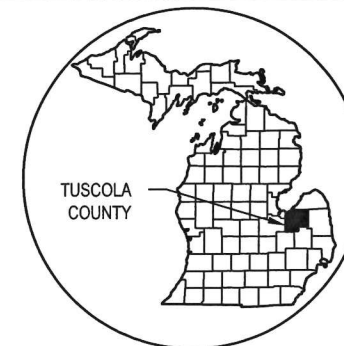


| PLANS | SHEET NUMBERS |
|--|---------------|
| TITLE | 1 |
| LEGEND | 2 |
| NOTE SHEET | 3 |
| TYPICAL CROSS SECTIONS | 4 |
| MISCELLANEOUS DETAILS | 5 |
| REMOVAL, CONSTRUCTION AND PROFILE SHEETS | 6-17 |
| DETAIL GRADES | 18 |
| PAVEMENT MARKING AND SIGNING SHEETS | 19-21 |
| GUARDRAIL DETAIL SHEET | 22 |

TUSCOLA COUNTY ROAD COMMISSION

BRAY ROAD FROM ORMES ROAD TO VAN CLEVE ROAD

TUSCOLA TOWNSHIP
TUSCOLA COUNTY



AREA MAP
NOT TO SCALE

TRAFFIC DATA

| | | |
|------|---|--------------------|
| 3122 | — | PRESENT ADT (2022) |
| 3122 | — | FUTURE ADT (2032) |
| 55 | — | POSTED SPEED |
| 60 | — | DESIGN SPEED |
| 3.0% | — | COMMERCIAL |

THE DESIGN OF THIS PATH IS BASED ON THE MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, 2012 EDITION, AASHTO GUIDE FOR THE DEVELOPMENT OF BICYCLE FACILITIES, 2012 EDITION, AND THE MICHIGAN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, 2011 EDITION.

CONTRACT FOR: 0.33 MILE OF HMA SHOULDER RECONSTRUCTION FOR BICYCLE LANE, DRAINAGE IMPROVEMENTS, PERMANENT SIGNING AND PAVEMENT MARKINGS.

TUSCOLA COUNTY ROAD COMMISSION APPROVAL

| | | |
|------------------|------------------------|------|
| CHAIRMAN | JOHN G. LAURIE | DATE |
| VICE-CHAIRMAN | GARY L. PARSELL | DATE |
| MEMBER | JULIE MATUSZAK | DATE |
| MEMBER | DUANE WEBER | DATE |
| MEMBER | DAVID KENNARD | DATE |
| HIGHWAY ENGINEER | BRENT J. DANKERT, P.E. | DATE |

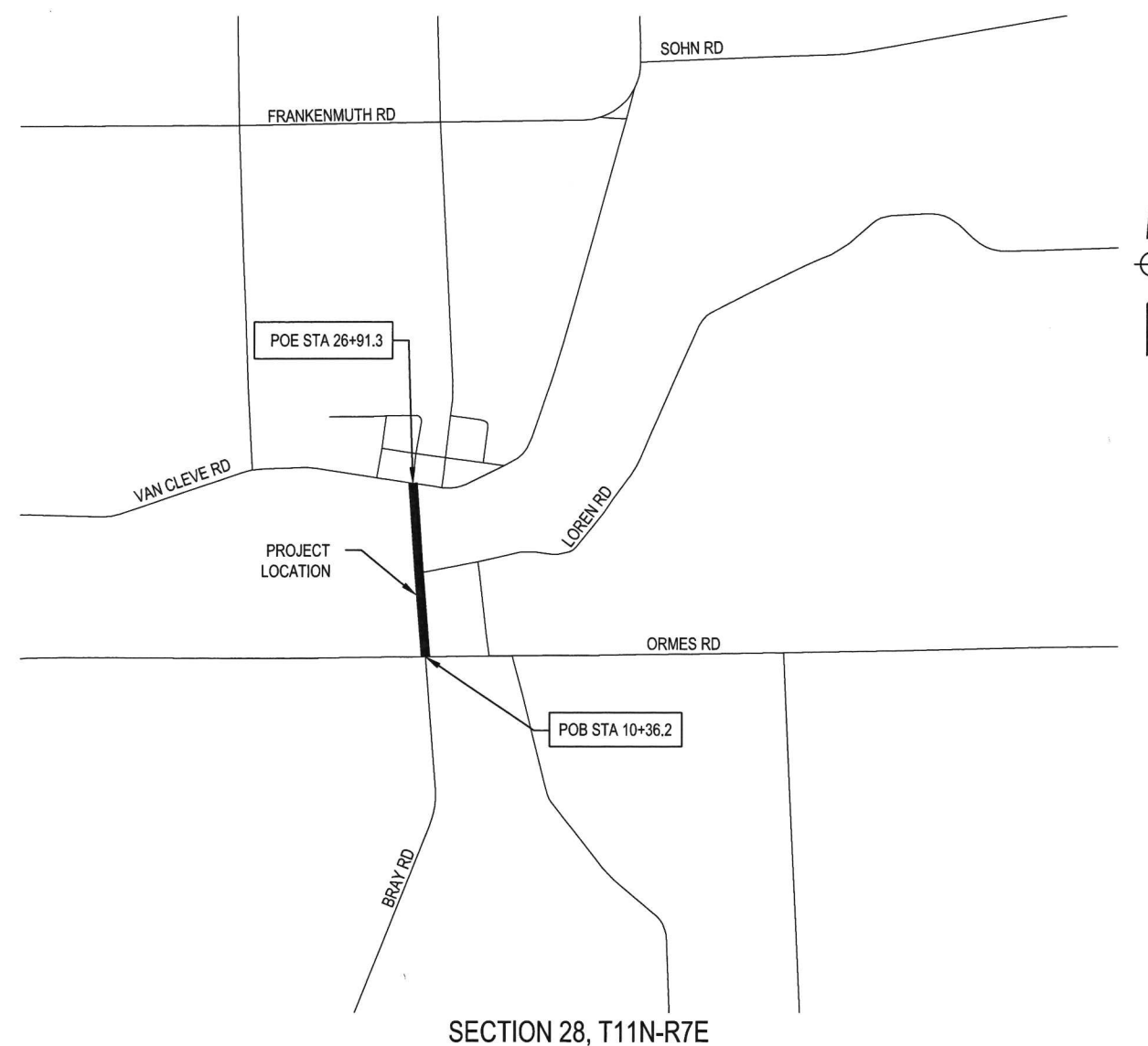
THESE PLANS WERE PREPARED FOR THE TUSCOLA COUNTY ROAD COMMISSION BY



Michael G. Niederquell
MICHAEL G. NIEDERQUELL
NO. 49825
REGISTRATION NO. 01-05-22
DATE



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Saginaw, MI 48607
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Fax. 989-754-4440
www.SpicerGroup.com



MDOT ROAD STANDARD PLANS

WHERE THE FOLLOWING ITEMS ARE CALLED FOR ON PLANS, THEY ARE TO BE CONSTRUCTED ACCORDING TO THE MDOT STANDARD PLAN GIVEN BELOW OPPOSITE EACH ITEM UNLESS OTHERWISE INDICATED.

| | |
|--|----------|
| DRAINAGE STRUCTURES | R-1-G |
| COVER B | R-7-F |
| MONUMENT BOXES | R-11-E |
| COVER K | R-15-G* |
| BRIDGE APPROACH CURB AND GUTTER | R-27-F* |
| CURB RAMP AND DETECTABLE WARNING DETAILS | R-28-J* |
| DRIVEWAY OPENINGS & APPROACHES AND CONCRETE SIDEWALKS | R-29-I |
| CONCRETE CURB AND CONCRETE CURB & GUTTER | R-30-G |
| APPROACH CURB & GUTTER, DOWNSPOUTS (FOR BRIDGE APPROACH CURB AND GUTTER) | R-32-F* |
| CONCRETE SHOULDER GUTTER AND SPILLWAY | R-35-E |
| GUARDRAIL TYPES A, B, BD, T, TD, MGS-8 & MGS-8D | R-60-J* |
| GUARDRAIL APPROACH TERMINAL TYPE 2M | R-62-H* |
| GUARDRAIL ANCHORAGE, BRIDGE, DETAILS | R-67-G* |
| BUMPER & PARKING RAILS AND MISC. WOOD POSTS | R-74-D |
| GRANULAR BLANKET, UNDERDRAINS, OUTLET ENDINGS FOR UNDERDRAINS, AND SEWER BULKHEADS | R-80-F* |
| BEDDING AND FILLING AROUND PIPE CULVERTS | R-82-D |
| UTILITY TRENCHES | R-83-C |
| PRECAST CONCRETE END SECTION FOR PIPE | R-86-F |
| CULVERT SLOPED END SECTION | R-95-G |
| SOIL EROSION & SEDIMENTATION CONTROL MEASURES | R-96-E |
| SEEDING AND TREE PLANTING | R-100-I* |

*SPECIAL DETAILS INCLUDED IN PROPOSAL

MDOT TRAFFIC AND SAFETY STANDARD PLANS

WHERE THE FOLLOWING ITEMS ARE CALLED FOR ON PLANS, THEY ARE TO BE CONSTRUCTED ACCORDING TO THE MDOT STANDARD PLAN GIVEN BELOW OPPOSITE EACH ITEM UNLESS OTHERWISE INDICATED.

| | |
|---|------------|
| PAVEMENT ARROW AND MESSAGE DETAILS | PAVE-900-G |
| LONGITUDINAL LINE TYPES AND PLACEMENT | PAVE-905-E |
| INTERSECTION, STOP BAR AND CROSSWALK MARKINGS | PAVE-945-D |
| BIKE LANE AND PATH PAVEMENT MARKINGS | PAVE-962-B |
| ROADSIDE SIGN LOCATIONS AND SUPPORT SPACING | SIGN-120-E |
| STEEL POSTS | SIGN-200-E |
| GROUND DRIVEN SIGN SUPPORTS FOR TEMP SIGNS | WZD-100-A* |
| TEMPORARY TRAFFIC CONTROL DEVICES | WZD-125-E* |

*SPECIAL DETAILS INCLUDED IN PROPOSAL

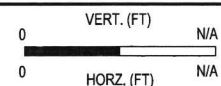
SECTION 28, T11N-R7E

12/17/2021 4:23 PM katherine.pleminger

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



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www.SpicerGroup.com



SGI PROJECT NO: 128551SG2020
DATE: DECEMBER, 2021
FILE: LP_TITLE.DWG

CS:
JN:

TITLE SHEET
BRAY ROAD

DRAWING SHEET
TTL 1

UTILITIES

THE EXISTING UTILITIES LISTED BELOW AND SHOWN ON THESE PLANS REPRESENT THE BEST INFORMATION AVAILABLE AT THE TIME OF PREPARING THESE PLANS. THIS INFORMATION DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY TO BE SATISFIED AS TO ITS ACCURACY AND THE LOCATION OF EXISTING UTILITIES.

CONTACTS

CHARTER COMMUNICATIONS
ATT: MARK KELLY
1480 S VALLEY CENTER DRIVE
BAY CITY, MI 48706

CABLE TV
PHONE: 989-233-9404
EMAIL: mark.kelly@charter.com

CONSUMERS ENERGY
ATT: JOE RODEA
2400 WEISS STREET
SAGINAW, MI 48602

GAS
PHONE: 989-791-5869
FAX: 989-791-5719
EMAIL: joseph.rodea1@cmsenergy.com












DTE
ATT: SARA A KIPP
4100 DOERR ROAD
CASS CITY, MI 48726

ELECTRIC
PHONE: 989-897-6107
FAX: 989-872-6108
EMAIL: sara.force@dteenergy.com























































WOLVERINE TELEPHONE CO
ATT: WILLIAM BOUMAN
P.O. BOX 292
4712 E. MAIN ST
MILLINGTON, MI 48746



TELEPHONE
PHONE: 989-971-5101
EMAIL: william.bouman@tdstelecom.com








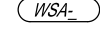
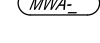
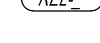
PLAN SHEET REMOVAL LEGEND

- COLD MILLING HMA SURFACE  ABANDON 
- HMA SURFACE REMOVE  BULKHEAD 
- REMOVING PAVEMENT  CLEARING 
- REMOVING SIDEWALK  REMOVING 
- HMA BASE CRUSHING AND SHAPING  SAVE 
- REMOVING CURB, GUTTER AND CURB & GUTTER 





















SYMBOLS LEGEND

-  - STORM MANHOLE
-  - SANITARY MANHOLE
-  - WATER MANHOLE
-  - TELEPHONE MANHOLE
-  - ELECTRIC MANHOLE
-  - PROPOSED MANHOLE
-  - CATCHBASIN
-  - CURB CATCHBASIN
-  - PROPOSED CATCHBASIN
-  - CULVERT END SECTION
-  - PROPOSED CULVERT END SECTION
-  - FIRE HYDRANT
-  - PROPOSED FIRE HYDRANT
-  - GAS VALVE
-  - WATER VALVE
-  - PROPOSED WATER VALVE
-  - WATER CURB STOP
-  - WATER METER
-  - TELEPHONE PEDESTAL
-  - POWER POLE
-  - TELEPHONE POLE
-  - POWER AND TELEPHONE POLE
-  - LIGHT POLE
-  - GUY ANCHOR AND POLE
-  - PERMANENT UTILITY MARKER
-  - CABLE TV PEDESTAL
-  - TRANSFORMER
-  - ELECTRICAL PEDESTAL
-  - EROSION CONTROL ITEM NUMBER (SEE STANDARD PLAN R-96 SERIES)
-  - MAIL BOX
-  - BARRIER FREE PARKING
-  - SPRINKLER
-  - RAILROAD SIGNAL
-  - ANTENNA
-  - SATELLITE DISH
-  - AIR CONDITIONING UNIT
-  - SOIL BORING
-  - BENCH MARK
-  - CONTROL POINT
-  - FOUND SURVEY CORNER
-  - SET 3/4" IRON PIPE
-  - 1/4 SECTION CORNER
-  - BREAK IN LINE
-  - STUMP
-  - WETLANDS
-  - PINE
-  - BUSH
-  - TREE
-  - M.W. - MONITORING WELL
-  - HAND HOLE
-  - EXISTING SIGN-1 POST
-  - PROPOSED SIGN-1 POST
-  - EXISTING SIGN-2 POSTS
-  - PROPOSED SIGN-2 POSTS

-  - HAZARDOUS OR FLAMMABLE MATERIAL - GAS OR ELECTRICAL LINES LABEL
-  - CAUTION - CRITICAL UTILITY - FIBER OPTIC, TELEPHONE LINES, AND WATER MAIN LABEL

-  - DR STRUCTURE COVER, ADJ, CASE _
-  - ADJUST BY OTHERS
-  - RELOCATE BY OTHERS
-  - SIDEWALK RAMP TYPE
-  - GATE BOX, ADJ, CASE _
-  - CONTRACTOR TO SUPPORT UTILITY POLE
-  - PRESERVE MONUMENT BOX
-  - WATER SHUTOFF, ADJ, CASE _
-  - MONITORING WELL, ADJ, CASE _
-  - RELOCATE WITH CASE _

LINE TYPE LEGEND

-  - EXISTING WATER MAIN
-  - EXISTING SANITARY SEWER
-  - EXISTING STORM SEWER
-  - EXISTING UNDERGROUND TELEPHONE
-  - EXISTING UNDERGROUND FIBER OPTIC
-  - EXISTING UNDERGROUND CABLE TV
-  - EXISTING GAS MAIN
-  - EXISTING UNDERGROUND ELECTRIC
-  - EXISTING OVERHEAD UTILITY
-  - EXISTING FENCE
-  - EXISTING CURB & GUTTER
-  - EXISTING BUILDING
-  - PROPOSED STORM SEWER
-  - PROPOSED CURB & GUTTER
-  - PROPOSED REVERSE PAN CURB & GUTTER
-  - RIGHT-OF-WAY
-  - EASEMENT
-  - GUARDRAIL
-  - TREE LINE
-  - LANDSCAPING

PLAN SHEET CONSTRUCTION LEGEND

-  - HMA APPROACH

3/8/2021 11:54 AM Ohia.Vanabst

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



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VERT. (FT) 0 N/A
HORZ. (FT) 0 N/A

SGI PROJECT NO: 128551SG2020
DATE: MARCH, 2021
FILE: LP_LEGEND.DWG

CS:
JN:

LEGEND
BRAY ROAD

| | |
|---------|-------|
| DRAWING | SHEET |
| LGND | 2 |

GENERAL NOTES

UNDERGROUND UTILITIES/MISS DIG

FOR PROTECTION OF UNDERGROUND UTILITIES AND IN CONFORMANCE WITH PUBLIC ACT 174, 2013, THE CONTRACTOR SHALL DIAL 1-800-482-7171 OR 811 A MINIMUM OF THREE FULL WORKING DAYS, EXCLUDING SATURDAYS, SUNDAYS, AND HOLIDAYS PRIOR TO BEGINNING EACH EXCAVATION IN AREAS WHERE PUBLIC UTILITIES HAVE NOT BEEN PREVIOUSLY LOCATED. MEMBERS WILL THUS BE ROUTINELY NOTIFIED. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING UTILITY OWNERS WHO MAY NOT BE A PART OF THE "MISS DIG" ALERT SYSTEM.

THE EXISTING UTILITIES ON THESE DRAWINGS HAVE BEEN SHOWN ACCORDING TO THE BEST AVAILABLE INFORMATION. CONTRACTOR SHALL FIELD LOCATE ALL UTILITIES PRIOR TO BEGINNING CONSTRUCTION AND SHALL NOTIFY THE ENGINEER AS TO WHERE POSSIBLE CONFLICT EXISTS.

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.

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.

PAVEMENT MARKINGS AND SIGNS

ALL PERMANENT PAVEMENT MARKINGS, SHAPES, AND DIMENSIONS SHALL CONFORM WITH MDT PAVEMENT MARKING TYPICALS PAVE-900 SERIES.

SOIL EROSION MEASURES

APPROPRIATE SOIL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO EARTH-DISTURBING ACTIVITIES. PLACE 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.

SOIL EROSION AND SEDIMENTATION CONTROL MEASURES

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT SOIL EROSION AND SEDIMENTATION CONTROL MEASURES ARE IN PLACE AND MAINTAINED UNTIL THE CONTRACT HAS BEEN COMPLETED AND ACCEPTED. MEASURES SHALL ONLY BE PAID FOR ONCE.

SEED MIXTURE

THE DESIGNATION FOR THE PERMANENT TURF SEED MIXTURE ON THIS PROJECT SHALL BE THM.

DRAINAGE STRUCTURE OFFSETS AND ELEVATIONS

DRAINAGE STRUCTURE IN PROPOSED CURB - OFFSETS AND ELEVATIONS SHOWN ARE TO THE BACK AND TOP OF CURB. ALIGN THE STRUCTURE WITH THE BACK OF THE CASTING AND THE TOP OF THE CASTING FLUSH WITH THE PROPOSED BACK AND TOP OF CURB. DRAINAGE STRUCTURES IN OUTLAWN AREA AND PAVED AREA - OFFSET SHOWN IS TO CENTER OF STRUCTURE. RIM ELEVATIONS FOR DOME COVERS AND FLAT COVERS ARE TO THE TOP OF THE CASTING FRAME.

EGLE PERMIT

WORK CANNOT BEGIN ON THE PROJECT UNTIL THE EGLE PERMIT IS OBTAINED BY THE TUSCOLA COUNTY ROAD COMMISSION. IT IS ANTICIPATED THE PERMIT WILL BE RECEIVED BY MAY 15TH, 2022.

CRUSHED CONCRETE

THE USE OF CRUSHED CONCRETE IS PROHIBITED ON THE PROJECT WITHIN 500 FEET OF ANY WATER COURSE (STREAM, RIVER, COUNTY DRAIN, ETC.) AND LAKE, REGARDLESS OF THE APPLICATION OR LOCATION OF THE WATER COURSE RELATIVE TO THE PROJECT LIMITS.

TCRC PROJECT COORDINATION

CONTRACTOR TO COORDINATE DURING CONSTRUCTION WITH THE TUSCOLA COUNTY ROAD COMMISSION BANK STABILIZATION PROJECT.

GENERAL NOTES (CONT.)

LAWN SPRINKLERS/LANDSCAPING

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

CONNECTIONS TO EXISTING CULVERTS/SEWERS

THE EXTENSIONS/CONNECTIONS TO EXISTING CULVERTS/SEWERS ON THIS PROJECT MAY REQUIRE EXTRA WORK TO OBTAIN A TIGHT SEAL AT THE JOINT CONNECTING NEW PIPE TO EXISTING PIPE. THE JOINT BETWEEN THE EXISTING AND NEW PIPES SHALL BE CONSTRUCTED ACCORDING TO THE 2012 MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, AND AS DIRECTED BY THE ENGINEER. ANY EXTRA WORK REQUIRED TO OBTAIN TIGHT JOINTS WILL NOT BE PAID FOR SEPARATELY BUT WILL BE INCLUDED IN COMPENSATION FOR NEW PIPE.

PROPERTY OWNERS

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

SAWCUTS

PAYMENT FOR SAWCUTS REQUIRED TO REMOVE MISCELLANEOUS ITEMS, PAVEMENT AND/OR CURB AND GUTTER SHALL BE INCLUDED IN THOSE REMOVAL ITEMS.

TOPSOIL

CONTRACTOR SHALL REMOVE AND DISPOSE, OR SALVAGE AND STORE TOPSOIL A MINIMUM OF 4" DEEP. SALVAGED TOPSOIL SHALL BE STORED ON-SITE UNLESS WRITTEN PERMISSION IS OBTAINED AT AN OFF-SITE LOCATION. COST TO REMOVE AND DISPOSE, OR SALVAGE AND STORE TOPSOIL SHALL BE INCLUDED IN THE PAYMENT FOR OTHER ITEMS.

SALVAGED MATERIALS

IF CONTRACTORS CHOOSES TO USE SALVAGED MATERIALS FROM PROJECT TO MAINTAIN ACCESS, IT SHALL BE PLACED, MAINTAINED, AND REMOVED WHEN NO LONGER NEEDED AT CONTRACTOR'S EXPENSE.

MAINTAINING TRAFFIC QUANTITIES

| | | |
|-----|------|--|
| 2 | Ea | Barricade, Type III, High Intensity, Double Sided, Lighted, Furn |
| 2 | Ea | Barricade, Type III, High Intensity, Double Sided, Lighted, Oper |
| 2 | Ea | Pedestrian Type II Barricade, Temp |
| 2 | Ea | Lighted Arrow, Type C, Furn |
| 2 | Ea | Lighted Arrow, Type C, Oper |
| 1 | LSUM | Minor Traf Devices |
| 40 | Ea | Plastic Drum, Flourescent, Furn |
| 40 | Ea | Plastic Drum, Flourescent, Oper |
| 15 | Ea | Sign Cover |
| 256 | Sft | Sign, Type B, Temp, Prismatic, Furn |
| 256 | Sft | Sign, Type B, Temp, Prismatic, Oper |
| 1 | LSUM | Traf Regulator Control |

QUANTITIES FOR INFORMATION ONLY. ALL COSTS FOR MAINTAINING TRAFFIC ARE TO BE INCLUDED IN THE LUMP SUM BID FOR TRAFFIC CONTROL.

MISCELLANEOUS ESTIMATES

THE FOLLOWING ITEMS OF WORK SHALL BE DONE AS THEY APPLY THROUGHOUT THE PROJECT. THESE ITEMS ARE NOT DETAILED OR INCLUDED ON THE PLAN AND PROFILE SHEETS:

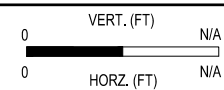
| | | |
|------|------|---|
| 1 | LSUM | Mobilization, Max _____ |
| 1 | Cyd | Masonry and Conc Structure, Rem |
| 50 | Syd | Pavt, Rem |
| 25 | Cyd | Non Haz Contaminated Material Handling and Disposal, LM |
| 125 | Cyd | Subgrade Undercutting, Type II |
| 500 | Ft | Erosion Control, Silt Fence |
| 50 | Ton | Maintenance Gravel |
| 0.3 | Sta | Trenching, Modified |
| 50 | Syd | Geotextile, Separator |
| 50 | Ft | Sump Pump Lead and Drain Tile Connection |
| 1 | Ea | Dr Structure Cover, Adj, Case 1 |
| 1 | Ea | Dr Structure Cover, Adj, Case 2 |
| 1 | Ft | Dr Structure, Adj, Add Depth |
| 1 | Ea | Dr Structure, Tap, 6 inch |
| 100 | Ft | Underdrain, Subgrade, 6 inch |
| 1 | Ea | Post, Mailbox |
| 1 | LSUM | Traffic Control |
| 25 | Syd | Riprap, Plain |
| 2300 | Syd | Slope Restoration, Modified |

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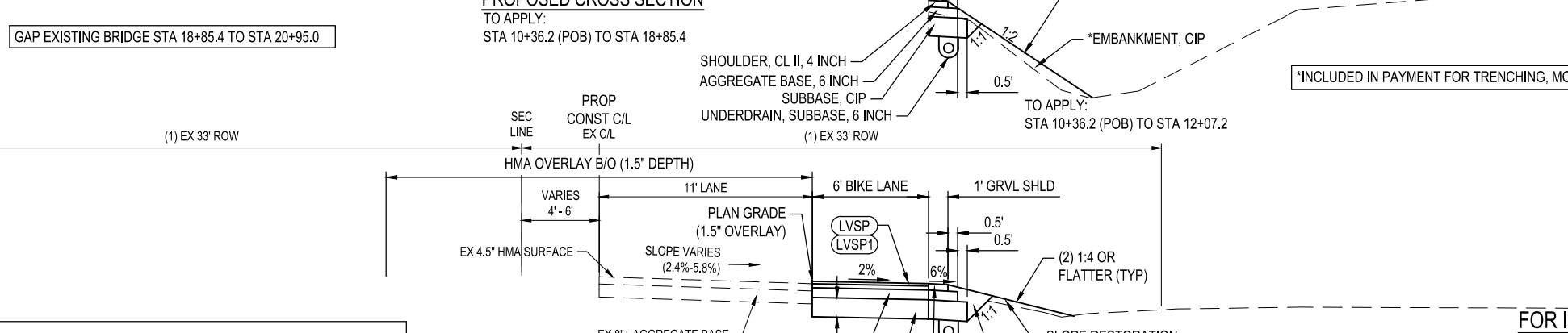
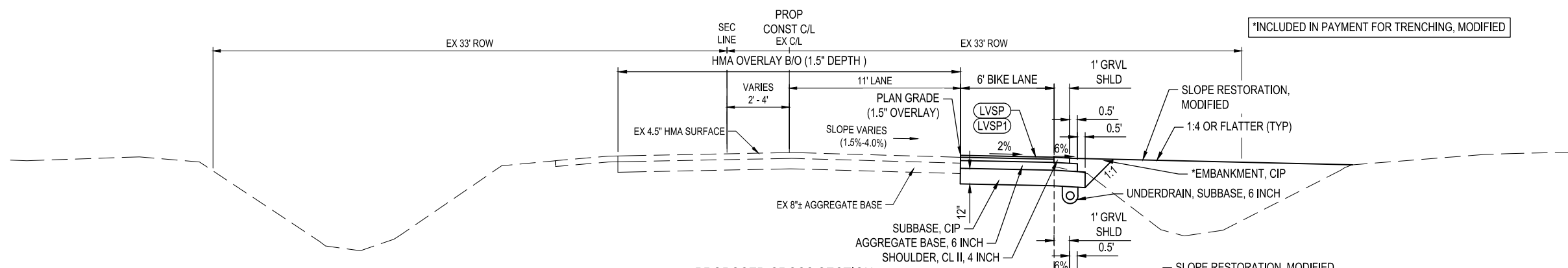
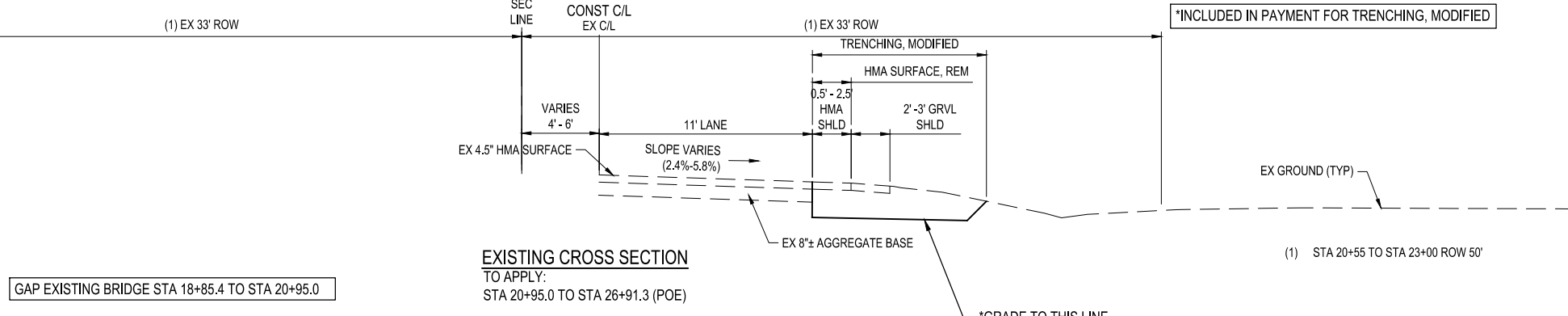
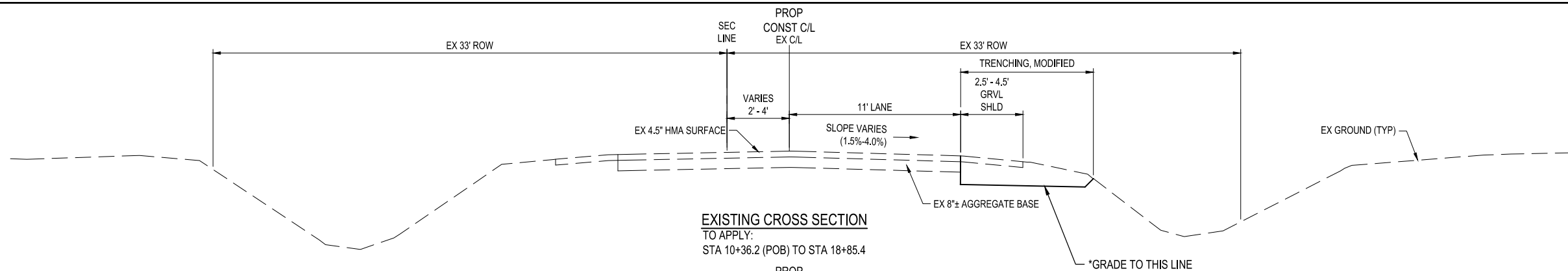


SGI PROJECT NO: 128551SG2020
DATE: JANUARY, 2022
FILE: LP_NOTES.DWG

CS:
JN:

**NOTE SHEET
BRAY ROAD**

| | |
|---------|-------|
| DRAWING | SHEET |
| NOTES | 3 |



HMA APPLICATION ESTIMATE

| IDENT NO. | ITEM | RATE LBS PER SYD | PERFORMANCE GRADE | REMARKS |
|-----------|--------------|------------------|-------------------|---|
| LVSP | HMA, LVSP | 165 | 58-28 | HMA TOP COURSE |
| LVSP1 | HMA, LVSP | 275 | 58-28 | HMA LEVELING COURSE |
| HA | HMA APPROACH | 440 | 58-28 | HMA, LVSP TOP COURSE EST @ 165#/SYD; HMA, LVSP LEVELING COURSE EST @ 220#/SYD |

PLACE HMA BOND COAT AT 0.05-0.15 GAL/SYD BETWEEN LAYERS AS DIRECTED BY THE ENGINEER (INCLUDED IN PAYMENT FOR HMA PAVING)
 THE AGGREGATE WEAR INDEX (AWI) FOR THE TOP COURSE SHALL BE 220 MINIMUM

FOR INFORMATION ONLY

| TRENCHING, MODIFIED | |
|---------------------|-------------------|
| VOLUME | ITEM |
| 583 CYD | EMBANKMENT, CIP |
| 591 CYD | EXCAVATION, EARTH |

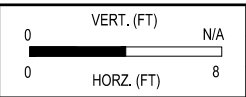
(1) STA 20+55 TO STA 23+00 ROW 50'
 (2) 1:2 SLOPE FROM STA 20+95 TO STA 22+75
 *INCLUDED IN PAYMENT FOR TRENCHING, MODIFIED

1/5/2022 12:29 PM Ryan.Sullivan

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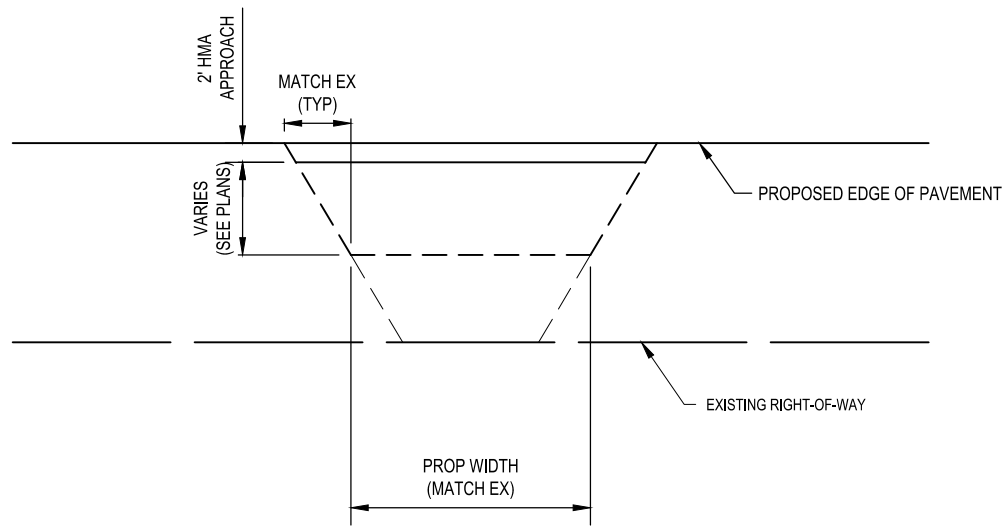


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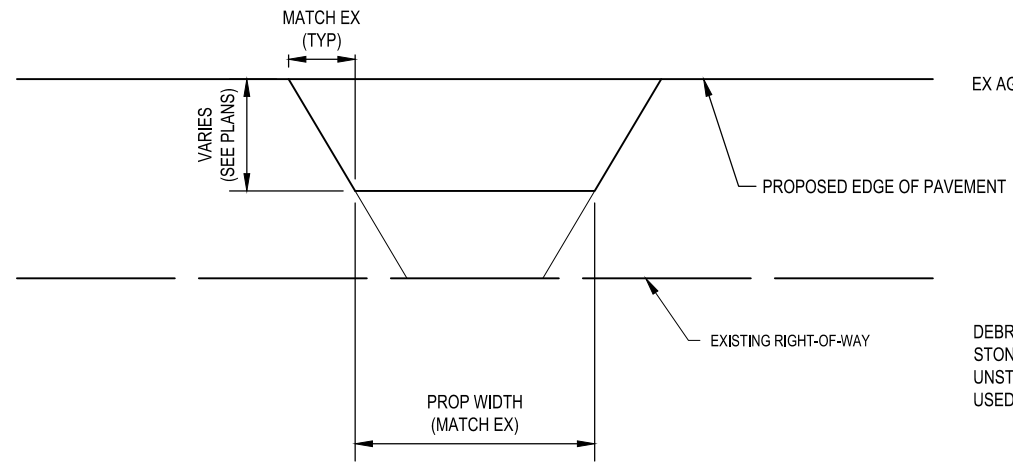
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 JN:

TYPICAL CROSS SECTIONS
BRAY ROAD

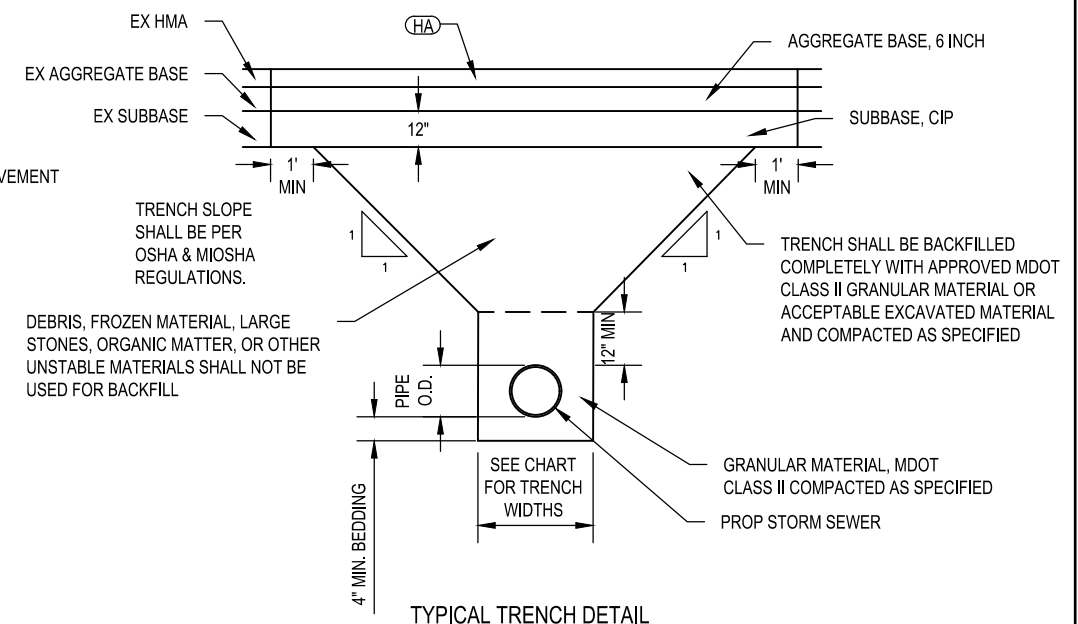
DRAWING SHEET
 TYP 4



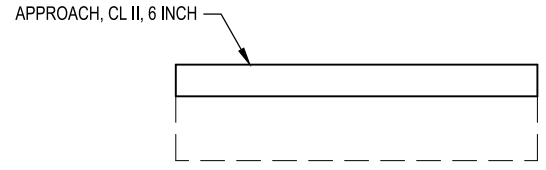
GRAVEL DRIVEWAY REPAIR DETAIL



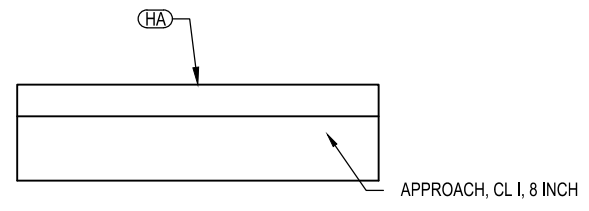
HMA DRIVEWAY REPAIR DETAIL



TYPICAL TRENCH DETAIL



GRAVEL DRIVEWAY REPAIR SECTION



HMA DRIVEWAY REPAIR SECTION

TRENCH WIDTH CHART

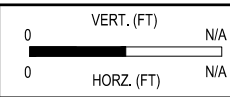
| PIPE SIZE | MINIMUM | MAXIMUM |
|-----------------|------------|------------|
| 8" & 10" | 24" | 30" |
| 12" & 15" | 30" | 36" |
| 18" | 34" | 40" |
| 21" | 38" | 42" |
| 24" | 42" | 46" |
| 27" | 45" | 49" |
| 30" | 49" | 53" |
| 36" | 56" | 60" |
| LARGER THAN 36" | I.D. + 20" | i.d. + 24" |

1/5/2022 8:44 AM ryan.sullivan

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FILE: LP_DETAILS.DWG

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JN:

MISCELLANEOUS DETAILS
BRAY ROAD

DRAWING SHEET
DETS 5

SECTION 33
T11N, R7E
TUSCOLA TWP

SECTION 28
T11N, R7E
TUSCOLA TWP

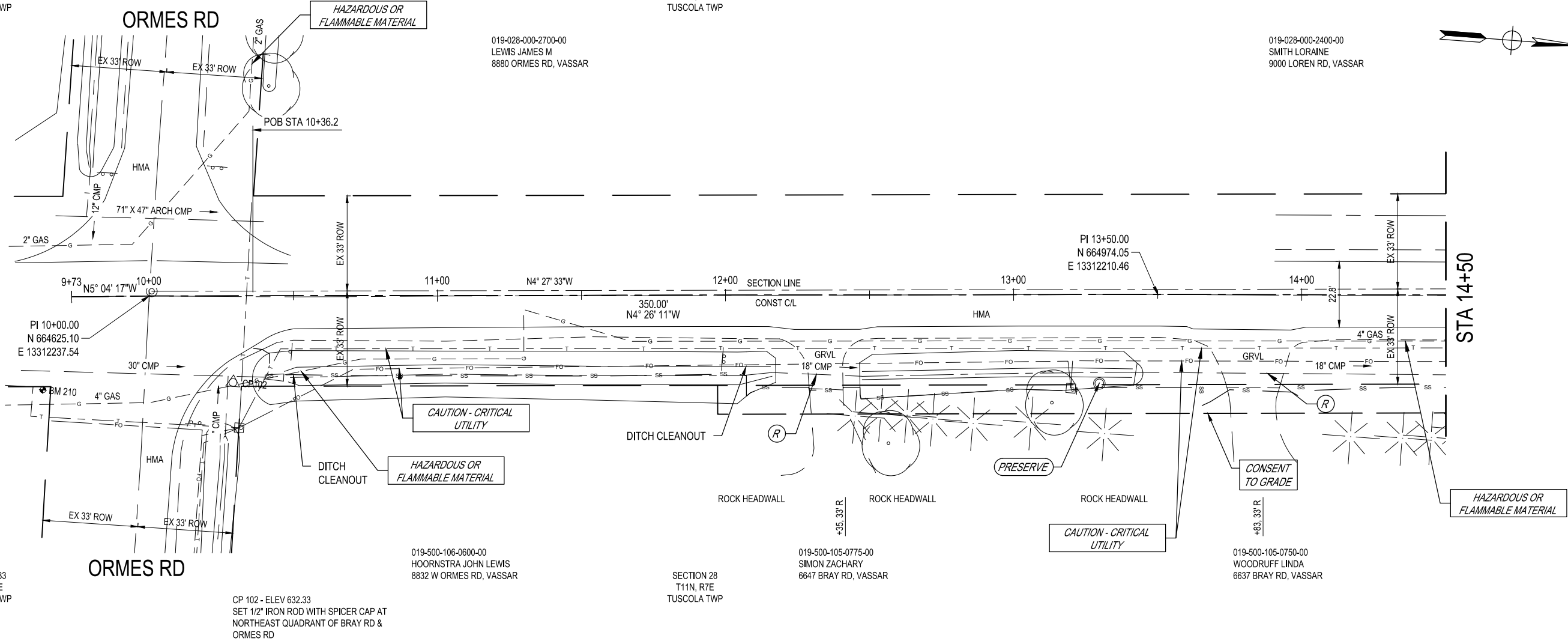
019-028-000-2400-00
SMITH LORAINÉ
9000 LOREN RD, VASSAR



019-028-000-2700-00
LEWIS JAMES M
8880 ORMES RD, VASSAR

BRAY RD

BRAY RD



SECTION 33
T11N, R7E
TUSCOLA TWP

CP 102 - ELEV 632.33
SET 1/2\"/>

019-500-106-0600-00
HOORNSTRA JOHN LEWIS
8832 W ORMES RD, VASSAR

SECTION 28
T11N, R7E
TUSCOLA TWP

019-500-105-0775-00
SIMON ZACHARY
6647 BRAY RD, VASSAR

019-500-105-0750-00
WOODRUFF LINDA
6637 BRAY RD, VASSAR

DRIVEWAY APPROACH QUANTITIES - THIS SHEET

| C/L STATION | HMA Surface, Rem (Syd) | Pavt, Rem (Syd) |
|-------------|------------------------|-----------------|
| 12+35 R | | |
| 13+83 R | | |
| TOTAL | | |

REMOVAL QUANTITIES - THIS SHEET

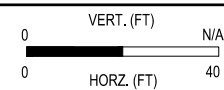
- 2 Ea Culv, Rem, Less than 24 inch
- 1.6 Sta Ditch Cleanout
- 4.2 Sta Trenching, Modified

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DATE: DECEMBER, 2021
FILE: LP_REM.DWG

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JN:

REMOVAL SHEET
BRAY ROAD
STA 10+36.2 (POB) TO STA 14+50

DRAWING SHEET
REM1 6

12/17/2021 5:04 PM katherine.pleminger

SECTION 33
T11N, R7E
TUSCOLA TWP

SECTION 28
T11N, R7E
TUSCOLA TWP

019-028-000-2400-00
SMITH LORAINÉ
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019-028-000-2700-00
LEWIS JAMES M
8880 ORMES RD, VASSAR

019-500-106-0600-00
HOORNSTRA JOHN LEWIS
8832 W ORMES RD, VASSAR

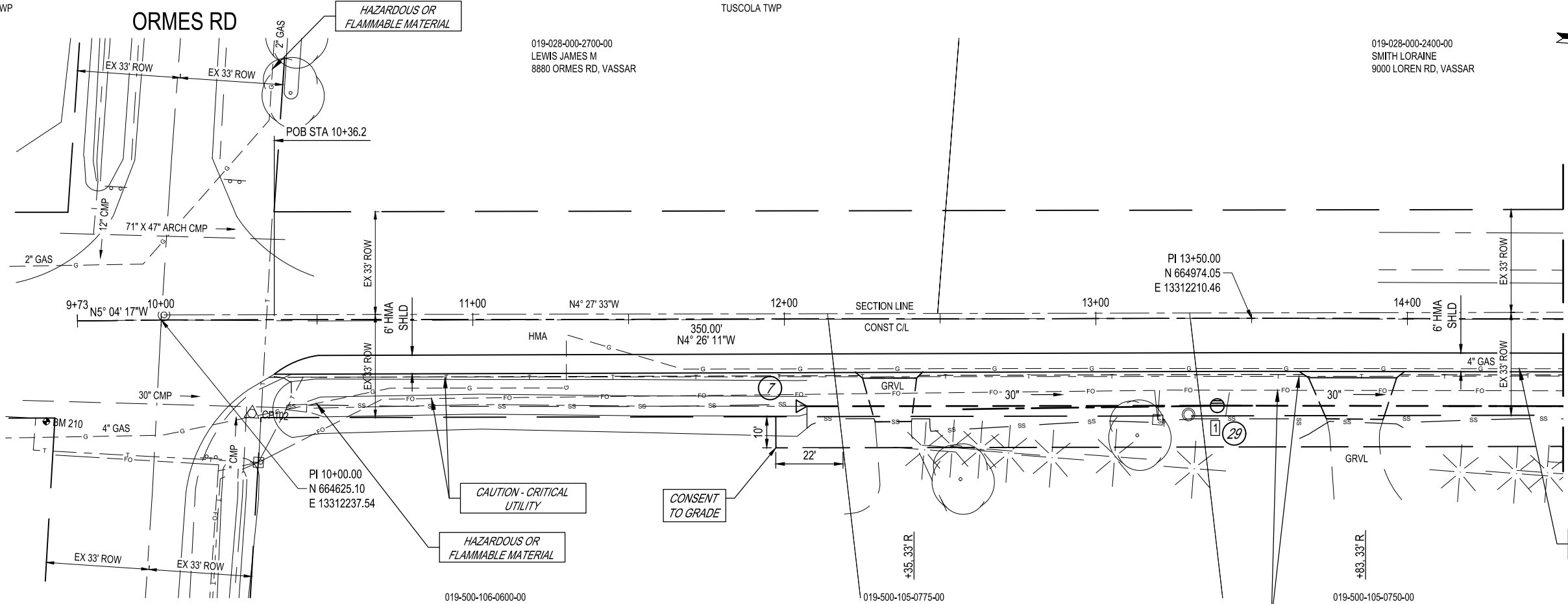
019-500-105-0775-00
SIMON ZACHARY
6647 BRAY RD, VASSAR

019-500-105-0750-00
WOODRUFF LINDA
6637 BRAY RD, VASSAR

SECTION 33
T11N, R7E
TUSCOLA TWP

SECTION 28
T11N, R7E
TUSCOLA TWP

CP 102 - ELEV 632.33
SET 1/2" IRON ROD WITH SPICER CAP AT
NORTHEAST QUADRANT OF BRAY RD &
ORMES RD



DRIVEWAY APPROACH QUANTITIES - THIS SHEET

| C/L STATION | HMA Approach (Ton) | Approach, CII, 8 inch (Syd) | Approach, CIII, 6 inch (Syd) |
|-------------|--------------------|-----------------------------|------------------------------|
| 12+35 R | 1 | 4 | 23 |
| 13+83 R | 2 | 7 | 35 |
| TOTAL | 3 | 11 | 58 |

DRAINAGE STRUCTURE TABLE - THIS SHEET

| STR NO | Dr Structure, 60 inch dia, Modified (Ea) | Dr Structure Cover, Type DG (Ea) | Sewer, CII, 30 inch, Tr Det B (Ft) | Culv, Slp End Sect, 1 on 6, 30 inch, Longit (Ea) |
|--------|--|----------------------------------|------------------------------------|--|
| 1 | 1 | 1 | 303 | 1 |
| TOTAL | 1 | 1 | 303 | 1 |

CONSTRUCTION QUANTITIES - THIS SHEET

| | | |
|-----|-----|--|
| 1 | Ea | Erosion Control, Inlet Protection, Fabric Drop |
| 144 | Cyd | Subbase, CIP |
| 368 | Syd | Aggregate Base, 6 inch |
| 41 | Syd | Shoulder, CII, 4 inch |
| 414 | Ft | Underdrain, Subbase, 6 inch |
| 69 | Ton | HMA, LVSP |
| 8 | Syd | Riprap, Plain |

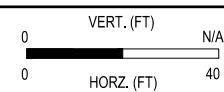
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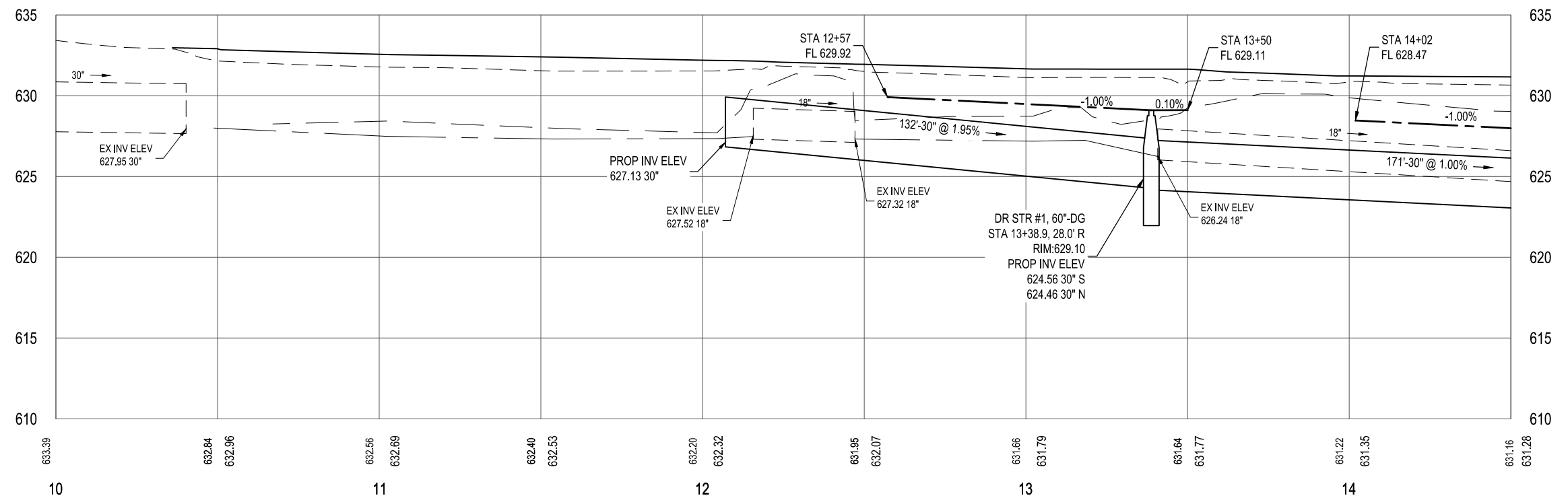
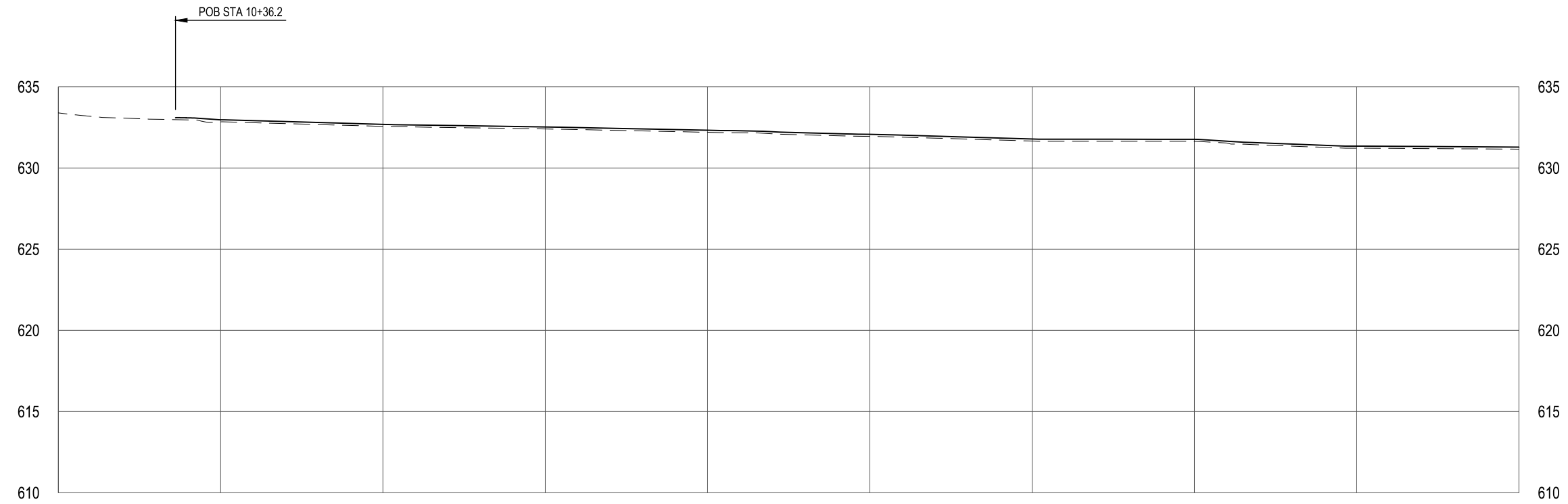
SGI PROJECT NO: 128551SG2020
DATE: JANUARY, 2022
FILE: LP_PLAN.DWG

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JN:

CONSTRUCTION SHEET

BRAY ROAD
STA 10+36.2 (POB) TO STA 14+50

DRAWING SHEET
PLAN1 7



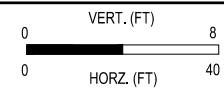
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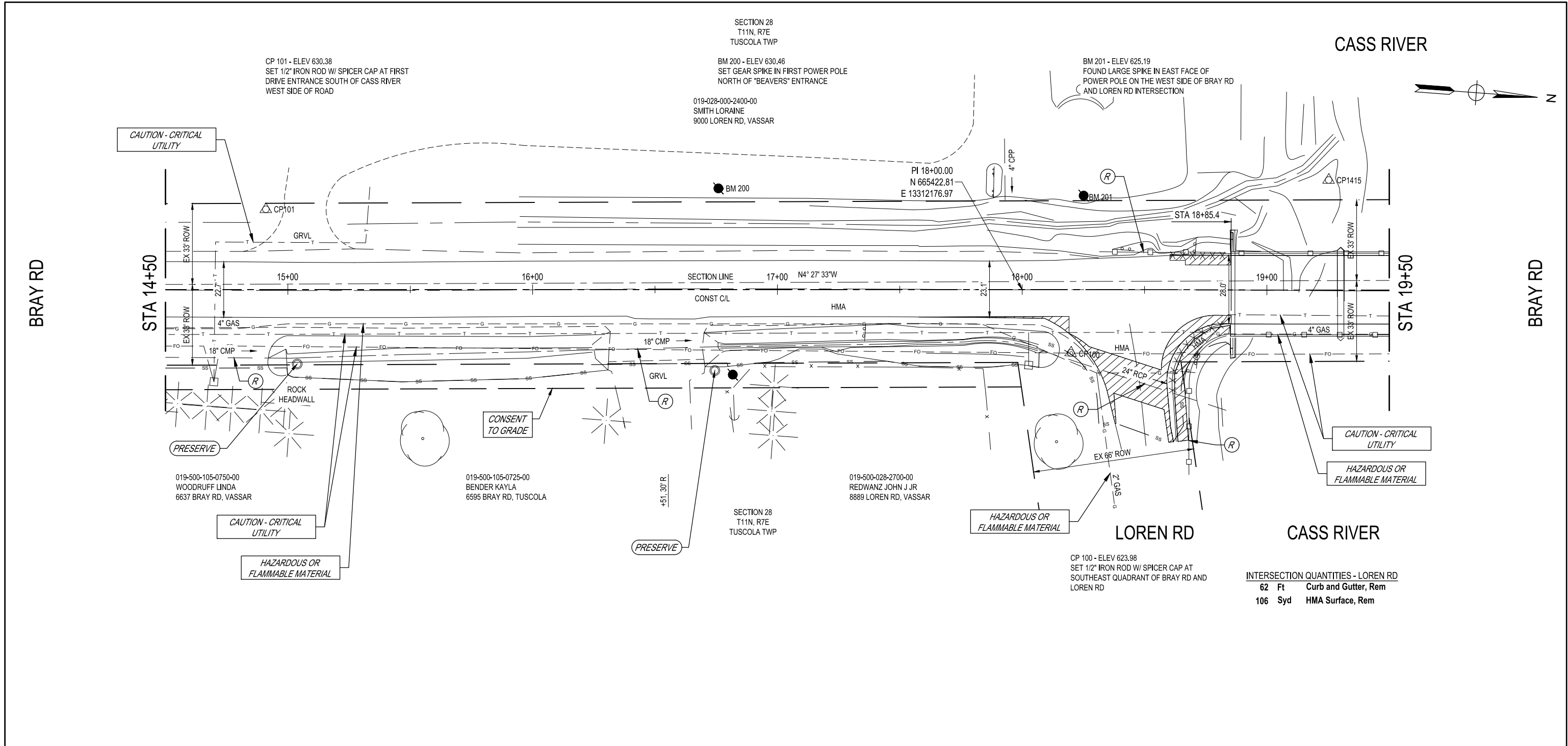


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DATE: JANUARY, 2022
FILE: LP_PROF.DWG

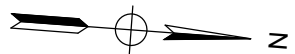
CS:
JN:

PROFILE
BRAY ROAD
STA 10+36.2 (POB) TO STA 14+50

DRAWING SHEET
PROF1 8



CASS RIVER



CAUTION - CRITICAL UTILITY

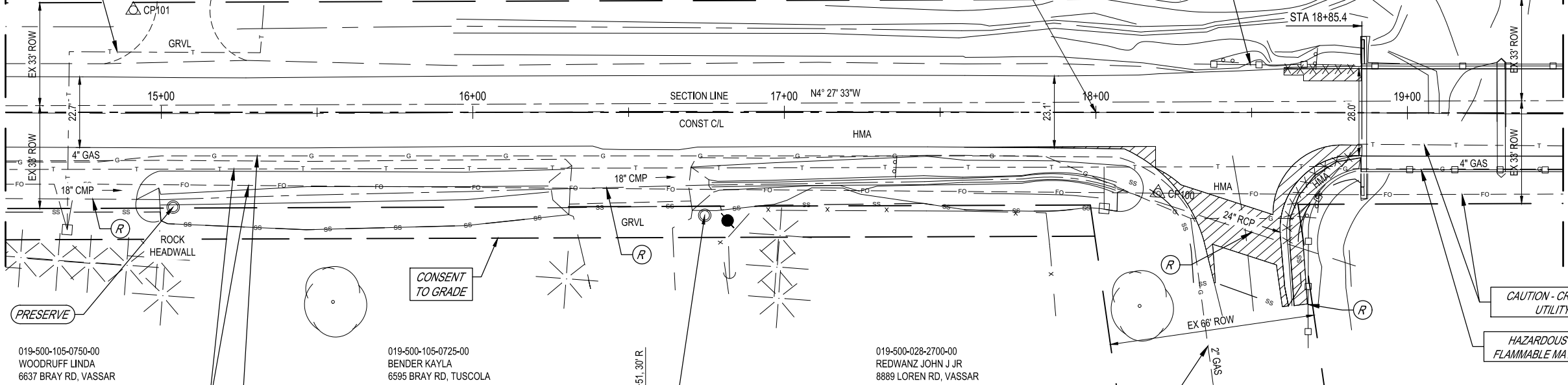
CP 101 - ELEV 630.38
SET 1/2" IRON ROD W/ SPICER CAP AT FIRST
DRIVE ENTRANCE SOUTH OF CASS RIVER
WEST SIDE OF ROAD

SECTION 28
T11N, R7E
TUSCOLA TWP
BM 200 - ELEV 630.46
SET GEAR SPIKE IN FIRST POWER POLE
NORTH OF "BEAVERS" ENTRANCE
019-028-000-2400-00
SMITH LORAINÉ
9000 LOREN RD, VASSAR

BM 201 - ELEV 625.19
FOUND LARGE SPIKE IN EAST FACE OF
POWER POLE ON THE WEST SIDE OF BRAY RD
AND LOREN RD INTERSECTION

BRAY RD
STA 14+50

BRAY RD
STA 19+50



019-500-105-0750-00
WOODRUFF LINDA
6637 BRAY RD, VASSAR

019-500-105-0725-00
BENDER KAYLA
6595 BRAY RD, TUSCOLA

019-500-028-2700-00
REDWANZ JOHN J JR
8889 LOREN RD, VASSAR

SECTION 28
T11N, R7E
TUSCOLA TWP

HAZARDOUS OR
FLAMMABLE MATERIAL

LOREN RD

CASS RIVER

CAUTION - CRITICAL UTILITY

HAZARDOUS OR
FLAMMABLE MATERIAL

CAUTION - CRITICAL UTILITY

HAZARDOUS OR
FLAMMABLE MATERIAL

INTERSECTION QUANTITIES - LOREN RD
62 Ft Curb and Gutter, Rem
106 Syd HMA Surface, Rem

DRIVEWAY APPROACH QUANTITIES - THIS SHEET

| C/L STATION | HMA Surface, Rem (Syd) | Pavt, Rem (Syd) |
|-------------|------------------------|-----------------|
| 16+51 R | | |
| TOTAL | | |

REMOVAL QUANTITIES - THIS SHEET
1 Ea Culv, Rem, Less than 24 inch
1 Ea Culv, Rem, 24 inch to 48 inch
25 Ft Curb and Gutter, Rem
116 Ft Guardrail, Rem
4.4 Sta Trenching, Modified
10 Syd HMA Surface, Rem

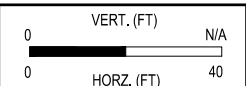
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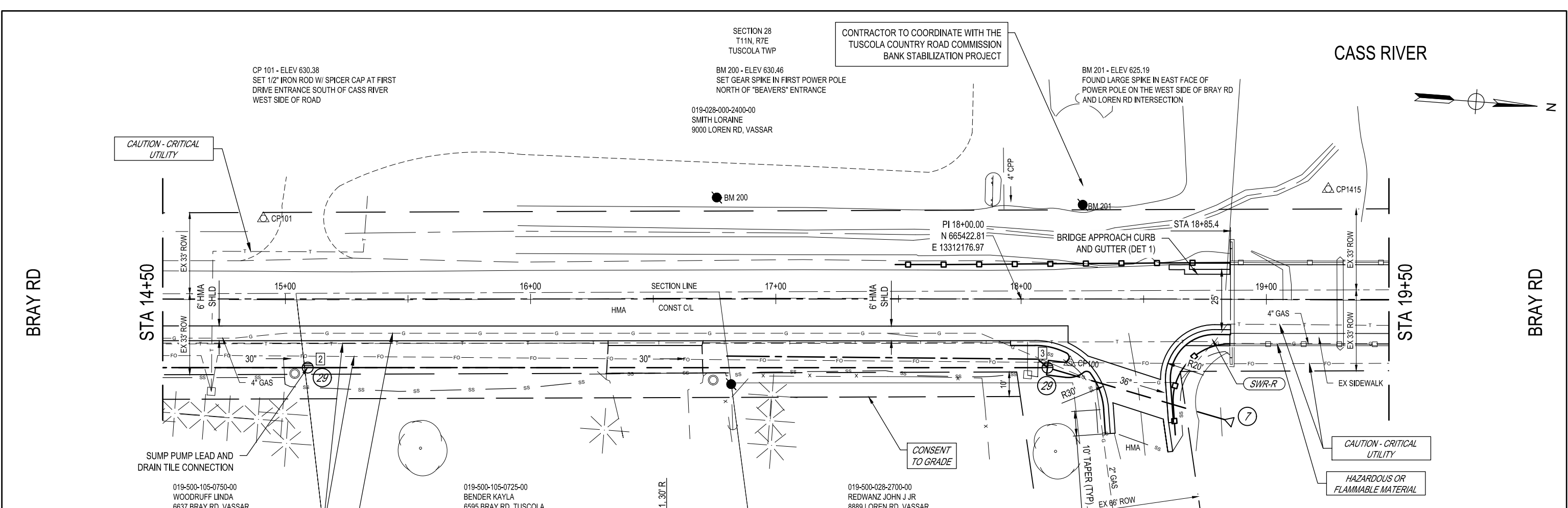


SGI PROJECT NO: 128551SG2020
DATE: DECEMBER, 2021
FILE: LP_REM.DWG

CS:
JN:

REMOVAL SHEET
BRAY ROAD
STA 14+50 TO STA 19+50

DRAWING SHEET
REM2 9



CP 101 - ELEV 630.38
SET 1/2" IRON ROD W/ SPICER CAP AT FIRST
DRIVE ENTRANCE SOUTH OF CASS RIVER
WEST SIDE OF ROAD

SECTION 28
T11N, R7E
TUSCOLA TWP
BM 200 - ELEV 630.46
SET GEAR SPIKE IN FIRST POWER POLE
NORTH OF "BEAVERS" ENTRANCE
019-028-000-2400-00
SMITH LORAINÉ
9000 LOREN RD, VASSAR

CONTRACTOR TO COORDINATE WITH THE
TUSCOLA COUNTRY ROAD COMMISSION
BANK STABILIZATION PROJECT

BM 201 - ELEV 625.19
FOUND LARGE SPIKE IN EAST FACE OF
POWER POLE ON THE WEST SIDE OF BRAY RD
AND LOREN RD INTERSECTION

CASS RIVER

CAUTION - CRITICAL
UTILITY

CAUTION - CRITICAL
UTILITY

SUMP PUMP LEAD AND
DRAIN TILE CONNECTION
019-500-105-0750-00
WOODRUFF LINDA
6637 BRAY RD, VASSAR

019-500-105-0725-00
BENDER KAYLA
6595 BRAY RD, TUSCOLA

019-500-028-2700-00
REDWANZ JOHN J JR
8889 LOREN RD, VASSAR

CAUTION - CRITICAL
UTILITY

HAZARDOUS OR
FLAMMABLE MATERIAL

CONSENT
TO GRADE

SECTION 28
T11N, R7E
TUSCOLA TWP

HAZARDOUS OR
FLAMMABLE MATERIAL

CP 100 - ELEV 623.98
SET 1/2" IRON ROD W/ SPICER CAP AT
SOUTHEAST QUADRANT OF BRAY RD AND
LOREN RD

CASS RIVER

INTERSECTION QUANTITIES - LOREN RD

| | | |
|----|-----|-------------------------------|
| 32 | Cyd | Subbase, CIP |
| 32 | Syd | Aggregate Base, 4 inch |
| 42 | Syd | Aggregate Base, 6 inch |
| 10 | Ton | Hand Patching |
| 10 | Ton | HMA Approach |
| 87 | Ft | Curb and Gutter, Conc, Det F4 |
| 1 | Ea | Shoulder Gutter, Conc, Det 3 |
| 13 | Ft | Spillway, Conc |
| 14 | Ft | Detectable Warning Surface |
| 15 | Ft | Curb Ramp Opening, Conc |
| 66 | Sft | Sidewalk Ramp, Conc, 6 inch |

CONSTRUCTION QUANTITIES - THIS SHEET

| | | |
|-----|-----|--|
| 2 | Ea | Erosion Control, Inlet Protection, Fabric Drop |
| 136 | Cyd | Subbase, CIP |
| 6 | Syd | Aggregate Base, 4 inch |
| 341 | Syd | Aggregate Base, 6 inch |
| 35 | Syd | Shoulder, CII, 4 inch |
| 50 | Ft | Sump Pump Lead and Drain Tile Connection |
| 386 | Ft | Underdrain, Subbase, 6 inch |
| 3 | Ton | Hand Patching |
| 65 | Ton | HMA, LVSP |
| 17 | Ft | Curb and Gutter, Bridge Approach |
| 50 | Ft | Guardrail, Type MGS-8 |
| 38 | Ft | Guardrail, Curved, Type MGS-9 |
| 1 | Ea | Guardrail Approach Terminal, Type 2M |
| 1 | Ea | Guardrail Departing Terminal, Type MGS |
| 8 | Ea | Guardrail Reflector |
| 1 | Ea | Guardrail Anch, Bridge, Det M1 |
| 8 | Syd | Riprap, Plain |

DRAINAGE STRUCTURE TABLE - THIS SHEET

| STR NO | Dr Structure, 60 inch dia, Modified (Ea) | Dr Structure, 72 inch dia, Modified (Ea) | Dr Structure Cover, Type DG (Ea) | Sewer, CII, 30 inch, Tr Det B (Ft) | Sewer, CII, 36 inch, Tr Det B (Ft) | Culv End Sect, Conc, 36 inch (Ea) |
|--------|--|--|----------------------------------|------------------------------------|------------------------------------|-----------------------------------|
| 2 | 1 | | 1 | 302 | | |
| 3 | | 1 | 1 | | 76 | 1 |
| TOTAL | 1 | 1 | 2 | 302 | 76 | 1 |

DRIVEWAY APPROACH QUANTITIES - THIS SHEET

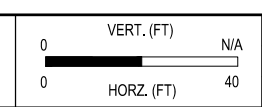
| C/L STATION | HMA Approach (Ton) | Approach, CII, 8 inch (Syd) | Approach, CII, 6 inch (Syd) |
|-------------|--------------------|-----------------------------|-----------------------------|
| 16+51 R | 13 | 54 | 49 |
| TOTAL | 13 | 54 | 49 |

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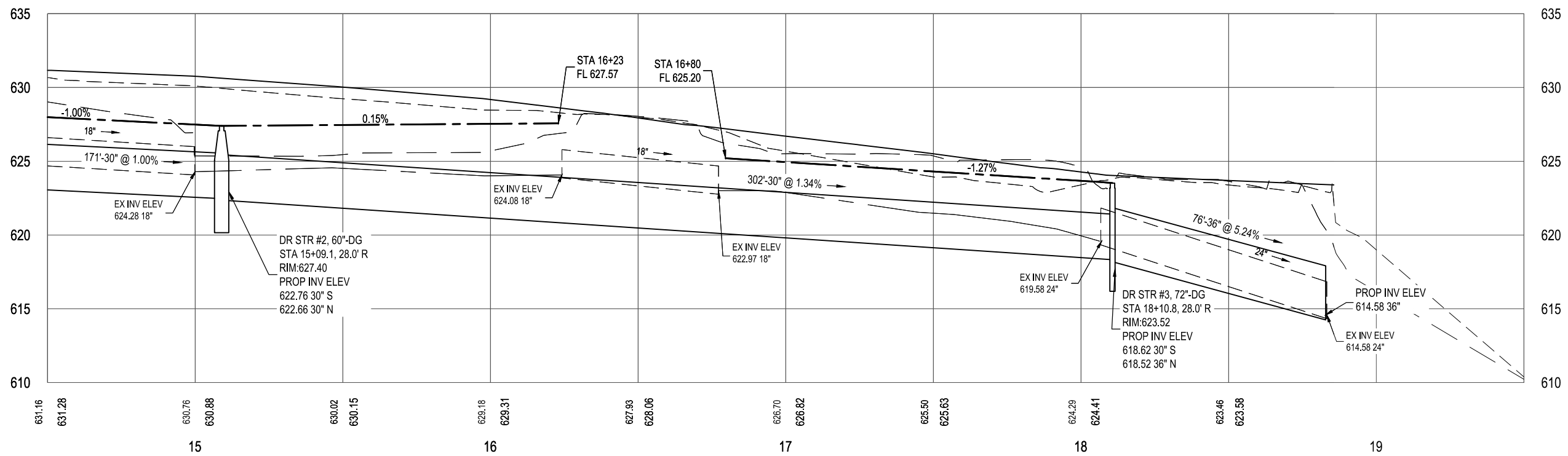
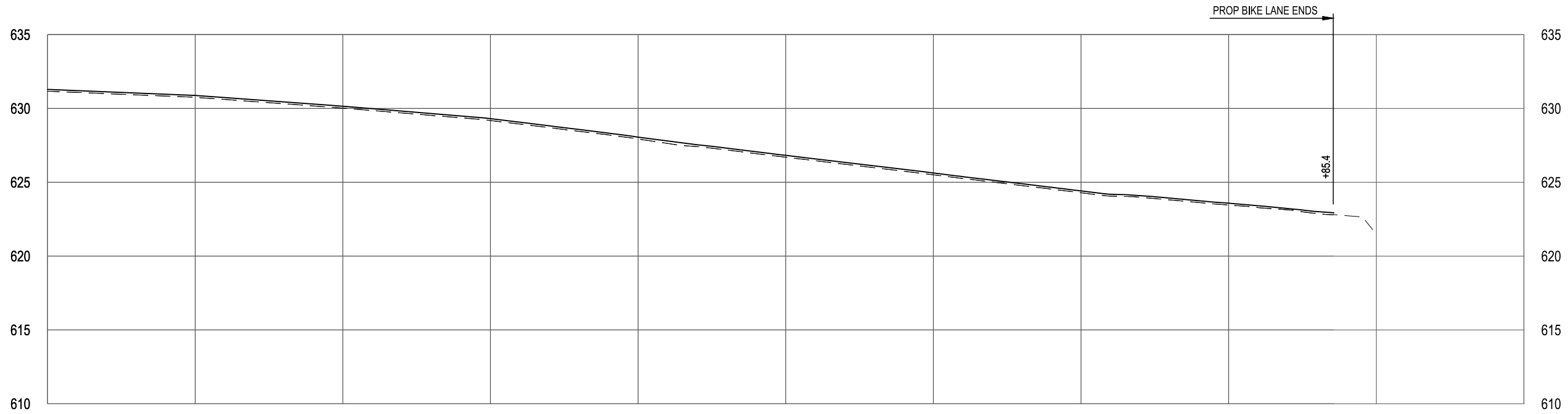
SGI PROJECT NO: 128551SG2020
DATE: JANUARY, 2022
FILE: LP_PLAN.DWG

CS:
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CONSTRUCTION SHEET
BRAY ROAD
STA 14+50 TO STA 19+50

DRAWING SHEET
PLAN2 10

1/5/2022 9:04 AM ryan.sullivan



EX ELEV @ PLAN GRADE
PLAN GRADE
EX ROW 33' RT
EX GROUND 17' RT
PROP RT EDGE OF BIKE PATH
EX EDGE OF HMA
PROP LT EDGE OF BIKE PATH

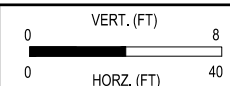
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FINAL PLAN REVISIONS

| NO. | DATE | AUTH | DESCRIPTION |
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| | | | |



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PROFILE
BRAY ROAD
STA 14+50 TO STA 19+50

DRAWING SHEET
PROF2 11