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UTILITIES

ELECTRIC CONSUMERS ENERGY CO. 2400 WEISS STREET SAGINAW, MI 48602 CONTACT: GREG SQUANDA TELEPHONE: 989-791-5353	CABLE CHARTER COMMUNICATIONS 1480 SOUTH VALLEY CENTER DRIVE BAY CITY, MI 48706 CONTACT: GORDON BROOKS TELEPHONE: 989-737-5356
NATURAL GAS CONSUMERS ENERGY CO. 2400 WEISS STREET SAGINAW, MI 48602 CONTACT: KYLE SKRABUT TELEPHONE: 989-791-5885	ROADS MIDLAND COUNTY ROAD COMMISSION 2334 NORTH MERIDIAN RD. SANFORD, MICHIGAN 48657 CONTACT: TERENCE PALMER, P.E. TELEPHONE: 989-687-9060
TELEPHONE AT&T 309 SOUTH WASHINGTON SAGINAW, MI 48607 CONTACT: ROB AUGUSTINE TELEPHONE: 989-771-5404	WATER CITY OF MIDLAND 333 W. ELLSWORTH ST. MIDLAND, MI 48640 CONTACT: ANDREW PARROTT TELEPHONE: 989-837-6958

M.D.O.T. STANDARD PLANS

(* SPECIAL DETAILS WILL BE INCLUDED IN PROPOSAL)

PLAN NO.	TITLE
R-1-G *	DRAINAGE STRUCTURES
R-7-F	COVER B
R-11-E	MONUMENT BOXES
R-15-F	COVER K
R-29-I	DRIVEWAY OPENINGS & APPROACHES, AND CONCRETE SIDEWALK
R-30-G	CONCRETE CURB AND CONCRETE CURB & GUTTER
R-32-E	APPROACH CURB & GUTTER, DOWNSPOUTS (FOR BRIDGE APPROACH CURB AND GUTTER)
R-35-D	CONCRETE SHOULDER GUTTER AND SPILLWAY
R-59-E	GUARDRAIL AT BRIDGES AND EMBANKMENTS
R-60-J *	GUARDRAIL TYPES A, B, DB, T, TD, MGS-8, & MGS-8D
R-67-G *	GUARDRAIL ANCHORAGE, BRIDGE, DETAILS
R-80-E	GRANULAR BLANKET, UNDERDRAINS, OUTLET ENDINGS FOR UNDERDRAINS, AND SEWER BULKHEADS
R-82-D	BEDDING AND FILLING AROUND PIPE CULVERTS
R-83-C	UTILITY TRENCHES
R-85-D	OUTLET HEADWALLS
R-86-E	PRECAST CONCRETE END SECTION FOR PIPE CULVERT
R-88-D	STEEL END SECTION
R-95-F	CULVERT SLOPED END SECTION
R-96-E	SOIL EROSION & SEDIMENTATION CONTROL MEASURES
R-100-H	SEEDING AND TREE PLANTING
R-101-B	WOVEN WIRE FENCE
R-105-D	GRADING CROSS-SECTIONS
R-107-H	SUPERELEVATION AND PAVEMENT CROWNS
R-110-A	PAVEMENT SAFETY EDGE
R-127-F *	DELINEATOR INSTALLATIONS
21 *	GUARDRAIL AT INTERSECTIONS

TRAFFIC AND SAFETY

STANDARD PLANS

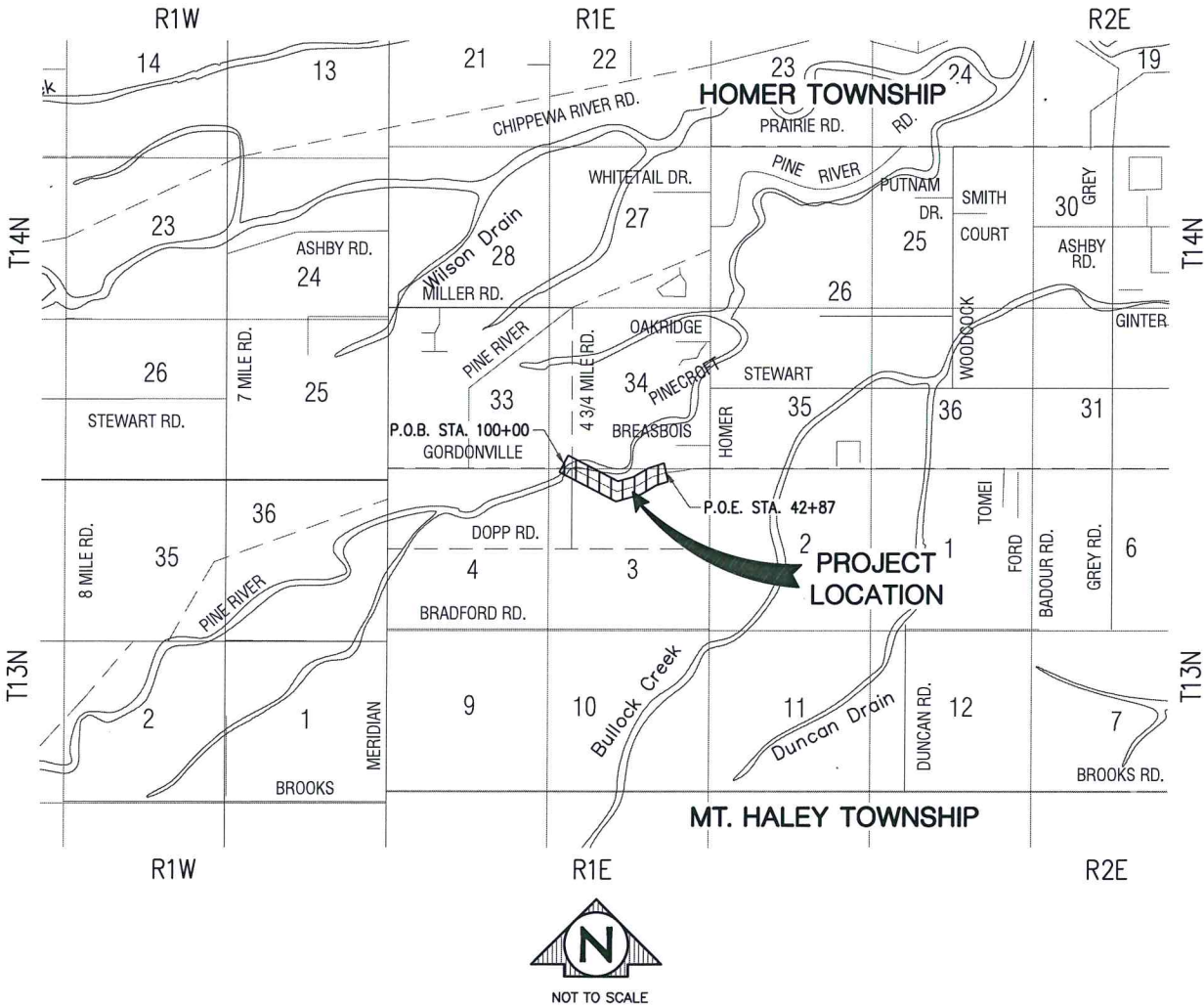
(* SPECIAL DETAILS WILL BE INCLUDED IN PROPOSAL)

PLAN NO.	TITLE
PAVE-905-C	LONGITUDINAL LINE TYPES AND PLACEMENT
PAVE-930-C	PAVEMENT MARKINGS FOR NON-SIGNALIZED INTERSECTIONS
PAVE-945-C	INTERSECTION, STOP BAR AND CROSSWALK MARKINGS
SIGN-100-G *	STANDARD SIGN INSTALLATIONS
SIGN-120-E *	ROADSIDE SIGN LOCATIONS AND SUPPORT SPACING
SIGN-150-D	SIGN SUPPORT SELECTION CHARTS
SIGN-200-D	STEEL POSTS
WZD-100-A *	GROUND DRIVEN SIGN AND SUPPORTS FOR TEMP SIGNS
WZD-125-E *	TEMPORARY TRAFFIC CONTROL DEVICES

MIDLAND COUNTY ROAD COMMISSION

IN CO-OPERATION WITH
MICHIGAN DEPARTMENT OF TRANSPORTATION
&
FEDERAL HIGHWAY ADMINISTRATION
PLAN AND PROFILE OF PROPOSED
GORDONVILLE ROAD SAFETY IMPROVEMENTS

T13N - R1E, SECTION 3			
T14N - R1E, SECTION 34			
MT. HALEY AND HOMER TOWNSHIPS, MIDLAND COUNTY			
<u>CONTROL SECTION</u>	<u>JOB NO.</u>	<u>FEDERAL JOB NO.</u>	<u>FEDERAL ITEM NO.</u>
HRRR 56609	131247A	HRRR 1756(014)	KK4372



COUNTY	ROAD	PROJ.	YEAR	SHEET	TOTAL
MIDLAND	GORDONVILLE	131247A	2017	1	28

THE IMPROVEMENTS COVERED BY THESE PLANS SHALL BE COMPLETED IN ACCORDANCE WITH THE MICHIGAN DEPARTMENT OF TRANSPORTATION (MDOT) 2012 STANDARD SPECIFICATIONS FOR CONSTRUCTION AND SUPPLEMENTAL SPECIFICATIONS. THE LATEST MDOT STANDARD ROAD PLANS, SECTION B (4R) AND SECTION C (3R) OF THE MDOT LOCAL AGENCY PROGRAMS GUIDELINES FOR GEOMETRICS, 2014 EDITION, AND SUPPLEMENTAL SPECIFICATIONS. THE PROPOSED IMPROVEMENTS COVERED BY THESE PLANS ARE IN ACCORDANCE WITH AASHTO: A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS, 6TH EDITION, 2011.

THE PLACEMENT OF PAVEMENT MARKINGS AND SIGNAGE SHALL BE COMPLETED IN ACCORDANCE WITH THE MICHIGAN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, 2011 EDITION.

PROJECT LENGTH

JN 131247A P.O.B. = STA. 100+00 P.O.E. = STA 42+87
JN 131247A = 0.69 MILE

TRAFFIC DATA

GORDONVILLE ROAD	
PRESENT ADT (2016) =	1,748 VEHICLES/DAY
FUTURE ADT (2036) =	1,931 VEHICLES/DAY
% COMMERCIAL =	7.8%
DESIGN SPEED =	60 MPH
POSTED SPEED =	PRIMA FACIE

CONTRACT FOR:
0.69 MILES OF HORIZONTAL CURVE REALIGNMENT, INTERSECTION REALIGNMENT, COLD MILLING HMA SURFACE, HMA PAVING, GUARDRAIL REPLACEMENT, SUPERELEVATION CORRECTIONS, PAVEMENT MARKINGS AND PERMANENT SIGNING.

MIDLAND COUNTY ROAD COMMISSION APPROVAL

Terence Palmer 8-22-17
TERENCE PALMER, P.E. - MANAGING DIRECTOR DATE

PREPARED UNDER SUPERVISION OF

MATTHEW J. SEITZ 57041
REGISTERED PROFESSIONAL ENGINEER REGISTRATION NO.

ROWE PROFESSIONAL SERVICES COMPANY
ORGANIZATION

127 S. MAIN ST. MT. PLEASANT, MI 48858
ADDRESS



ROWE PROFESSIONAL
SERVICES COMPANY
























127 S. Main Street
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www.rowepsc.com



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STRUCTURE SYMBOLS

	EXISTING CATCH BASIN IN CURB LINE
	PROPOSED CATCH BASIN IN CURB LINE
	EXISTING CATCH BASIN IN GREEN SPACE
	PROPOSED CATCH BASIN IN GREEN SPACE
	EXISTING STORM MANHOLE
	PROPOSED STORM MANHOLE
	PROPOSED CULVERT END SECTION
	EXISTING HEADWALL
	PROPOSED HEADWALL
	EXISTING WATER SHUTOFF (SERVICE VALVE)
	EXISTING GATE VALVE AND BOX (STOP BOX)
	PROPOSED GATE VALVE AND BOX
	EXISTING GATE VALVE AND WELL
	PROPOSED GATE VALVE AND WELL
	EXISTING SPRINKLER HEAD
	EXISTING WATER WELL
	EXISTING FIRE HYDRANT
	PROPOSED FIRE HYDRANT
	PROPOSED WATER MAIN FITTINGS
	EXISTING CLEAN OUT
	EXISTING SANITARY SEWER MANHOLE
	PROPOSED SANITARY SEWER MANHOLE
	EXISTING MONITORING WELL

EXISTING TOPOGRAPHICAL SYMBOLS

	SIGN
	STREET SIGN
	END OF PIPE
	SWAMP OR WETLAND
	DECIDUOUS TREE
	CONIFEROUS TREE
	TREE STUMP
	MAIL BOX
	SOIL BORING
	ROCK
	METAL POST
	BUMPER BLOCK

UTILITY SYMBOLS

	UTILITY POLE
	GUY ANCHOR CABLE
	LIGHT POLE / ORNAMENTAL LIGHT
	POWER LIGHT POLE
	TELEPHONE MANHOLE
	UNDERGROUND GAS LINE MARKER
	GAS RISER
	GAS VENT
	GAS VALVE
	RAILROAD SIGNAL
	METAL LIGHT POLE
	OUTLET
	CIRCUIT BREAKER PANEL
	ELECTRICAL TRANSFORMER PAD
	ELECTRICAL TRANSFORMER RISER
	ELECTRIC METER
	TELEPHONE PEDESTAL / RISER
	TRAFFIC SIGNAL ON POLE
	PHONE BOOTH / PAY PHONE



SURVEY SYMBOLS

■	MONUMENT
▲	BENCHMARK
△	TRAVERSE POINT
▴	SECTION CORNER
•	FOUND SURVEY MONUMENTATION

MISCELLANEOUS SYMBOLS

	EXISTING STRUCTURE NUMBER
	PROPOSED STRUCTURE NUMBER
	FLOW DIRECTION
	EXISTING RIP-RAP
	PROPOSED RIP-RAP

CAUTION SYMBOLS



 USED WITH UNDERGROUND GAS & ELECTRICAL LINES
 USED WITH FIBER OPTICS LINES

PLAN VIEW LINE TYPES

	EXISTING STORM SEWER
	EXISTING CULVERT
	PROPOSED STORM SEWER
	EXISTING SANITARY SEWER
	PROPOSED SANITARY SEWER
	EXISTING WATER MAIN
	PROPOSED WATER MAIN
	SECTION LINE
	EXISTING RIGHT OF WAY
	PROPOSED RIGHT OF WAY
	PROPOSED EASEMENT
	EXISTING CENTER LINE DITCH
	PROPOSED DITCH CENTERLINE
	EXISTING CENTER LINE ROADWAY
	PARCEL LINE / LOT LINE
	EXISTING OVERHEAD UTILITIES
	UNDERGROUND ELECTRICAL LINE
	GAS LINE OR PETROLEUM PIPELINE
	UNDERGROUND TELEPHONE LINE
	UNDERGROUND CABLE TV LINE
	UNDERGROUND FIBER OPTIC
	PROJECT CONTROL LINE
	TREE LINE
	EXISTING FENCE
	PROPOSED FENCE
	EXISTING GUARD RAIL
	PROPOSED SLOPE STAKE LINE
	PROPOSED SILT FENCE





TOPOGRAPHY

Line Style	Frequency	Contour Type
Solid	960	Major
Dashed	958	Minor


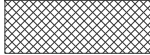
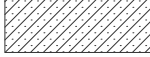
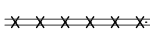


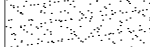
PARCEL INFORMATION

401-069	PARCEL/TAX IDENTIFICATION NUMBER
#5324	ADDRESS/BUSINESS NAME
























PAVEMENT IDENTIFICATION

	EXISTING CURB AND GUTTER
	PROPOSED CURB AND GUTTER
	EXISTING PAVEMENT
	EXISTING GRAVEL

HATCHING LEGEND

	REMOVE PAVEMENT
	REMOVE HMA SURFACE
	COLD MILLING EXISTING PAVEMENT
	REMOVE CURB AND GUTTER
	REMOVE AND REPLACE CURB AND GUTTER
	SAND BACKFILL (PROFILE)
	PROPOSED HMA APPROACH

PROPOSED CALLOUTS

TOPO CALLOUTS	PLAN VIEW
	 ADJUST STRUCTURE
	 ADJUST STRUCTURE BY OTHERS
	 RECONSTRUCT STRUCTURE
	 RELOCATE
	 RELOCATE BY OTHERS
	 REMOVE
	 REMOVE AND REPLACE
	 SALVAGE
	 SAVE
	 ABANDON
	 BULKHEAD
	 SIDEWALK RAMP TYPE
	 SOIL EROSION CONTROL MEASURE



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PLAN SUBMITTALS AND CHANGES	
BIDDING DOCUMENTS	
DATE	DESCRIPTION
8/8/17	ISSUED FOR BIDS

**KRWE PROFESSIONAL
SERVICES COMPANY**



127 S. Main Street
Mt. Pleasant, MI 48858

LEGEND SHEET

**MIDLAND COUNTY ROAD COMMISSION
GORDONVILLE ROAD SAFETY IMP.**

PLAN DATE: AUGUST 2017

PROJECT MGR: MJS

REVIEWER: ENJ

SCALE: NO SCALE

F: (989) 773-7757
www.rowepsc.com

PLOTTED: 8/8/2017 1:02 PM

GENERAL CONSTRUCTION NOTES

EMERGENCY CONTACTS
BEFORE BEGINNING WORK ON THE PROJECT, THE CONTRACTOR SHALL PROVIDE THE OWNER AND ENGINEER WITH THE NAMES AND TELEPHONE NUMBERS OF EMERGENCY CONTACTS. AT LEAST ONE PERSON REPRESENTING THE CONTRACTOR SHALL BE AVAILABLE TO RESPOND TO EMERGENCIES THROUGHOUT THE LIFE OF THE PROJECT, 24 HOURS A DAY, 7 DAYS A WEEK.

UNDERGROUND UTILITY IDENTIFICATION AND LOCATION
THE CONTRACTOR SHALL CALL MISS DIG (1-800-482-7171 OR 811) A MINIMUM OF THREE WORK DAYS IN ADVANCE OF BEGINNING EXCAVATION. THE CONTRACTOR IS RESPONSIBLE TO IDENTIFY AND NOTIFY UTILITY AGENCIES WITHIN THE PROJECT AREA WHICH DO NOT PARTICIPATE IN THE MISS DIG NOTIFICATION PROGRAM.

PUBLIC UTILITIES
EXISTING UTILITIES ARE SHOWN BASED UPON RECORDS AND LOCATIONS PROVIDED BY UTILITY AGENCIES. THE INFORMATION SHOWN IS CONSIDERED APPROXIMATE AND SHALL BE VERIFIED BY THE CONTRACTOR. UNLESS THE PLANS SPECIFICALLY SHOW THAT EXISTING UTILITIES ARE TO BE MOVED, THE CONTRACTOR IS RESPONSIBLE TO PROTECT AND MAINTAIN EXISTING UTILITIES.

VERIFICATION OF UNDERGROUND UTILITIES
THE CONTRACTOR SHALL EXCAVATE AND LOCATE ALL EXISTING UTILITIES IN THE PROJECT AREA IN ADVANCE OF CONSTRUCTION TO VERIFY THEIR ACTUAL LOCATION. POTENTIAL CONFLICTS SHALL BE REPORTED TO THE ENGINEER. THE CONTRACTOR SHALL MAKE SUCH CHANGES TO GRADE AND ALIGNMENT OF PROPOSED WORK AS DIRECTED BY THE ENGINEER TO AVOID CONFLICTS, AT NO INCREASE IN COST TO THE OWNER.

UTILITY SERVICE
UNLESS SPECIFICALLY PROVIDED OTHERWISE IN THE CONTRACT DOCUMENTS, ALL EXISTING UTILITIES ARE TO REMAIN IN SERVICE DURING THE PROJECT.

MAILBOXES
MAILBOXES LOCATED WITHIN THE LIMITS OF EXCAVATION, GRADING, OR CONSTRUCTION SHALL BE REMOVED AND PROTECTED FROM DAMAGE BY THE CONTRACTOR. TEMPORARY MAILBOXES SHALL BE PROVIDED AND MAINTAINED DURING THE PROJECT. UPON COMPLETION OF GRADING OR CONSTRUCTION ACTIVITIES, THE ORIGINAL MAILBOX SHALL BE REINSTALLED.

MAILBOXES (AND/OR SUPPORTS) WHICH ARE DAMAGED AS A RESULT OF THE PROJECT SHALL BE REPLACED BY THE CONTRACTOR, AT THE CONTRACTOR'S EXPENSE. MAILBOXES SHALL BE REPLACED IN ACCORDANCE WITH THE STANDARDS OF THE U.S. POSTAL SERVICE AND THE REGULATIONS OF THE AGENCY HAVING JURISDICTION OVER THE ROADS AND STREETS IN THE PROJECT AREA.

PRIVATE IRRIGATION SYSTEMS
WHERE IRRIGATION SYSTEMS WITHIN THE PUBLIC RIGHT-OF-WAY WILL INTERFERE WITH THE PROPOSED CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE PROPERTY OWNERS THAT IT IS THEIR RESPONSIBILITY TO REMOVE AND PROTECT THEIR IRRIGATION SYSTEM. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH A COPY OF THE NOTIFICATION.

WHERE THE OWNER HAS NOT REMOVED THEIR PRIVATE IRRIGATION SYSTEM, THE CONTRACTOR SHALL CUT AND PLUG THOSE SECTIONS OF PIPING WHICH INTERFERE WITH CONSTRUCTION. SPRINKLER HEADS, VALVES, AND PIPING WHICH INTERFERES WITH THE CONTRACTOR'S WORK, SHALL BE REMOVED AND STOCKPILED ON THE OWNER'S PROPERTY.

SOIL BORINGS / PAVEMENT CORES
IF PROVIDED ON THE PLANS OR IN THE CONTRACT DOCUMENTS, LOGS OF SOIL BORINGS OR PAVEMENT CORES REPRESENT THE SUBSURFACE CONDITIONS ENCOUNTERED AT SPECIFIC POINTS. THE INFORMATION IS PROVIDED FOR THE CONTRACTOR'S INFORMATION ONLY.

MAINTAINING TRAFFIC
LOCAL AND EMERGENCY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES WITHIN THE PROJECT AREA.

WHEN EXCAVATION, FRESH CONCRETE, OR OTHER CONSTRUCTION WORK WILL RESULT IN THE CLOSURE OF A STREET OR DRIVEWAY FOR A PERIOD OF TIME, THE CONTRACTOR IS RESPONSIBLE TO NOTIFY ALL AFFECTED RESIDENTS IN ADVANCE.

THE CONTRACTOR SHALL NOTIFY EMERGENCY RESPONSE AGENCIES IN ADVANCE OF ROAD CLOSURES OR THE ESTABLISHMENT OF DETOURS.

MIDLAND COUNTY CENTRAL DISPATCH
TELEPHONE: 989-839-6464

MIDLAND COUNTY SHERIFF
TELEPHONE: 989-839-4600

BULLOCK CREEK SCHOOLS
TELEPHONE: 989-631-9022

TRAFFIC SIGNS
TRAFFIC SIGNS WHICH INTERFERE WITH CONSTRUCTION THAT ARE NOT SPECIFICALLY CALLED OUT FOR REMOVAL SHALL BE REMOVED AND REPLACED BY THE MIDLAND COUNTY ROAD COMMISSION. THE CONTRACTOR IS RESPONSIBLE TO CONTACT THE MIDLAND COUNTY ROAD COMMISSION TO ARRANGE FOR REMOVAL OF THE SIGN. THIS WORK IS INCLUDED IN OTHER ITEMS.

SCHEDULE
THE CONTRACTOR SHALL COMPLETE ALL WORK IN AN EXPEDITIOUS MANNER AND SHALL NOT STOP WORK ON THE PROJECT ONCE BEGUN.

ALIGNMENT
ALIGNMENT AND GRADES FOR CURB AND GUTTER (INCLUDING THROUGH RAMPS AND DRIVEWAY OPENINGS) SHOWN ON THE PLANS ARE FOR THE TOP, BACK OF CURB, UNLESS SPECIFICALLY SHOWN OTHERWISE ON THE PLANS.

WHERE RIM ELEVATIONS ARE PROVIDED ON THE PLANS FOR INLETS OR MANHOLE CASTINGS, THE ELEVATIONS PROVIDED ARE CONSIDERED PRELIMINARY. THE CONTRACTOR SHALL MAKE THE FINAL ADJUSTMENT FOLLOWING THE ESTABLISHMENT OF ACTUAL GRADING AND PAVEMENT ELEVATIONS.

CONSTRUCTION STAKING
CONSTRUCTION STAKING IS TO BE PROVIDED BY THE ENGINEER OR OWNER, THE CONTRACTOR SHALL REQUEST STAKING AT LEAST THREE WORKING DAYS IN ADVANCE.

CONSTRUCTION STAKING IS TO BE PROVIDED BY THE ENGINEER OR OWNER, STAKING WILL BE PROVIDED ONE TIME. THE CONTRACTOR SHALL PROTECT AND PRESERVE SURVEY CONTROL AND STAKING. RE-STAKING WILL BE AT THE CONTRACTOR'S EXPENSE.

SURVEY CORNERS, BENCHMARKS, AND CONTROL POINTS
THE CONTRACTOR SHALL PRESERVE ALL GOVERNMENT CORNERS, PROPERTY CORNERS, BENCHMARKS, SURVEY CONTROL POINTS AND OTHER SURVEY POINTS WITHIN THE PROJECT AREA. WHERE CORNERS, BENCHMARKS, OR SURVEY POINTS ARE ENCOUNTERED WHICH WILL BE DISTURBED BY THE CONTRACTOR'S ACTIVITIES; A LICENSED SURVEYOR SHALL WITNESS THE POINT BEFORE DISTURBANCE AND SHALL RE-SET THE POINT FOLLOWING THE COMPLETION OF CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL PAY THE SURVEYOR TO WITNESS AND TO RE-SET THE POINTS.

PROTECTION OF TREES, SHRUBS, AND LANDSCAPING
ALL TREES, SHRUBS, AND LANDSCAPING WITHIN THE CONSTRUCTION AREA WHICH ARE NOT SPECIFICALLY DESIGNATED FOR REMOVAL SHALL BE PROTECTED FROM DAMAGE BY THE CONTRACTOR. DAMAGED TREES, SHRUBS, AND LANDSCAPING SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

CONSTRUCTION SIGNING AND BARRICADING
THE CONTRACTOR SHALL PROTECT HAZARDOUS AREAS WITH BARRICADES. BARRICADES LEFT IN PLACE AFTER SUNSET SHALL BE LIGHTED.

THE CONTRACTOR SHALL PROVIDE SUITABLE SANDBAGS OR OTHER SUITABLE MEASURES FOR ANCHORING OF TEMPORARY SIGNS AND BARRICADES, TO PREVENT THEIR TIPPING OR DISPLACEMENT BY WIND OR AIR FLOW FROM VEHICLES.

THE CONTRACTOR SHALL PROVIDE SIGNING, BARRICADES, DRUMS, AND OTHER TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH THE REQUIREMENTS OF THE AGENCY HAVING JURISDICTION OVER STREETS OR ROADS IN THE PROJECT AREA, THE CURRENT MICHIGAN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, AND THE PLANS AND SPECIFICATIONS.

THE CONTRACTOR SHALL COVER OR REMOVE TEMPORARY SIGNS DURING PERIODS WHEN THEY ARE NOT APPROPRIATE.

TURF ESTABLISHMENT
ALL DISTURBED AREAS WHICH ARE NOT TO BE SURFACED WITH PAVEMENT, AGGREGATE OR OTHER APPROVED SURFACES SHALL BE ESTABLISHED WITH TURF.

TURF AREAS SHALL BE GRADED TO PROVIDE POSITIVE DRAINAGE.

DISTURBED AREAS SHALL BE SURFACED WITH FOUR INCHES OF SCREENED TOPSOIL.

THE CONTRACTOR IS RESPONSIBLE TO ESTABLISH TURF WHICH IS SUBSTANTIALLY FREE OF BARE SPOTS AND FREE OF WEEDS. THE GROUND SURFACE IN TURF AREAS SHALL BE SMOOTH AND PROVIDE A NATURAL TRANSITION TO ADJACENT, UNDISTURBED AREAS.

THE CONTRACTOR IS RESPONSIBLE TO PROVIDE WATERING, WEEDING, RESEEDING, AND REWORKING AS NECESSARY TO ESTABLISH TURF AREAS TO THE REQUIRED STANDARD.

ADA COMPLIANCE
ALL PROPOSED CONSTRUCTION SHALL COMPLY WITH THE PROVISIONS OF THE CURRENT AMERICANS WITH DISABILITIES ACT (ADA), AND APPLICABLE GUIDELINES OR STANDARDS. WHERE EXISTING CONDITIONS AND/OR THE REQUIREMENTS OF THE PLANS WILL RESULT IN FINISHED CONDITIONS THAT DO NOT MEET THE ADA REQUIREMENTS, GUIDELINES, OR STANDARDS; THE CONTRACTOR SHALL NOTIFY THE ENGINEER BEFORE PROCEEDING WITH CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE TO REMOVE AND REPLACE WORK DETERMINED TO BE NOT IN ACCORDANCE WITH APPLICABLE REQUIREMENTS, GUIDELINES, OR STANDARDS.

EARTHWORK
THE CONTRACTOR SHALL MAKE HIS OWN DETERMINATION OF THE EARTHWORK QUANTITIES, AND BASE HIS BID ON HIS DETERMINATION OF THE QUANTITIES OF WORK REQUIRED.

IF ADDITIONAL FILL MATERIAL MUST BE PROVIDED TO ATTAIN THE FINISH GRADES SHOWN ON THE PLANS, THE CONTRACTOR SHALL PROVIDE THE REQUIRED FILL MATERIAL, UNLESS A SPECIFIC BORROW AREA IS IDENTIFIED ON THE PLANS.

EXCESS SOILS RESULTING FROM EXCAVATION AND EARTHWORK SHALL BECOME THE CONTRACTOR'S PROPERTY AND DISPOSED OF PROPERLY, UNLESS AN AREA(S) HAS BEEN DESIGNATED FOR STOCKPILING OR 'BLENDING IN' THE EXCESS MATERIAL WITHIN THE PROJECT LIMITS.

BACKFILL AND EMBANKMENT
BACKFILL OF AN EXCAVATION UNDER OR WITHIN THE ONE ON ONE INFLUENCE OF AN EXISTING OR PROPOSED ROAD, SIDEWALK, DRIVEWAY, PAVEMENT, OR AGGREGATE SURFACE, SHALL BE SAND, MEETING THE REQUIREMENTS OF GRANULAR MATERIAL CLASS III AS DESCRIBED IN THE CURRENT MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION. THE SAND BACKFILL SHALL BE COMPACTED TO AT LEAST 95% OF ITS MAXIMUM UNIT WEIGHT.

BACKFILL OF AN EXCAVATION WHICH IS NOT UNDER OR WITHIN THE ONE ON ONE INFLUENCE OF AN EXISTING OR PROPOSED ROAD, SIDEWALK, DRIVEWAY, PAVEMENT, OR AGGREGATE SURFACE MAY BE SUITABLE EXCAVATED MATERIAL OR OTHER SOIL, WHICH IS FREE OF ORGANIC MATTER, STONES AND ROCKS, ROOTS, BROKEN CONCRETE, FROZEN MATERIAL, OR DEBRIS. THE BACKFILL SHALL BE COMPACTED TO AT LEAST 90% OF ITS MAXIMUM UNIT WEIGHT.

THE CONTRACTOR SHALL INDICATE THE SOURCE OF SAND USED FOR BACKFILL TO THE ENGINEER, AND PROVIDE THE ENGINEER WITH THE RESULTS OF A GRADATION TEST PERFORMED ON A SAMPLE OF THE SAND. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN ADVANCE OF USING SAND FROM OTHER SOURCES.

EMBANKMENT USED TO BUILD THE SUBGRADE TO REQUIRED ELEVATION SHALL BE SUITABLE SOIL EXCAVATED FROM THE PROJECT SITE, OR FURNISHED BY THE CONTRACTOR FROM OTHER SOURCES. SUITABLE SOIL IS FREE FROM ORGANIC MATTER, ROCKS AND STONES, FROZEN MATERIAL, BROKEN CONCRETE, AND DEBRIS.

EMBANKMENT CONSTRUCTED OF GRANULAR SOILS SHALL BE COMPACTED IN LIFTS NOT EXCEEDING 10 INCHES TO AT LEAST 95% OF ITS MAXIMUM UNIT WEIGHT.

EMBANKMENT CONSTRUCTED OF COHESIVE SOILS SHALL BE COMPACTED IN LIFTS NOT EXCEEDING 10 INCHES TO AT LEAST 95% OF ITS MAXIMUM UNIT WEIGHT.

DENSITY TESTING
THE MAXIMUM UNIT WEIGHT OF SAND AND OTHER GRANULAR SOILS WILL BE DETERMINED BY THE ONE POINT CONE TEST, AS DESCRIBED IN THE MICHIGAN DEPARTMENT OF TRANSPORTATION'S DENSITY TESTING AND INSPECTION MANUAL, EXCEPT WHEN ANOTHER TEST METHOD IS SPECIFIED.

THE MAXIMUM UNIT WEIGHT OF COHESIVE SOILS WILL BE DETERMINED BY THE ONE POINT PROCTOR TEST, AS DESCRIBED IN THE MICHIGAN DEPARTMENT OF TRANSPORTATION'S DENSITY TESTING AND INSPECTION MANUAL, EXCEPT WHEN ANOTHER TEST METHOD IS SPECIFIED.

WORK HOURS
UNLESS PROVIDED OTHERWISE IN THE CONTRACT DOCUMENTS OR LIMITED BY LOCAL ORDINANCE, THE CONTRACTOR SHALL WORK WITHIN OF THE FOLLOWING TIMES, UNLESS OTHERWISE APPROVED BY THE OWNER:

MONDAY THROUGH FRIDAY: DAYLIGHT HOURS ONLY
SATURDAY: MUST BE APPROVED BY ENGINEER
SUNDAY: NO WORK WILL BE ALLOWED

THE CONTRACTOR SHALL NOT WORK ON SUNDAYS OR HOLIDAYS, UNLESS OTHERWISE APPROVED BY THE OWNER.

LANDSCAPING
WHERE LANDSCAPING WITHIN THE PUBLIC RIGHT-OF-WAY WILL INTERFERE WITH THE PROPOSED CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE PROPERTY OWNERS THAT IT IS THEIR RESPONSIBILITY TO REMOVE OR RELOCATE THEIR LANDSCAPING. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH A COPY OF THE NOTIFICATION.

WHERE THE OWNER HAS NOT REMOVED THEIR LANDSCAPING, THE CONTRACTOR SHALL CONTINUE WORK PER PLAN AS SCHEDULED. THE LANDSCAPING WILL BE REMOVED BY THE CONTRACTOR AND THE AREA WILL BE RESTORED PER PLANS AND SPECIFICATIONS.

DRAINAGE

THE CONTRACTOR SHALL MAINTAIN DRAINAGE OF THE PROJECT AREA AND ADJACENT AREAS. WHERE EXISTING DRAINAGE FACILITIES ARE DISTURBED OR BLOCKED BY CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE AND MAINTAIN TEMPORARY PROVISIONS FOR DRAINAGE.

WHERE CONSTRUCTION HAS DISTURBED EXISTING DITCHES, SWALES, OR OTHER DRAINAGE FACILITIES; THE CONTRACTOR SHALL RESTORE THEM TO THEIR GRADES AND DIMENSIONS WHICH EXISTED PRIOR TO THE BEGINNING OF CONSTRUCTION, UNLESS DIRECTED OTHERWISE.

DRAINAGE SHALL NOT BE REROUTED ONTO ADJACENT PROPERTIES NOR ALLOWED TO DRAIN ONTO ADJACENT PROPERTIES AT AN INCREASED RATE, AS A RESULT OF THE CONTRACTOR'S WORK.

A MISCELLANEOUS QUANTITY OF Underdrain, Subbase, 6 inch AND Underdrain, Outlet Ending, 6 inch HAS BEEN INCLUDED FOR UNDERDRAIN PLACEMENT AT LOCATIONS AS DIRECTED BY THE ENGINEER.

ROAD PROJECTS

ADJUSTING STRUCTURES
WHERE CASTINGS FOR MANHOLES, CATCH BASINS, INLETS, VALVE BOXES, AND MONUMENT BOXES ARE TO BE ADJUSTED TO MEET A NEW PAVEMENT SURFACE ELEVATION, THE FINAL ADJUSTMENT SHALL NOT BE COMPLETED UNTIL ALL PAVEMENT COURSES HAVE BEEN PLACED EXCEPT THE FINAL COURSE. THE FINAL ADJUSTMENT SHALL BE COMPLETED JUST PRIOR TO PLACEMENT OF THE FINAL COURSE OF PAVEMENT.

THE MATERIALS AND PROCEDURES FOR ADJUSTING STRUCTURES SHALL MEET THE REQUIREMENTS OF THE AGENCIES HAVING JURISDICTION OVER THE ROAD AND UTILITIES.

SUBGRADE PREPARATION
TOPSOIL, PEAT, AND ORGANIC MATERIAL SHALL BE EXCAVATED AND REMOVED.

SOFT AND YIELDING SOILS SHALL BE REMOVED OR DRIED IF THE RESULT OF EXCESSIVE MOISTURE CONTENT.

PRIOR TO CONSTRUCTING FILLS, SUBBASE, OR PAVEMENT ON A SUBGRADE; THE SUBGRADE SHALL BE PROOF-ROLLED TO DETERMINE THE SUITABILITY OF THE SUBGRADE. THE CONTRACTOR SHALL DRIVE A HEAVY PIECE OF WHEELED CONSTRUCTION EQUIPMENT OVER THE SUBGRADE WHILE THE ENGINEER IS OBSERVING. THE CONSTRUCTION OF FILLS, SUBBASE, OR PAVEMENTS SHALL NOT PROCEED UNTIL THE SUBGRADE HAS BEEN DEMONSTRATED TO BE FREE OF SOFT AREAS.

THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN THE MOISTURE CONTENT OF SUBGRADE SOILS WITHIN A SUITABLE RANGE TO ALLOW FOR COMPACTION TO THE REQUIRED DENSITY. WHEN THE SOIL IS TOO DRY, THE CONTRACTOR SHALL ADD WATER. WHEN THE SOIL IS TOO WET, THE CONTRACTOR SHALL PROVIDE DRAINAGE OR AERATE THE SOIL.

THE SURFACE OF THE SUBGRADE SHALL BE COMPACTED TO AT LEAST 95% OF ITS MAXIMUM UNIT WEIGHT, PRIOR TO CONSTRUCTING FILLS, SUBBASE, OR PAVEMENTS.

CURB AND GUTTERS
THE CONTRACTOR SHALL DETERMINE THE LOCATION AND DIMENSIONS OF CURB OPENINGS FOR DRIVEWAYS, RAMPS, AND DRAINAGE STRUCTURES.

HOT MIX ASPHALT (HMA) PAVING
PAVEMENTS WHICH ARE TO BE OVERLAID WITH A NEW PAVEMENT COURSE SHALL BE SWEEPED TO REMOVE ALL DIRT AND DEBRIS.

A BITUMINOUS BOND COAT SHALL BE APPLIED TO PAVEMENTS WHICH ARE TO BE OVERLAID WITH A NEW PAVEMENT COURSE AND ALLOWED TO CURE PRIOR TO CONSTRUCTING THE NEW PAVEMENT COURSE.

HMA PAVEMENT SHALL NOT BE PLACED WHEN THE SURFACE BEING OVERLAID IS WET, OR WHEN RAIN IS FORECAST OR THREATENING.

DRIVEWAY CONSTRUCTION

DRIVEWAY SLOPES SHALL NOT EXCEED 10%, EXCEPT WHERE SPECIFICALLY INDICATED OTHERWISE ON THE PLANS OR DIRECTED BY THE ENGINEER.

THE CONTRACTOR SHALL PROVIDE PROPERTY OWNERS WITH SUITABLE NOTICE BEFORE REMOVING AND REPLACING AN EXISTING DRIVEWAY.

CULVERT NOTES

PIPE MATERIAL SHALL BE DOUBLE WALL PLASTIC PIPE MEETING ASTM F2881. CULVERTS SHALL BE MANDREL TESTED AND MDOT FORM 1975 SHALL BE COMPLETED.

MISCELLANEOUS QUANTITIES		
DESCRIPTION	QUANTITY	UNITS
Mobilization, Max 10%	1	LSUM
Clearing	1	Acre
Subgrade Undercutting, Type II	100	Cyd
Erosion Control, Silt Fence	3500	Ft
Maintenance Gravel	100	Ton
Geotextile, Separator	200	Syd
Sump Pump Lead and Drain Tile Connection	50	Ft
Underdrain, Subbase, 6 inch	500	Ft
Underdrain, Outlet Ending, 6 inch	2	Ea
Barricade, Type III, High Intensity, Double Sided, Lighted, Furn	7	Ea
Barricade, Type III, High Intensity, Double Sided, Lighted, Oper	7	Ea
Lighted Arrow, Type C, Furn	2	Ea
Lighted Arrow, Type C, Oper	2	Ea
Minor Traf Devices	1	LSUM
Plastic Drum, High Intensity, Furn	130	Ea
Plastic Drum, High Intensity, Oper	130	Ea
Sign, Type B, Temp, Prismatic, Furn	660	Sft
Sign, Type B, Temp, Prismatic, Oper	660	Sft
Traf Regulator Control	1	LSUM
Slope Restoration, Type B	4732	Syd
Slope Restoration, Type C	2100	Syd
Slope Restoration, Type D	100	Syd



Know what's below.
Call before you dig.

PLAN SUBMITTALS AND CHANGES	
BIDDING DOCUMENTS	
DATE	DESCRIPTION
8/8/17	ISSUED FOR BIDS

REV:

SHT# 3 OF 28
JOB No: 16M0094

ROWE PROFESSIONAL SERVICES COMPANY



127 S. Main Street
Mt. Pleasant, MI 48858

NOTE SHEET

PREPARED FOR
MIDLAND COUNTY ROAD COMMISSION
GORDONVILLE ROAD SAFETY IMP.

PLAN DATE: AUGUST 2017
PROJECT MGR: MJS
REVIEWER: ENJ
SCALE: NO SCALE

O: (989) 772-2138
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PLAN

15' [4575]
 75' [1905]
 31" [790]
 DIRECTION OF TRAFFIC

ELEVATION


1" [25]
 7" [175]
 78" [1980]
 32" [810]
 46" [1170]
 7" [175]
 RWM02a W-Beam Guardrail (150" [3810] or 300" [7620])
 FBB01 Splice Bolts (8 EA Guardrail Joint)
 FBC16a x 3 1/2" [90] LNG w/FBB01 Nut
 NU-GUARD 3 1/2" [90] x 1/4" [6] Washer
 NU-GUARD Line Post (PFP06b)

FRONT **CROSS-SECTION**

NU-GUARD-31 ROADSIDE BARRIER

SGR33	
SHEET NO.	DATE:
1 of 2	10/01/06

V. 2011.08A Page 22

NU-GUARD-31 ROADSIDE BARRIER		
SGR33		 BAR MILL GROUP NUCOR STEEL MARION, INC.
SHEET NO.	DATE	
2 of 2	10/01/2009	
		<i>All Nucor Steel Marion Inc. products are produced from 100% recycled steel.</i>

V. 2011.08A Page 23



JOB No: 16M0094

1127 S. Main Street
Mt Pleasant MI 48134

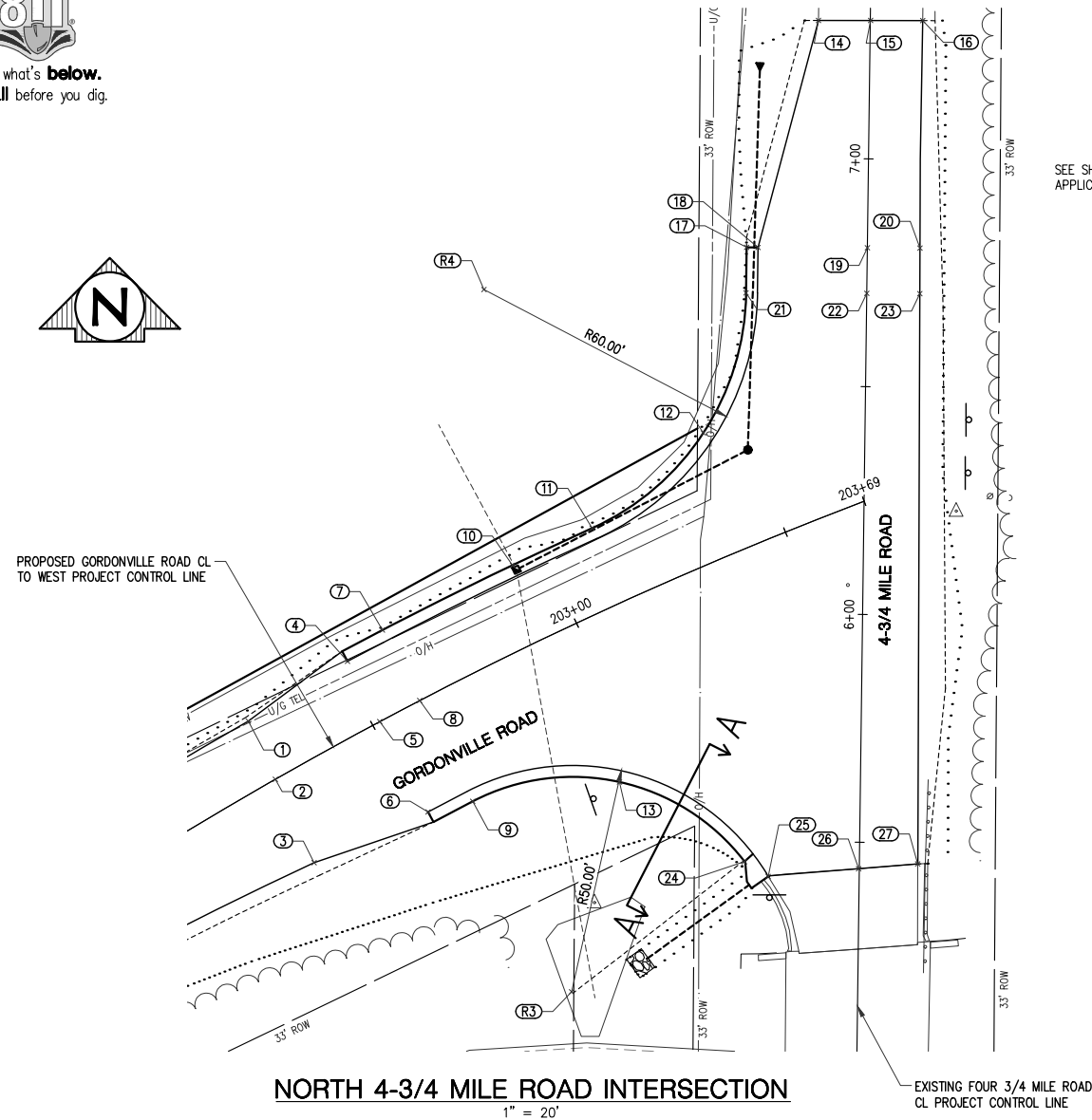
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PINE RIVER



Know what's below.
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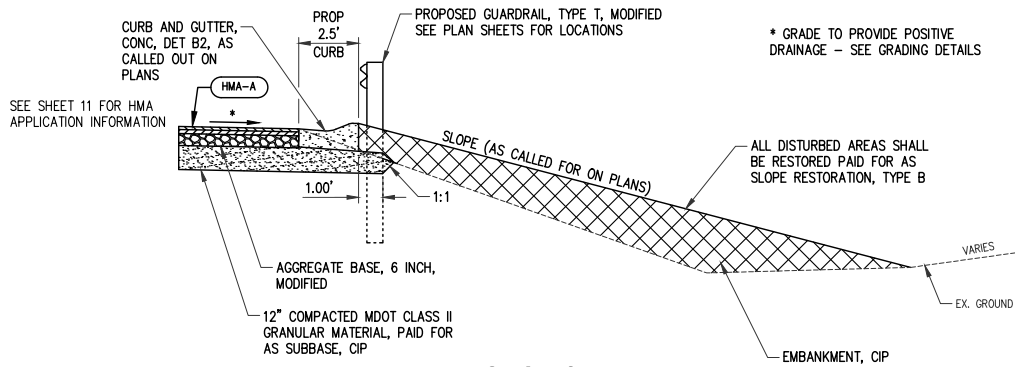


NORTH 4-3/4 MILE ROAD INTERSECTION

1" = 20'

RELOCATED GORDONVILLE RD & OBLITERATED ROAD AREA

1" = 20'



SECTION A-A

1" = 4'

GRADING TABLE				
POINT	DESCRIPTION	STATION	OFFSET	ELEVATION
1 *	EOP Match Ex	202+26.73	14.00, L	637.03
2 *	CL Match Ex	202+25.56	0.00,	637.31
3 *	EOP Match Ex	202+23.81	20.13, R	636.91
4 *	EOP	202+51.73	15.00, L	636.84
5 *	CL	202+51.73	0.00,	637.14
6 *	EOP	202+51.73	22.50, R	636.69
7 *	T/C	202+61.54	17.50, L	637.10
8 *	CL	202+61.62	0.00,	637.07
9 *	T/C	202+61.73	25.00, R	636.95
10 *	T/C	202+92.81	17.47, L	636.88
11 *	T/C	203+11.71	17.50, L	636.95
12 *	T/C	203+41.69	26.98, L	637.14
13 *	T/C	202+93.49	35.58, R	636.55
14 **	EOP Match Ex	7+30.25	11.36, L	637.60
15 **	EOP Match Ex	7+30.38	0.07, R	638.22
16 **	CL Match Ex	7+30.50	11.50, R	637.94
17 **	T/C	6+80.25	26.50, L	637.30
18 **	EOP	6+80.25	24.00, L	637.31
19 **	CL	6+80.48	0.00,	637.79

GRADING TABLE				
POINT	DESCRIPTION	STATION	OFFSET	ELEVATION
20 **	EOP	6+80.59	11.53, R	637.59
21 **	T/C	6+70.25	26.50, L	637.53
22 **	CL	6+70.48	0.00,	637.68
23 **	EOP	6+70.59	11.62, R	637.50
24 **	T/C	5+45.43	25.23, L	636.17
25 **	EOP Match Ex	5+42.24	19.96, L	635.78
26 **	CL Match Ex	5+44.20	0.15, L	636.09
27 **	EOP Match Ex	5+45.41	12.80, R	635.86
28 **	EOP Match Ex	3+77.61	13.02, L	632.48
29 **	EOP	3+67.61	13.00, L	632.09
30 **	EOP Match Ex	3+80.77	19.61, R	632.54
31 **	T/C	3+81.32	22.38, R	632.61
32 **	EOP	3+16.28	12.92, L	630.47
33 **	T/C	3+12.91	31.45, R	629.81
34 **	T/C	2+89.90	21.80, R	629.45
35 **	Inv	2+95.71	40.47, R	622.92
36 **	T/C	2+79.90	21.74, R	629.00
37 **	EOP	2+54.96	12.81, L	628.91
38	EOP Match Ex	2+29.96	12.84, L	628.49
39	EOP Match Ex	2+29.83	12.58, R	628.31

GRADING TABLE				
POINT	DESCRIPTION	STATION	OFFSET	ELEVATION
40***	T/C	10+47.01	29.50, L	631.56
41***	T/C	10+74.02	29.50, L	630.56
42***	T/C	10+54.74	17.50, R	630.16
43***	T/C	10+74.02	17.48, R	630.40
44***	EOP	10+84.01	27.00, L	630.07
45***	Inv	35+48.46	26.93, L	632.85
46***	EOP	35+66.06	13.42, L	638.14
47***	EOP	35+69.93	28.59, L	637.99
48***	EOP	35+91.49	13.36, L	638.32
49***	Inv	36+03.25	27.01, L	633.16
50***	EOP	35+83.18	28.29, L	637.89
51***	EOP	35+83.04	38.17, L	637.79
52***	EOP	35+70.03	38.14, L	637.90
53***	EOP	35+91.26	75.36, L	637.36
54***	EOP	35+80.70	82.18, L	637.46
55***	EOP	36+03.02	101.93, L	632.38
56***	EOP	35+93.48	109.20, L	637.16
57***	Inv	35+82.16	115.96, L	632.88
58***	Inv	35+58.85	138.90, L	630.78
59***	EOP	36+05.21	133.37, L	632.59

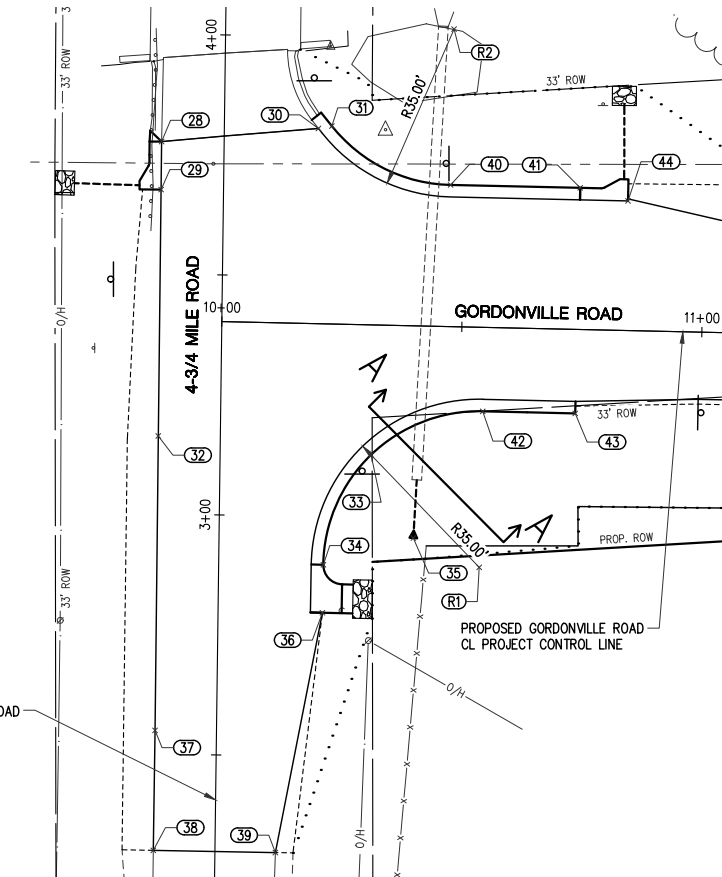
GRADING TABLE				
POINT	DESCRIPTION	STATION	OFFSET	ELEVATION
60***	EOP	36+14.60	126.58, L	636.71
61***	Inv	36+25.05	87.90, L	634.01
62***	Inv	36+48.46	74.37, L	634.50
63***	EOG	36+67.20	94.76, L	635.76
64***	EOG	36+86.02	85.68, L	635.70
65***	EOG	36+58.28	71.21, L	636.48
66***	EOG	36+77.93	62.24, L	636.44
67***	Inv	36+26.50	26.43, L	632.69
68***	EOG	36+50.80	32.41, L	637.66
69***	EOG	36+73.34	32.37, L	637.54
70***	EOP	36+32.01	13.27, L	635.96
71***	EOP	36+92.06	13.15, L	638.27
72***	Inv	36+98.24	26.28, L	632.97

RADIUS POINT TABLE			
POINT	DESCRIPTION	STATION	OFFSET
R1	Radius Point	2+89.78	54.28, R
R2	Radius Point	4+01.85	47.58, R
R3	Radius Point	5+16.37	62.76, L
R4	Radius Point	6+70.25	84.00, L

NOTE: ALL RADIUS POINTS ARE REFERENCED TO THE S. 4 3/4 MILE RD. PROJECT CONTROL LINE

LEGEND

EOP - EDGE OF PAVEMENT
CL - CENTER LINE
EOG - EDGE OF GRAVEL
Inv - INVERT
T/C - TOP OF CURB
* - PROPOSED GORDONVILLE ROAD CL TO WEST PROJECT CONTROL LINE
** - EXISTING FOUR 3/4 MILE ROAD CL PROJECT CONTROL LINE
*** - PROPOSED GORDONVILLE ROAD CL PROJECT CONTROL LINE



SOUTH 4-3/4 MILE ROAD INTERSECTION

1" = 20'

PLAN SUBMITTALS AND CHANGES		REV:
DATE	DESCRIPTION	
8/8/17	ISSUED FOR BIDS	

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SERVICES COMPANY



MIDLAND COUNTY ROAD COMMISSION
GORDONVILLE ROAD SAFETY IMP.

PREPARED FOR

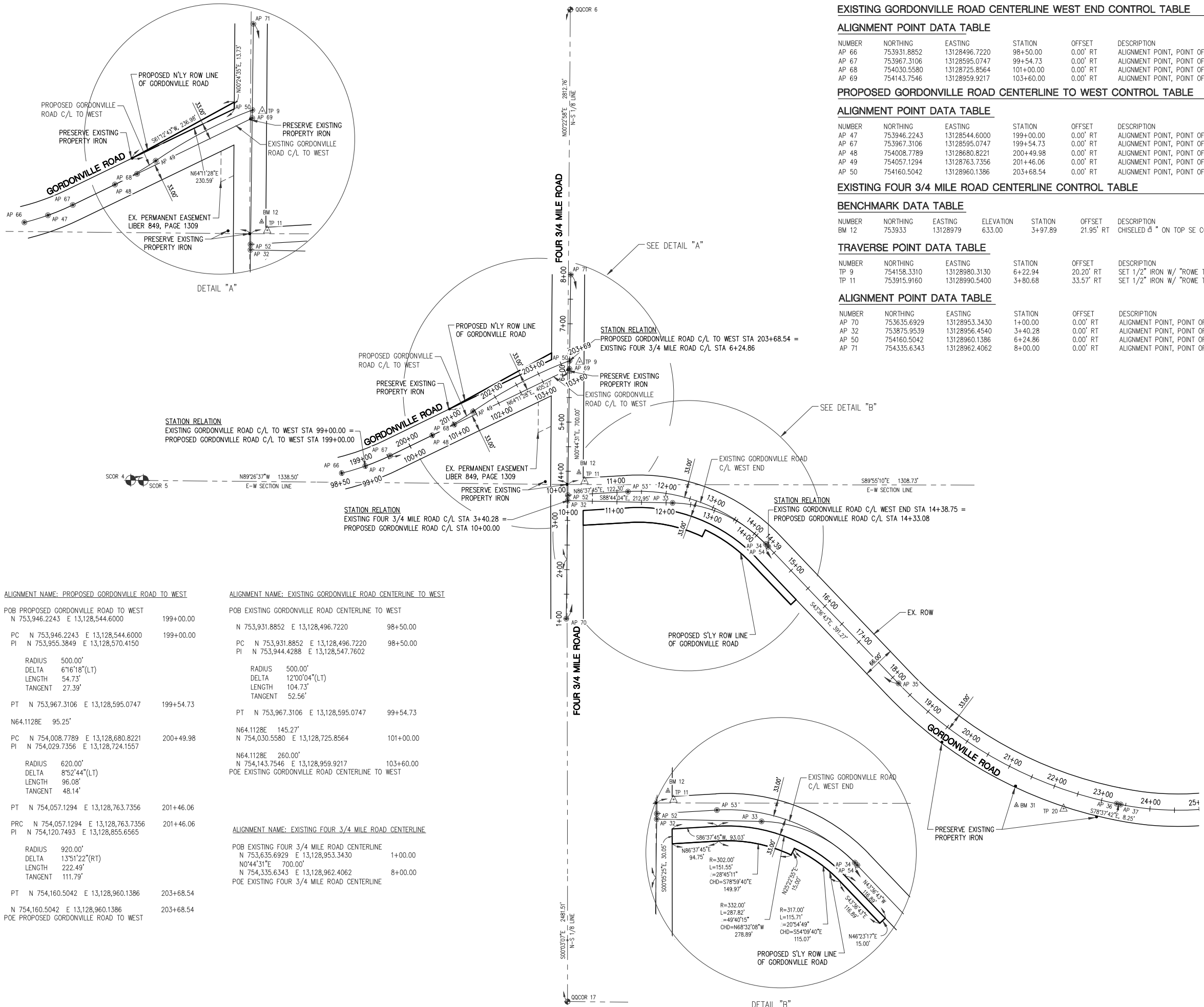
DETAIL GRADES

SHT# 5 OF 28
JOB No: 16M0094

PLAN DATE: AUGUST 2017
PROJECT MGR: MJS
REVIEWER: ENJ
SCALE: SEE DETAIL

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127 S. Main Street
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ALIGNMENT NAME: PROPOSED GORDONVILLE ROAD TO WEST

POB PROPOSED GORDONVILLE ROAD TO WEST N 753,946.2243 E 13,128,544.6000	199+00.00
PC N 753,946.2243 E 13,128,544.6000 PI N 753,955.3849 E 13,128,570.4150	199+00.00
RADIUS 500.00' DELTA 6°16'18"(LT) LENGTH 54.73' TANGENT 27.39'	
PT N 753,967.3106 E 13,128,595.0747	199+54.73
N64.1128E 95.25'	
PC N 754,008.7789 E 13,128,680.8221 PI N 754,029.7356 E 13,128,724.1557	200+49.98
RADIUS 620.00' DELTA 8°52'44"(LT) LENGTH 96.08' TANGENT 48.14'	
PT N 754,057.1294 E 13,128,763.7356	201+46.06
PRC N 754,057.1294 E 13,128,763.7356 PI N 754,120.7493 E 13,128,855.6565	201+46.06
RADIUS 920.00' DELTA 13°51'22"(RT) LENGTH 222.49' TANGENT 111.79'	
PT N 754,160.5042 E 13,128,960.1386	203+68.54
N 754,160.5042 E 13,128,960.1386 POE PROPOSED GORDONVILLE ROAD TO WEST	203+68.54

ALIGNMENT NAME: EXISTING GORDONVILLE ROAD CENTERLINE TO WEST

POB EXISTING GORDONVILLE ROAD CENTERLINE TO WEST N 753,931.8852 E 13,128,496.7220	98+50.00
PC N 753,931.8852 E 13,128,496.7220 PI N 753,944.4288 E 13,128,547.7602	98+50.00
RADIUS 500.00' DELTA 12°00'04"(LT) LENGTH 104.73' TANGENT 52.56'	
PT N 753,967.3106 E 13,128,595.0747	99+54.73
N64.1128E 145.27'	
N64.1128E 145.27' N 754,030.5580 E 13,128,725.8564	101+00.00
N64.1128E 260.00' N 754,143.7546 E 13,128,959.9217	103+60.00
POE EXISTING GORDONVILLE ROAD CENTERLINE TO WEST	

ALIGNMENT NAME: EXISTING FOUR 3/4 MILE ROAD CENTERLINE

POB EXISTING FOUR 3/4 MILE ROAD CENTERLINE N 753,635.6929 E 13,128,953.3430 N0°44'31"E 700.00'	1+00.00
N 754,335.6343 E 13,128,962.4062	8+00.00
POE EXISTING FOUR 3/4 MILE ROAD CENTERLINE	

EXISTING GORDONVILLE ROAD CENTERLINE WEST END CONTROL TABLE

ALIGNMENT POINT DATA TABLE

NUMBER	NORTHING	EASTING	STATION	OFFSET	DESCRIPTION
AP 66	753931.8852	13128496.7220	98+50.00	0.00' RT	ALIGNMENT POINT, POINT OF BEGINNING
AP 67	753967.3106	13128595.0747	99+54.73	0.00' RT	ALIGNMENT POINT, POINT OF TANGENT
AP 68	754030.5580	13128725.8564	101+00.00	0.00' RT	ALIGNMENT POINT, POINT OF INTERSECTION
AP 69	754143.7546	13128959.9217	103+60.00	0.00' RT	ALIGNMENT POINT, POINT OF ENDING

PROPOSED GORDONVILLE ROAD CENTERLINE TO WEST CONTROL TABLE

ALIGNMENT POINT DATA TABLE

NUMBER	NORTHING	EASTING	STATION	OFFSET	DESCRIPTION
AP 47	753946.2243	13128544.6000	199+00.00	0.00' RT	ALIGNMENT POINT, POINT OF BEGINNING
AP 67	753967.3106	13128595.0747	199+54.73	0.00' RT	ALIGNMENT POINT, POINT OF TANGENT
AP 48	754008.7789	13128680.8221	200+49.98	0.00' RT	ALIGNMENT POINT, POINT OF CURVATURE
AP 49	754057.1294	13128763.7356	201+46.06	0.00' RT	ALIGNMENT POINT, POINT OF REVERSE CURVATURE
AP 50	754160.5042	13128960.1386	203+68.54	0.00' RT	ALIGNMENT POINT, POINT OF ENDING

EXISTING FOUR 3/4 MILE ROAD CENTERLINE CONTROL TABLE

BENCHMARK DATA TABLE

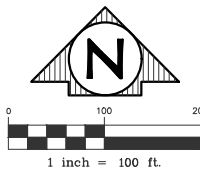
NUMBER	NORTHING	EASTING	ELEVATION	STATION	OFFSET	DESCRIPTION
BM 12	753933	13128979	633.00	3+97.89	21.95' RT	CHISELED 5" ON TOP SE CORNER HIGHEST STEP IN SE WINGWALL OF BRIDGE OVER PINE RIVER.

TRAVERSE POINT DATA TABLE

NUMBER	NORTHING	EASTING	STATION	OFFSET	DESCRIPTION
TP 9	754158.3310	13128980.3130	6+22.94	20.20' RT	SET 1/2" IRON W/ "ROWE TRAV" CAP 21' E. AND 43' N. OF INTERSECTION OF GORDONVILLE ROAD AND 4 3/4 MILE ROAD.
TP 11	753915.9160	13128990.5400	3+80.68	33.57' RT	SET 1/2" IRON W/ "ROWE TRAV" CAP 9' NW OF STOP SIGN, 24' SE OF SE CORNER TO BRIDGE OVER PINE RIVER.

ALIGNMENT POINT DATA TABLE

NUMBER	NORTHING	EASTING	STATION	OFFSET	DESCRIPTION
AP 70	753635.6929	13128953.3430	1+00.00	0.00' RT	ALIGNMENT POINT, POINT OF BEGINNING
AP 32	753875.9539	13128956.4540	3+40.28	0.00' RT	ALIGNMENT POINT, POINT OF BEGINNING FOR PROPOSED GORDONVILLE ROAD CENTERLINE
AP 50	754160.5042	13128960.1386	6+24.86	0.00' RT	ALIGNMENT POINT, POINT OF ENDING FOR PROPOSED GORDONVILLE ROAD WEST CENTERLINE
AP 71	754335.6343	13128962.4062	8+00.00	0.00' RT	ALIGNMENT POINT, POINT OF ENDING



LEGEND

- △ BENCHMARK
- △ TRAVERSE POINT
- FOUND SURVEY MONUMENTATION
- ALIGNMENT POINT
- ⊙ SECTION CORNER

SURVEY NOTES:

- HORIZONTAL DATUM: NAD83/CORS2011 MCS SOUTH ZONE
- VERTICAL DATUM: NAVD88



PLAN SUBMITTALS AND CHANGES

BIDDING DOCUMENTS	
DATE	DESCRIPTION
8/8/17	ISSUED FOR BIDS

ROWE PROFESSIONAL
SERVICES COMPANY



MIDLAND COUNTY ROAD COMMISSION
GORDONVILLE ROAD SAFETY IMP.

ALIGNMENT & CONTROL SHEET

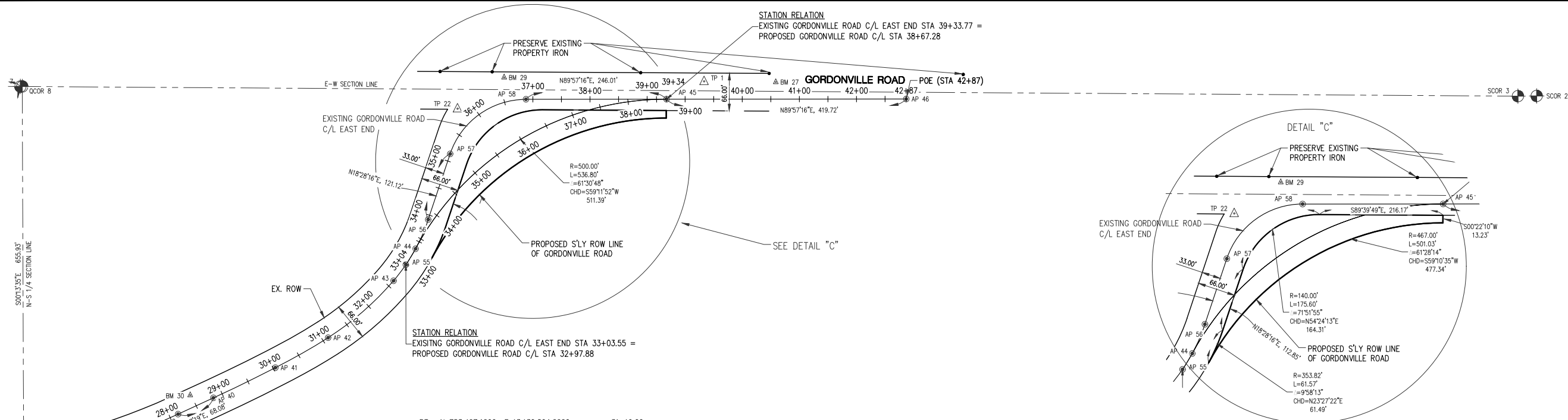
PLAN DATE: AUGUST 2017
PROJECT MGR: MJS
REVIEWER: JR
SCALE: 1"=100'

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127 S. Main Street
Mt. Pleasant, MI 48858

REV:

SHT# 6 OF 28
JOB No: 16M0094



ALIGNMENT NAME: PROPOSED GORDONVILLE ROAD CENTERLINE			
POB PROPOSED GORDONVILLE ROAD CENTERLINE N 753,875.9539 E 13,128,956.4540	10+00.00	PT N 753,467.1200 E 13,130,804.2220	31+10.00
S88.4404E 212.95'		PCC N 753,467.1200 E 13,130,804.2220	31+10.00
PC N 753,871.2509 E 13,129,169.3538	12+12.95	PI N 753,508.5623 E 13,130,868.8094	
PI N 753,868.7735 E 13,129,281.5023			
RADIUS 270.00'		RADIUS 522.42'	
DELTA 45°07'21"(RT)		DELTA 16°42'47"(LT)	
LENGTH 212.63'		LENGTH 152.39'	
TANGENT 112.18'		TANGENT 76.74'	
PT N 753,787.5552 E 13,129,358.8780	14+25.59	PT N 753,566.8278 E 13,130,918.7505	32+62.39
S43.3643E 391.27'		PCC N 753,566.8278 E 13,130,918.7505	32+62.39
PC N 753,504.2653 E 13,129,628.7652	18+16.86	PI N 753,592.7731 E 13,130,940.9885	
PI N 753,311.9857 E 13,129,811.9479			
RADIUS 841.86'		RADIUS 320.87'	
DELTA 35°00'59"(LT)		DELTA 12°09'28"(RT)	
LENGTH 514.50'		LENGTH 68.09'	
TANGENT 265.57'		TANGENT 34.17'	
PT N 753,259.6228 E 13,130,072.3044	23+31.36	PT N 753,622.8199 E 13,130,957.2636	33+30.48
S78.3742E 8.25'		PRC N 753,622.8199 E 13,130,957.2636	33+30.48
PC N 753,257.9970 E 13,130,080.3886	23+39.61	PI N 753,743.7416 E 13,131,022.7579	
PI N 753,232.6106 E 13,130,206.6135			
RADIUS 593.09'		RADIUS 500.00'	
DELTA 24°29'47"(LT)		DELTA 61°30'48"(RT)	
LENGTH 253.57'		LENGTH 536.80'	
TANGENT 128.75'		TANGENT 297.55'	
PT N 753,261.8468 E 13,130,332.0027	25+93.18	PT N 753,884.6920 E 13,131,396.5188	38+67.29
PCC N 753,261.8468 E 13,130,332.0027	25+93.18	N89.5716E 419.72'	
PI N 753,286.7228 E 13,130,440.4617		N 753,885.0264 E 13,131,816.2432	42+87.01
RADIUS 1,077.56'		POE PROPOSED GORDONVILLE ROAD CENTERLINE	
DELTA 11°47'30"(LT)			
LENGTH 221.76'			
TANGENT 111.28'			
PT N 753,333.2377 E 13,130,541.5484	28+14.94		
N65.1719E 68.08'			
PC N 753,361.6976 E 13,130,603.3924	28+83.02	PC N 753,594.9943 E 13,130,940.3102	33+03.55
PI N 753,386.9321 E 13,130,658.2275		PI N 753,631.7667 E 13,130,965.3596	
RADIUS 2,601.57'		RADIUS 320.82'	
DELTA 2°39'30"(LT)		DELTA 15°47'30"(LT)	
LENGTH 120.70'		LENGTH 88.42'	
TANGENT 60.36'		TANGENT 44.49'	
PT N 753,414.6827 E 13,130,711.8332	30+03.72	PT N 753,673.9682 E 13,130,979.4562	33+91.97
PCC N 753,414.6827 E 13,130,711.8332	30+03.72	N18.2816E 121.12'	
PI N 753,438.4672 E 13,130,759.4092		PC N 753,788.8518 E 13,131,017.8313	35+13.10
RADIUS 1,009.40'		PI N 753,884.4158 E 13,131,049.7530	
DELTA 6°01'58"(LT)			
LENGTH 106.28'			
TANGENT 53.19'			
		RADIUS 140.00'	
		DELTA 71°29'00"(RT)	
		LENGTH 174.67'	
		TANGENT 100.75'	
		PT N 753,884.4960 E 13,131,150.5075	36+87.76
		N89.5716E 246.01'	
		N 753,884.6920 E 13,131,396.5188	39+33.77
		POE EXISTING GORDONVILLE ROAD CENTERLINE EAST END	

PROPOSED GORDONVILLE ROAD CENTERLINE CONTROL TABLE

BENCHMARK DATA TABLE

NUMBER	NORTHING	EASTING	ELEVATION	STATION	OFFSET	DESCRIPTION
BM 12	753933	13128979	633.00	10+21.43	57.81' LT	CHISELED 3" ON TOP SE CORNER HIGHEST STEP IN SE WINGWALL OF BRIDGE OVER PINE RIVER.
BM 27	753915	13131588	637.97	N/A	N/A	TOP NNW FLANGE BOLT OF HYDRANT, AT HOUSE #887.
BM 29	753923	13131112	637.20	36+24.46	108.65' LT	TOP NE FLANGE BOLT OF HYDRANT, AT HOUSE #819.
BM 30	753366	13130563	636.84	28+48.17	21.23' LT	SET SPIKE IN S. FACE OF DEAD 10" ASH, 5± N. OF GRAVEL AT TOP OF BANK.
BM 31	753256	13129869	639.16	21+45.11	65.35' RT	SET SPIKE IN NW FACE OF POWER POLE, W. EDGE OF YARD TO HOUSE #720.

TRAVERSE POINT DATA TABLE

NUMBER	NORTHING	EASTING	STATION	OFFSET	DESCRIPTION
TP 1	753915.8760	13131462.3460	39+33.14	31.13' LT	SET 1/2" IRON W/ "ROWE TRAV" CAP 16± N. OF MAILBOX #859, 250± E. OF CURVE AT RIVER.
TP 9	754158.3310	13128980.3130	10+17.62	282.84' LT	SET 1/2" IRON W/ "ROWE TRAV" CAP 21' E. AND 43' N. OF INTERSECTION OF GORDONVILLE ROAD AND 4 3/4 MILE ROAD.
TP 11	753915.9160	13128990.5400	10+33.20	40.71' LT	SET 1/2" IRON W/ "ROWE TRAV" CAP 9' NW OF STOP SIGN, 24' SE OF SE CORNER TO BRIDGE OVER PINE RIVER.
TP 20	753249.8250	13129964.3700	22+31.62	37.05' RT	SET 1/2" IRON W/ "ROWE TRAV" CAP 14' SW OF W. END 12" CPP, 28' W. OF CL GRAVEL DRIVE.
TP 21	753286.4490	13130551.1070	28+04.52	46.55' RT	SET 1/2" IRON W/ "ROWE TRAV" CAP 90± EASTERLY OF CORNER OF WOODS, 47± SE OF CL ROAD.
TP 22	753868.0620	13131030.7730	35+43.55	106.39' LT	FOUND 1/2" IRON 3± NW OF GUARDRAIL, W. SIDE OF GORDONVILLE ROAD CURVE TO EAST.

ALIGNMENT POINT DATA TABLE

NUMBER	NORTHING	EASTING	STATION	OFFSET	DESCRIPTION
AP 32	753875.9539	13128956.4540	10+00.00	0.00' RT	ALIGNMENT POINT, POINT OF BEGINNING
AP 33	753871.2509	13129169.3538	12+12.95	0.00' RT	ALIGNMENT POINT, POINT OF CURVATURE
AP 34	753787.5552	13129358.8780	14+25.59	0.00' RT	ALIGNMENT POINT, POINT OF TANGENT
AP 35	753504.2653	13129628.7652	18+16.86	0.00' RT	ALIGNMENT POINT, POINT OF CURVATURE
AP 36	753259.6228	13130072.3044	23+31.36	0.00' RT	ALIGNMENT POINT, POINT OF TANGENT
AP 37	753257.9970	13130080.3886	23+39.61	0.00' RT	ALIGNMENT POINT, POINT OF CURVATURE
AP 38	753261.8468	13130332.0027	25+93.18	0.00' RT	ALIGNMENT POINT, POINT OF COMPOUND CURVATURE
AP 39	753333.2377	13130541.5484	28+14.94	0.00' RT	ALIGNMENT POINT, POINT OF TANGENT
AP 40	753361.6976	13130603.3924	28+83.02	0.00' RT	ALIGNMENT POINT, POINT OF CURVATURE
AP 41	753414.6827	13130711.8332	30+03.72	0.00' RT	ALIGNMENT POINT, POINT OF COMPOUND CURVATURE
AP 42	753467.1200	13130804.2220	31+10.00	0.00' RT	ALIGNMENT POINT, POINT OF COMPOUND CURVATURE
AP 43	753566.8278	13130918.7505	32+62.39	0.00' RT	ALIGNMENT POINT, POINT OF COMPOUND CURVATURE
AP 44	753622.8199	13130957.2636	33+30.48	0.00' RT	ALIGNMENT POINT, POINT OF REVERSE CURVATURE
AP 45	753884.6920	13131396.5188	38+67.29	0.00' RT	ALIGNMENT POINT, POINT OF TANGENT
AP 46	753885.0264	13131816.2432	42+87.00	0.00' RT	ALIGNMENT POINT, POINT OF ENDING

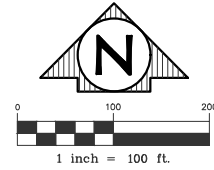
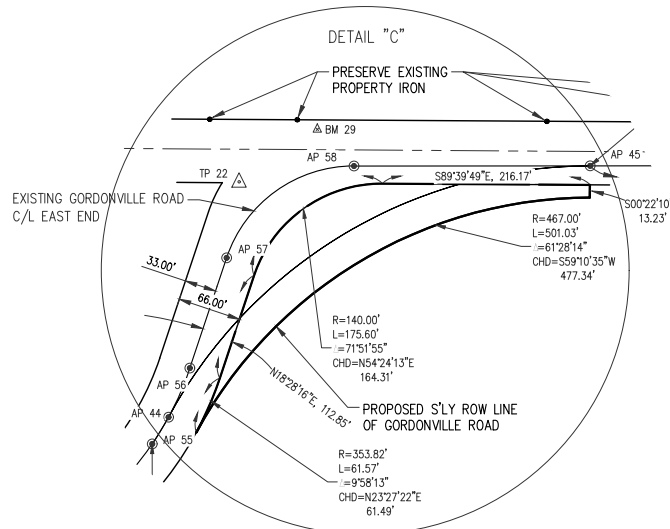
EXISTING GORDONVILLE ROAD CENTERLINE EAST END CONTROL TABLE

ALIGNMENT POINT DATA TABLE

NUMBER	NORTHING	EASTING	STATION	OFFSET	DESCRIPTION
AP 55	753594.9943	13130940.3102	33+03.55	0.00' RT	ALIGNMENT POINT, POINT OF BEGINNING FOR EXISTING GORDONVILLE ROAD EAST CENTERLINE
AP 56	753673.9682	13130979.4562	33+91.97	0.00' RT	ALIGNMENT POINT, POINT OF TANGENT
AP 57	753788.8518	13131017.8313	35+13.10	0.00' RT	ALIGNMENT POINT, POINT OF CURVATURE
AP 58	753884.4960	13131150.5075	36+87.76	0.00' RT	ALIGNMENT POINT, POINT OF TANGENT
AP 45	753884.6920	13131396.5188	39+33.77	0.00' RT	ALIGNMENT POINT, POINT OF ENDING FOR EXISTING GORDONVILLE ROAD EAST CENTERLINE

SECTION CORNER DATA TABLE

NUMBER	NORTHING	EASTING	STATION	OFFSET	DESCRIPTION
SCOR 2	753890.4760	13132919.9070	N/A	N/A	NORTHEAST CORNER OF SECTION 3, T13N-R1E, MOUNT HALEY TOWNSHIP, MIDLAND COUNTY, MICHIGAN, FOUND REMON IN MON. BOX.
SCOR 3	753890.0870	13132887.0450	N/A	N/A	SOUTHEAST CORNER OF SECTION 34, T14-R1E, HOMER TOWNSHIP, MIDLAND COUNTY, MICHIGAN, FOUND REMON IN MON. BOX.
SCOR 4	753921.8270	13127618.4430	N/A	N/A	NORTHWEST CORNER OF SECTION 3, T13N-R1E, MOUNT HALEY TOWNSHIP, MIDLAND COUNTY, MICHIGAN, FOUND REMON IN MON. BOX.
SCOR 5	753921.4820	13127644.2050	N/A	N/A	SOUTHWEST CORNER OF SECTION 34, T14N-R1E, HOMER TOWNSHIP, MIDLAND COUNTY, MICHIGAN, FOUND REMON IN MON. BOX.
QCOR 6	756569.4630	13128973.6970	35+42.47	3501.84' LT	WEST 1/8 CORNER ON THE E-W 1/4 LINE OF SECTION 34, T14N-R1E, HOMER TOWNSHIP, MIDLAND COUNTY, MICHIGAN, FOUND MON. BOX.
QCOR 17	751275.2600	13128957.1590	21+38.29	2246.13' RT	WEST 1/8 CORNER ON THE E-W 1/4 LINE OF SECTION 3, T13N-R1E, MOUNT HALEY TOWNSHIP, MIDLAND COUNTY, MICHIGAN, FOUND PIPE.
QCOR 7	753906.9890	13130265.6040	27+88.46	636.43' LT	SOUTH 1/4 CORNER OF SECTION 34, T14N-R1E, HOMER TOWNSHIP, MIDLAND COUNTY, MICHIGAN, FOUND REMON IN WOODS.
QCOR 8	753906.9310	13130268.8370	27+95.63	635.09' LT	NORTH 1/4 CORNER OF SECTION 3, T13N-R1E, MOUNT HALEY TOWNSHIP, MIDLAND COUNTY, MICHIGAN, FOUND IRON W/ CAP #43066.
CCOR 61	751263.1520	13130279.2800	24+76.18	1984.51' RT	CENTER OF SECTION 3, T13N-R1E, MOUNT HALEY TOWNSHIP, MIDLAND COUNTY, MICHIGAN, FOUND 3/4" PIPE IN MON. BOX.



LEGEND

- △ BENCHMARK
- △ TRAVERSE POINT
- FOUND SURVEY MONUMENTATION
- ALIGNMENT POINT
- ⊕ SECTION CORNER

- SURVEY NOTES:
- HORIZONTAL DATUM: NAD83/CORS2011 MCS SOUTH ZONE
 - VERTICAL DATUM: NAVD88



PLAN SUBMITTALS AND CHANGES

BIDDING DOCUMENTS	
DATE	DESCRIPTION
8/8/17	ISSUED FOR BIDS

PLAN DATE: AUGUST 2017
PROJECT MGR: MJS
REVIEWER: JR
SCALE: 1"=100'

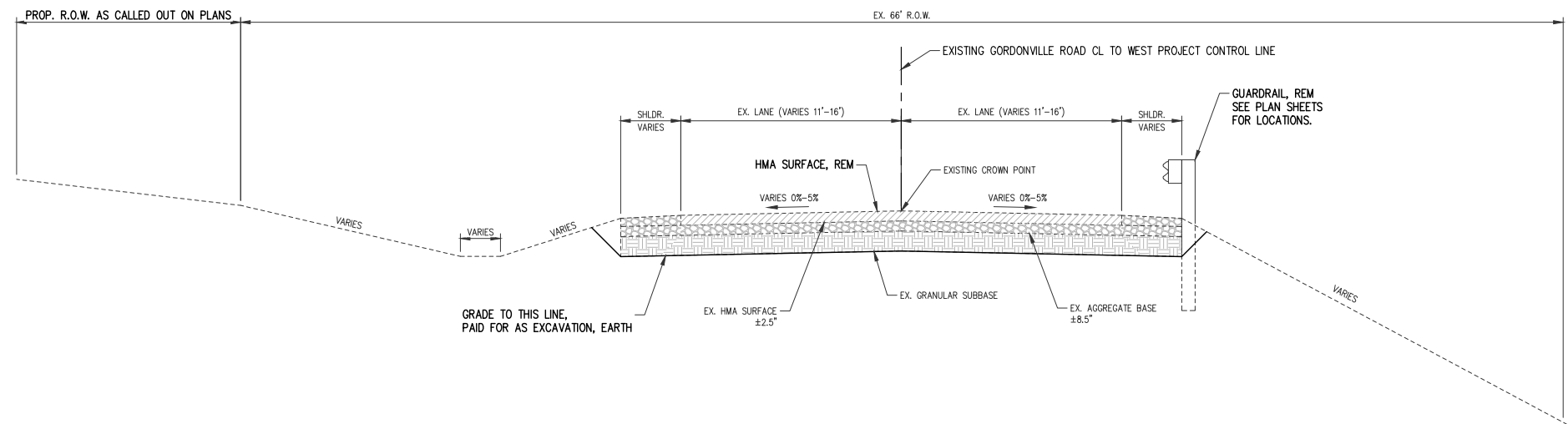
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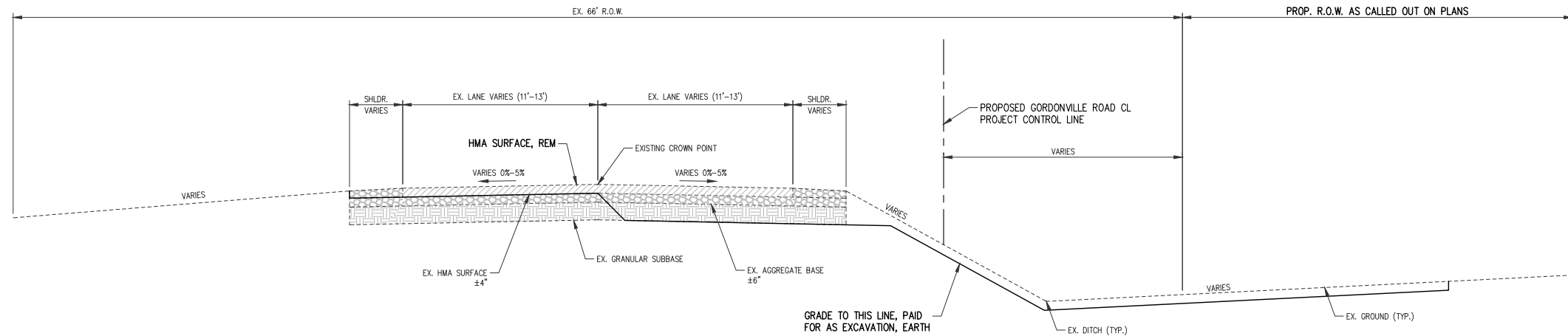
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MIDLAND COUNTY ROAD COMMISSION
GORDONVILLE ROAD SAFETY IMP.
ALIGNMENT & CONTROL SHEET

REV:
SHT# 7 OF 28
JOB No: 16M0094

CONTINUED NEXT COLUMN

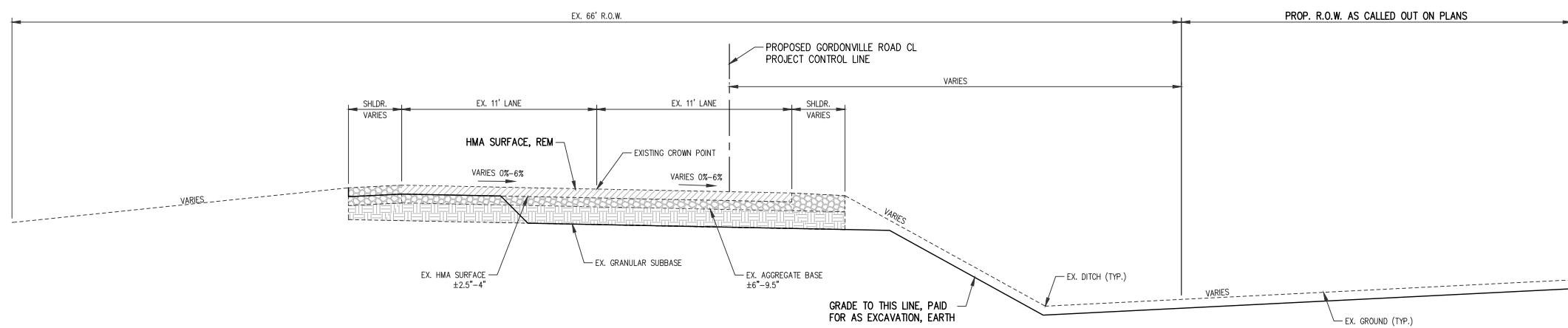


TYPICAL EXISTING CROSS SECTION
APPLIES:
P.O.B. (STA. 100+00) TO STA. 103+42



TYPICAL EXISTING CROSS SECTION
APPLIES:
STA. 10+19 TO STA. 11+22

NOTE: FROM STA. 10+74 TO STA 13+50 CONTRACTOR SHALL RETAIN EXISTING AGGREGATE BASE AND SUBBASE TO CONSTRUCT PROPOSED AGGREGATE SHOULDER.



TYPICAL EXISTING CROSS SECTION
APPLIES:
STA. 11+22 TO STA. 14+11

NOTE: FROM STA. 10+74 TO STA 13+50 CONTRACTOR SHALL RETAIN EXISTING AGGREGATE BASE AND SUBBASE TO CONSTRUCT PROPOSED AGGREGATE SHOULDER.



PLAN SUBMITTALS AND CHANGES	
BIDDING DOCUMENTS	
DATE	DESCRIPTION
8/8/17	ISSUED FOR BIDS

REV: SHT# 8 OF 28 JOB No: 16M0094

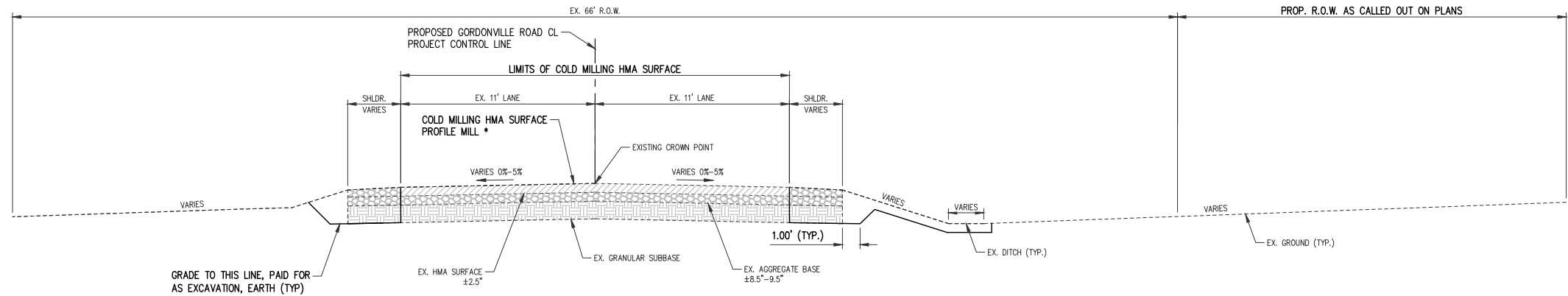
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PLAN DATE: AUGUST 2017
PROJECT MGR: MJS
REVIEWER: ENJ
SCALE: NO SCALE

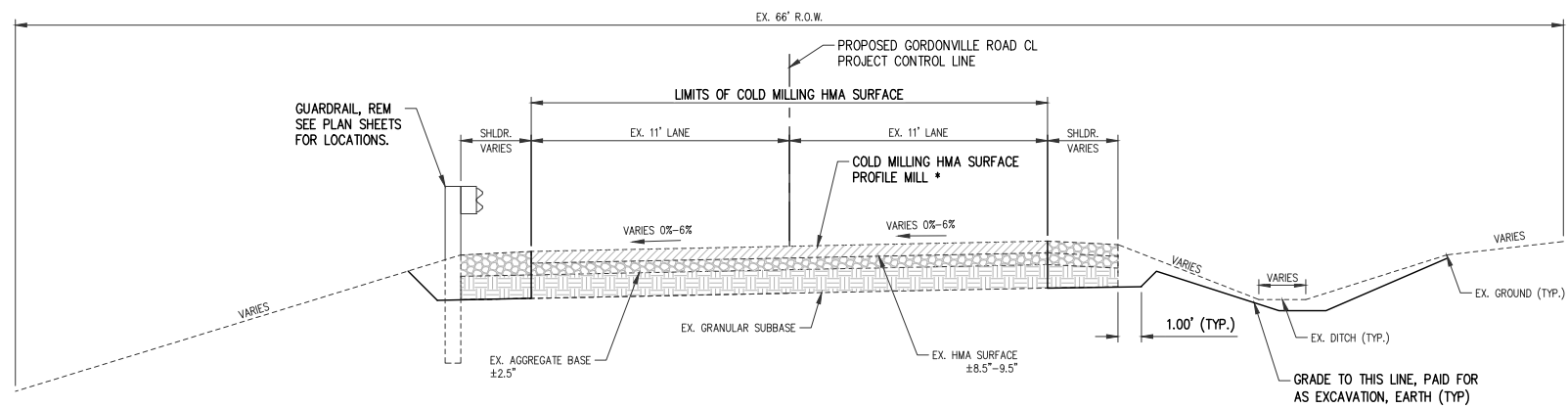
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GORDONVILLE ROAD SAFETY IMP.

TYPICAL SHEET



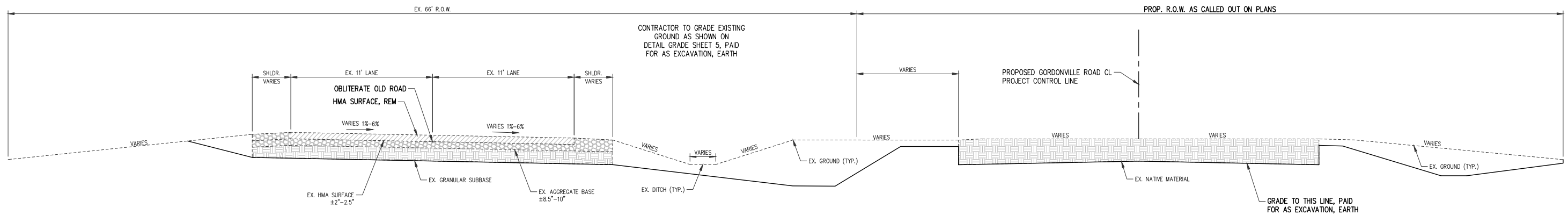
TYPICAL EXISTING CROSS SECTION

APPLIES:
STA. 14+11 TO STA. 19+10
STA. 28+20 TO STA. 29+10
* MILLING DEPTH VARIES TO ACHIEVE PROPOSED PROFILE



TYPICAL EXISTING CROSS SECTION

APPLIES:
STA. 19+10 TO STA. 28+20
STA. 29+10 TO STA. 33+30
* MILLING DEPTH VARIES TO ACHIEVE PROPOSED PROFILE



TYPICAL EXISTING CROSS SECTION

APPLIES:
STA. 33+30 TO STA. 36+88

GORDONVILLE ROAD PROFILE MILLING CHART					
START STATION	END STATION	START MILLING PROFILE	END MILLING PROFILE	CONTROL PT.	DEPTH AT CONTROL PT.
STA 14+11 START MILLING	STA 14+75	2.9% 2.9%	2% 2%	CENTERLINE OF PAVEMENT	1.0"
STA 14+75	STA 15+24	2% 2%	0% 2%	CENTERLINE OF PAVEMENT	1.0"
STA 15+24	STA 15+73	0% 2%	2% 2%	CENTERLINE OF PAVEMENT	1.0"
STA 15+73	STA 16+70	2% 2%	2% 2%	CENTERLINE OF PAVEMENT	1.0"
STA 16+70	STA 17+19	2% 2%	2% 0%	CENTERLINE OF PAVEMENT	1.0"
STA 17+19	STA 17+68	2% 0%	2% 2%	CENTERLINE OF PAVEMENT	1.0"
STA 17+68	STA 18+66	2% 2%	6% 6%	CENTERLINE OF PAVEMENT	1.0"
STA 18+66	STA 27+66	6% 6%	6% 6%	LEFT EDGE OF PAVEMENT	1.0"
STA 27+66	STA 28+64	6% 6%	2% 2%	CENTERLINE OF PAVEMENT	1.0"
STA 28+64	STA 28+81	2% 2%	2% 2%	CENTERLINE OF PAVEMENT	1.0"
STA 28+81	STA 29+08	2% 2%	3.1% 3.1%	CENTERLINE OF PAVEMENT	1.0"
STA 29+08	STA 29+80	3.1% 3.1%	3.1% 3.1%	CENTERLINE OF PAVEMENT	1.0"
STA 29+80	STA 30+53	3.1% 3.1%	6% 6%	LEFT EDGE OF PAVEMENT	1.0"
STA 30+53	STA 31+83	6% 6%	6% 6%	LEFT EDGE OF PAVEMENT	1.0"
STA 31+83	STA 33+30 STOP MILLING	6% 6%	0% 0%	CENTERLINE OF PAVEMENT	1.0"



Know what's below.
Call before you dig.

PLAN SUBMITTALS AND CHANGES	
BIDDING DOCUMENTS	
DATE	DESCRIPTION
8/8/17	ISSUED FOR BIDS

REV:

SHT# 9 OF 28

JOB No: 16M0094

PLAN DATE: AUGUST 2017

PROJECT MGR: MJS

REVIEWER: ENJ

SCALE: NO SCALE

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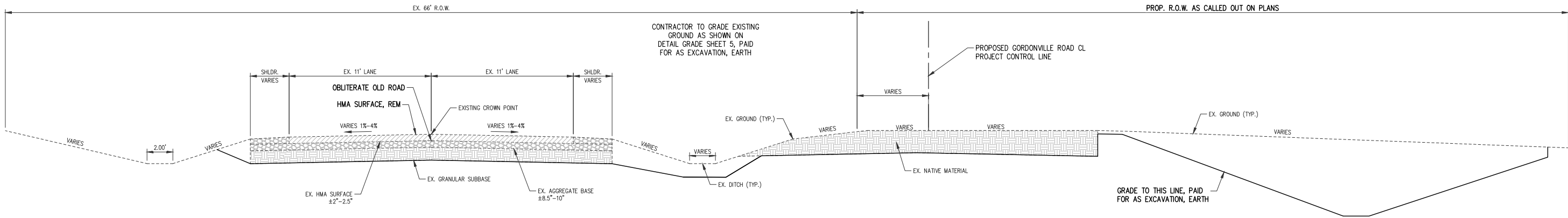
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TYPICAL SHEET

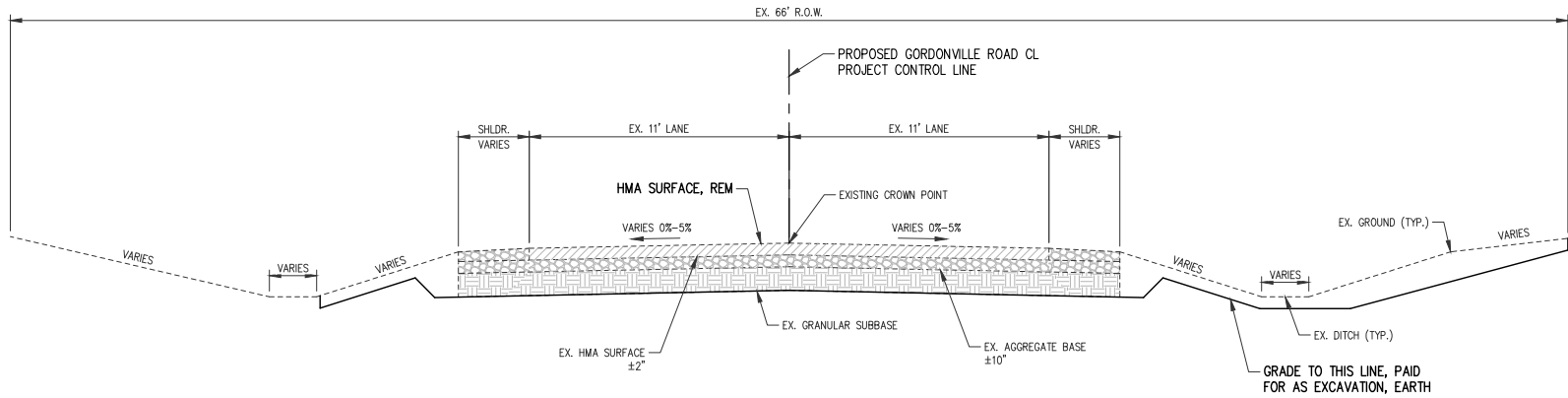
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TYPICAL EXISTING CROSS SECTION

APPLIES:
STA. 36+88 TO STA. 38+67



TYPICAL EXISTING CROSS SECTION

APPLIES:
STA. 38+67 TO P.O.E. (STA 42+87)



Know what's **below.**
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PLAN SUBMITTALS AND CHANGES	
BIDDING DOCUMENTS	
DATE	DESCRIPTION
8/8/17	ISSUED FOR BIDS

REV:

SHT# 10 OF 28
JOB No: 16M0094

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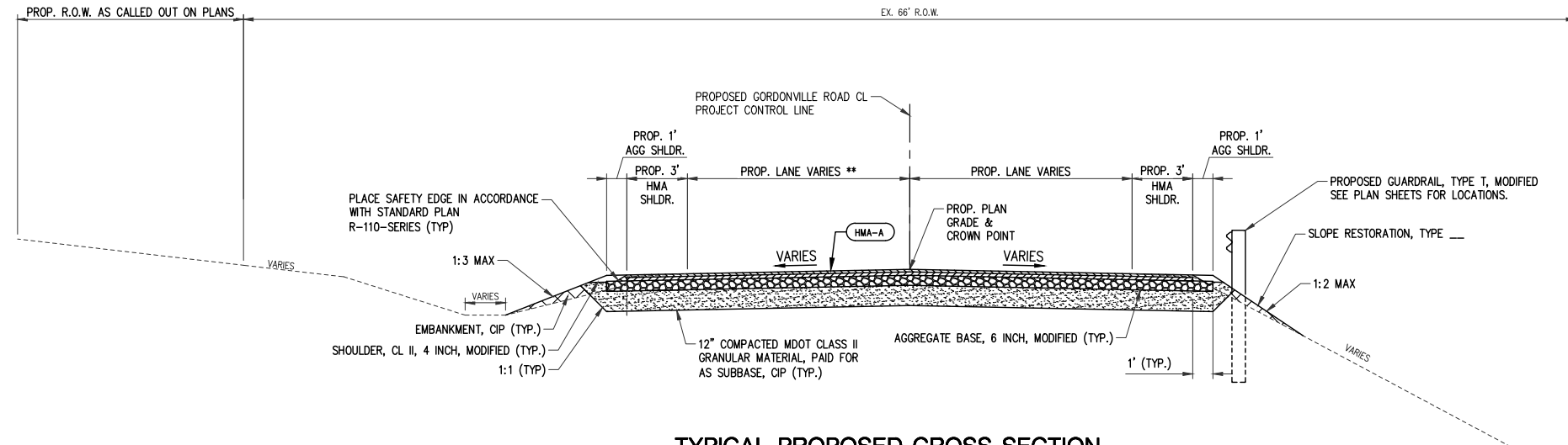
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TYPICAL SHEET

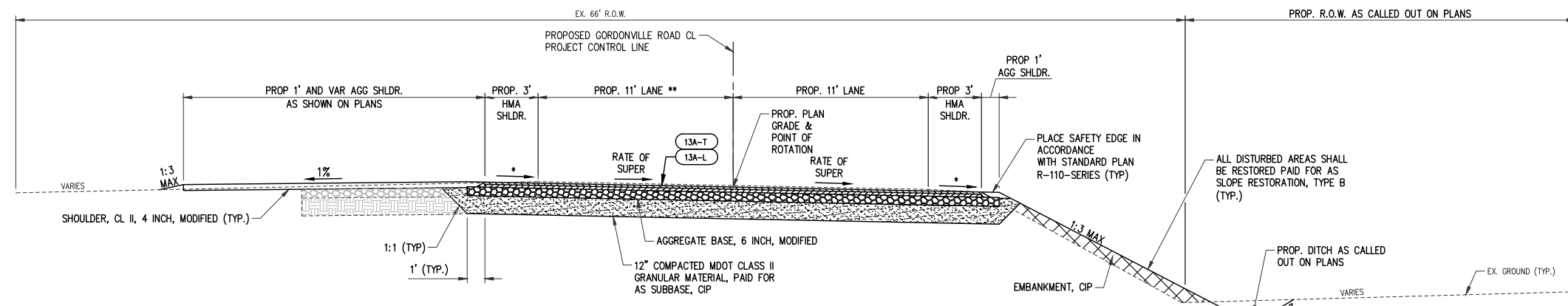
PLAN DATE: AUGUST 2017
PROJECT MGR: MJS
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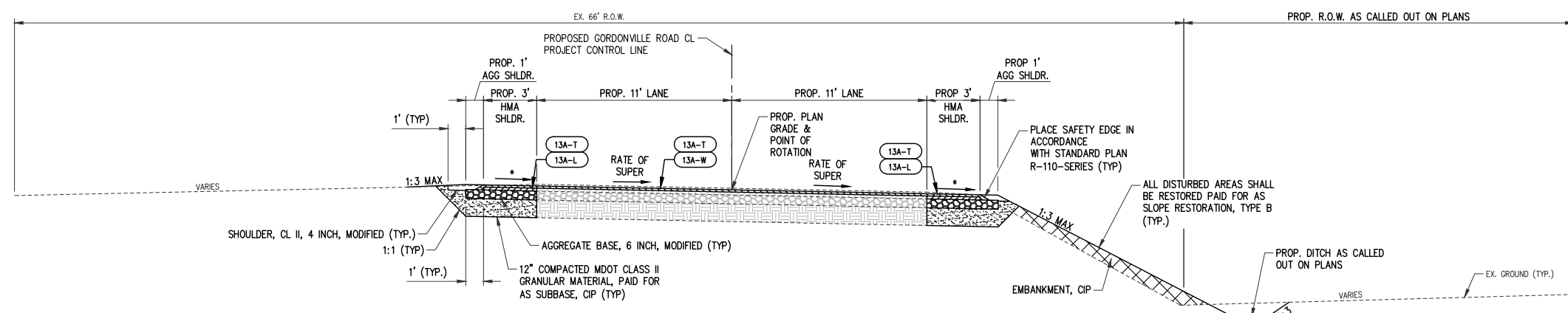
TYPICAL PROPOSED CROSS SECTION
APPLIES:
EXISTING GORDONVILLE ROAD CL TO WEST PROJECT CONTROL LINE P.O.B. (STA 100+00)
= PROPOSED GORDONVILLE ROAD CL TO WEST PROJECT CONTROL LINE STA. 200+00 TO STA. 203+43
STA. 10+19 TO STA. 10+84
STA. 40+14 TO STA. 40+25

NOTE: STA 40+14 TO STA. 40+25
HMA APPLICATION IS PAID FOR AS
13A-T AND 13A-L
**NOTE: PROP 25' LANE STA 10+66
TO STA 10+84.



TYPICAL PROPOSED CROSS SECTION
APPLIES:
STA. 10+84 TO STA. 14+11

**NOTE: PROP LANE VARIES FROM
25' AT STA 10+84 TO 11' AT STA
11+49



TYPICAL PROPOSED CROSS SECTION
APPLIES:
STA. 14+11 TO STA. 15+73

GORDONVILLE ROAD SUPERELEVATION CHART	
2%	2%
STA 10+66	
0%	2%
STA 11+15	
2%	2%
STA 11+64	
6%	6%
STA 12+62 TO STA 13+77	
2%	2%
STA 14+75	
0%	2%
STA 15+24	
2%	2%
STA 15+73	

* SEE STANDARD PLAN R-107-H FOR
SHOULDER SLOPES

HMA APPLICATION CHART						
IDENT NO	ITEM	HMA PAVEMENT	RATE OF APPLICATION	ESTIMATED THICKNESS	PERFORMANCE GRADE	COMMENTS
13A-T	HMA, 13A	HMA, 13A	165#/SYD	1.5"	58-28	TOP COURSE AWI=220
13A-L	HMA, 13A	HMA, 13A	220#/SYD	2.0"	58-28	LEVELING COURSE
13A-W	HMA, 13A	HMA, 13A	VARIES	VARIES	58-28	WEDGING FOR PROFILE AND CROWN CORRECTION
HMA-A	HMA APPROACH	HMA, 13A	-	-	58-28	MATCH MAINLINE APPLICATION RATES
HMA-D	HMA APPROACH	HMA, 13A	385#/SYD	-	58-28	HMA, 13A @ 165#/SYD AND HMA, 13A @ 220#/SYD FOR DRIVEWAYS
-	HMA BOND COAT	-	0.05-0.15 GAL	-	-	NOT A PAY ITEM; FOR INFORMATION ONLY



PLAN SUBMITTALS AND CHANGES	
BIDDING DOCUMENTS	
DATE	DESCRIPTION
8/8/17	ISSUED FOR BIDS

REV:
SHT# 11 OF 28
JOB No: 16M0094

PREPARED FOR

MIDLAND COUNTY ROAD COMMISSION

GORDONVILLE ROAD SAFETY IMP.

ROWE PROFESSIONAL SERVICES COMPANY

TYPICAL SHEET

PLAN DATE: AUGUST 2017

PROJECT MGR: MJS

REVIEWER: ENJ

SCALE: NO SCALE

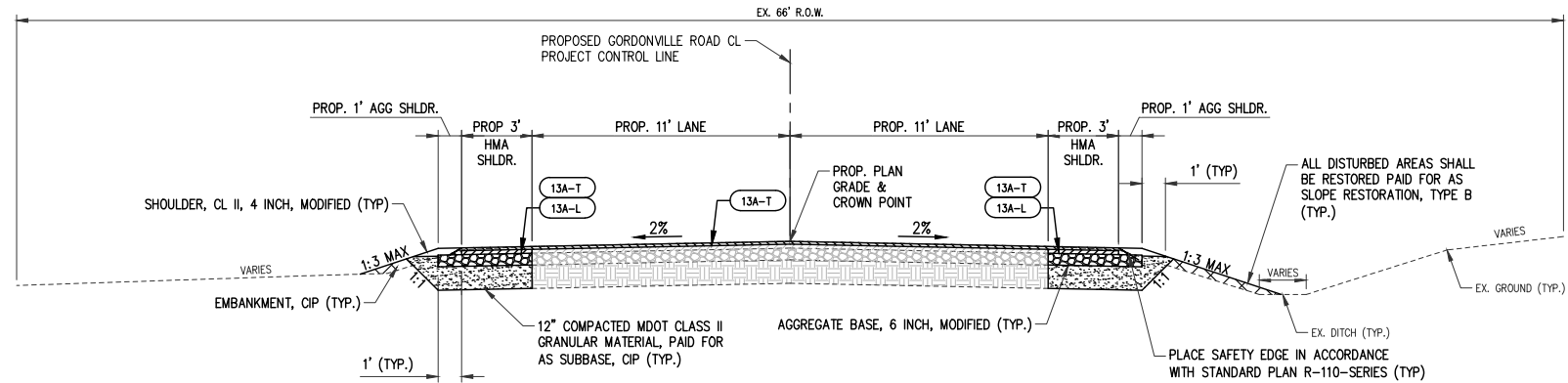
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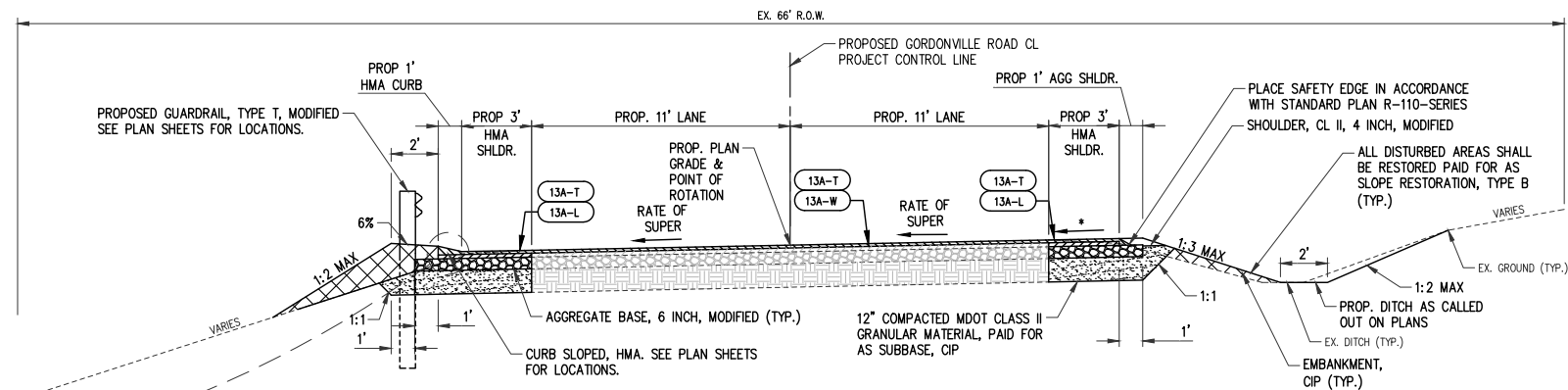
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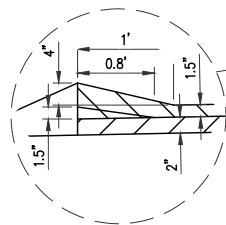
TYPICAL PROPOSED CROSS SECTION

APPLIES:
STA. 15+73 TO STA. 16+70



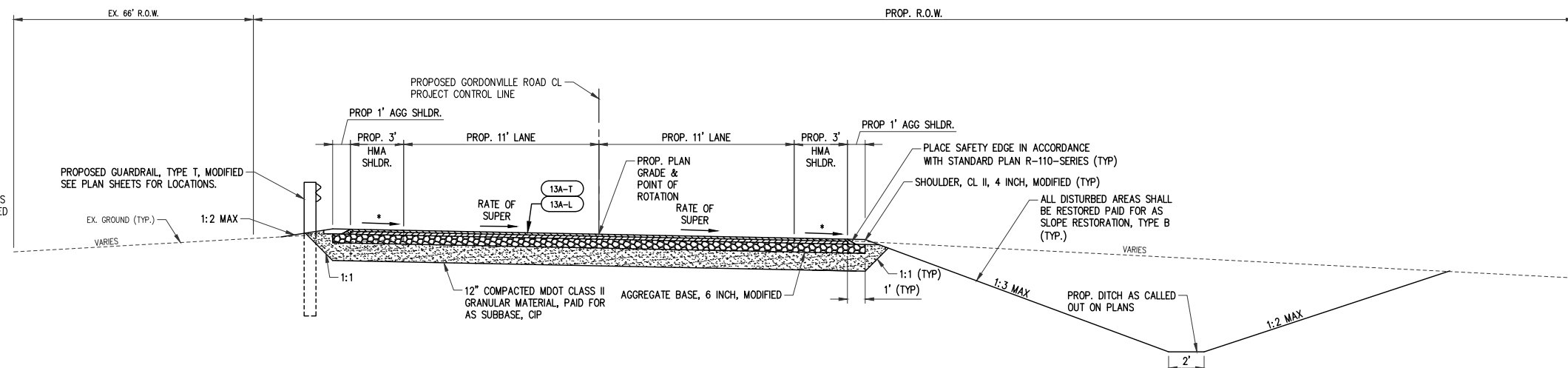
TYPICAL PROPOSED CROSS SECTION

APPLIES:
STA. 16+70 TO STA. 33+30



CURB SLOPED, HMA DETAIL

NO SCALE



TYPICAL PROPOSED CROSS SECTION

APPLIES:
STA. 33+30 TO STA. 40+14

GORDONVILLE ROAD SUPERELEVATION CHART	
2%	2%
STA 16+70	
2%	0%
STA 17+19	
2%	2%
STA 17+68	
6%	6%
STA 18+66 TO STA 27+66	
2%	2%
STA 28+64 TO STA 28+81	
3.1%	3.1%
STA 29+08 TO STA 29+80	
6%	6%
STA 30+53 TO STA 31+83	
0%	0%
STA 33+30	

* SEE STANDARD PLAN R-107-H FOR SHOULDER SLOPES

GORDONVILLE ROAD SUPERELEVATION CHART	
0%	0%
STA 33+30	
6%	6%
STA 34+77 TO STA 38+18	
2%	2%
STA 39+16	
0%	2%
STA 39+65	
2%	2%
STA 40+14	

* SEE STANDARD PLAN R-107-H FOR SHOULDER SLOPES



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PLAN SUBMITTALS AND CHANGES

BIDDING DOCUMENTS	
DATE	DESCRIPTION
8/8/17	ISSUED FOR BIDS

REV:

SHT# 12 OF 28

JOB No: 16M0094

ROWE PROFESSIONAL
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PREPARED FOR
MIDLAND COUNTY ROAD COMMISSION
GORDONVILLE ROAD SAFETY IMP.

TYPICAL SHEET

PLAN DATE: AUGUST 2017
PROJECT MGR: MJS
REVIEWER: ENJ
SCALE: NO SCALE

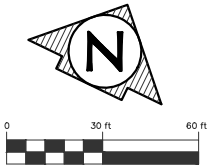
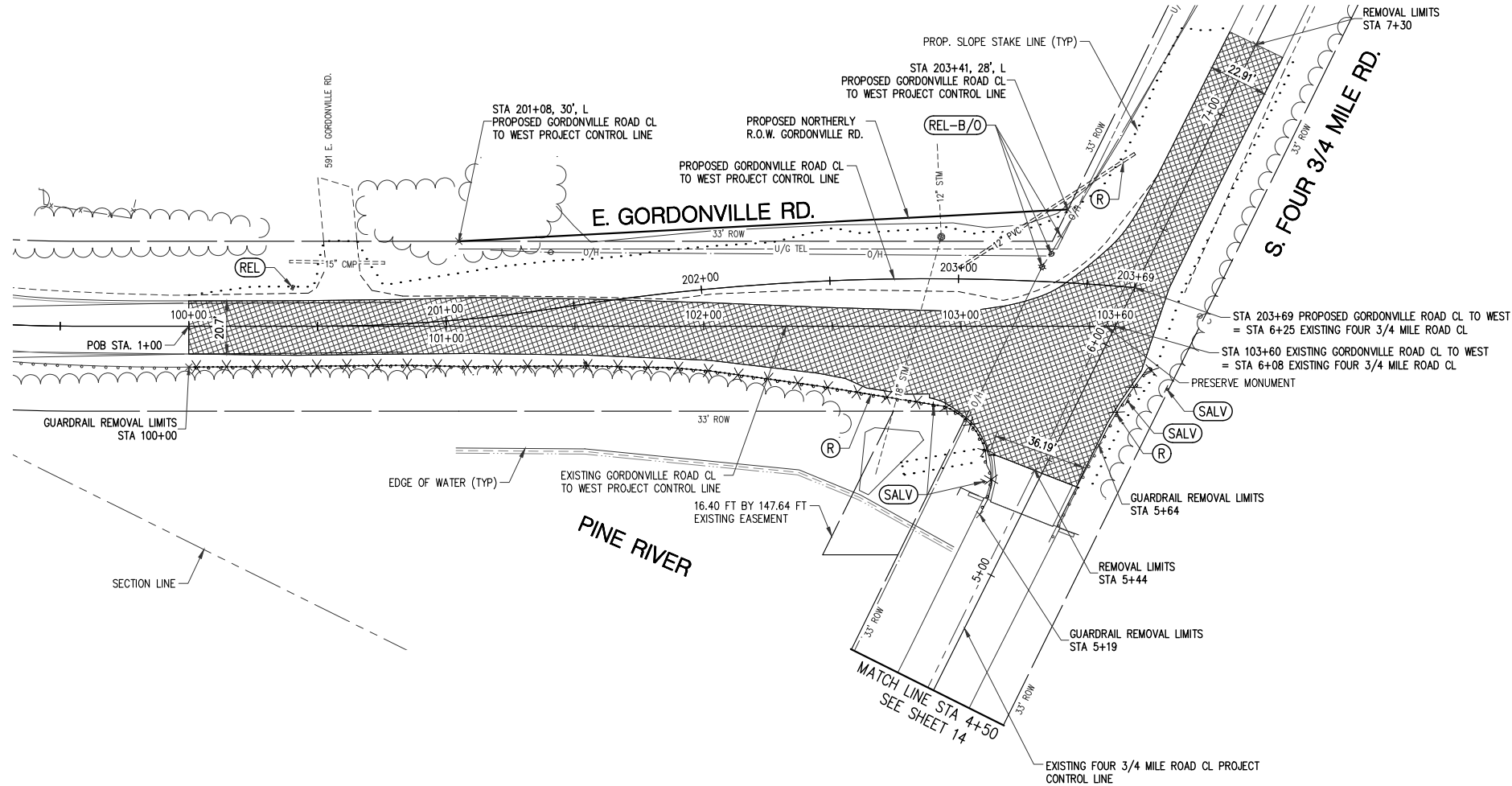
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PLOTTED: 8/8/2017 1:03 PM

DESCRIPTION	QUANTITY	UNIT
Culv, Rem, Less than 24 inch	1	Ea
Guardrail, Rem	387	Ft
Excavation, Earth	1195	Cyd
HMA Surface, Rem	1546	Syd
Sign, Type III, Rem	4	Ea
Monument Preservation	1	Ea



PLAN SUBMITTALS AND CHANGES	
BIDDING DOCUMENTS	
DATE	DESCRIPTION
8/8/17	ISSUED FOR BIDS

REV:

SHT# 13 of 28
JOB No: 16M0094

99+24 23.8'R HEAVY WOODS
99+26 14.2'R GUARD RAIL

99+30 29.5'L HEAVY WOODS

99+79 48.1'L CHAINLINK

100+08 41.1'L HEAVY WOODS
100+39 25.1'L 15" METAL PIPE (CMP)
REL 100+40 15.0'L MAIL BOX

100+69 39.0'L HEAVY WOODS
100+78 24.6'L 15" METAL PIPE (CMP)
100+83 29.0'L HEAVY WOODS
100+03 27.4'L HEAVY WOODS
101+05 33.0'L IRON ROD

101+33 31.9'L HEAVY WOODS
101+41 28.7'L ELEC POLE
101+50 39.0'L PLANTED AREA

102+92 34.7'L ROUND CB
REM 102+99 22.8'L 12" PLASTIC PIPE

REL-B/O 103+32 23.1'L ELEC & LIGHT POLE
REL-B/O 103+35 28.1'L GUY POLE
REL-B/O 103+39 35.0'L GUY WIRE
103+52 36.1'L PLANTED AREA

101+54 14.4'R MP 701
101+54 14.2'R GUARD RAIL REM

102+46 30.6'R HEAVY WOODS
102+67 39.4'R RRP RAP
102+67 31.4'R 18" RND PLASTIC PIPE
102+76 38.6'R TP 364

102+80 31.0'R STOP SIGN SALV

103+09 60.4'R MSC SIGN SALV
103+12 61.4'R GUARD RAIL REM

103+54 83.8'R GUARD RAIL

103+56 0.0'R IRON ROD SAVE



PREPARED FOR

MIDLAND COUNTY ROAD COMMISSION
GORDONVILLE ROAD SAFETY IMP.

POB TO STA 103+60
REMOVAL SHEET



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PLAN DATE: AUGUST 2017

PROJECT MGR: MJS

REVIEWER: ENJ

SCALE: 1"=30'

REM 10+17 42.6'L GUARD RAIL
SALV 10+21 37.8'L MISC SIGN
10+25 44.7'L BM 12
10+29 40.7'L R/P R/P
10+36 26.7'L 1P 11
SALV 10+42 20.8'L STOP SIGN
10+49 47.6'L 24" CONC PPE (RCP)
10+57 43.0'L R/P R/P
REM 10+73 17.2'L GUARD RAIL
SAVE 10+81 29.4'L MISC SIGN
10+97 47.1'L HEAVY WOODS

SALV 13+01 19.8'L MISC SIGN

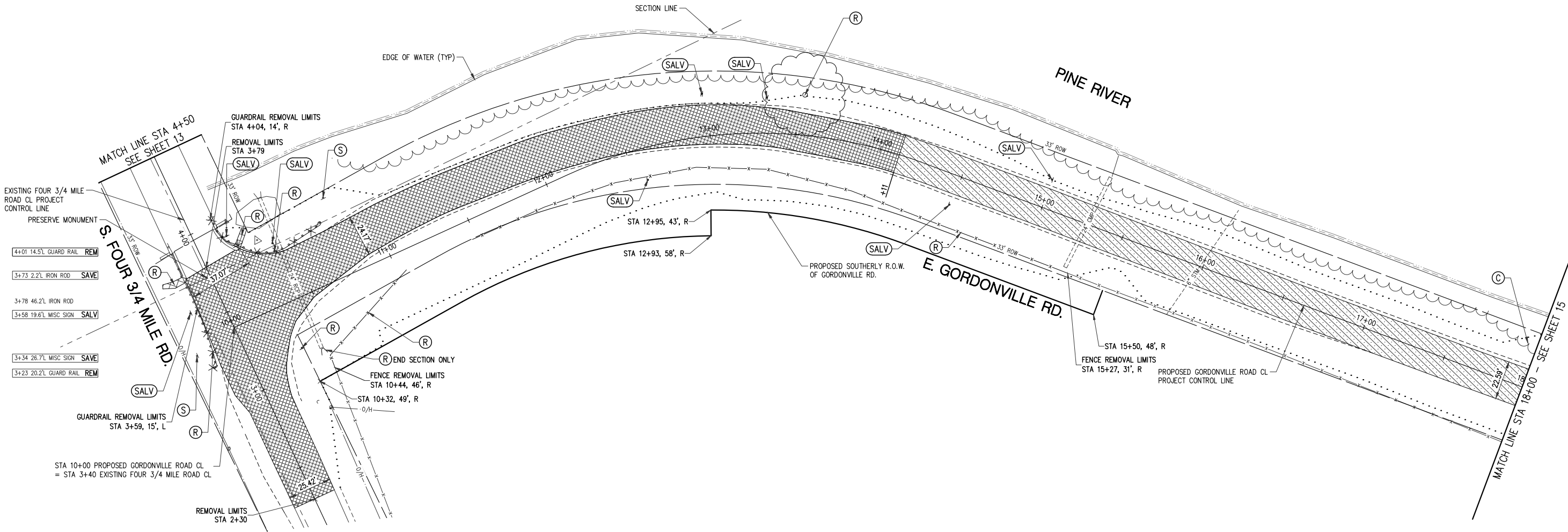
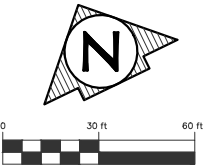
SALV 13+37 18.7'L MISC SIGN

REM 13+53 23.4'L 48" MAPLE

SALV 15+05 17.1'L MISC SIGN

15+37 30.3'L 24" METAL PIPE (CMP)

16+14 38.5'L 6" RND METAL PIPE (CMP)



SHEET QUANTITIES

DESCRIPTION	QUANTITY	UNIT
Tree, Rem, 37 inch or Larger	1	Ea
Culv, End, Rem, 24 inch to 48 inch	1	Ea
Fence, Rem	439	Ft
Guardrail, Rem	125	Ft
Excavation, Earth	2248	Cyd
Pavt, Rem	10	Syd
Cold Milling HMA Surface	707	Syd
HMA Surface, Rem	1612	Syd
Sign, Type III, Rem	12	Ea
Monument Preservation	1	Ea

10+20 72.3'R GUY WIRE
10+28 40.9'R STREET SIGN
10+38 46.5'R 24" CONC PPE (RCP)
10+40 40'R FARM FENCE
10+42 33'R 24" END SECT

11+45 11'R FARM FENCE

11+47 11'R FARM FENCE

12+66 26.2'R MISC SIGN

14+55 17.5'R MISC SIGN

15+31 27.0'R 24" METAL PIPE (CMP)
15+32 30.4'R FARM FENCE



PLAN SUBMITTALS AND CHANGES

BIDDING DOCUMENTS	
DATE	DESCRIPTION
8/8/17	ISSUED FOR BIDS

REV:

SHT# 14 of 28
JOB No: 16M0094

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GORDONVILLE ROAD SAFETY IMP.



PLAN DATE: AUGUST 2017
PROJECT MGR: MJS
REVIEWER: ENJ
SCALE: 1" = 30'

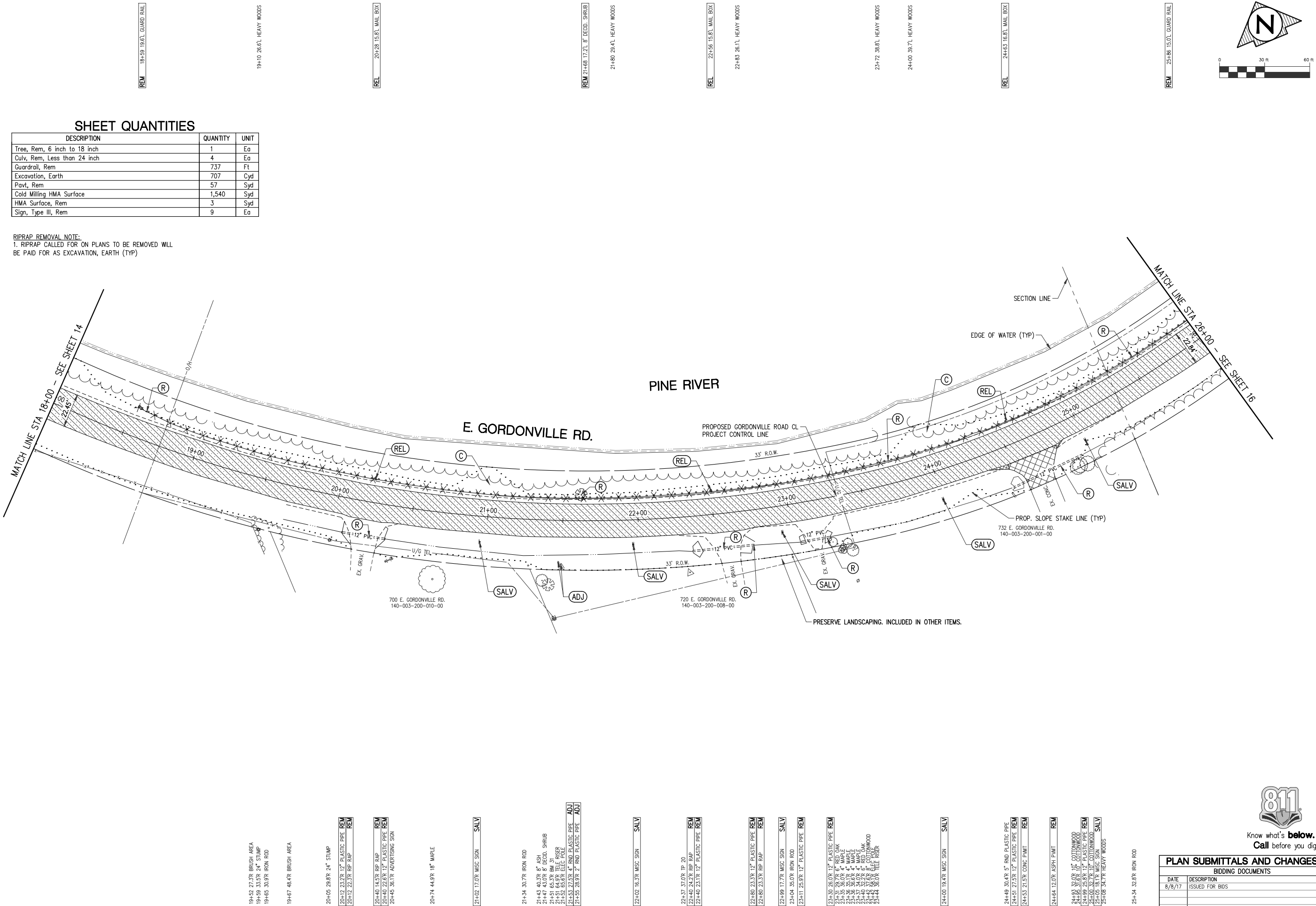
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DESCRIPTION	QUANTITY	UNIT
Tree, Rem, 6 inch to 18 inch	1	Ea
Culv, Rem, Less than 24 inch	4	Ea
Guardrail, Rem	737	Ft
Excavation, Earth	707	Cyd
Pavt, Rem	57	Syd
Cold Milling HMA Surface	1,540	Syd
HMA Surface, Rem	3	Syd
Sign, Type III, Rem	9	Ea

RIPRAP REMOVAL NOTE:
1. RIPRAP CALLED FOR ON PLANS TO BE REMOVED WILL
BE PAID FOR AS EXCAVATION, EARTH (TYP)



PLAN SUBMITTALS AND CHANGES	
BIDDING DOCUMENTS	
DATE	DESCRIPTION
8/8/17	ISSUED FOR BIDS

PREPARED FOR

MIDLAND COUNTY ROAD COMMISSION

GORDONVILLE ROAD SAFETY IMP.

STA. 18+00 TO STA. 26+00

REMOVAL SHEET

811

Know what's below.
Call before you dig.

PLAN DATE: AUGUST 2017

PROJECT MGR: MJS

REVIEWER: ENJ

SCALE: 1"=30'

REV:

SHT# 15 of 28

JOB No: 16M0094

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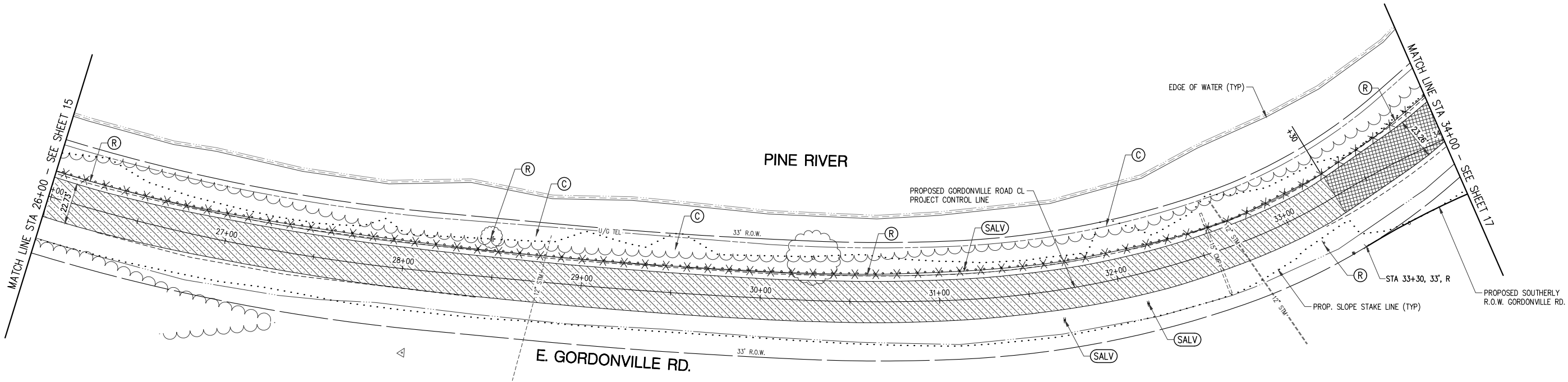
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SHEET QUANTITIES		
DESCRIPTION	QUANTITY	UNIT
Tree, Rem, 6 inch to 18 inch	1	Ea
Guardrail, Rem	792	Ft
Excavation, Earth	732	Cyd
Obliterate Old Road	1	Sta
Cold Milling HMA Pavement	1,844	Syd
HMA Surface, Rem	184	Syd
Sign, Type III, Rem	6	Ea



REM 26+36 14.6' GUARD RAIL

REM 28+53 22' 12" ASPH
28+54 21' 2' RM 30

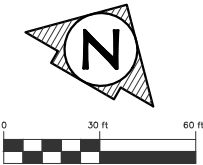
28+87 26.9' 12" RND METAL PIPE (CMP)
29+01 21' 2' HEAVY WOODS

30+08 14.9' GUARD RAIL
30+09 23.9' HEAVY WOODS
30+34 23.6' 30" RED OAK

SALV 31+20 17' 3' MISC SIGN

32+61 22.9' 15" METAL PIPE (CMP)
32+68 27.9' 12" RND PLASTIC PIPE
32+69 27.8' 12" RND METAL PIPE (CMP)

REM 33+75 18.8' GUARD RAIL



27+40 39.6' R HEAVY WOODS

28+10 46.6' R TP 21

31+73 17.2' R MISC SIGN SALV

32+19 17.3' R MISC SIGN SALV

32+63 24.7' R 15" METAL PIPE (CMP)

33+18 19.4' R MISC SIGN REM



PLAN SUBMITTALS AND CHANGES	
BIDDING DOCUMENTS	
DATE	DESCRIPTION
8/8/17	ISSUED FOR BIDS

REV:

SHT# 16 of 28
JOB No: 16M0094

PREPARED FOR
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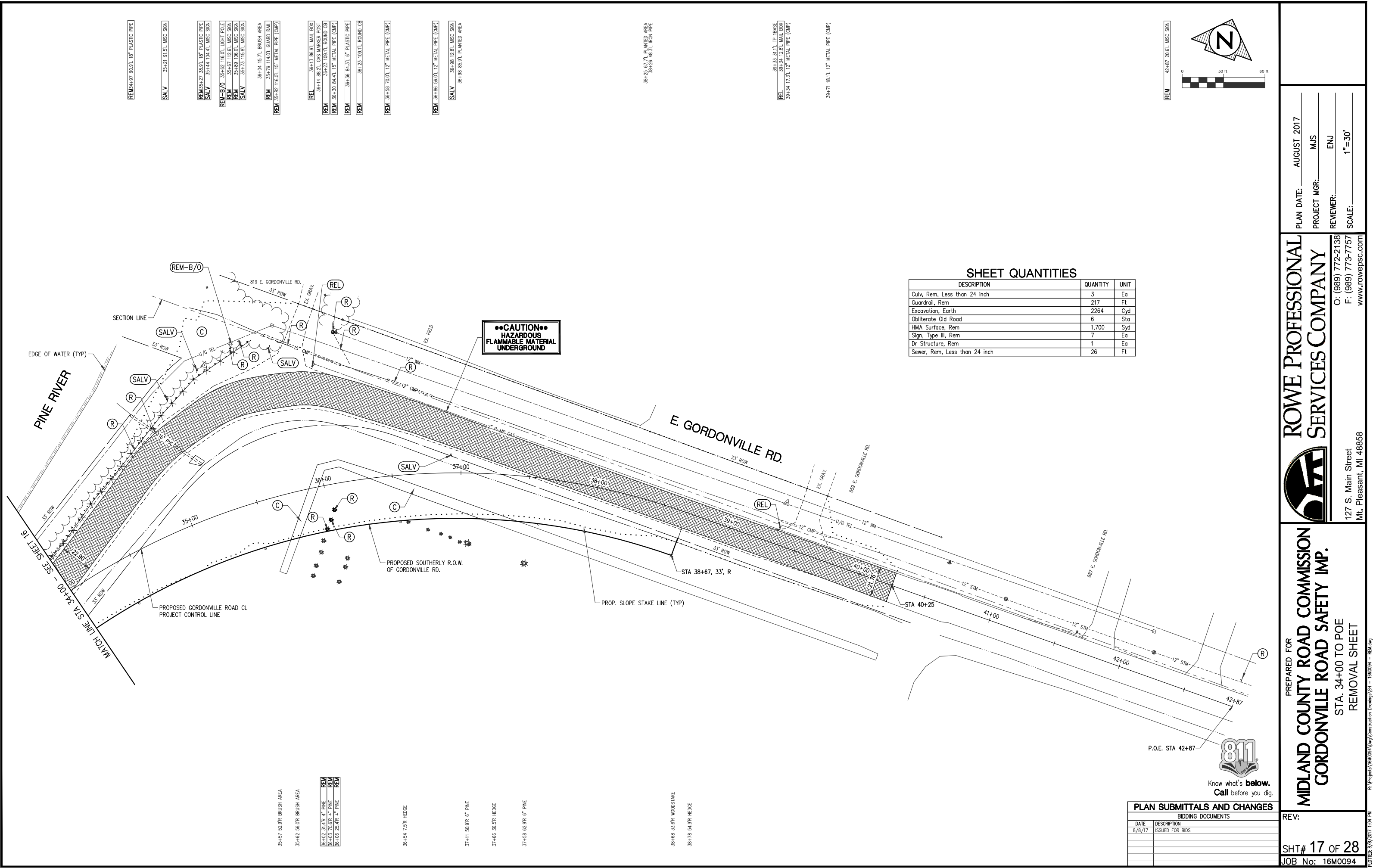


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REMOVAL SHEET

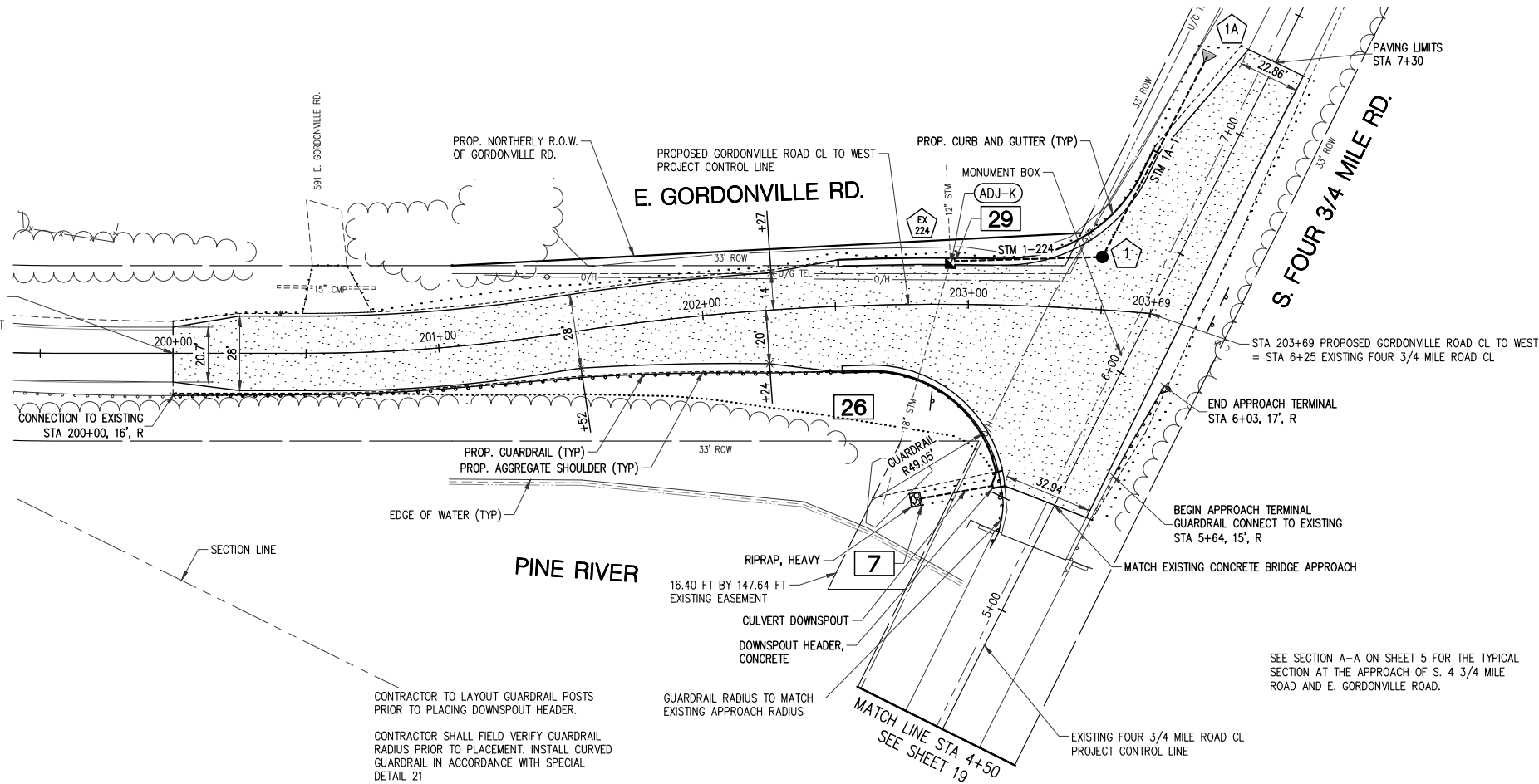
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Mt. Pleasant, MI 48858

PLAN DATE: AUGUST 2017
PROJECT MGR: MJS
REVIEWER: ENJ
SCALE: 1" = 30'

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EXISTING GORDONVILLE ROAD CL TO WEST PROJECT
CONTROL LINE P.O.B. (STA 100+00)
= PROPOSED GORDONVILLE ROAD CL TO WEST PROJECT
CONTROL LINE STA. 200+00 TO STA. 203+43



PROPOSED STORM SEWER STRUCTURE TABLE					
STRUCT NO.	DIA.	COVER TYPE	RIM ELEVATION	INVERT	STATION
EX 224	N/A	K	T/C=636.88	12" 632.34 NE (PR) 12" 628.27 NW (EX) 18" 627.06 S (EX)	202+93.2
1	48"	B	RIM=636.97	12" 632.91 SW (PR) 12" 632.91 N (PR)	203+49.1

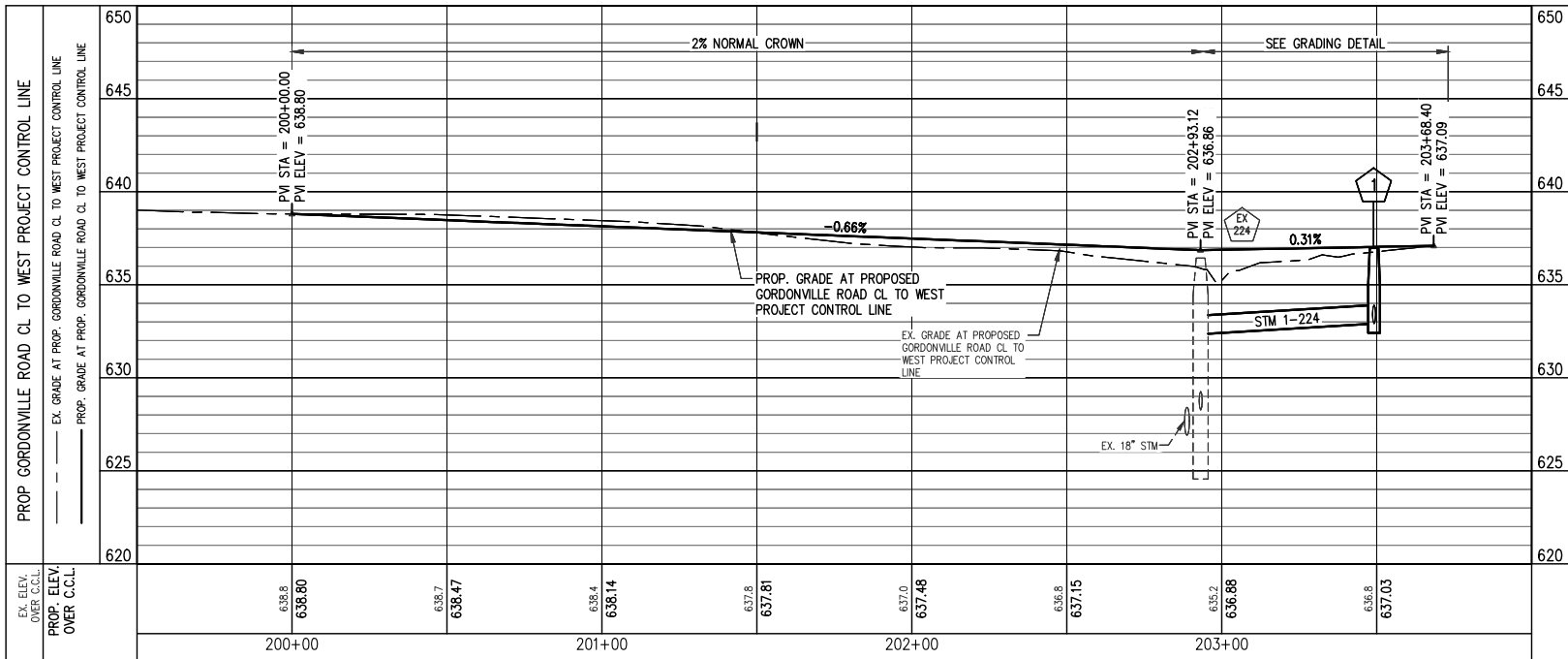
PROPOSED STORM SEWER PIPE TABLE					
PIPE NUMBER	DIAMETER	PAY ITEM	TOTAL LENGTH	SLOPE	TRENCH DETAIL B (T.D. B)
STM 1-224	12"	Sewer, Cl E, 12 inch	57'	1.00%	57'
STM 1A-1	12"	Sewer, Cl E, 12 inch	85'	3.05%	85'

PROPOSED CULVERT END SECTION TABLE					
STRUCT NO.	DIA.	PAY ITEM	END OF PIPE INVERT *	END OF PIPE STATION	END OF PIPE OFFSET
1A	12"	Culv End Sect, 12 inch	12" 635.50	7+20.7	24.1 L

* STATION AND OFFSET RELATES TO S. 4 3/4 MILE RD. PROJECT CONTROL LINE

DRIVEWAY & APPROACH SCHEDULE					
RIGHT OF WAY					
C/L DRIVEWAY STATION	EXIST. P/VMT TYPE	WIDTH AT RIGHT OF WAY (FT)	WIDTH AT OPENING (FT)	LENGTH OF DRIVE RESTORATION (FT)	APPROACH, CL II, 6 INCH, MODIFIED (SYD)
200+61, LT	G	13.0	26.0	17.9	39

G = GRAVEL DRIVE, C = CONCRETE DRIVE, HMA = HMA DRIVE



SHEET QUANTITIES

DESCRIPTION	QUANTITY	UNIT
Embankment, CIP	101	Cyd
Erosion Control, Inlet Protection, Fabric Drop	1	Ea
Subbase, CIP	797	Cyd
Approach, Cl I, 6 inch, Modified	2150	Syd
Shoulder, Cl II, 4 inch, Modified	193	Syd
Approach, Cl II, 6 inch, Modified	39	Syd
Culv, Downspout, 12 inch	28	Ft
Culv End Sect, 12 inch	1	Ea
Dr Marker Post	1	Ea
Sewer, Cl E, 12 inch, Tr Det B	142	Ft
Dr Structure Cover, Adj, Case 1	1	Ea
Dr Structure Cover, Type B	1	Ea
Dr Structure Cover, Type K	1	Ea
Dr Structure, 48 inch dia	1	Ea
Dr Structure, Tap, 12 inch	1	Ea
HMA Approach	451	Ton
Conc, Grade S2	1	Cyd
Reinforcement, Steel, Culv and Headwall	40	Lb
Curb and Gutter, Conc, Det B2	203	Ft
Downspout Header, Conc	1	Ea
Guardrail, Anch, Bridge, Det T3	1	Ea
Post, Mailbox	1	Ea
Guardrail, Type T, Modified	262	Ft
Guardrail Approach Terminal, Modified	1	Ea
Guardrail, Curved, Type T, Modified	60	Ft
Riprap, Heavy	3	Syd
Monument Box	1	Ea



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PLAN SUBMITTALS AND CHANGES

BIDDING DOCUMENTS	
DATE	DESCRIPTION
8/8/17	ISSUED FOR BIDS

PLAN DATE: AUGUST 2017
PROJECT MGR: MJS
REVIEWER: ENJ
SCALE: 1" = 30'

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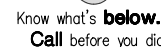
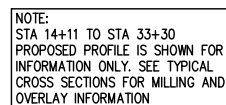
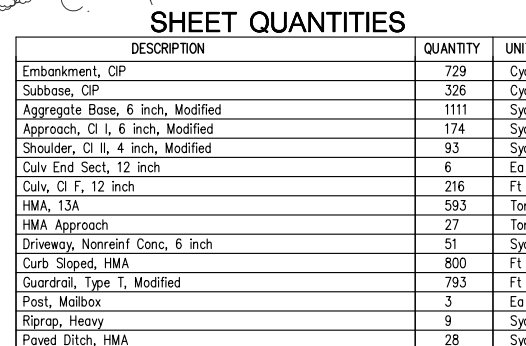
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GORDONVILLE ROAD SAFETY IMP.
STA. 200+00 TO STA 203+69
PLAN & PROFILE SHEET

REV:

SHT# 18 OF 28
JOB No: 16M0094

G = GRAVEL DRIVE, C = CONCRETE DRIVE, HMA = HMA DRIVE

REV:

SHT# 20 OF 28
JOB No: 16M0094

PLAN DATE: AUGUST 2017
PROJECT MGR: MJS
REVIEWER: ENJ
SCALE: HORZ. 1"=30', VERT 1"=5'

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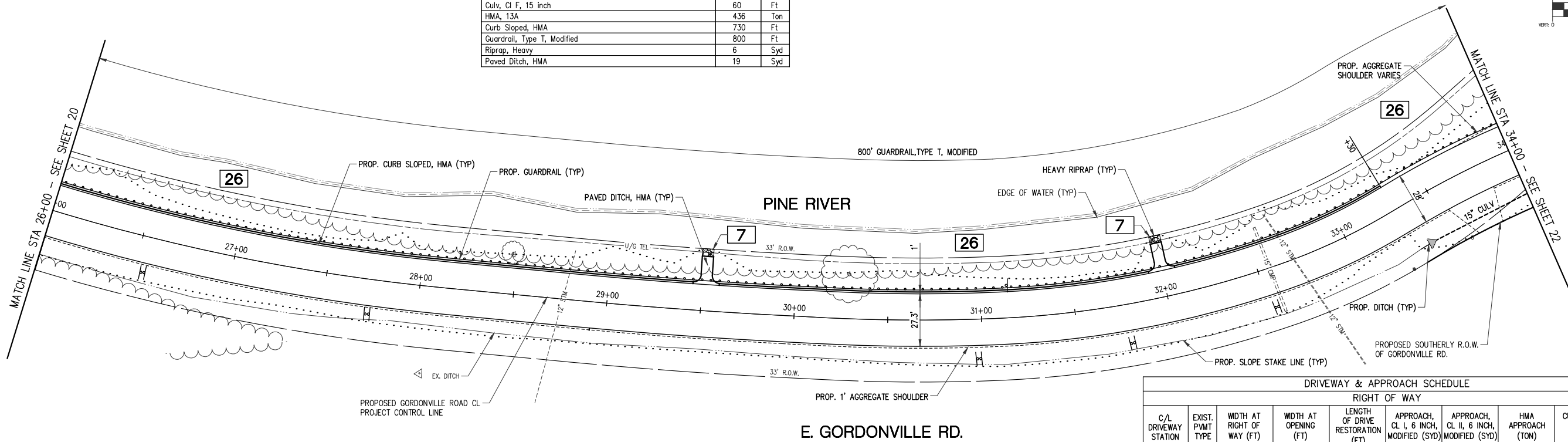
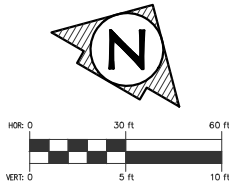
STA. 18+00 TO STA. 26+00
PLAN & PROFILE SHEET

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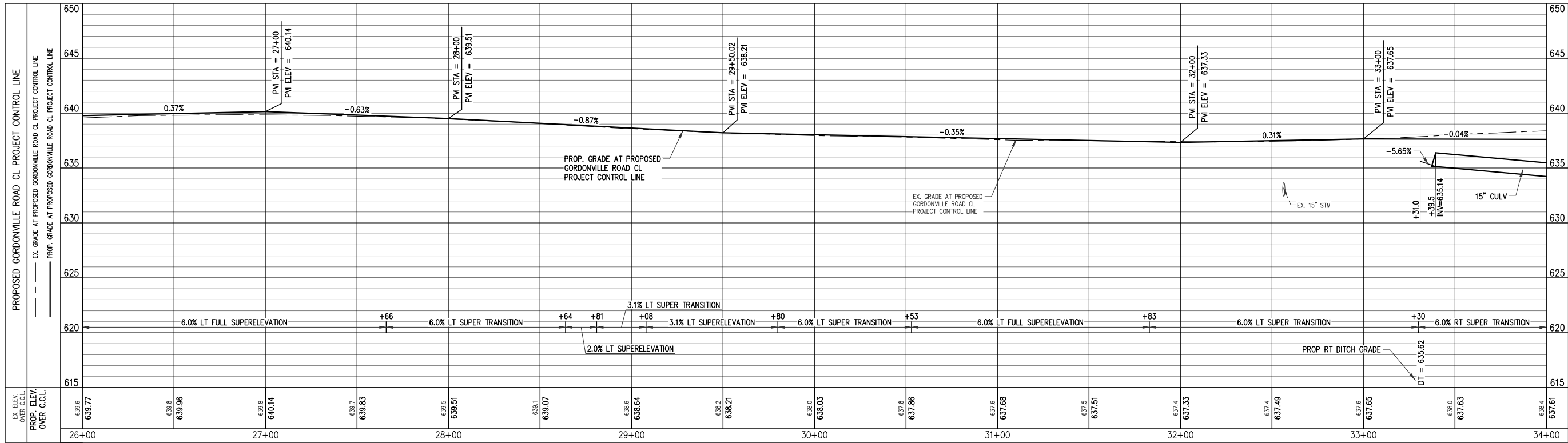
SHEET QUANTITIES

DESCRIPTION	QUANTITY	UNIT
Embankment, CIP	560	Cyd
Subbase, CIP	381	Cyd
Aggregate Base, 6 inch, Modified	1269	Syd
Approach, Cl II, 6 inch, Modified	44	Syd
Shoulder, Cl II, 4 inch, Modified	93	Syd
Culv End Sect, 15 inch	2	Ea
Culv, Cl F, 15 inch	60	Ft
HMA, 13A	436	Ton
Curb Sloped, HMA	730	Ft
Guardrail, Type T, Modified	800	Ft
Riprap, Heavy	6	Syd
Paved Ditch, HMA	19	Syd



DRIVEWAY & APPROACH SCHEDULE								
RIGHT OF WAY								
C/L DRIVEWAY STATION	EXIST. P.V.M.T. TYPE	WIDTH AT RIGHT OF WAY (FT)	WIDTH AT OPENING (FT)	LENGTH OF DRIVE RESTORATION (FT)	APPROACH, CL I, 6 INCH, MODIFIED (SYD)	APPROACH, CL II, 6 INCH, MODIFIED (SYD)	HMA APPROACH (TON)	CULV, CL F, 15 INCH (FT)
33+70, RT	G	14.0	27.0	19.0		44		60
								2

G = GRAVEL DRIVE, C = CONCRETE DRIVE, HMA = HMA DRIVE



NOTE:
STA 14+11 TO STA 33+30
PROPOSED PROFILE IS SHOWN FOR
INFORMATION ONLY. SEE TYPICAL
CROSS SECTIONS FOR MILLING AND
OVERLAY INFORMATION



PLAN SUBMITTALS AND CHANGES

BIDDING DOCUMENTS	
DATE	DESCRIPTION
8/8/17	ISSUED FOR BIDS

PLAN DATE: AUGUST 2017
PROJECT MGR: MJS
REVIEWER: ENJ
SCALE: 1" = 30', VERT 1" = 5'

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MIDLAND COUNTY ROAD COMMISSION
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STA. 26+00 TO STA. 34+00
PLAN & PROFILE SHEET

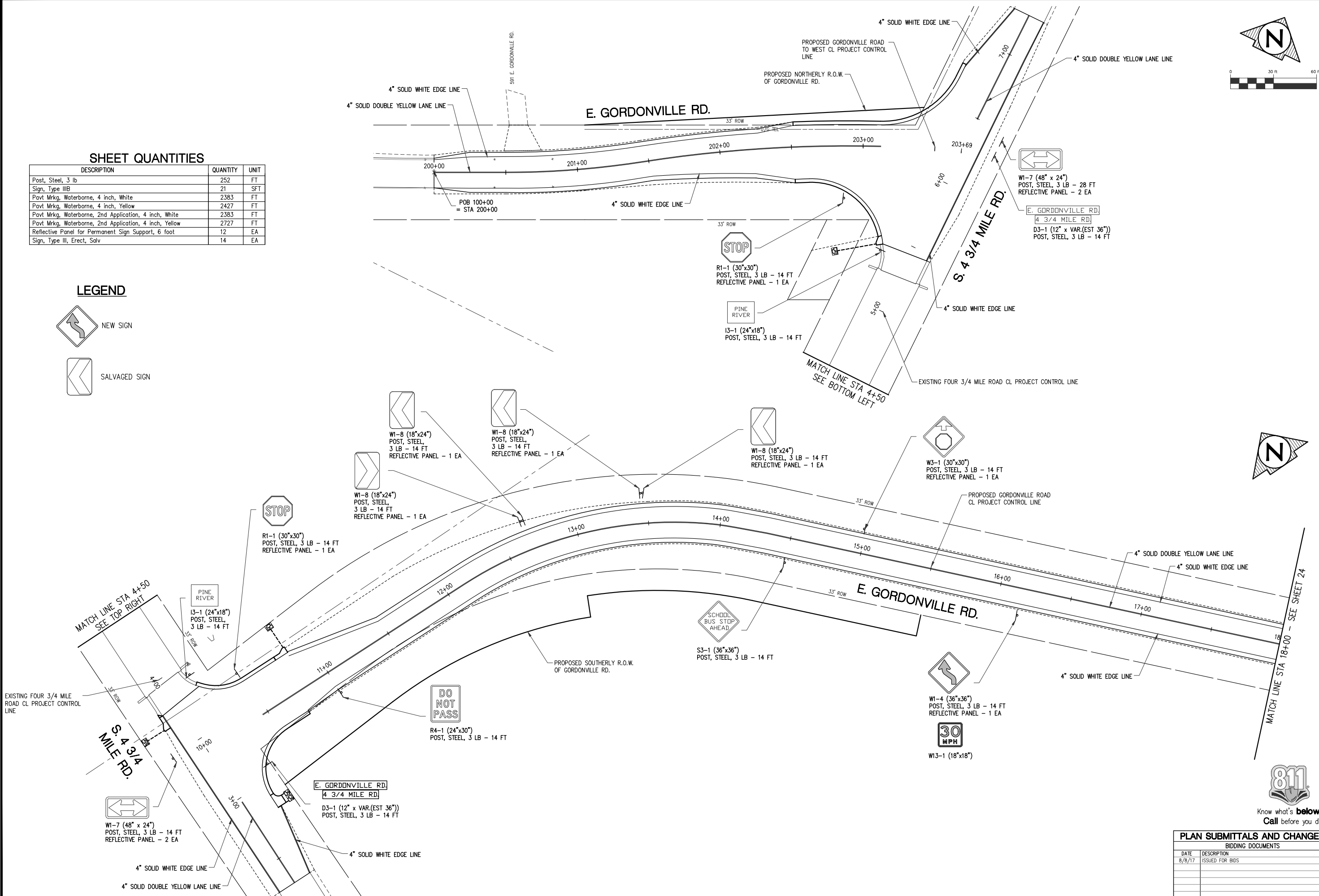
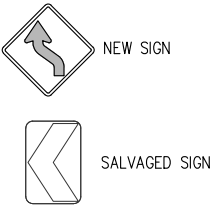
REV:

SHT# 21 OF 28

JOB No: 16M0094

SHEET QUANTITIES		
DESCRIPTION	QUANTITY	UNIT
Post, Steel, 3 lb	252	FT
Sign, Type IIIB	21	SFT
Pavt Mrkg, Waterborne, 4 inch, White	2383	FT
Pavt Mrkg, Waterborne, 4 inch, Yellow	2427	FT
Pavt Mrkg, Waterborne, 2nd Application, 4 inch, White	2383	FT
Pavt Mrkg, Waterborne, 2nd Application, 4 inch, Yellow	2727	FT
Reflective Panel for Permanent Sign Support, 6 foot	12	EA
Sign, Type III, Erect, Salv	14	EA

LEGEND



PLAN SUBMITTALS AND CHANGES	
BIDDING DOCUMENTS	
DATE	DESCRIPTION
8/8/17	ISSUED FOR BIDS

PLAN DATE: AUGUST 2017
PROJECT MGR: MJS
REVIEWER: ENJ
SCALE: 1"=30'

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
STA 200+00 TO STA 203+69 & STA 10+00 TO STA 18+00
PAVEMENT MARKING AND SIGNING SHEET


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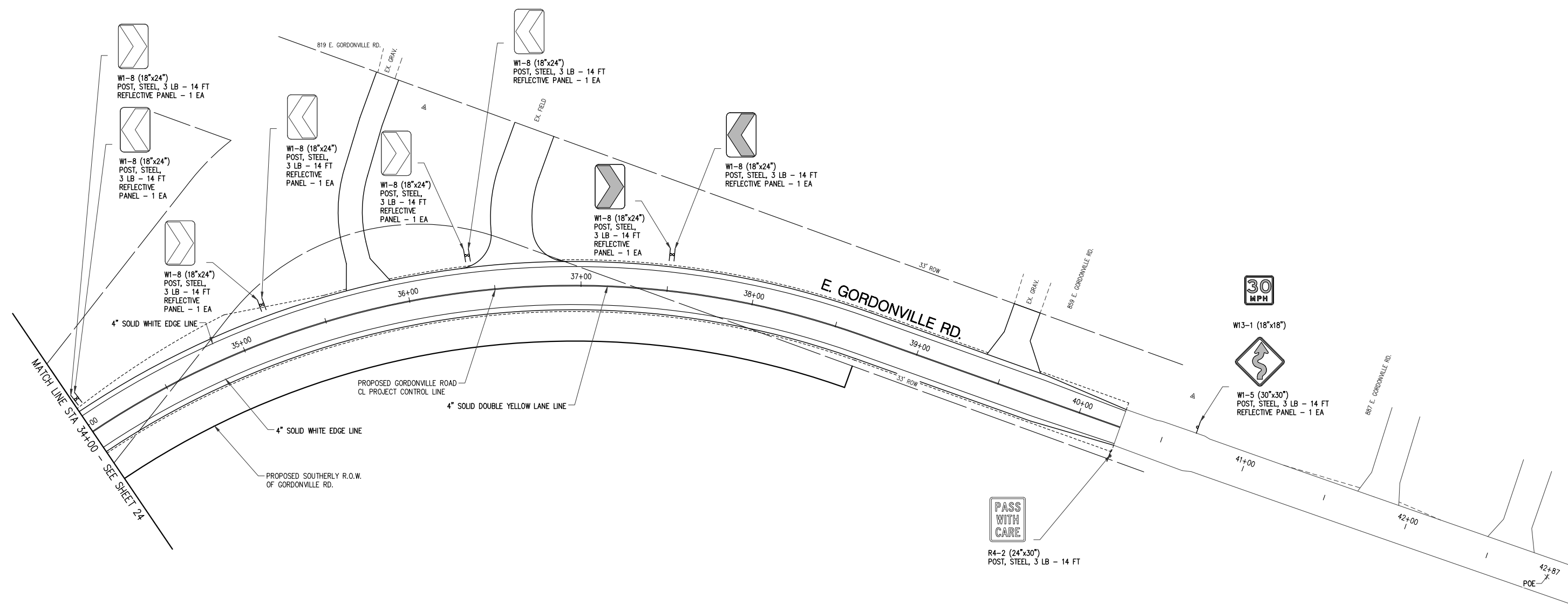
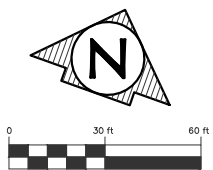
SHT# 23 OF 28
JOB No: 16M0094

DESCRIPTION	QUANTITY	UNIT
Post, Steel, 3 lb	140	FT
Sign, Type IIIB	15	SFT
Sign, Type III, Erect, Salv	7	EA
Pavt Mrkg, Waterborne, 4 inch, White	1252	FT
Pavt Mrkg, Waterborne, 4 inch, Yellow	1252	FT
Pavt Mrkg, Waterborne, 2nd Application, 4 inch, White	1252	FT
Pavt Mrkg, Waterborne, 2nd Application, 4 inch, Yellow	1252	FT
Reflective Panel for Permanent Sign Support, 6 foot	9	EA

LEGEND

 NEW SIGN

 SALVAGED SIGN



PLAN SUBMITTALS AND CHANGES	
BIDDING DOCUMENTS	
DATE	DESCRIPTION
8/8/17	ISSUED FOR BIDS

PREPARED FOR

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GORDONVILLE ROAD SAFETY IMP.

STA 34+00 TO POE

PAVEMENT MARKING AND SIGNING SHEET



ROWE PROFESSIONAL SERVICES COMPANY

127 S. Main Street

Mt. Pleasant, MI 48858

PLAN DATE: AUGUST 2017

PROJECT MGR: MJS

REVIEWER: ENJ

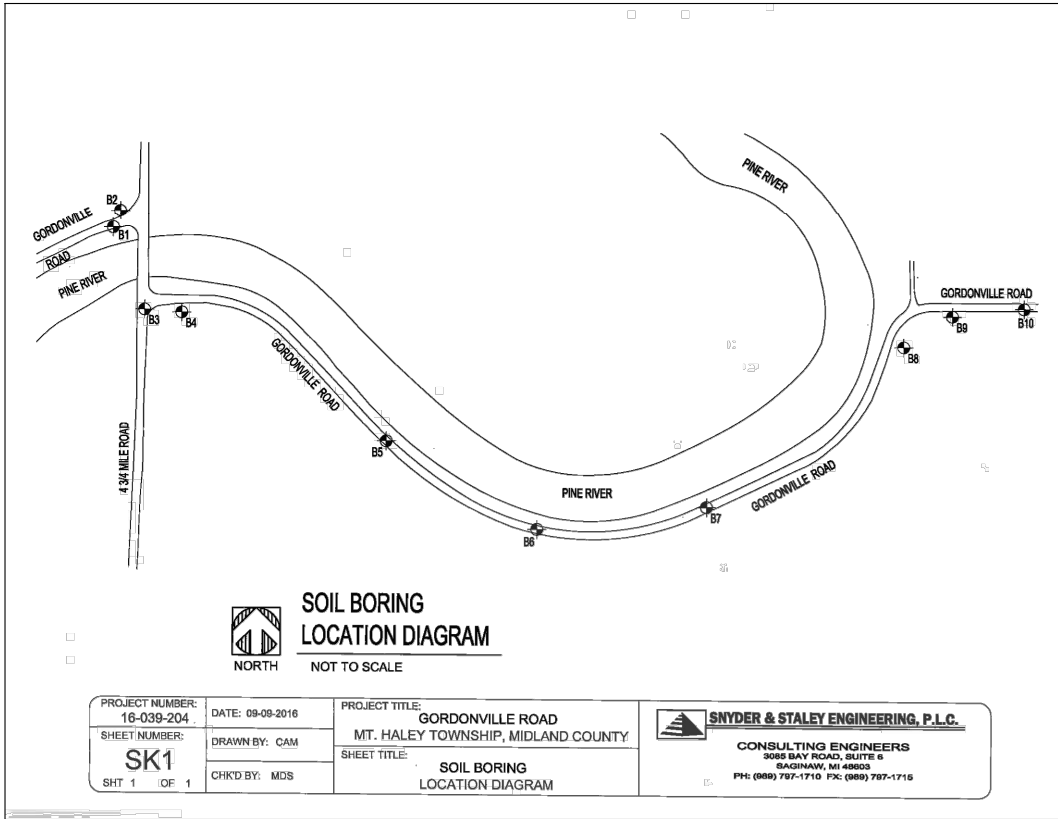
SCALE: 1"=30'

SHT# 25 OF 28

JOB No: 16M0094

FLUTED: 8/30/2017 10:10 AM

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SNYDER & STALEY ENGINEERING, P.L.C.
SOIL BORING LOG

Project: Proposed Gordonville Road Reconstruction Project No: 16-039-204
Location: Midland County, Michigan Client: Rowe Inc.

Boring No: B1

Description of Material	Depth (ft)	Sample Length	Sample I.D.	Sample Type	Standard Penetration	Hand Penetration	Unconfined compression	Torsion Shear	Moisture Content	Natural Unit Weight
Driller reported 2 1/2" of Asphalt PAVEMENT; overlaying 3" of asphalt millings overlaying 5 1/2" sandy gravel AGGREGATE BASE- (GP-BASE COURSE)										
Fine SAND; trace silt and fine gravel - brown - damp to moist - medium dense (SP)		S1	SS	23						
Clayey SAND; trace silt, gravel - brown - moist - medium dense (SP)										
Silty CLAY; trace sand, gravel - mottled; gray and brown - stiff (CL)		S2	SS	7	2				26	
Boring Terminated at 5 feet	5									
	10									

NOTE: Changes in soil stratification indicated by lines are approximate. In situ, the transition between materials maybe gradual unless otherwise noted. The bored hole was backfilled with natural soil.

WATER LEVEL OBSERVATIONS	BORING	SHEET
NONE While Sampling or Drilling	Rig: AFT Drilling Foreman: B. BELLAWS	1 of 10
NONE Immediately After Completion	Started: 11/03/2016 Drawn By: C. MARKHART	
After Completion	Completed: 11/03/2016 Approved: M. STALEY	

PLAN DATE: AUGUST 2017
PROJECT MGR: MJS
REVIEWER: ENJ
SCALE: NO SCALE

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SOIL BORING LOG SHEET

REV:
SHT# 26 of 28
JOB No: 16M0094

PL01ED: 8/8/2017 1:05 PM

SNYDER & STALEY ENGINEERING, P.L.C.
SOIL BORING LOG

Project: Proposed Gordonville Road Reconstruction Project No: 16-039-204
Location: Midland County, Michigan Client: Rowe Inc.

Boring No: B2

Description of Material	Depth (ft)	Sample Length	Sample I.D.	Sample Type	Standard Penetration	Hand Penetration	Unconfined compression	Torsion Shear	Moisture Content	Natural Unit Weight
Fine SAND; trace silt, fine gravel, root structure, clay - brown - moist - medium dense (SP)										
Clayey TOPSOIL; trace silt, gravel - dark brown - stiff (SC-TOPSOIL)		S1	SS	4	1 1/2				26	
Silty CLAY; trace sand, gravel - mottled; gray and brown - stiff to hard (CL)										
		S2	SS	20	4 1/2				21	
	5									
		S3	SS	100+	2 1/2				17	
Fine SAND; trace silt, clay, fine gravel - brown - moist - very dense (SP)										
		S4	SS	96	4 1/2				11	
Silty CLAY; trace sand, gravel - mottled; gray and brown - hard (CL)	10									
Boring Terminated at 10 feet										

NOTE: Changes in soil stratification indicated by lines are approximate. In situ, the transition between materials maybe gradual unless otherwise noted. The bored hole was backfilled with natural soil.

WATER LEVEL OBSERVATIONS	BORING	SHEET
NONE While Sampling or Drilling	Rig: AFT Drilling Foreman: B. BELLAWS	2 of 10
NONE Immediately After Completion	Started: 11/03/2016 Drawn By: C. MARKHART	
After Completion	Completed: 11/03/2016 Approved: M. STALEY	

SNYDER & STALEY ENGINEERING, P.L.C.
SOIL BORING LOG

Project: Proposed Gordonville Road Reconstruction Project No: 16-039-204
Location: Midland County, Michigan Client: Rowe Inc.

Boring No: B3

Description of Material	Depth (ft)	Sample Length	Sample I.D.	Sample Type	Standard Penetration	Hand Penetration	Unconfined compression	Torsion Shear	Moisture Content	Natural Unit Weight
Driller reported 4" of Asphalt PAVEMENT; overlaying 6" of crushed limestone AGGREGATE BASE- (GP-BASE COURSE)										
Fine SAND; trace silt and fine gravel - brown - damp - medium dense (SP)		S1	SS	13	1				11	
Clayey TOPSOIL; trace silt, gravel, root structure - dark brown - stiff (SC-TOPSOIL)										
Fine SAND; trace silt, fine gravel, clay, topsoil - brown - damp - medium dense (SP)		S2	SS	5						
Boring Terminated at 5 feet	5									
	10									

NOTE: Changes in soil stratification indicated by lines are approximate. In situ, the transition between materials maybe gradual unless otherwise noted. The bored hole was backfilled with natural soil.

WATER LEVEL OBSERVATIONS	BORING	SHEET
NONE While Sampling or Drilling	Rig: AFT Drilling Foreman: B. BELLAWS	3 of 10
NONE Immediately After Completion	Started: 11/03/2016 Drawn By: C. MARKHART	
After Completion	Completed: 11/03/2016 Approved: M. STALEY	

SNYDER & STALEY ENGINEERING, P.L.C.
SOIL BORING LOG

Project: Proposed Gordonville Road Reconstruction Project No: 16-039-204
Location: Midland County, Michigan Client: Rowe Inc.

Boring No: B4

Description of Material	Depth (ft)	Sample Length	Sample I.D.	Sample Type	Standard Penetration	Hand Penetration	Unconfined compression	Torsion Shear	Moisture Content	Natural Unit Weight
Fine SAND; trace silt, fine gravel, root structure, clay - brown - moist - medium dense (SP)		S1	SS	9	2				19	
Silty CLAY; trace sand, gravel, organics, root structures - gray - stiff (CL)										
		S2	SS	2	1				15	
	5									
Clayey SAND; trace silt, fine gravel - dark brown - moist - very dense (SC)		S3	SS	5	1				15	
Fine SAND; trace silt, clay, fine gravel - brown - moist - loose (SP)		S4	SS	5						
Boring Terminated at 10 feet	10									

NOTE: Changes in soil stratification indicated by lines are approximate. In situ, the transition between materials maybe gradual unless otherwise noted. The bored hole was backfilled with natural soil.

WATER LEVEL OBSERVATIONS	BORING	SHEET
NONE While Sampling or Drilling	Rig: AFT Drilling Foreman: B. BELLAWS	4 of 10
NONE Immediately After Completion	Started: 11/03/2016 Drawn By: C. MARKHART	
After Completion	Completed: 11/03/2016 Approved: M. STALEY	



PLAN SUBMITTALS AND CHANGES	
BIDDING DOCUMENTS	
DATE	DESCRIPTION
8/8/17	ISSUED FOR BIDS



SNYDER & STALEY ENGINEERING, P.L.C.

SOIL BORING LOG

Boring No: B5

Project: Proposed Gordonville Road Reconstruction Project No: 16-039-204
Location: Midland County, Michigan Client: Rowe Inc.

Description of Material	Turn of H	Sample Length	Sample I.D.	Sample Type	Standard Penetration Blows Per Ft.	Hand Penetrometer qp (1st)	Unconfined compression qu (1st)	Torsion Shear cs (1st)	Moisture Content w (%)	Natural Unit Weight γ (pcf)
Driller reported 2 1/2" of Asphalt PAVEMENT; overlaying 9 1/2" of sandy gravel AGGREGATE BASE- (GP-BASE COURSE)										
Silty CLAY; trace sand, fine gravel - brown - hard (CL)			S1	SS	19	4			12	
Fine SAND; trace silt, fine gravel, clay - brown - damp - medium dense (SP)										
Silty CLAY; trace sand, fine gravel - gray - very stiff (CL)			S2	SS	12	2			25	
Boring Terminated at 5 feet	5									
	10									
NOTE: Changes in soil stratification indicated by lines are approximate. In situ, the transition between materials maybe gradual unless otherwise noted. The bored hole was backfilled with natural soil.										
WATER LEVEL OBSERVATIONS				BORING						SHEET
<u>NONE</u>	While Sampling or Drilling			Rig: <u>AFT Drilling</u>		Foreman: <u>B. BELLOWS</u>		5 of 10		
<u>NONE</u>	Immediately After Completion			Started: <u>11/03/2016</u>		Drawn By: <u>C. MARKHART</u>				
.	After Completion			Completed: <u>11/03/2016</u>		Approved: <u>M. STALEY</u>				



SNYDER & STALEY ENGINEERING, P.L.C.

SOIL BORING LOG

Boring No: B6

Project: Proposed Gordonville Road Reconstruction Project No: 16-039-204
Location: Midland County, Michigan Client: Rowe Inc.

Description of Material	DEPTH (ft)	Sample Length	Sample I.D.	Sample Type	Standard Penetration Blows Per Ft.	Hand Penetration qp (1st)	Unconfined compression qu (1st)	Torsion Shear cs (1st)	Moisture Content w (%)	Natural Unit Weight γ (pcf)
Driller reported 11" sandy gravel AGGREGATE BASE- (GP-BASE COURSE)										
Fine SAND; trace silt, fine gravel, clay – brown – damp – medium dense (SP)			S1	SS	19	3			18	
Silty CLAY; trace sand, fine gravel – brown – very stiff to hard (CL)										
			S2	SS	12	4½+			11	
Boring Terminated at 5 feet	5									
	10									
NOTE: Changes in soil stratification indicated by lines are approximate. In situ, the transition between materials maybe gradual unless otherwise noted. The bored hole was backfilled with natural soil.										
WATER LEVEL OBSERVATIONS				BORING						SHEET
NONE While Sampling or Drilling				Rig: AFT Drilling Foreman: B. BELLOWS						6 of 10
NONE Immediately After Completion				Started: 11/03/2016 Drawn By: C. MARKHART						
. @ . After Completion				Completed: 11/03/2016 Approved: M. STALEY						



SNYDER & STALEY ENGINEERING, P.L.C.

SOIL BORING LOG

Boring No: B7

Project: Proposed Gordonville Road Reconstruction Project No: 16-039-204
Location: Midland County, Michigan Client: Rowe Inc.

Description of Material	Turn Down H (ft)	Sample Length	Sample I.D.	Sample Type	Standard Penetration "N" Blows Per Ft.	Hand Penetrometer qp (tsf)	Unconfined compression qu (tsf)	Torsion Shear cs (tsf)	Moisture Content w (%)	Natural Unit Weight γ (pcf)
Driller reported 2 1/2" of Asphalt PAVEMENT; overlaying 8 1/2" of sandy gravel AGGREGATE BASE – (GP–BASE COURSE)										
Clayey SAND; trace silt, fine gravel – brown – damp – medium dense (SC)			S1	SS	26	2			11	
Silty CLAY; trace sand, fine gravel – mottled; gray and brown – stiff to hard (CL)										
			S2	SS	11	4			21	
Boring Terminated at 5 feet	5									
	10									
NOTE: Changes in soil stratification indicated by lines are approximate. In situ, the transition between materials maybe gradual unless otherwise noted. The bored hole was backfilled with natural soil.										
WATER LEVEL OBSERVATIONS			BORING							SHEET
<u>NONE</u>	While Sampling or Drilling		Rig: <u>AFT Drilling</u>		Foreman: <u>B. BELLOWS</u>		7 of 10			
<u>NONE</u>	Immediately After Completion		Started: <u>11/03/2016</u>		Drawn By: <u>C. MARKHART</u>					
.	After Completion		Completed: <u>11/03/2016</u>		Approved: <u>M. STALEY</u>					



SNYDER & STALEY ENGINEERING, P.L.C.

SOIL BORING LOG

Boring No: B8

Project: Proposed Gordonville Road Reconstruction Project No: 16-039-204
Location: Midland County, Michigan Client: Rowe Inc.

Description of Material										
	DEPTH (ft)	Sample Length	Sample I.D.	Sample Type	Standard Penetration N ₆₀ Blows Per Ft.	Hand Penetration (lbf)	Unconfined compression (lbf)	Torsion Shear (lbf)	Moisture Content (%)	Natural Unit Weight (pcf)
Clayey SAND; trace silt, fine gravel, root structure – brown – moist – medium dense (SC) Sandy GRAVEL aggregate base (GP–BASE COURSE) Clayey SAND; trace silt, fine gravel – dark brown – moist – very dense (SC)			S1	SS	14					
Silty CLAY; trace sand, gravel – mottled; brown and gray – stiff to hard (CL)			S2	SS	8	2½			18	
	5									
			S3	SS	20	4			19	
			S4	SS	54	4½			9	
	10									
Boring Terminated at 10 feet										
NOTE: Changes in soil stratification indicated by lines are approximate. In situ, the transition between materials maybe gradual unless otherwise noted. The bored hole was backfilled with natural soil.										
WATER LEVEL OBSERVATIONS					BORING					SHEET
NONE While Sampling or Drilling					Rig: AFT Drilling Foreman: B. BELLOWS					8 of 10
NONE Immediately After Completion					Started: 11/03/2016 Drawn By: C. MARKHART					
. © . After Completion					Completed: 11/03/2016 Approved: M. STALEY					



SNYDER & STALEY ENGINEERING, P.L.C.

SOIL BORING LOG

Boring No: B9

Project: Proposed Gordonville Road Reconstruction Project No: 16-039-204
Location: Midland County, Michigan Client: Rowe Inc.

Description of Material		DEPTH (ft)	Sample Length	Sample I.D.	Sample Type	Standard Penetration N Blows Per Ft.	Hand Penetrometer qp (1st)	Unconfined compression qu (1st)	Torsion Shear cs (1st)	Moisture Content w (%)	Natural Unit Weight γ (pcf)	
Clayey TOPSOIL; trace silt, fine gravel, root structure – dark brown – moist – medium dense (SC–TOPSOIL)												
Silty CLAY; trace sand, gravel – mottled; brown and gray – stiff to hard (CL)				S1	SS	8	2			24		
				S2	SS	12	2			19		
		5										
				S3	SS	26	4½			16		
Clayey SILT; trace silt, fine gravel – brown – stiff (ML)				S4	SS	83	4½			10		
Boring Terminated at 10 feet		10										
NOTE: Changes in soil stratification indicated by lines are approximate. In situ, the transition between materials maybe gradual unless otherwise noted. The bored hole was backfilled with natural soil.												
WATER LEVEL OBSERVATIONS				BORING								SHEET
NONE While Sampling or Drilling				Rig: AFT Drilling Foreman: B. BELLOWS								9 of 10
NONE Immediately After Completion				Started: 11/03/2016 Drawn By: C. MARKHART								
. © . After Completion				Completed: 11/03/2016 Approved: M. STALEY								



SNYDER & STALEY ENGINEERING, P.L.C.

SOIL BORING LOG

Boring No: B10

Project: Proposed Gordonville Road Reconstruction Project No: 16-039-204
Location: Midland County, Michigan Client: Rowe Inc.

Description of Material	DEPTH (ft)	Sample Length	Sample I.D.	Sample Type	Standard Penetration N" Blows Per Ft.	Hand Penetrometer qp (tsr)	Unconfined compression qu (tsr)	Torsion Shear cs (tsr)	Moisture Content w (%)	Natural Unit Weight γ (pcf)	
Driller reported 2" of Asphalt PAVEMENT; overlaying 10" of sandy gravel AGGREGATE BASE- (GP-BASE COURSE)											
Clayey SAND; trace silt, fine gravel - brown - damp - medium dense (SC)			S1	SS	23						
Fine SAND; trace silt, fine gravel - brown - stiff (CL)											
Silty CLAY; trace sand, fine gravel - mottled; gray and brown - stiff (CL)			S2	SS	11	2½			22		
Boring Terminated at 5 feet	5										
	10										
NOTE: Changes in soil stratification indicated by lines are approximate. In situ, the transition between materials maybe gradual unless otherwise noted. The bored hole was backfilled with natural soil.											
WATER LEVEL OBSERVATIONS				BORING							SHEET
NONE While Sampling or Drilling				Rig: AFT Drilling Foreman: B. BELLOWS							10 of 10
NONE Immediately After Completion				Started: 11/03/2016 Drawn By: C. MARKHART							
. After Completion				Completed: 11/03/2016 Approved: M. STALEY							



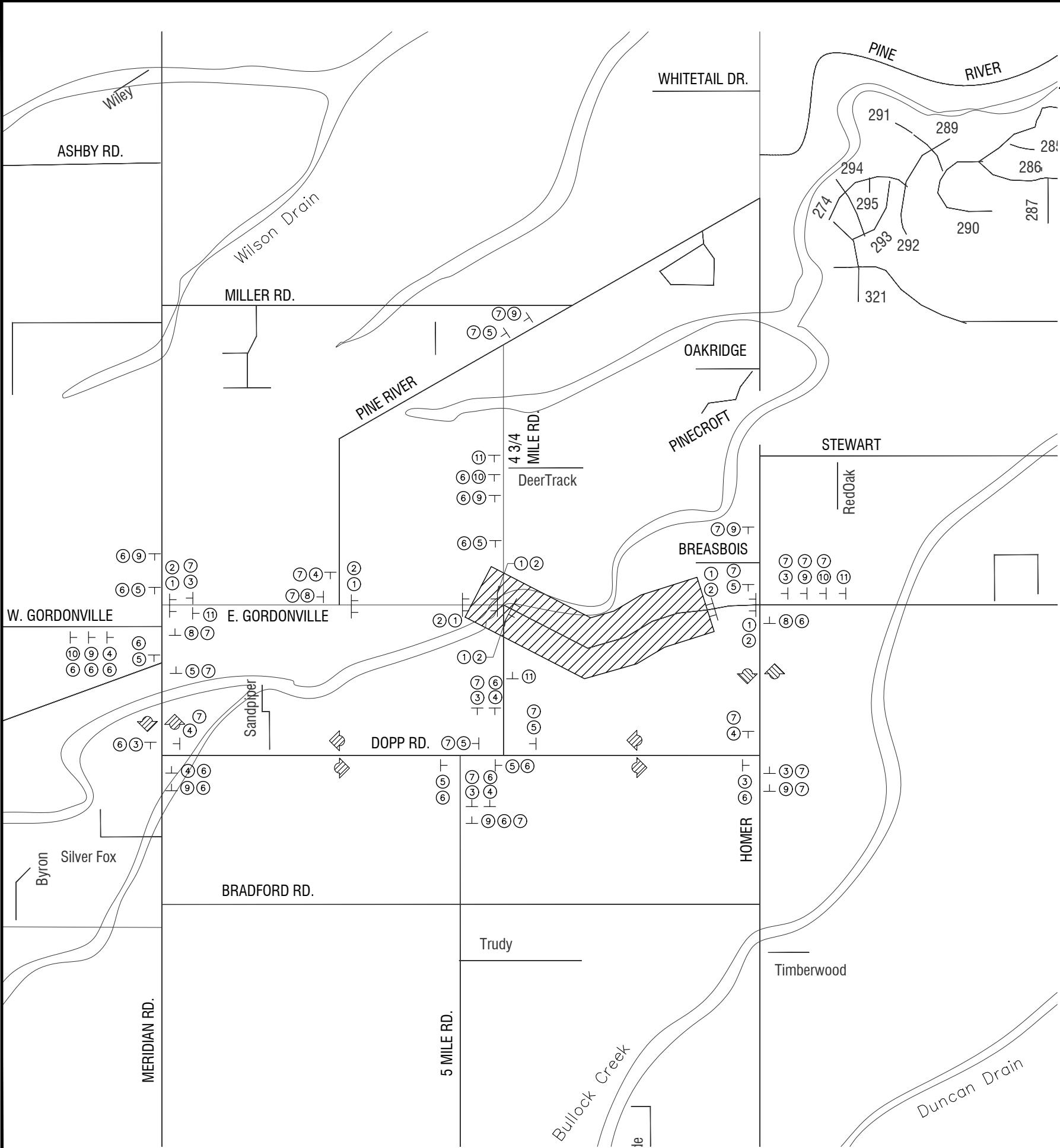
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PLAN SUBMITTALS AND CHANGES	
BIDDING DOCUMENTS	
DATE	DESCRIPTION
8/8/17	ISSUED FOR BIDS

PLAN DATE: AUGUST 2017
PROJECT MGR: MJS
REVIEWER: ENJ
SCALE: NO SCALE

ROWE PROFESSIONAL SERVICES COMPANY
O: (989) 772-2138
F: (989) 773-7757
www.rowepsc.com
127 S. Main Street
Mt. Pleasant, MI 48858

PREPARED FOR
MIDLAND COUNTY ROAD COMMISSION
GORDONVILLE ROAD SAFETY IMP.
SOIL BORING LOG SHEET
REV:
SHT# 27 of 28
JOB No: 16M0094



TRAFFIC CONTROL

1. TRAFFIC CONTROL DURING CONSTRUCTION SHALL MEET THE REQUIREMENTS OF THE 2011 MICHIGAN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND THE MICHIGAN DEPARTMENT OF TRANSPORTATION 2012 STANDARD SPECIFICATIONS FOR CONSTRUCTION, SECTION 812; EXCEPT AS MODIFIED ON THE PLANS, IN THE SPECIAL PROVISIONS, OR BY THE ENGINEER.
2. EMERGENCY VEHICLE TRAFFIC SHALL BE MAINTAINED AT ALL TIMES DURING THE LIFE OF THE PROJECT.
3. THE CONTRACTOR IS RESPONSIBLE FOR FURNISHING, PLACING, MAINTAINING, AND REMOVING ALL TRAFFIC CONTROL DEVICES.
4. THREE WORKING DAYS PRIOR TO DRIVING POSTS FOR SIGNS, THE CONTRACTOR SHALL CALL MISS DIG (1-800-482-7171) OR 811 FOR THE LOCATION OF UNDERGROUND UTILITIES.
5. WHERE EXCAVATION OR OTHER WORK RESULTS IN A GRADE DIFFERENCE OR OTHER HAZARD TO LOCAL TRAFFIC, PLASTIC DRUMS SHALL BE PROVIDED AT INTERVALS AND ON EACH SIDE OF DRIVEWAYS OR INTERSECTING ROADS, AS DIRECTED BY THE ENGINEER. THIS SHALL BE PAID FOR AS PLASTIC DRUM, HIGH INTENSITY, FURNISHED AND OPERATED.
6. ALL BARRICADES LEFT IN PLACE AT NIGHT SHALL BE LIGHTED.
7. PAYMENT FOR TEMPORARY SIGNS AND BARRICADES WILL BE BASED ON THE MAXIMUM QUANTITY, AT ANY TIME, OF EACH TYPE REQUIRED DURING THE LIFE OF THE PROJECT. IF BARRICADES OR SIGNS ARE REMOVED FROM ONE LOCATION AND RELOCATED FOR USE AT ANOTHER LOCATION, THEY WILL NOT BE CONSIDERED ELIGIBLE FOR REPAYMENT.
8. WHEN TRAFFIC IS MAINTAINED ON A SOIL OR AGGREGATE SURFACE, IT IS THE CONTRACTOR'S RESPONSIBILITY TO PERIODICALLY GRADE AND MAINTAIN THE SURFACE. DUST CONTROL MEASURES SHALL BE PROVIDED AS DIRECTED BY THE ENGINEER. PAYMENT WILL BE INCLUDED IN OTHER MAINTAINING TRAFFIC PAY ITEMS.
9. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH A DETAILED CONSTRUCTION SCHEDULE PRIOR TO BEGINNING WORK. THE SCHEDULE SHALL INDICATE THE PROPOSED METHOD OF MAINTAINING TRAFFIC DURING ALL PHASES OF CONSTRUCTION. THE CONTRACTOR SHALL MAKE SUCH REVISIONS AS DIRECTED BY THE ENGINEER.
10. THE CONTRACTOR SHALL NOTIFY POLICE, FIRE, HOSPITAL, AND EMERGENCY AGENCIES THREE DAYS IN ADVANCE OF, AND THE DAY OF, IMPLEMENTING A LANE CLOSURE FOR ANY SECTION OF ROAD. WRITTEN VERIFICATION OF THE CONTRACTOR'S CALL MUST BE PROVIDED BY THE CONTRACTOR TO THE MIDLAND COUNTY ROAD COMMISSION.
11. IF ACCESS FROM DRIVEWAYS IS DENIED FOR ANY PERIOD OF TIME BECAUSE OF CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE ENGINEER AND NOTIFY THE AFFECTED RESIDENTS PRIOR TO THE CLOSING.
12. ALL TEMPORARY SIGNS SHALL HAVE GROUND DRIVEN SIGN SUPPORTS IN ACCORDANCE WITH MDOT SPECIAL DETAIL WZD-100-A.
13. CONTRACTOR SHALL MAINTAIN TWO LANES OF TRAFFIC ON 4 3/4 MILE ROAD AT ALL TIMES EXCEPT FOR DURING INTERSECTION RECONSTRUCTION. AT LEAST ONE OF LANE OF TRAFFIC SHALL BE MAINTAINED ON 4 3/4 MILE ROAD DURING DAYLIGHT HOURS USING TRAFFIC REGULATOR CONTROL WHILE INTERSECTION RECONSTRUCTION IS BEING PERFORMED.
14. SEE SPECIAL PROVISIONS FOR MAINTAINING TRAFFIC AND MDOT TYPICAL DETAILS FOR ADDITIONAL INFORMATION.

SIGN LEGEND

- ① TYPE III - 8 FT BARRICADE - B (DOUBLE SIDED, HIGH INTENSITY, LIGHTED)
- ② R11-4 (60" X 30")
- ③ M4-9 (L) (30" X 24")
- ④ M4-9 (R) (30" X 24")
- ⑤ M4-9 (T) (30" X 24")
- ⑥ D3-1 SPECIAL (52" X 6")
- ⑦ D3-1 SPECIAL (52" X 6")
- ⑧ M4-8a (24" X 18")
- ⑨ W20-2 (48" X 48")
- ⑩ W20-3 (48" X 48")
- ⑪ R11-2 (48" X 30")
- ⑫ W20-1 (48" X 48")

SYMBOL LEGEND

- SIGN
- CONSTRUCTION ZONE
- GORDONVILLE RD. DETOUR ROUTE

SYMBOL	ITEM	QUANTITY	SIGNS	
			SIGN AREA SFT	TOTAL AREA SFT
2	R11-4	7	12.50	88
3	M4-8 (L)	7	5	35
4	M4-8 (R)	7	5	35
5	M4-8 (T)	10	5	50
6	D3-1 (SPECIAL)	19	1.25	24
7	D3-1 (SPECIAL)	21	1.25	27
8	M4-8A	3	3	9
9	W20-2	9	16	144
10	W20-3	3	16	48
11	W20-1	4	16	64
SIGN TYPE B, TEMP			TOTAL	524
BARRICADE, TYPE III, HIGH INTENSITY, DOUBLE SIDED, LIGHTED, FURNISHED & OPERATED 7 EA.				



Know what's below.
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PLAN SUBMITTALS AND CHANGES

BIDDING DOCUMENTS	
DATE	DESCRIPTION
8/8/17	ISSUED FOR BIDS

ROWE PROFESSIONAL
SERVICES COMPANY



MIDLAND COUNTY ROAD COMMISSION
GORDONVILLE ROAD SAFETY IMP.

REV:
SHT# 28 OF 28
JOB No: 16M0094

127 S. Main Street
Mt. Pleasant, MI 48858

MAINTAINING TRAFFIC SHEET