIVITIES.  2. DUE TO HEAVY TRAFFIC VOLUME AND NARROW RAMP SHOULDERS SME WAS UNABLE TO PERFORM THIS TEST HOLE IN THE RAMP PAVEMENT.	END OF TEST HOLE AT 5 FEET.  NOTES: 1. GROUNDWATER WAS ENCOUNTERED AT 5 FEET DURING & 2 FEET UPON COMPLETION OF TEST HOLE ACTIVITIES.  2. DUE TO SOIL COLLAPSE, SME EXTENDED A MUCK PROBE INTO THE TEST HOLE AT A DEPTH OF 5 FEET AND ENCOUNTERED FIRM BOTTOM AT ABOUT 9.5 FEET BELOW THE EXISTING GROUND SURFACE.	END OF TEST HOLE AT 5 FEET.  NOTES: 1. GROUNDWATER WAS ENCOUNTERED AT 4 FEET DURING & 2 FEET UPON COMPLETION OF TEST HOLE ACTIVITIES.  2. DUE TO SOIL COLLAPSE, SME EXTENDED A MUCK PROBE INTO THE TEST HOLE AT A DEPTH OF 5 FEET AND ENCOUNTERED FIRM BOTTOM AT ABOUT 5.5 FEET BELOW THE EXISTING GROUND SURFACE.	END OF TEST HOLE AT 5 FEET.  NOTES: 1. GROUNDWATER WAS NOT ENCOUNTERED DURING OR UPON COMPLETION OF TEST HOLE ACTIVITIES.

TEST HOLES PERFORMED IN ASPHALT PAVEMENT WERE PATCHED WITH 4-INCHES OF CONSTRUCTION GRADE ASPHALT COLD PATCH AFTER BACKFILLING.

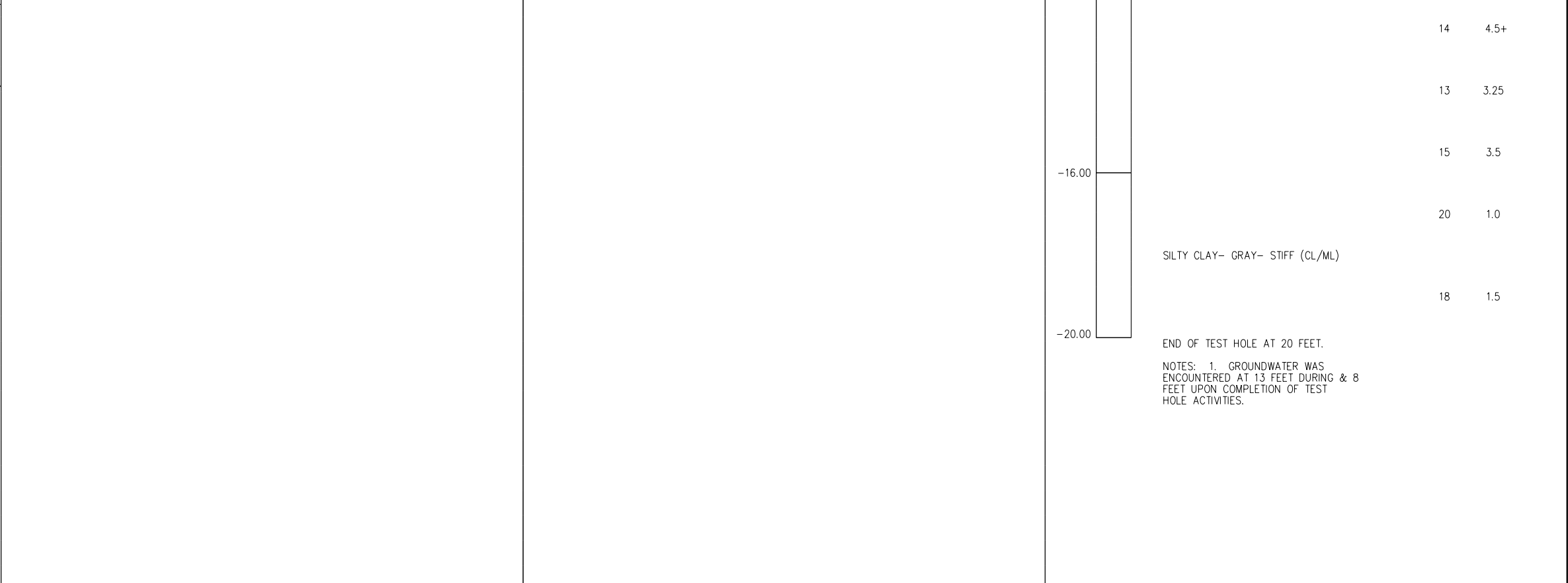
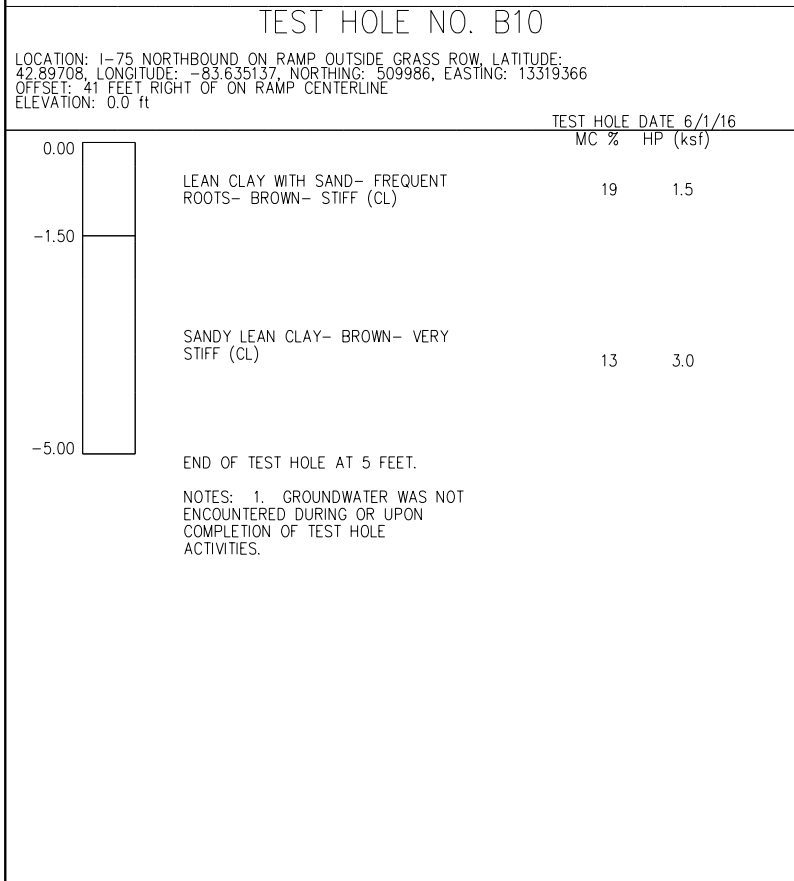
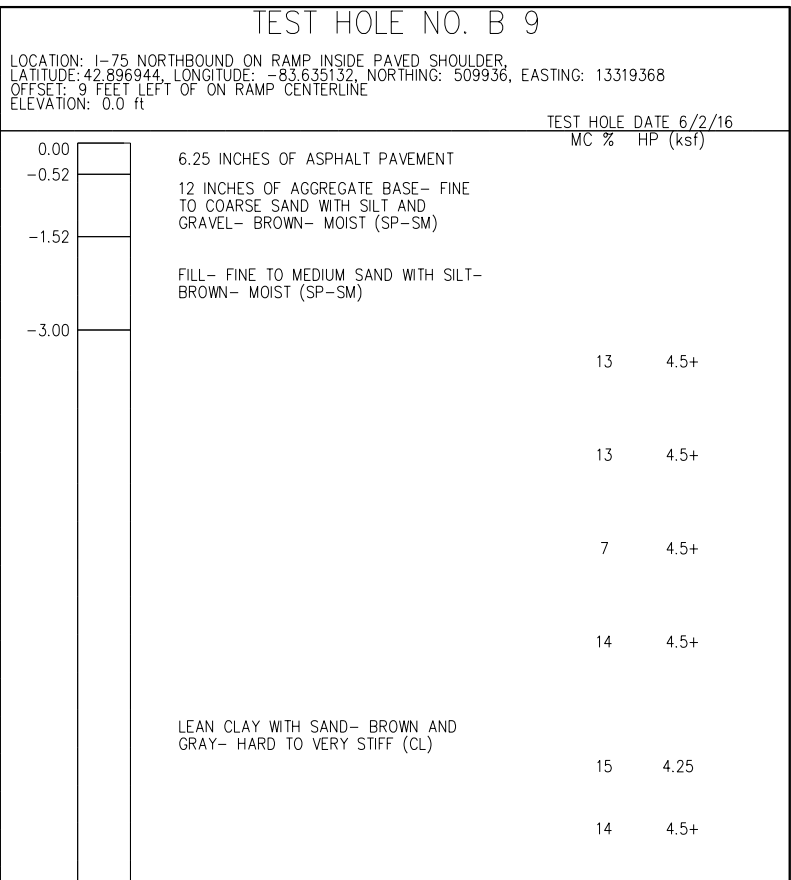
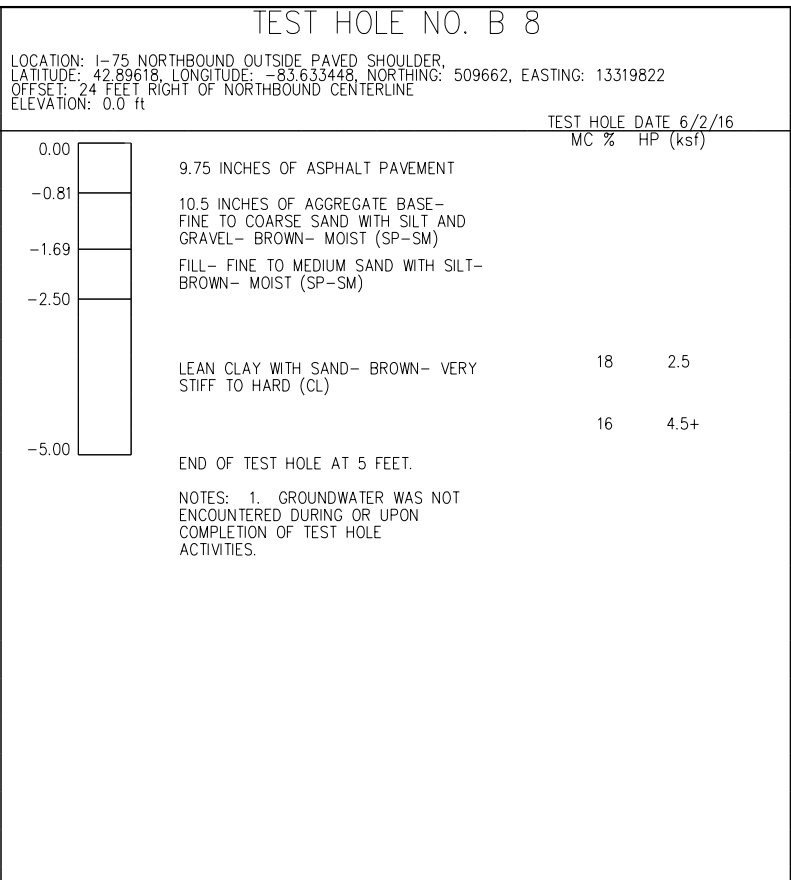
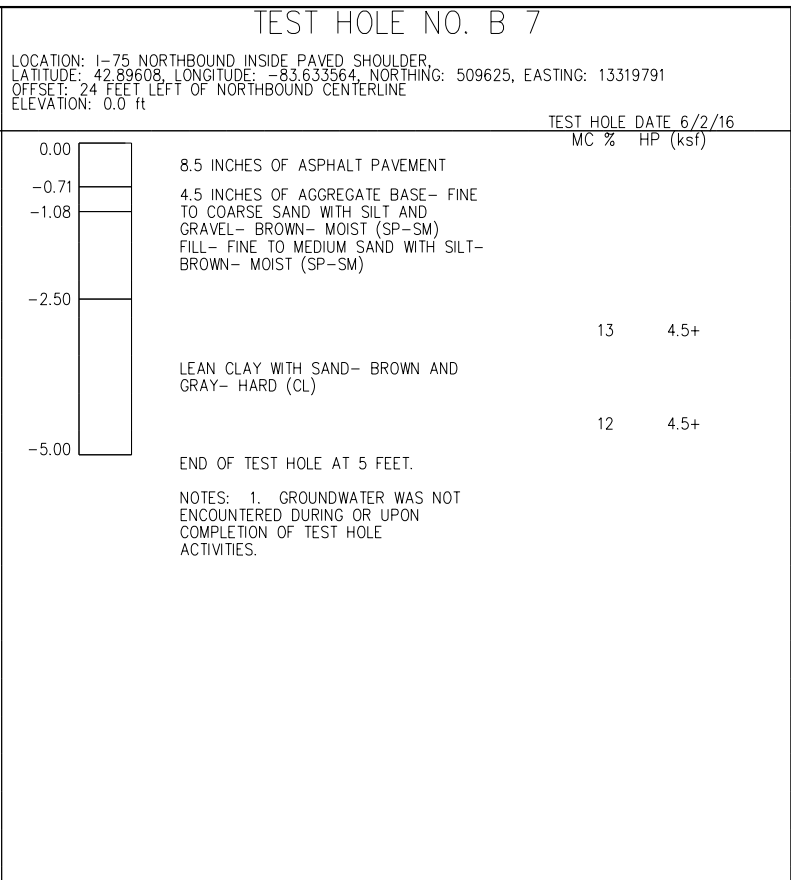
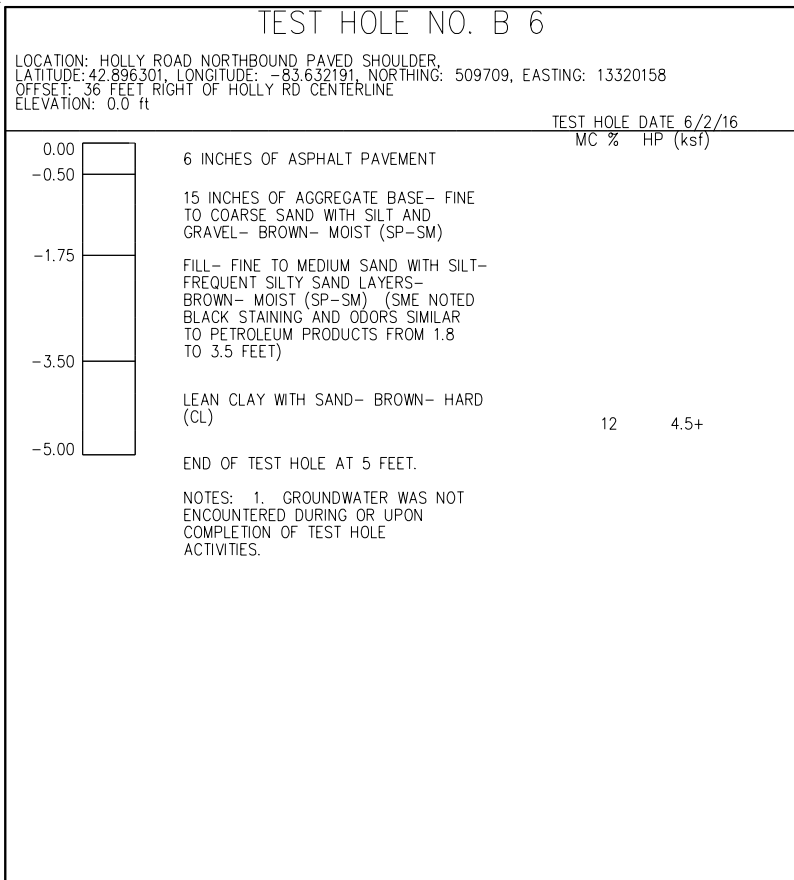
MC = MOISTURE CONTENT PERCENT  
 HP = HAND PENETROMETER TEST, ESTIMATED UNDRAINED SHEAR STRENGTH-KIPS/SQ.FT (KSF)  
 TV = TORVANE TEST, ESTIMATED UNDRAINED SHEAR STRENGTH-KIPS/SQ.FT (KSF)

THE TEST HOLE LOGS REPRESENT POINT INFORMATION. PRESENTATION OF THIS INFORMATION IN NO WAY IMPLIES THAT THE SUBSURFACE CONDITIONS ARE THE SAME AT LOCATIONS OTHER THAN THE EXACT LOCATION OF THE TEST HOLES. THE LABORATORY TESTING INCLUDED VISUAL SOIL CLASSIFICATION OF RECOVERED SAMPLES IN GENERAL ACCORDANCE WITH ASTM D2488. IN ADDITION, MOISTURE CONTENT AND UNDRAINED SHEAR STRENGTH ESTIMATES WERE OBTAINED FROM PORTIONS OF COHESIVE SAMPLES OR ORGANIC SAMPLES. BASED ON THE DATA, SME ASSIGNED A UNIFIED SOIL CLASSIFICATION SYSTEM (USCS) SYMBOL TO THE VARIOUS SOIL STRATA ENCOUNTERED. ADDITIONALLY, PHOTOGRAPHS WERE TAKEN OF EACH PAVEMENT CORE.

SME OBTAINED PAVEMENT CORES AT TEST HOLES B6, B7, B8 AND B9, AND MEASURED THE AGGREGATE BASE THICKNESS. USACE DCP TESTS WERE PERFORMED AT TEST HOLES B1, B4, B6, B7, B8, B9 AND B10. TEST HOLES WERE PERFORMED AT THESE LOCATIONS WITH A GEOPROBE USING DIRECT PUSH TECHNOLOGY. TEST HOLES B2 AND B3 WERE PERFORMED USING A HAND OPERATED BUCKET AUGER AND THEN WERE EXTENDED THROUGH THE MUCK TO FIRM BOTTOM USING A MUCK PROBE. THE TEST HOLES WERE BACKFILLED WITH SAND AND GRAVEL. THE PHOTOGRAPHS OF THE PAVEMENT CORES AND THE USACE DCP TEST RESULTS ARE ON THE PAVEMENT CORE PHOTO AND USACE DCP DATA SHEETS INCLUDED AS AN ATTACHMENT TO THE REPORT.

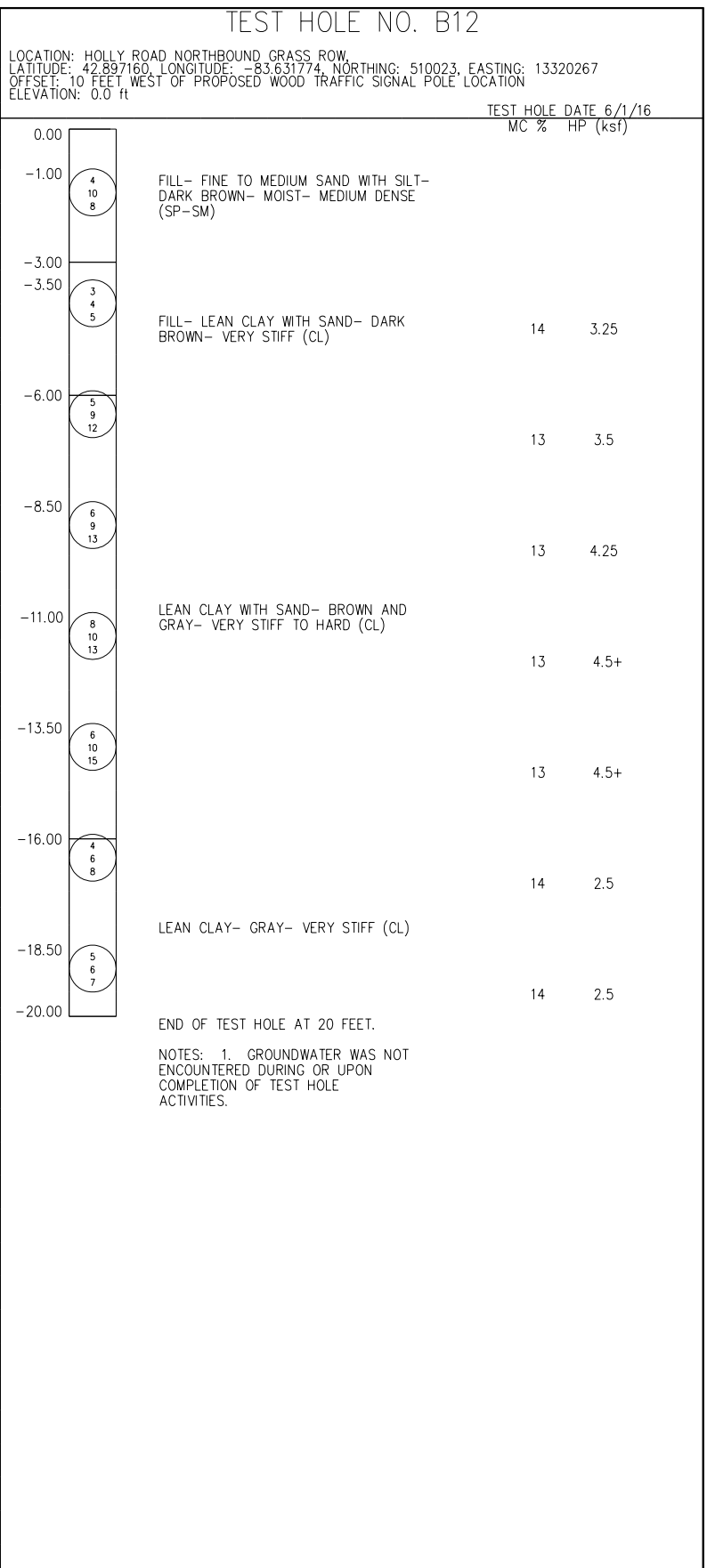
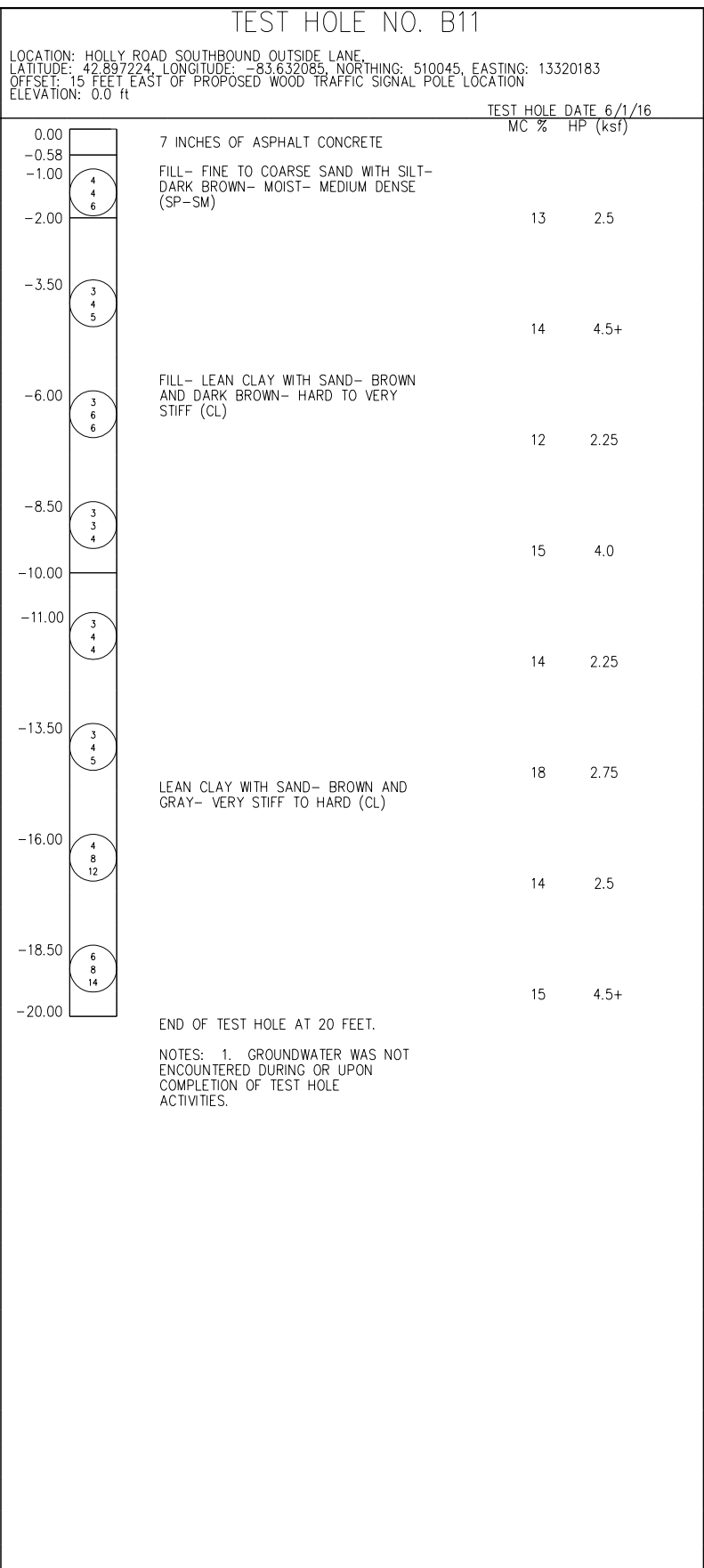
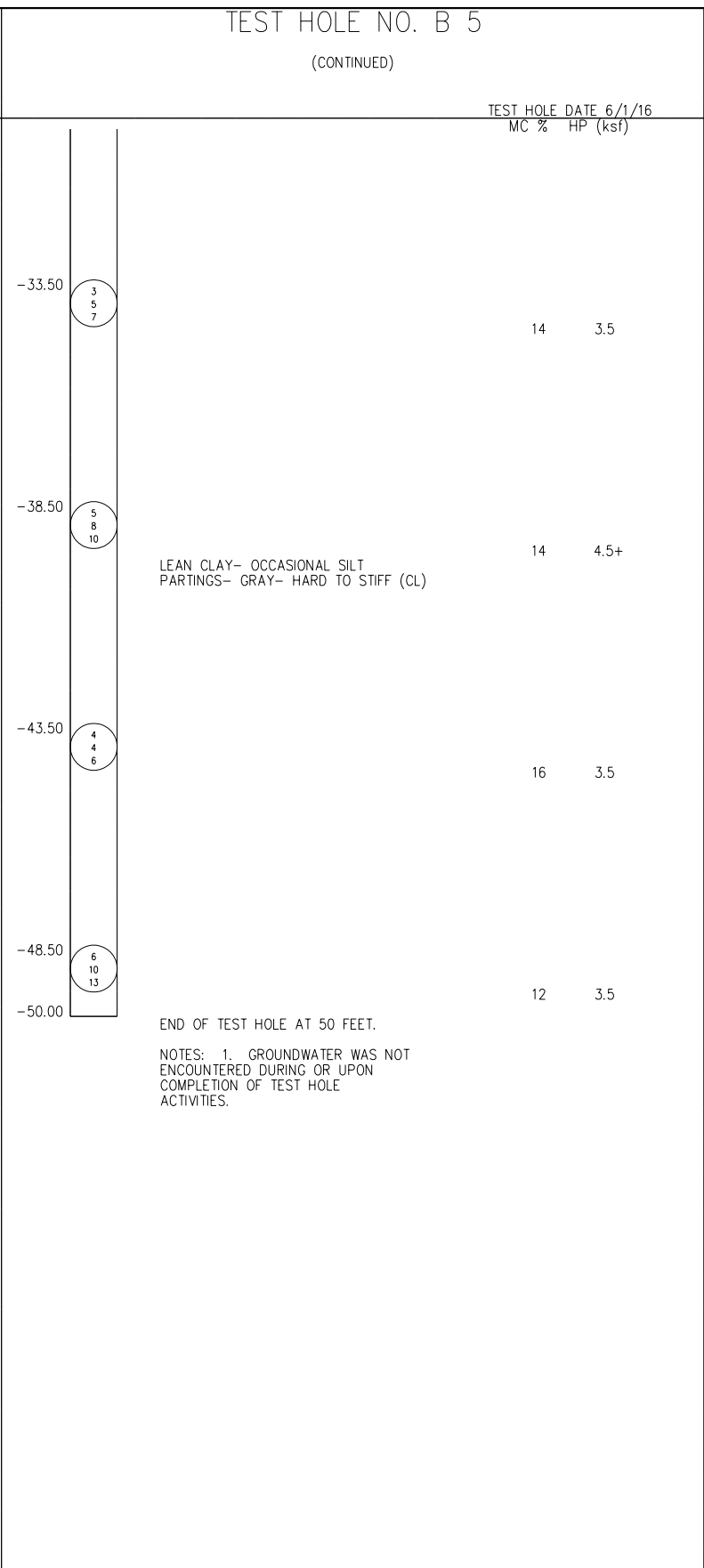
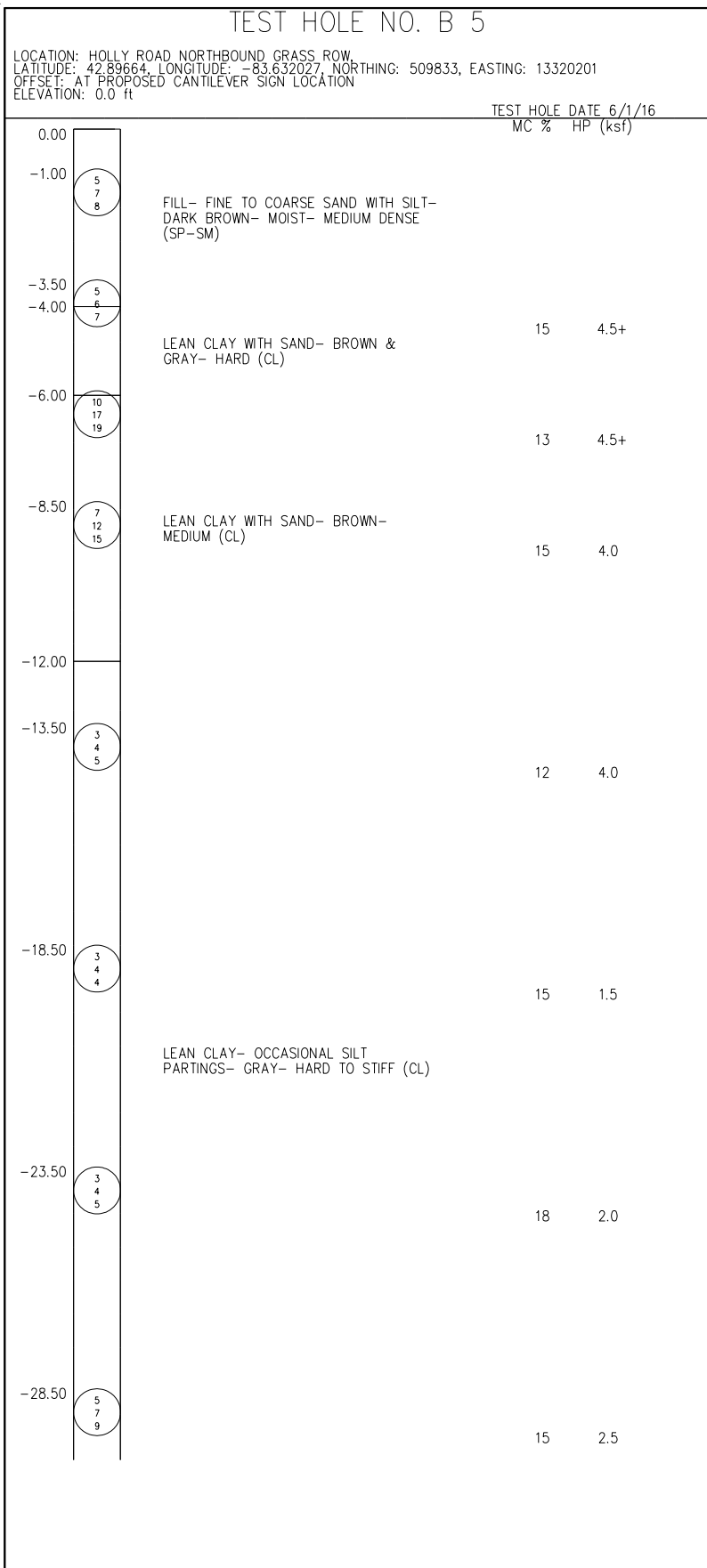
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NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION			DESIGN UNIT: PETHERS	JN: 115832A			BOR	SECT
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FILE: 115832\_Boring\_001.dgn



FINAL ROW PLAN REVISIONS (SUBMITTAL DATE: )				NO SCALE				DATE: 03/10/17		CS: 25131		BORING LOGS		DRAWING SHEET	
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NUMBERS IN CIRCLES DENOTE NUMBER OF BLOWS REQUIRED TO DRIVE A 2" O.D. X 1.5" I.D. SPLIT SPOON SAMPLER 3 SUCCESSIVE 6" INCREMENTS USING A 140 LB AUTOMATIC HAMMER FALLING 30".

MC = PERCENT MOISTURE CONTENT  
 HP = HAND PENETROMETER TEST, ESTIMATE OF UNDRAINED SHEAR STRENGTH - KIPS/SQ.FT (KSF)

THE TEST HOLE LOGS REPRESENTS POINT INFORMATION. PRESENTATION OF THIS INFORMATION IN NO WAY IMPLIES THAT THE SUBSURFACE CONDITIONS ARE THE SAME AT LOCATIONS OTHER THAN THE EXACT LOCATION OF THE TEST HOLES. THE LABORATORY TESTING INCLUDED VISUAL SOIL CLASSIFICATION OF RECOVERED SAMPLES IN GENERAL ACCORDANCE WITH ASTM D2488. IN ADDITION, MOISTURE CONTENT AND UNDRAINED SHEAR STRENGTH ESTIMATES WERE OBTAINED FROM PORTIONS OF COHESIVE SAMPLES. BASED ON THE DATA, SME ASSIGNED A UNIFIED SOIL CLASSIFICATION SYSTEM (USCS) SYMBOL TO THE VARIOUS SOIL STRATA ENCOUNTERED.

THE TEST HOLES WERE PERFORMED WITH A TRUCK MOUNTED ROTARY DRILL RIG. HOLLOW-STEM AUGERS WITH AN I.D. OF 3 3/4 INCHES WERE USED TO THE EXPLORED DEPTH OF TEST HOLE B5. SOLID-STEM AUGERS WITH AN O.D. OF 4 INCHES WERE USED TO THE EXPLORED DEPTH OF TEST HOLES B11, B12 AND B13. THE TEST HOLES WERE BACKFILLED WITH AUGER CUTTINGS. TEST HOLE B11 WAS CAPPED WITH 4-INCHES OF CONSTRUCTION GRADE ASPHALT COLDPATCH AFTER BACKFILLING.

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE: )								BORING LOGS		DRAWING	SHEET
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										BOR 003	SECT 1 161



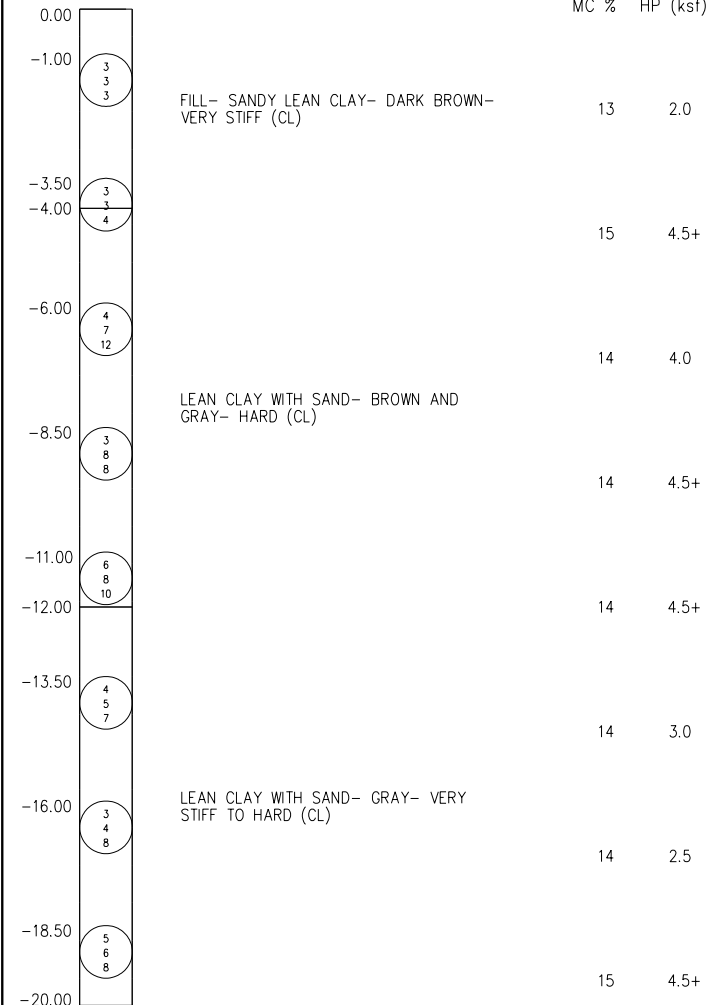
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DATE: 03/10/17 CS: 25131  
 DESIGN UNIT: PETHERS JN: 115832A  
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TEST HOLE NO. B13

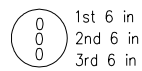
LOCATION: HOLLY ROAD NORTHBOUND GRASS ROW  
 LATITUDE: 42.896658, LONGITUDE: -83.631895, NORTHING: 509912, EASTING: 13320235  
 OFFSET: 22 FEET WEST OF PROPOSED WOOD TRAFFIC SIGNAL POLE LOCATION  
 ELEVATION: 0.0 ft

TEST HOLE DATE 6/1/16  
 MC % HP (ksf)



END OF TEST HOLE AT 20 FEET.

NOTES: 1. GROUNDWATER WAS NOT ENCOUNTERED DURING OR UPON COMPLETION OF TEST HOLE ACTIVITIES.



NUMBERS IN CIRCLES DENOTE NUMBER OF BLOWS REQUIRED TO DRIVE A 2" O.D. X 1.5" I.D. SPLIT SPOON SAMPLER 3 SUCCESSIVE 6" INCREMENTS USING A 140 LB AUTOMATIC HAMMER FALLING 30".

MC = PERCENT MOISTURE CONTENT  
 HP = HAND PENETROMETER TEST, ESTIMATE OF UNDRAINED SHEAR STRENGTH - KIPS/SQ.FT (KSF)

THE TEST HOLE LOGS REPRESENTS POINT INFORMATION. PRESENTATION OF THIS INFORMATION IN NO WAY IMPLIES THAT THE SUBSURFACE CONDITIONS ARE THE SAME AT LOCATIONS OTHER THAN THE EXACT LOCATION OF THE TEST HOLES. THE LABORATORY TESTING INCLUDED VISUAL SOIL CLASSIFICATION OF RECOVERED SAMPLES IN GENERAL ACCORDANCE WITH ASTM D2488. IN ADDITION, MOISTURE CONTENT AND UNDRAINED SHEAR STRENGTH ESTIMATES WERE OBTAINED FROM PORTIONS OF COHESIVE SAMPLES. BASED ON THE DATA, SME ASSIGNED A UNIFIED SOIL CLASSIFICATION SYSTEM (USCS) SYMBOL TO THE VARIOUS SOIL STRATA ENCOUNTERED.

THE TEST HOLES WAS PERFORMED WITH A TRUCK MOUNTED ROTARY DRILL RIG. HOLLOW-STEM AUGERS WITH AN I.D. OF 3 ? INCHES WERE USED TO THE EXPLORED DEPTH OF TEST HOLE B5. SOLID-STEM AUGERS WITH AN O.D. OF 4 INCHES WERE USED TO THE EXPLORED DEPTH OF TEST HOLES B11, B12 AND B13. THE TEST HOLES WERE BACKFILLED WITH AUGER CUTTINGS. TEST HOLE B11 WAS CAPPED WITH 4-INCHES OF CONSTRUCTION GRADE ASPHALT COLDPATCH AFTER BACKFILLING.

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



NO SCALE

DATE: 03/10/17	CS: 25131
DESIGN UNIT: PETHERS	JN: 115832A
FILE: 115832_Boring_004.dgn	TSC: DAVISON

BORING LOGS		DRAWING	SHEET
		BOR 004	162



SOIL SAMPLES WERE NOT COLLECTED FOR VISUAL SOIL CLASSIFICATION OF RECOVERED SAMPLES IN GENERAL ACCORDANCE WITH ASTM D2488. MOISTURE CONTENT AND UNDRAINED SHEAR STRENGTH ESTIMATES WERE NOT OBTAINED SINCE SAMPLES WERE NOT COLLECTED.

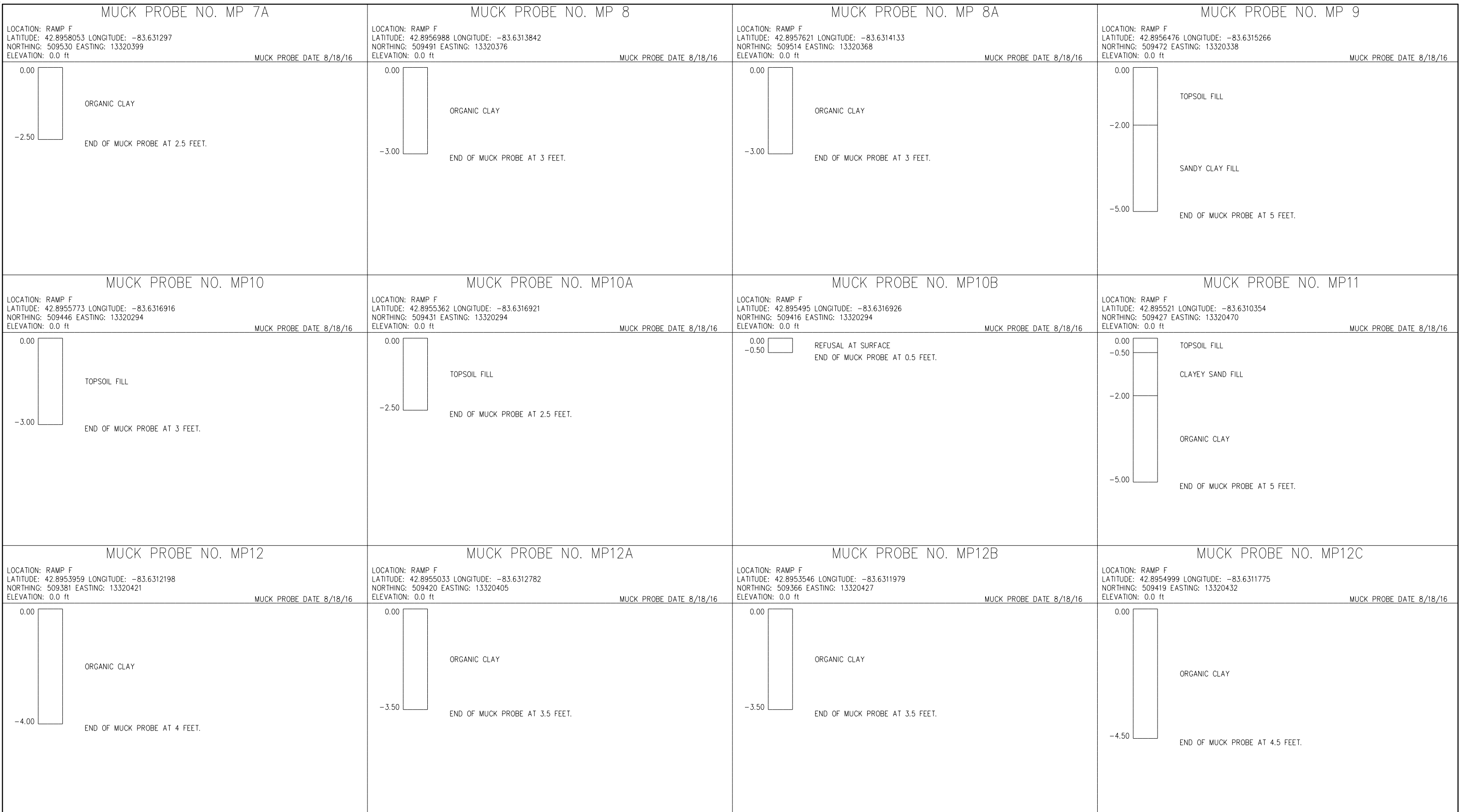
THE MUCK PROBE LOGS REPRESENT POINT INFORMATION. PRESENTATION OF THIS INFORMATION IN NO WAY IMPLIES THAT THE SUBSURFACE CONDITIONS ARE THE SAME AT LOCATIONS OTHER THAN THE EXACT LOCATION OF THE MUCK PROBES. SOIL DESCRIPTIONS ARE BASED ON VISUAL OBSERVATION IN THE FIELD OF THE SOIL CUTTINGS ON THE HAND AUGER AND MUCK PROBE EQUIPMENT. THEREFORE, TRANSITION DEPTHS FROM ONE SOIL STRATA TO ANOTHER ARE APPROXIMATE AND THE SOIL TYPES MAY VARY FROM THE MUCK PROBE LOGS. IT IS DIFFICULT TO DETERMINE IN A MUCK PROBE THE DIFFERENCE BETWEEN SOFT CLAYEY SOIL AND ORGANIC CLAY OR PEAT.

MUCK PROBES WERE PERFORMED USING MUCK PROBE RODS. THE RODS WERE EXTENDED THROUGH THE SOFT AND/OR ORGANIC SOILS UNTIL REFUSAL (FIRM OR HARD BOTTOM) WAS ENCOUNTERED. A HAND OPERATED AUGER WAS USED AT SOME LOCATIONS WHERE SURFACE SOILS WERE OVERLYING SOFT OR ORGANIC SOILS. SME AUGERED THROUGH THE UPPER SURFACE FILL AND THEN THE MUCK PROBE RODS WERE EXTENDED THROUGH THE MUCK TO REFUSAL (FIRM OR HARD BOTTOM).

MUCK PROBES MP5, MP15, MP17, MP19, MP21, MP29, MP31 THROUGH MP35, MP37, MP39, MP41, MP52, MP53, MP55, MP56, MP58, MP59, MP61, MP62, MP64 AND MP66 WERE NOT PERFORMED BECAUSE THEY APPEARED TO BE OUTSIDE OF THE AREAS OF ORGANIC OR SOFT SOILS.

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE: )								NO SCALE		DATE: 03/10/17	CS: 25131	BORING LOGS		DRAWING	SHEET
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								FILE: 115832_Boring_005.dgn		TSC: DAVISON				005	163





SOIL SAMPLES WERE NOT COLLECTED FOR VISUAL SOIL CLASSIFICATION OF RECOVERED SAMPLES IN GENERAL ACCORDANCE WITH ASTM D2488. MOISTURE CONTENT AND UNDRAINED SHEAR STRENGTH ESTIMATES WERE NOT OBTAINED SINCE SAMPLES WERE NOT COLLECTED.

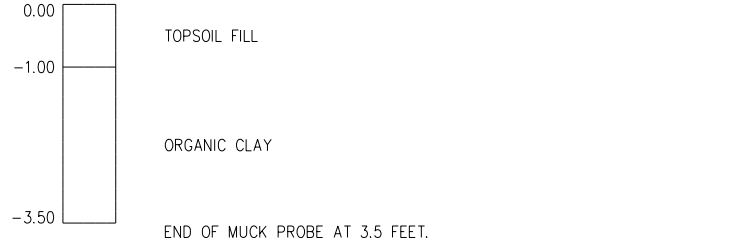
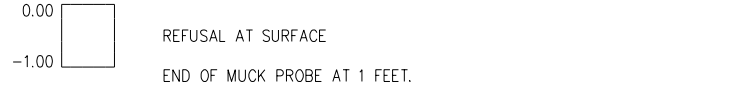
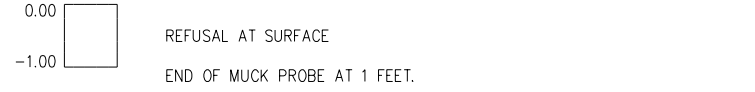
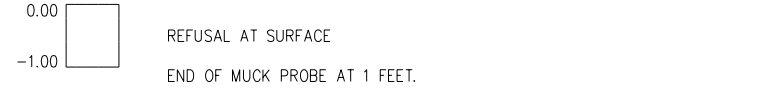


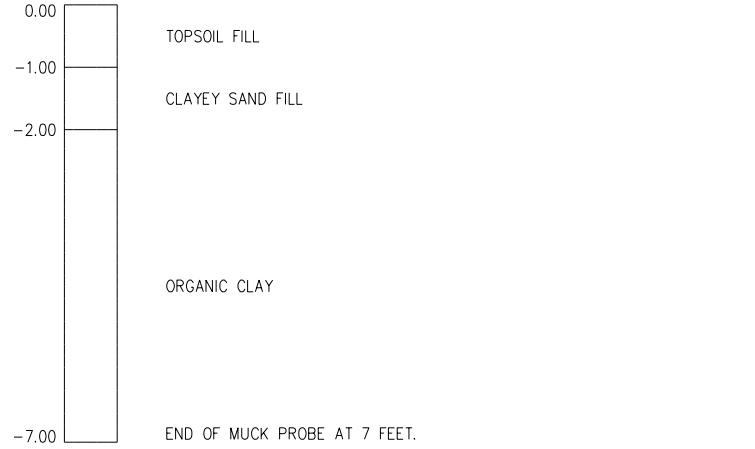
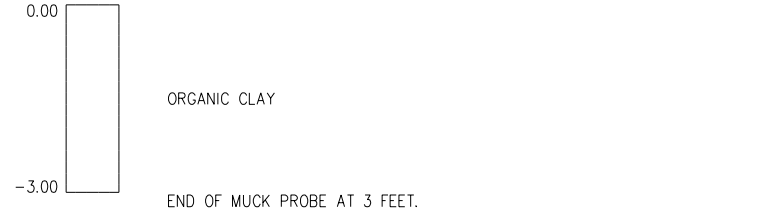




THE MUCK PROBE LOGS REPRESENT POINT INFORMATION. PRESENTATION OF THIS INFORMATION IN NO WAY IMPLIES THAT THE SUBSURFACE CONDITIONS ARE THE SAME AT LOCATIONS OTHER THAN THE EXACT LOCATION OF THE MUCK PROBES. SOIL DESCRIPTIONS ARE BASED ON VISUAL OBSERVATION IN THE FIELD OF THE SOIL CUTTINGS ON THE HAND AUGER AND MUCK PROBE EQUIPMENT. THEREFORE, TRANSITION DEPTHS FROM ONE SOIL STRATA TO ANOTHER ARE APPROXIMATE AND THE SOIL TYPES MAY VARY FROM THE MUCK PROBE LOGS. IT IS DIFFICULT TO DETERMINE IN A MUCK PROBE THE DIFFERENCE BETWEEN SOFT CLAYEY SOIL AND ORGANIC CLAY OR PEAT.

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MUCK PROBES MP5, MP15, MP17, MP19, MP21, MP29, MP31 THROUGH MP35, MP37, MP39, MP41, MP52, MP53, MP55, MP56, MP58, MP59, MP61, MP62, MP64 AND MP66 WERE NOT PERFORMED BECAUSE THEY APPEARED TO BE OUTSIDE OF THE AREAS OF ORGANIC OR SOFT SOILS.

FINAL ROW PLAN REVISIONS (SUBMITTAL DATE: )								NO SCALE		DATE: 03/10/17	CS: 25131	BORING LOGS		DRAWING	SHEET
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION			DESIGN UNIT: PETHERS	JN: 115832A			BOR	SECT
								FILE: 115832_Boring_006.dgn		TSC: DAVISON				006	164




<p style="text-align: center;"><b>MUCK PROBE NO. MP13</b></p> <p>LOCATION: RAMP F LATITUDE: 42.8953591 LONGITUDE: -83.6314666 NORTHING: 509367 EASTING: 13320355 ELEVATION: 0.0 ft</p> <p style="text-align: right;">MUCK PROBE DATE 8/18/16</p> 	<p style="text-align: center;"><b>MUCK PROBE NO. MP14</b></p> <p>LOCATION: RAMP F LATITUDE: 42.8954292 LONGITUDE: -83.6317046 NORTHING: 509392 EASTING: 13320291 ELEVATION: 0.0 ft</p> <p style="text-align: right;">MUCK PROBE DATE 8/18/16</p> 	<p style="text-align: center;"><b>MUCK PROBE NO. MP16</b></p> <p>LOCATION: RAMP B LATITUDE: 42.8946511 LONGITUDE: -83.6301837 NORTHING: 509112 EASTING: 13320701 ELEVATION: 0.0 ft</p> <p style="text-align: right;">MUCK PROBE DATE 8/18/16</p> 	<p style="text-align: center;"><b>MUCK PROBE NO. MP18</b></p> <p>LOCATION: RAMP B LATITUDE: 42.8949045 LONGITUDE: -83.6303299 NORTHING: 509204 EASTING: 13320661 ELEVATION: 0.0 ft</p> <p style="text-align: right;">MUCK PROBE DATE 8/18/16</p> 
<p style="text-align: center;"><b>MUCK PROBE NO. MP20</b></p> <p>LOCATION: RAMP B LATITUDE: 42.8951659 LONGITUDE: -83.6304425 NORTHING: 509299 EASTING: 13320630 ELEVATION: 0.0 ft</p> <p style="text-align: right;">MUCK PROBE DATE 8/18/16</p> 	<p style="text-align: center;"><b>MUCK PROBE NO. MP22</b></p> <p>LOCATION: RAMP B LATITUDE: 42.8954353 LONGITUDE: -83.6305177 NORTHING: 509397 EASTING: 13320609 ELEVATION: 0.0 ft</p> <p style="text-align: right;">MUCK PROBE DATE 8/18/16</p> 	<p style="text-align: center;"><b>MUCK PROBE NO. MP23</b></p> <p>LOCATION: RAMP B LATITUDE: 42.89557 LONGITUDE: -83.6305422 NORTHING: 509446 EASTING: 13320602 ELEVATION: 0.0 ft</p> <p style="text-align: right;">MUCK PROBE DATE 8/18/16</p> 	<p style="text-align: center;"><b>MUCK PROBE NO. MP24</b></p> <p>LOCATION: RAMP B LATITUDE: 42.8957075 LONGITUDE: -83.6306003 NORTHING: 509496 EASTING: 13320586 ELEVATION: 0.0 ft</p> <p style="text-align: right;">MUCK PROBE DATE 8/18/16</p> 
<p style="text-align: center;"><b>MUCK PROBE NO. MP25</b></p> <p>LOCATION: RAMP B LATITUDE: 42.8958446 LONGITUDE: -83.6305763 NORTHING: 509546 EASTING: 13320592 ELEVATION: 0.0 ft</p> <p style="text-align: right;">MUCK PROBE DATE 8/18/16</p> 	<p style="text-align: center;"><b>MUCK PROBE NO. MP26</b></p> <p>LOCATION: RAMP B LATITUDE: 42.8959791 LONGITUDE: -83.6305859 NORTHING: 509595 EASTING: 13320589 ELEVATION: 0.0 ft</p> <p style="text-align: right;">MUCK PROBE DATE 8/18/16</p> 	<p style="text-align: center;"><b>MUCK PROBE NO. MP27</b></p> <p>LOCATION: RAMP B LATITUDE: 42.8961164 LONGITUDE: -83.6305954 NORTHING: 509645 EASTING: 13320586 ELEVATION: 0.0 ft</p> <p style="text-align: right;">MUCK PROBE DATE 8/18/16</p> 	<p style="text-align: center;"><b>MUCK PROBE NO. MP28</b></p> <p>LOCATION: RAMP B LATITUDE: 42.8962536 LONGITUDE: -83.630605 NORTHING: 509695 EASTING: 13320583 ELEVATION: 0.0 ft</p> <p style="text-align: right;">MUCK PROBE DATE 8/18/16</p> 

SOIL SAMPLES WERE NOT COLLECTED FOR VISUAL SOIL CLASSIFICATION OF RECOVERED SAMPLES IN GENERAL ACCORDANCE WITH ASTM D2488. MOISTURE CONTENT AND UNDRAINED SHEAR STRENGTH ESTIMATES WERE NOT OBTAINED SINCE SAMPLES WERE NOT COLLECTED.

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NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION			DESIGN UNIT: PETHERS	JN: 115832A			BOR	SECT 1
										TSC: DAVISON				007	165

FILE: 115832\_Boring\_007.dgn

<p style="text-align: center;">MUCK PROBE NO. MP30</p> <p>LOCATION: RAMP B LATITUDE: 42.896523 LONGITUDE: -83.6306802 NORTHING: 509793 EASTING: 13320562 ELEVATION: 0.0 ft</p> <p style="text-align: right;">MUCK PROBE DATE 8/18/16</p>	<p style="text-align: center;">MUCK PROBE NO. MP36</p> <p>LOCATION: RAMP B LATITUDE: 42.8970032 LONGITUDE: -83.6315329 NORTHING: 509966 EASTING: 13320332 ELEVATION: 0.0 ft</p> <p style="text-align: right;">MUCK PROBE DATE 8/19/16</p>	<p style="text-align: center;">MUCK PROBE NO. MP36A</p> <p>LOCATION: RAMP B LATITUDE: 42.897003 LONGITUDE: -83.6314956 NORTHING: 509966 EASTING: 13320342 ELEVATION: 0.0 ft</p> <p style="text-align: right;">MUCK PROBE DATE 8/19/16</p>	<p style="text-align: center;">MUCK PROBE NO. MP36B</p> <p>LOCATION: RAMP B LATITUDE: 42.8970579 LONGITUDE: -83.6314949 NORTHING: 509986 EASTING: 13320342 ELEVATION: 0.0 ft</p> <p style="text-align: right;">MUCK PROBE DATE 8/19/16</p>
<p style="text-align: center;">MUCK PROBE NO. MP36C</p> <p>LOCATION: RAMP B LATITUDE: 42.8970581 LONGITUDE: -83.6315322 NORTHING: 509986 EASTING: 13320332 ELEVATION: 0.0 ft</p> <p style="text-align: right;">MUCK PROBE DATE 8/19/16</p>	<p style="text-align: center;">MUCK PROBE NO. MP38</p> <p>LOCATION: RAMP B LATITUDE: 42.8944545 LONGITUDE: -83.6299098 NORTHING: 509041 EASTING: 13320775 ELEVATION: 0.0 ft</p> <p style="text-align: right;">MUCK PROBE DATE 8/19/16</p>	<p style="text-align: center;">MUCK PROBE NO. MP40</p> <p>LOCATION: RAMP B LATITUDE: 42.894697 LONGITUDE: -83.6300562 NORTHING: 509129 EASTING: 13320735 ELEVATION: 0.0 ft</p> <p style="text-align: right;">MUCK PROBE DATE 8/19/16</p>	<p style="text-align: center;">MUCK PROBE NO. MP42</p> <p>LOCATION: RAMP B LATITUDE: 42.8949447 LONGITUDE: -83.6301764 NORTHING: 509219 EASTING: 13320702 ELEVATION: 0.0 ft</p> <p style="text-align: right;">MUCK PROBE DATE 8/19/16</p>
<p style="text-align: center;">MUCK PROBE NO. MP43</p> <p>LOCATION: RAMP B LATITUDE: 42.8950686 LONGITUDE: -83.6302384 NORTHING: 509264 EASTING: 13320685 ELEVATION: 0.0 ft</p> <p style="text-align: right;">MUCK PROBE DATE 8/19/16</p>	<p style="text-align: center;">MUCK PROBE NO. MP43A</p> <p>LOCATION: RAMP B LATITUDE: 42.8950929 LONGITUDE: -83.6301747 NORTHING: 509273 EASTING: 13320702 ELEVATION: 0.0 ft</p> <p style="text-align: right;">MUCK PROBE DATE 8/19/16</p>	<p style="text-align: center;">MUCK PROBE NO. MP44</p> <p>LOCATION: RAMP B LATITUDE: 42.8951951 LONGITUDE: -83.6302854 NORTHING: 509310 EASTING: 13320672 ELEVATION: 0.0 ft</p> <p style="text-align: right;">MUCK PROBE DATE 8/19/16</p>	<p style="text-align: center;">MUCK PROBE NO. MP44A</p> <p>LOCATION: RAMP B LATITUDE: 42.8952301 LONGITUDE: -83.630173 NORTHING: 509323 EASTING: 13320702 ELEVATION: 0.0 ft</p> <p style="text-align: right;">MUCK PROBE DATE 8/19/16</p>

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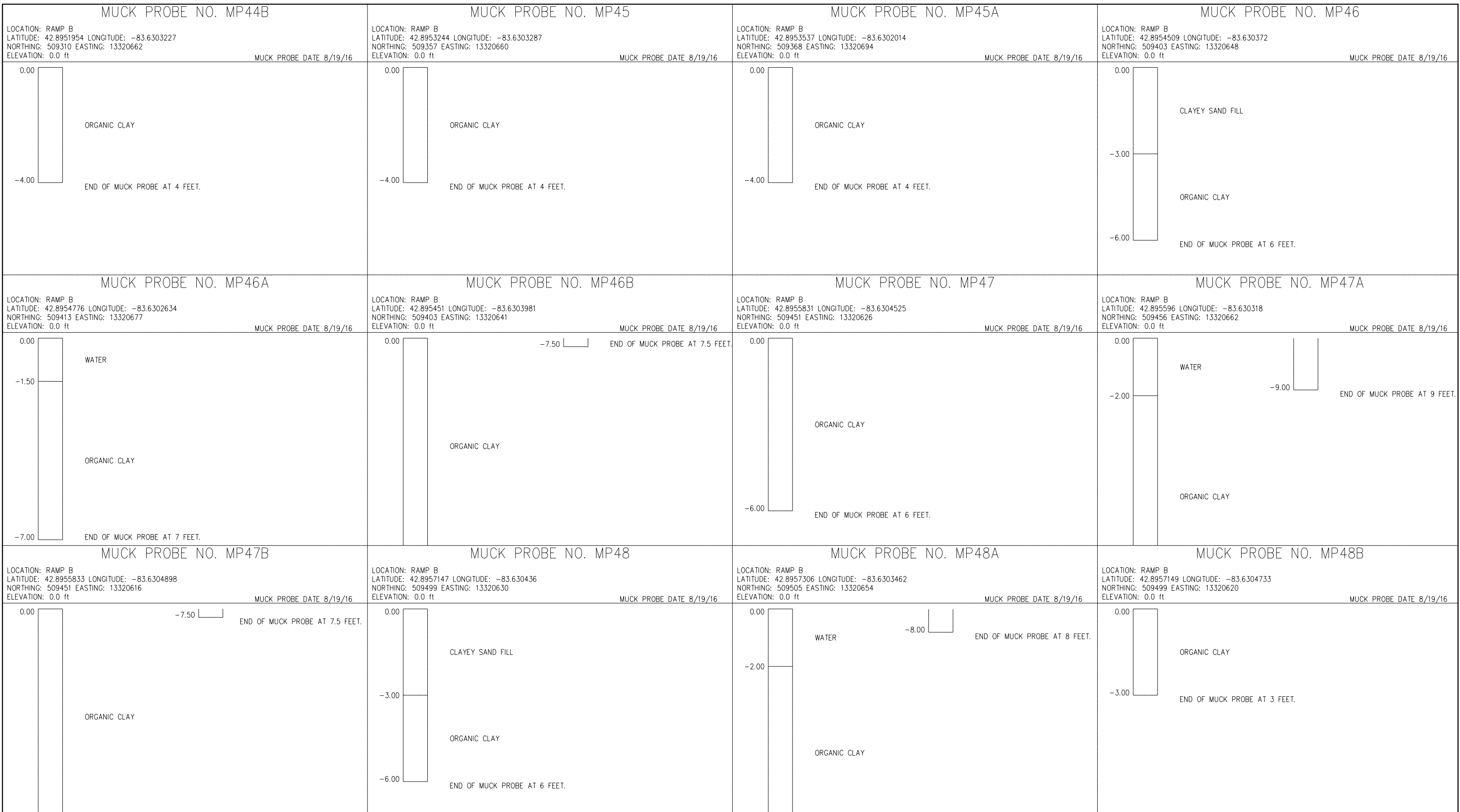
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NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION			DESIGN UNIT: PETHERS	JN: 115832A			BOR	SECT 1
										TSC: DAVISON				008	166

FILE: 115832\_Boring\_008.dgn



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NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION	DESIGN UNIT: PETHERS		JN: 115832A				SECT 1	
								FILE: 115832_Boring_009.dgn		TSC: DAVISON		BOR 009		167	



**NO SCALE**

<p style="text-align: center;"><b>MUCK PROBE NO. MP49</b></p> <p>LOCATION: RAMP B LATITUDE: 42.8958466 LONGITUDE: -83.630468 NORTHING: 509547 EASTING: 13320621 ELEVATION: 0.0 ft</p> <p style="text-align: right;">MUCK PROBE DATE 8/19/16</p>	<p style="text-align: center;"><b>MUCK PROBE NO. MP49A</b></p> <p>LOCATION: RAMP B LATITUDE: 42.8958653 LONGITUDE: -83.6303782 NORTHING: 509554 EASTING: 13320645 ELEVATION: 0.0 ft</p> <p style="text-align: right;">MUCK PROBE DATE 8/19/16</p>	<p style="text-align: center;"><b>MUCK PROBE NO. MP50</b></p> <p>LOCATION: RAMP B LATITUDE: 42.8959887 LONGITUDE: -83.6303767 NORTHING: 509599 EASTING: 13320645 ELEVATION: 0.0 ft</p> <p style="text-align: right;">MUCK PROBE DATE 8/19/16</p>	<p style="text-align: center;"><b>MUCK PROBE NO. MP51</b></p> <p>LOCATION: RAMP B LATITUDE: 42.896126 LONGITUDE: -83.6303826 NORTHING: 509649 EASTING: 13320643 ELEVATION: 0.0 ft</p> <p style="text-align: right;">MUCK PROBE DATE 8/19/16</p>
<p style="text-align: center;"><b>MUCK PROBE NO. MP54</b></p> <p>LOCATION: RAMP B LATITUDE: 42.896582 LONGITUDE: -83.6304667 NORTHING: 509815 EASTING: 13320619 ELEVATION: 0.0 ft</p> <p style="text-align: right;">MUCK PROBE DATE 8/19/16</p>	<p style="text-align: center;"><b>MUCK PROBE NO. MP57</b></p> <p>LOCATION: RAMP B LATITUDE: 42.8969772 LONGITUDE: -83.630895 NORTHING: 509958 EASTING: 13320503 ELEVATION: 0.0 ft</p> <p style="text-align: right;">MUCK PROBE DATE 8/19/16</p>	<p style="text-align: center;"><b>MUCK PROBE NO. MP60</b></p> <p>LOCATION: RAMP B LATITUDE: 42.8971784 LONGITUDE: -83.6314562 NORTHING: 510030 EASTING: 13320352 ELEVATION: 0.0 ft</p> <p style="text-align: right;">MUCK PROBE DATE 8/19/16</p>	<p style="text-align: center;"><b>MUCK PROBE NO. MP63</b></p> <p>LOCATION: RAMP F LATITUDE: 42.8966132 LONGITUDE: -83.6310486 NORTHING: 509825 EASTING: 13320463 ELEVATION: 0.0 ft</p> <p style="text-align: right;">MUCK PROBE DATE 8/19/16</p>
<p style="text-align: center;"><b>MUCK PROBE NO. MP65</b></p> <p>LOCATION: RAMP F LATITUDE: 42.8963841 LONGITUDE: -83.630846 NORTHING: 509742 EASTING: 13320518 ELEVATION: 0.0 ft</p> <p style="text-align: right;">MUCK PROBE DATE 8/19/16</p> <p style="text-align: center;">MC % HP (kst) TV (kst)</p>	<p style="text-align: center;"><b>MUCK PROBE NO. MP67</b></p> <p>LOCATION: RAMP F LATITUDE: 42.8961149 LONGITUDE: -83.630797 NORTHING: 509644 EASTING: 13320532 ELEVATION: 0.0 ft</p> <p style="text-align: right;">MUCK PROBE DATE 8/19/16</p>		

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NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION			DESIGN UNIT: PETHERS	JN: 115832A			BOR	SECT 1
										TSC: DAVISON				010	168

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