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UTILITIES

ELECTRIC
CONSUMERS ENERGY CO.
2400 WEISS STREET
SAGINAW, MI 48602
CONTACT: GREG SQUANDA
TELEPHONE: 989–791–5353

FIBER AND TELEPHONE
CENTURYLINK
100 SECOND STREET
PO BOX 389
PINCONNING, MI 48650
CONTACT: TOM BEECHUM
TELEPHONE: 989–879–8704

NATURAL GAS
CONSUMERS ENERGY CO.
2400 WEISS STREET
SAGINAW, MI 48602
CONTACT: KEVIN COUTURIER
TELEPHONE: 989–574–7538

CABLE
PARISH COMMUNICATIONS
803 WEST MIDLAND ROAD
AUBURN, MI 48611
CONTACT: FLOYD GROCHOLSKI
TELEPHONE: 989–662–6809

TELEPHONE
AT&T
309 SOUTH WASHINGTON
SAGINAW, MI 48607
CONTACT: ROB AUGUSTINE
TELEPHONE: 989–771–5404

ROADS
MIDLAND COUNTY ROAD COMMISSION
2334 NORTH MERIDIAN RD.
SANFORD, MICHIGAN 48657
CONTACT: TERENCE PALMER, P.E.
TELEPHONE: 989–687–9060

WATER
CITY OF MIDLAND
333 W. ELLSWORTH ST.
MIDLAND, MI 48640
CONTACT: ANDREW PARROTT
TELEPHONE: 989–837–6958

FIBER OPTIC
WINDSTREAM
4074 SOUTH LINDEN ROAD
FLINT, MI 48507
CONTACT: DIRK WELTE
TELEPHONE: 810–691–1035

M.D.O.T. STANDARD PLANS

(* SPECIAL DETAILS WILL BE INCLUDED IN CONSTRUCTION PLANS AND/OR PROPOSAL)

PLAN NO.	TITLE
R–1–G *	DRAINAGE STRUCTURES
R–9–D	COVER D
R–11–E	MONUMENT BOXES
R–12–E	COVER G
R–14–D	COVER J
R–29–I	DRIVEWAY OPENINGS & APPROACHES, AND CONCRETE SIDEWALK
R–30–G	CONCRETE CURB AND CONCRETE CURB & GUTTER
R–35–C	CONCRETE SHOULDER GUTTER AND SPILLWAY
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–86–E	PRECAST CONCRETE END SECTION FOR PIPE CULVERT
R–95–F	CULVERT SLOPED END SECTION
R–96–E	SOIL EROSION & SEDIMENTATION CONTROL MEASURES
R–100–H	SEEDING AND TREE PLANTING
R–105–D	GRADING CROSS–SECTIONS
R–107–H	SUPERELEVATION AND PAVEMENT CROWNS

TRAFFIC AND SAFETY STANDARD PLANS

(* SPECIAL DETAILS WILL BE INCLUDED IN CONSTRUCTION PLANS AND/OR PROPOSAL)

PLAN NO.	TITLE
WZD–100–A *	GROUND DRIVEN SIGN AND SUPPORTS FOR TEMP SINGS
WZD–125–E *	TEMPORARY TRAFFIC CONTROL DEVICES

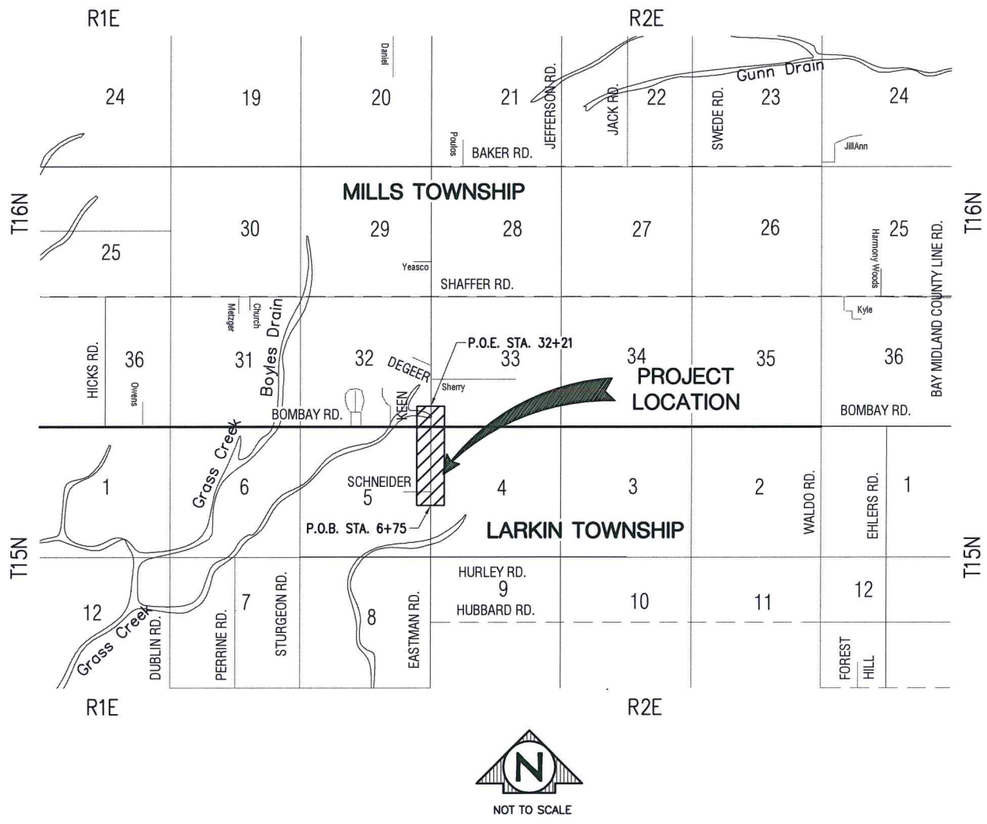
MIDLAND COUNTY ROAD COMMISSION

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

EASTMAN ROAD SAFETY IMPROVEMENTS

T15N - R2E, SECTION 4 & 5
T16N - R2E, SECTION 32 & 33
LARKIN AND MILLS TOWNSHIPS, MIDLAND COUNTY

CONTROL SECTION	JOB NO.	FEDERAL JOB NO.	FEDERAL ITEM NO.
HRRR 56609	130955A	HRRR1756(001)	KK4217



COUNTY	ROAD	PROJ.	YEAR	SHEET	TOTAL
MIDLAND	EASTMAN	130955A	2016	1	24

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, AND SECTION B (4R) OF THE MDOT LOCAL AGENCY PROGRAMS GUIDELINES FOR GEOMETRICS, 2014 EDITION. 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 130955A P.O.B. = STA. 6+75 P.O.E. = STA 32+21
JN 130955A = 0.48 MILE

TRAFFIC DATA

EASTMAN ROAD

PRESENT ADT (2017) =	4481 VEHICLES/DAY
FUTURE ADT (2037) =	5578 VEHICLES/DAY
% COMMERCIAL =	6%
DESIGN SPEED =	60 MPH
POSTED SPEED =	PRIMA FACIE

BOMBAY ROAD

PRESENT ADT (2017) =	1240 VEHICLES/DAY
FUTURE ADT (2037) =	1543 VEHICLES/DAY
% COMMERCIAL =	10%
DESIGN SPEED =	60 MPH
POSTED SPEED =	PRIMA FACIE

CONTRACT FOR:
0.48 MILES OF COLD MILLING, HMA RESURFACING, ROAD WIDENING AND STORM SEWER IMPROVEMENTS.

MIDLAND COUNTY ROAD COMMISSION APPROVAL

Terence W Palmer 11-10-16
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

STATE OF MICHIGAN
MATTHEW J. SEITZ
ENGINEER
No. 57041
LICENSED PROFESSIONAL ENGINEER

Know what's **below.**
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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 (EX 1070)
- PROPOSED STRUCTURE NUMBER (1)
- FLOW DIRECTION
- EXISTING RIP-RAP
- PROPOSED RIP-RAP

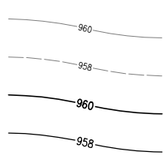
CAUTION SYMBOLS

- ••CAUTION•• HAZARDOUS FLAMMABLE MATERIAL UNDERGROUND — USED WITH UNDERGROUND GAS & ELECTRICAL LINES
- ••CAUTION•• FIBER OPTIC — USED WITH FIBER OPTICS LINES

PLAN VIEW LINE TYPES

- 12" STM — EXISTING STORM SEWER
- 12" CONC — EXISTING CULVERT
- PROPOSED STORM SEWER
- 12" SAN — EXISTING SANITARY SEWER
- PROPOSED SANITARY SEWER
- 12" WM — EXISTING WATER MAIN
- PROPOSED WATER MAIN
- SECTION LINE
- 60' ROW — EXISTING RIGHT OF WAY
- 60' ROW — PROPOSED RIGHT OF WAY
- PROPOSED EASEMENT
- EXISTING CENTER LINE DITCH
- PROPOSED DITCH CENTERLINE
- EXISTING CENTER LINE ROADWAY
- PARCEL LINE / LOT LINE
- O/H — EXISTING OVERHEAD UTILITIES
- U/G ELEC — UNDERGROUND ELECTRICAL LINE
- 6" S-MP GAS — GAS LINE OR PETROLEUM PIPELINE
- U/G TEL — UNDERGROUND TELEPHONE LINE
- U/G CATV — UNDERGROUND CABLE TV LINE
- U/G FIBER OPTIC — UNDERGROUND FIBER OPTIC
- 11+00 — PROJECT CONTROL LINE
- TREE LINE
- EXISTING FENCE
- PROPOSED FENCE
- EXISTING GUARD RAIL
- PROPOSED SLOPE STAKE LINE
- PROPOSED SILT FENCE

TOPOGRAPHY



- EXISTING CONTOURS MAJOR
- EXISTING CONTOURS MINOR
- PROPOSED CONTOUR MAJOR
- PROPOSED CONTOURS 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 HMA
- REMOVE CONCRETE
- COLD MILLING EXISTING PAVEMENT
- REMOVE SIDEWALK
- REMOVE CURB AND GUTTER
- REMOVE AND REPLACE CURB AND GUTTER
- SAND BACKFILL (PROFILE)
- PROPOSED HMA APPROACH

PROPOSED CALLOUTS

TOPO CALLOUTS	PLAN VIEW	
ADJ	(ADJ)	ADJUST STRUCTURE
ADJ-B/O	(ADJ-B/O)	ADJUST STRUCTURE BY OTHERS
REL	(REL)	RELOCATE
REC	(REC)	RECONSTRUCT STRUCTURE
REL-B/O	(REL-B/O)	RELOCATE BY OTHERS
REM	(R)	REMOVE
R&R	(R&R)	REMOVE AND REPLACE
SALV	(SALV)	SALVAGE
SAVE	(S)	SAVE
ABN	(A)	ABANDON
	(B)	BULKHEAD
	(SR-F)	SIDEWALK RAMP TYPE
	[XX]	SOIL EROSION CONTROL MEASURE

Know what's **below.** **Call** before you dig. 811

PLAN DATE: OCTOBER 2016
PROJECT MGR: MJS
REVIEWER: RAF
SCALE: N/A

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Mt. Pleasant, MI 48858
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www.rowepsc.com

PREPARED FOR
MIDLAND COUNTY ROAD COMMISSION
EASTMAN RD SAFETY IMPROVEMENTS

LEGEND SHEET

REV:

SHT# 2 OF 24

JOB No: 16M0055

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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) 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 AND BUSINESSES IN ADVANCE.

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

TRAFFIC SIGNS
TRAFFIC SIGNS WHICH INTERFERE WITH CONSTRUCTION SHALL BE REMOVED AND REPLACED BY THE AGENCY HAVING JURISDICTION OVER THE STREETS OR ROADS IN THE PROJECT AREA. THE CONTRACTOR IS RESPONSIBLE TO CONTACT THE AGENCY TO ARRANGE FOR REMOVAL OF THE SIGN AND IS RESPONSIBLE TO PAY ANY FEES ASSOCIATED WITH THE REMOVAL AND REPLACEMENT OF THE SIGNS.

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.

THE HORIZONTAL ALIGNMENT SHOWN ON THE DRAWINGS FOR DRAINAGE STRUCTURES LOCATED IN THE CURB LINE IS TO THE CENTER OF THE CASTING.

THE HORIZONTAL ALIGNMENT SHOWN ON THE DRAWINGS FOR DRAINAGE STRUCTURES WHICH ARE NOT IN THE CURB LINE AND FOR MANHOLES IS TO THE CENTER OF THE STRUCTURE.

WHERE RIM ELEVATIONS ARE PROVIDED ON THE PLANS FOR MANHOLE CASTINGS, THE ELEVATION PROVIDED IS FOR THE TOP OF THE CASTING.

WHERE RIM ELEVATIONS ARE PROVIDED FOR INLET TYPE CASTINGS, THE ELEVATIONS ARE PROVIDED AS FOLLOWS:
- CURB INLETS - THE ELEVATION OF THE TOP OF CURB
- ALL OTHER INLETS - THE ELEVATION OF THE FLOW LINE

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

WHEN 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.

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

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

THE CONTRACTOR SHALL PROVIDE SIGNING, FLAGGERS, CONES, 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 OF 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 THREE 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 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
EARTHWORK QUANTITIES, IF PROVIDED, ARE PROVIDED FOR THE CONTRACTOR'S INFORMATION. THE QUANTITIES WERE DEVELOPED USING THE AVERAGE END AREA METHOD. ASSUMPTIONS REGARDING TOPSOIL AND SHRINKAGE ARE STATED WITH THE ESTIMATES OF EXCAVATION AND FILL.

EARTHWORK SUMMARY (FOR INFORMATION ONLY)

EXCAVATION, EARTH	4,152 CYD
EMBANKMENT, CIP	2,000 CYD

ASSUMPTIONS:
- 3 INCHES OF TOPSOIL, INCLUDED IN EXCAVATION AND FILL VOLUMES
- EXCAVATION AND FILL VOLUMES HAVE BEEN DETERMINED WITHOUT CONSIDERATION OF AFFECT OF DENSITY, MOISTURE CONTENT, EXPANSION, ETC.

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.

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

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 7 A.M. TO 8 P.M.
SATURDAY 8 A.M. TO 6 P.M.

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

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.

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 SWEPT 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.

STORM SEWER CONSTRUCTION NOTES
DRAINAGE STRUCTURES SHALL BE CONSTRUCTED FROM PRECAST CONCRETE MANHOLE SECTIONS, MEETING ASTM C478.

DRAINAGE STRUCTURES AND CATCH BASINS SHALL INCLUDE 10' OF PERFORATED 6" WRAPPED PIPE TO COLLECT WATER FROM ADJACENT STORM SEWER TRENCHES.

SUMPS IN DRAINAGE STRUCTURES AND PIPELINES SHALL BE FREE OF SEDIMENT AND DEBRIS AT THE TIME OF ACCEPTANCE BY THE OWNER.

PIPE MATERIAL SHALL BE DOUBLE WALL PLASTIC PIPE MEETING ASTM F2881.

A MISCELLANEOUS QUANTITY OF DROP INLETS HAS BEEN INCLUDED TO BE PLACED AT LOCATIONS AS DIRECTED BY THE ENGINEER.

MISCELLANEOUS QUANTITIES

DESCRIPTION	UNITS	QUANTITY
Mobilization, Max	LSUM	1
Embankment, CIP	Cyd	2000
Excavation, Earth	Cyd	4152
Non Haz Contaminated Material Handling and Disposal, LM	Cyd	50
Subgrade Undercutting, Type II	Cyd	100
Maintenance Gravel	Ton	100
Approach, Cl I, 6 inch, Modified	Syd	130
Geotextile, Separator	Syd	200
Video Taping Sewer and Culv Pipe	Ft	3074
Drop Inlet, Type 1	Ea	5
HMA Approach	Ton	50
Driveway, Nonreinf Conc, 6 inch	Syd	80
Lighted Arrow, Type C, Furn	Ea	2
Lighted Arrow, Type C, Oper	Ea	2
Minor Traf Devices	LSUM	1
Pavt Mrkg, Wet Reflective, Type NR, Paint, 4 inch, Yellow, Temp	Ft	850
Plastic Drum, High Intensity, Furn	Ea	100
Plastic Drum, High Intensity, Oper	Ea	100
Sign, Type B, Temp, Prismatic, Furn	Sft	239
Sign, Type B, Temp, Prismatic, Oper	Sft	239
Sign, Type B, Temp, Prismatic, Special, Furn	Sft	113
Sign, Type B, Temp, Prismatic, Special, Oper	Sft	113
Traf Regulator Control	LSUM	1
Turf Establishment, Performance	Syd	4250

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REVISIONS

NO.	DATE	DESCRIPTION	BY

PLAN DATE: OCTOBER 2016
PROJECT MGR: MJS
REVIEWER: RAF
SCALE: NO SCALE

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EASTMAN RD SAFETY IMPROVEMENTS

CONSTRUCTION NOTE SHEET

REV:

SHT# 3 OF 24

JOB No: 16M0055

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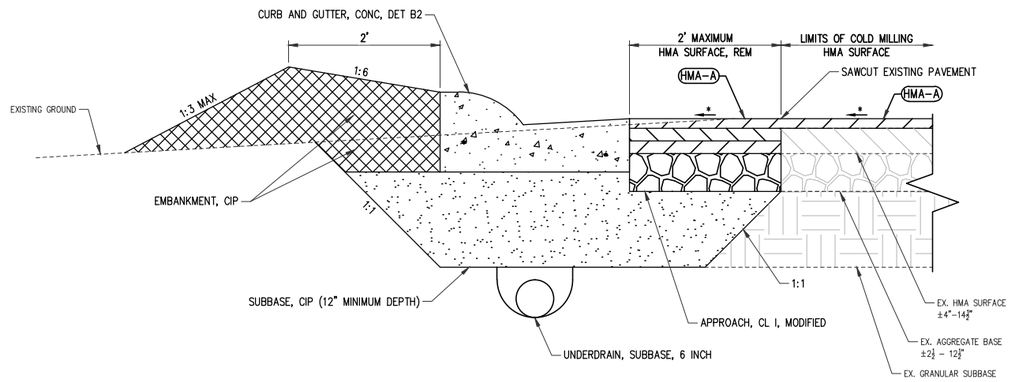
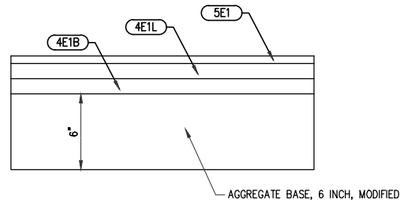


INTERSECTION WITH CURB AND GUTTER WIDENING DETAIL

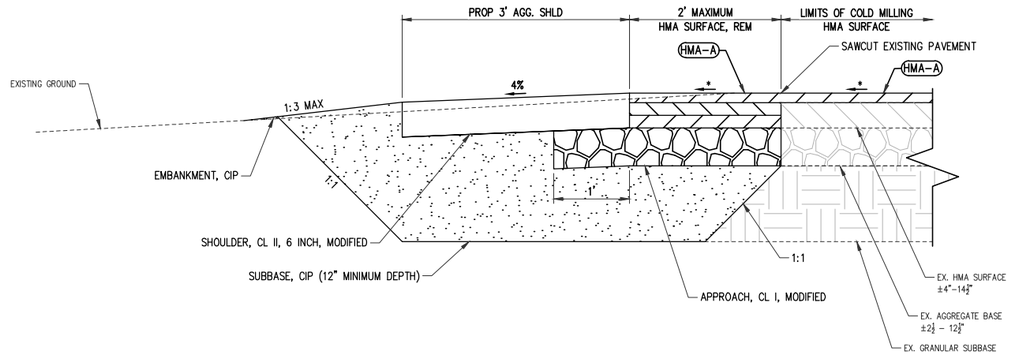
N.T.S.

* GRADE TO PROVIDE POSITIVE DRAINAGE



STORM SEWER TRENCH DETAIL

N.T.S.



INTERSECTION WIDENING DETAIL

N.T.S.

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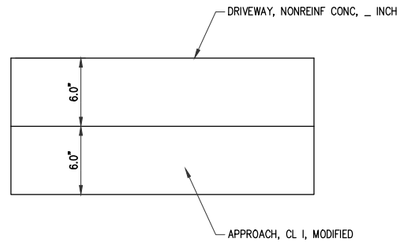
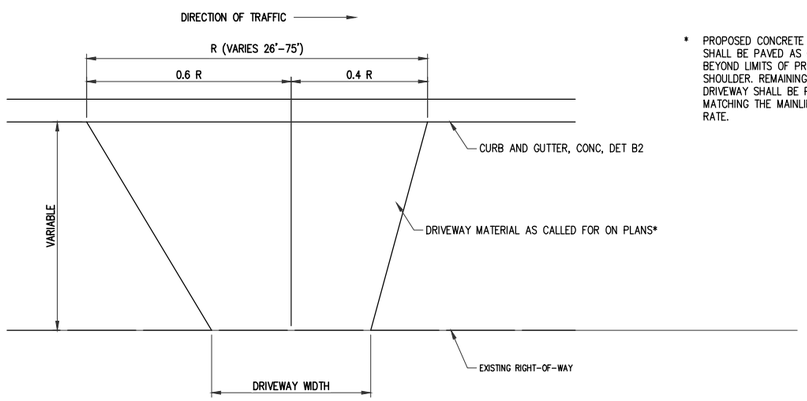


CONCRETE DRIVEWAY SECTION

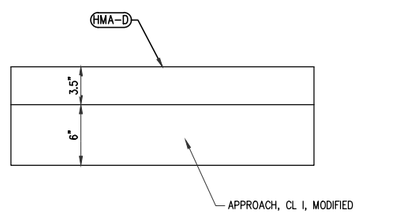
NO SCALE



* PROPOSED CONCRETE DRIVEWAYS SHALL BE PAVED AS CONCRETE ONLY BEYOND LIMITS OF PROPOSED SHOULDER. REMAINING PORTION OF DRIVEWAY SHALL BE PAVED AS HMA MATCHING THE MAINLINE APPLICATION RATE.

DRIVEWAY DETAIL

N.T.S.



HMA DRIVEWAY SECTION

NO SCALE

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REV:

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EASTMAN ROAD ALIGNMENT

BENCHMARK DATA TABLE

NUMBER	NORTHING	EASTING	ELEVATION	STATION	OFFSET	DESCRIPTION
BM 11	817417	13155064	680.8660	32+60.12	32.68' RT	TOP NE FLANGE BOLT OF HYDRANT E. SIDE OF EASTMAN ROAD BETWEEN "BEER & BRATS" AND "MINI STORAGE".
BM 12	816908	13154928	681.9120	27+42.29	81.79' LT	TOP NW FLANGE BOLT OF HYDRANT AT NW QUAD OF EASTMAN AND BOMBAY ROADS.
BM 13	816346	13154936	683.8330	21+87.06	28.55' LT	TOP SW FLANGE BOLT OF HYDRANT W. SIDE OF EASTMANROAD, ±500' S. OF BOMBAY ROAD.
BM 14	815467	13154943	682.7680	13+07.38	27.77' LT	TOP WSW FLANGE BOLT OF HYDRANT AT NW QUAD OF EASTMAN ROAD AND SCHNEIDER COURT.
BM 15	814913	13154947	678.0000	7+53.20	27.65' LT	TOP SW FLANGE BOLT OF HYDRANT AT W. SIDE OF EASTMAN ROAD AT N. SIDE OF "GRANDMA'S PUMPKIN PATCH".

TRAVERSE POINT DATA TABLE

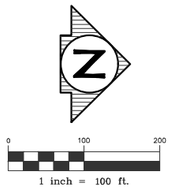
NUMBER	NORTHING	EASTING	STATION	OFFSET	DESCRIPTION
TP 1BASE	817408.2350	13155063.6260	32+51.75	32.17' RT	SET IRON W/ "ROWE TRAV" CAP 8' S. OF HYDRANT BETWEEN "BEER & BRATS" AND "MINI STORAGE", 32' E. OF CL OF EASTMAN ROAD.
TP 2	816834.8760	13154962.9600	26+72.90	38.76' LT	SET IRON W/ "ROWE TRAV" CAP IN SW QUAD OF EASTMAN AND BOMBAY ROADS, 36' S. AND 39' W. OF CL-CL INTERSECTION, 14.5' ESE OF STOP SIGN.
TP 3	816296.1120	13154995.6490	21+36.27	30.52' RT	SET IRON W/ "ROWE TRAV" CAP ±30' E. OF CL OF EASTMAN ROAD AND ±35' N. OF CL BIT DRIVE TO "TRI-CITY GROUNDBREAKERS", ±16' S. OF STORM MANHOLE.
TP 4	815411.0120	13154934.9800	12+51.62	36.33' LT	SET IRON W/ "ROWE TRAV" CAP AT SW QUAD OF EASTMAN ROAD AND SCHNEIDER COURT, 18.5' S. AND 36' W. OF CL-CL INTERSECTION, 8' E. OF STOP SIGN.
TP 5	814851.9100	13155001.4560	6+92.07	26.24' RT	SET IRON W/ "ROWE TRAV" CAP 25' E. OF EASTMAN ROAD, ±8' S. OF CL FARM ENTRANCE, ±475' N. OF E 1/4 SECTION 4.

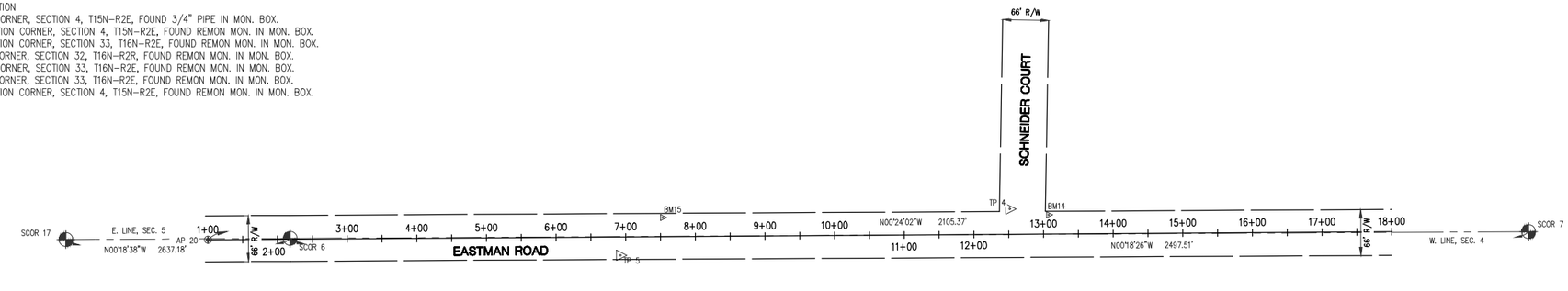
ALIGNMENT POINT DATA TABLE

NUMBER	NORTHING	EASTING	STATION	OFFSET	DESCRIPTION
AP POB	814259.6736	13154979.3601	1+00.00	0.00' RT	POINT OF BEGINNING, EASTMAN ROAD ALIGNMENT
AP PC	816364.9915	13154964.6435	22+05.37	0.00' RT	POINT OF CURVATURE, EASTMAN ROAD ALIGNMENT
AP PC	817006.9314	13155020.3455	28+50.08	0.00' RT	POINT OF CURVATURE, EASTMAN ROAD ALIGNMENT
AP PT	816591.6416	13154975.9339	24+32.42	0.00' RT	POINT OF TANGENT, EASTMAN ROAD ALIGNMENT
AP PT	817222.0520	13155031.6833	30+65.60	0.00' RT	POINT OF TANGENT, EASTMAN ROAD ALIGNMENT
AP POE	817486.9210	13155031.3588	33+30.47	0.00' RT	POINT OF ENDING, EASTMAN ROAD ALIGNMENT

SECTION CORNER DATA TABLE

NUMBER	NORTHING	EASTING	STATION	OFFSET	DESCRIPTION
QCOR 6	814377.8170	13154977.1050	2+18.16	1.43' LT	W 1/4 CORNER, SECTION 4, T15N-R2E, FOUND 3/4" PIPE IN MON. BOX.
SCOR 7	816875.4300	13154963.7080	27+13.30	42.33' LT	NW SECTION CORNER, SECTION 4, T15N-R2E, FOUND REMON MON. IN MON. BOX.
SCOR 8	816874.3300	13155033.0860	27+19.59	26.77' RT	SW SECTION CORNER, SECTION 33, T16N-R2E, FOUND REMON MON. IN MON. BOX.
QCOR 9	816910.7830	13152396.9100	24+75.51	2598.34' LT	S 1/4 CORNER, SECTION 32, T16N-R2R, FOUND REMON MON. IN MON. BOX.
QCOR 10	819523.1780	13155029.8950	N/A	N/A	W 1/4 CORNER, SECTION 33, T16N-R2E, FOUND REMON MON. IN MON. BOX.
QCOR 16	816833.7710	13157671.4600	28+97.22	2655.79' RT	S 1/4 CORNER, SECTION 33, T16N-R2E, FOUND REMON MON. IN MON. BOX.
SCOR 17	811740.6740	13154991.3980	N/A	N/A	SW SECTION CORNER, SECTION 4, T15N-R2E, FOUND REMON MON. IN MON. BOX.





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PROJECT MGR.: MJS
REVIEWER: JHR
SCALE: 1" = 100'

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MIDLAND COUNTY ROAD COMMISSION
EASTMAN RD SAFETY IMPROVEMENTS
P.O.B. TO STA 18+00
ALIGNMENT AND CONTROL SHEET

REV:

SHT# 5 OF 24

JOB No: 16M0055

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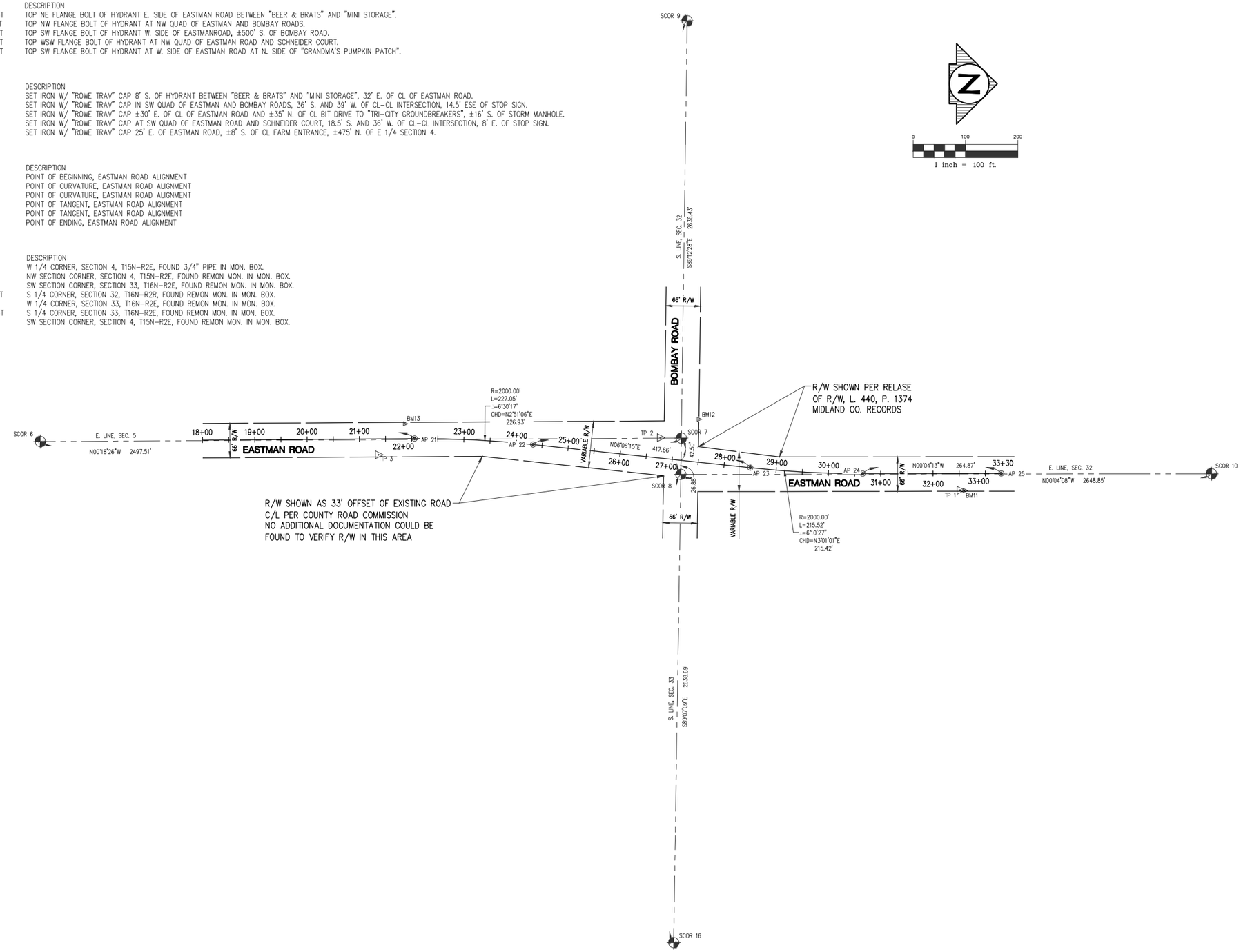

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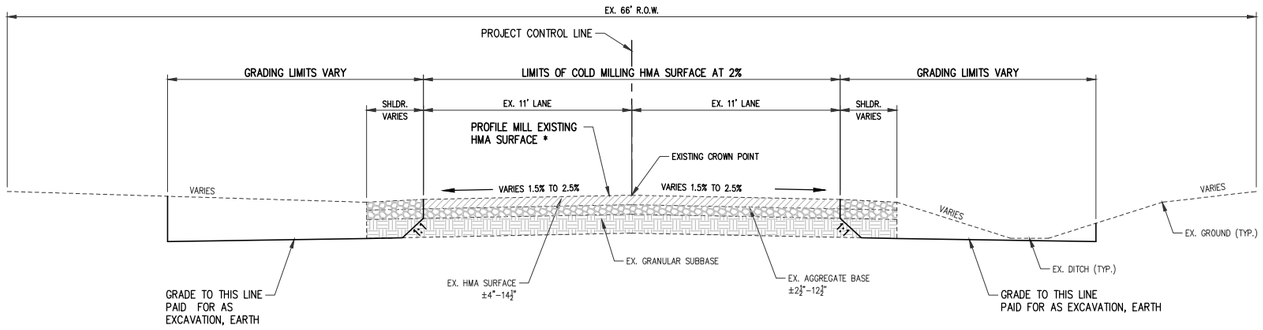

TYPICAL EXISTING CROSS SECTION

APPLIES:
P.O.B. (STA. 6+75) TO P.O.E. (STA. 32+21)
*** MILLING DEPTH VARIES TO ACHIEVE PROPOSED PROFILE**

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EXISTING TYPICAL CROSS SECTION

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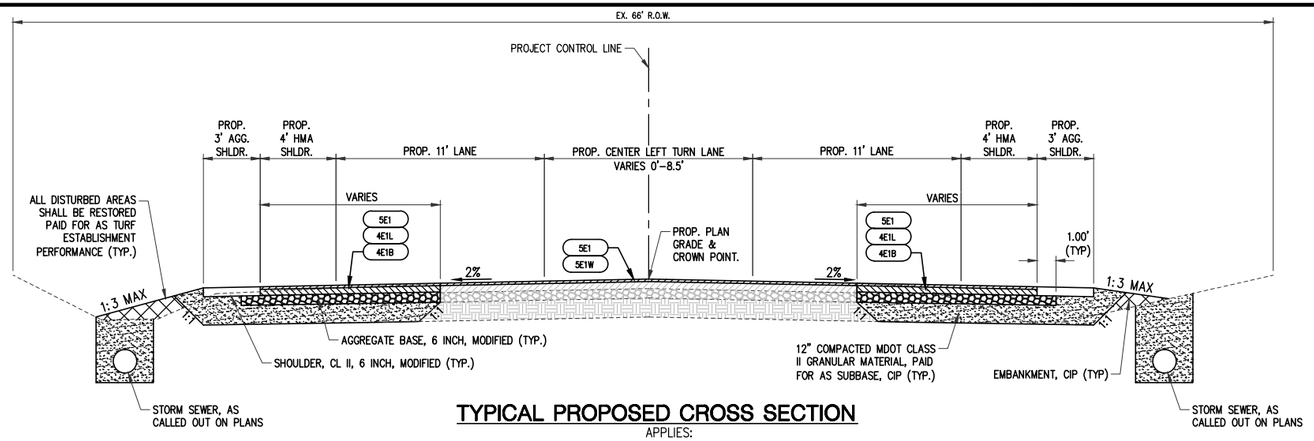
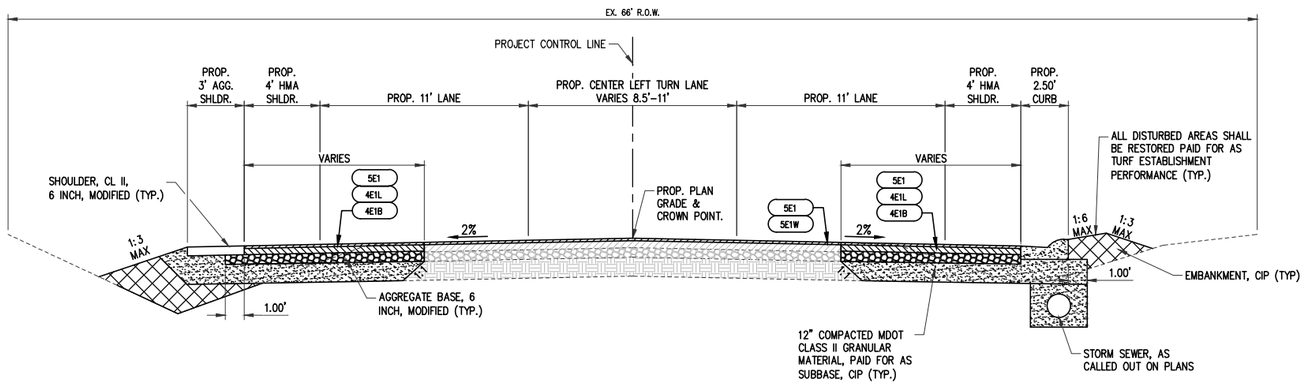


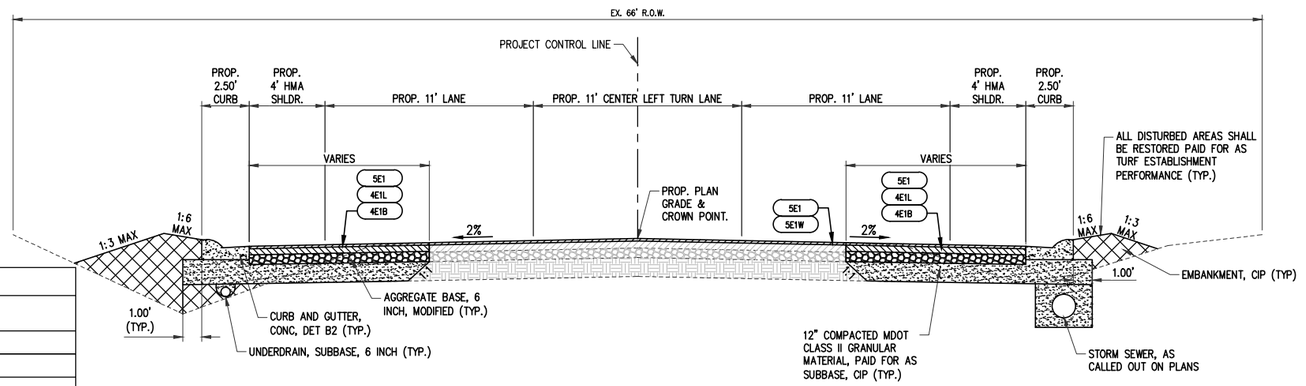
TYPICAL PROPOSED CROSS SECTION

APPLIES:
STA. P.O.B. (6+75) TO STA. 10+04



TYPICAL PROPOSED SUPERELEVATED CROSS SECTION

APPLIES:
STA. 10+04 TO STA. 10+79



TYPICAL PROPOSED CROSS SECTION

APPLIES:
STA. 10+79 TO STA. 20+43
STA. 25+94 TO STA. 26+88

HMA APPLICATION CHART

IDENT NO	ITEM	HMA PAVEMENT	RATE OF APPLICATION	ESTIMATED THICKNESS	PERFORMANCE GRADE	COMMENTS
5E1	HMA, 5E1	HMA, 5E1	165#/SYD	1.5"	64–28	TOP COURSE
4E1L	HMA, 4E1L	HMA, 4E1	220#/SYD	2.0"	64–28	LEVELING COURSE
4E1B	HMA, 4E1B	HMA, 4E1	220#/SYD	2.0"	58–22	BASE COURSE
5E1W	HMA, 5E1W	HMA, 5E1	VARIES	VARIES	64–28	WEDGING FOR PROFILE AND CROWN CORRECTION
HMA–A	HMA APPROACH	–	–	–	64–28	MATCH MAINLINE APPLICATION RATES
HMA–D	HMA APPROACH	VARIES	385#/SYD	–	64–28	HMA, 5E1 @ 165#/SYD AND HMA, 4E1 @ 220#/SYD FOR DRIVEWAYS
–	HMA BOND COAT	–	0.05–0.15 GAL	–	–	NOT A PAY ITEM; FOR INFORMATION ONLY

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REVISIONS			
NO.	DATE	DESCRIPTION	BY
–	–	–	–

PLAN DATE: OCTOBER 2016
PROJECT MGR: MJS
REVIEWER: RAF
SCALE: NO SCALE

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PREPARED FOR
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EASTMAN RD SAFETY IMPROVEMENTS

PROPOSED TYPICAL CROSS SECTIONS

REV:
SHT# 8 OF 24
JOB No: 16M0055

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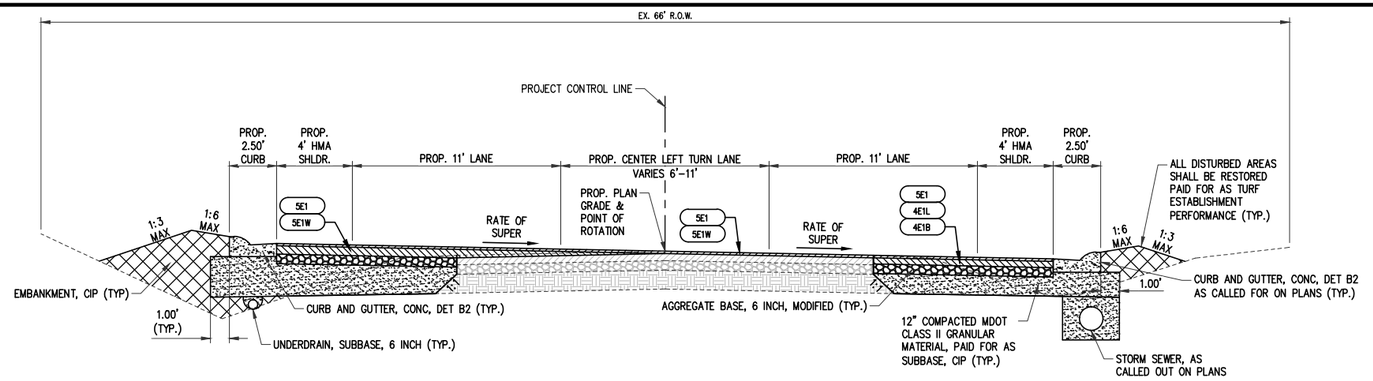
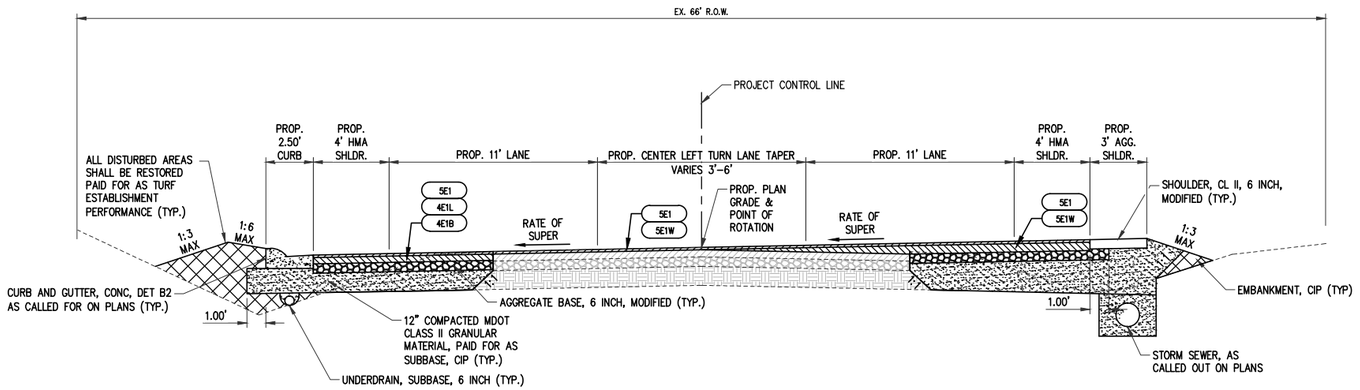


TYPICAL PROPOSED SUPERELEVATED CROSS SECTION

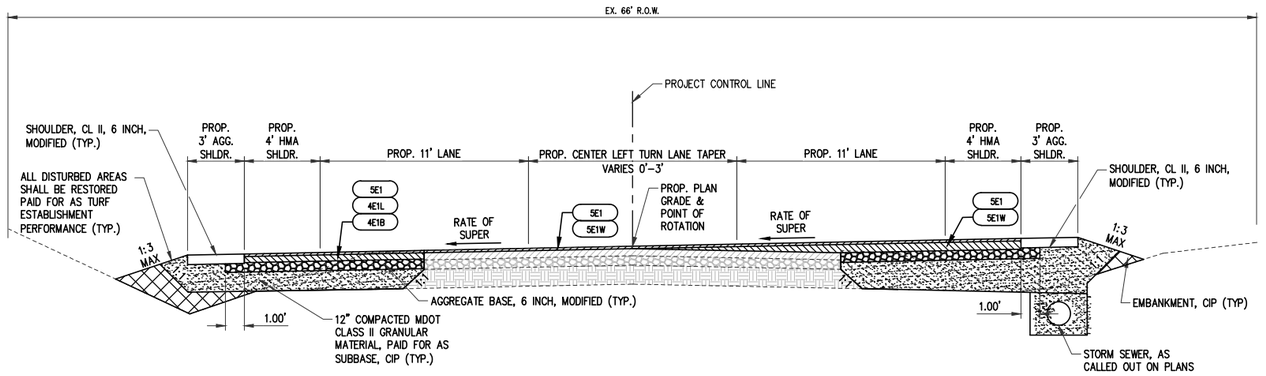
APPLIES:
STA. 20+43 TO STA. 25+94
STA. 26+88 TO STA. 29+10

EASTMAN ROAD SUPERELEVATION CHART
2% → 2%
STA 20+43
0% → 2%
STA 21+17
2% → 2%
STA 21+91
4% → 4%
STA 22+64 – 23+72
2% → 2%
STA 24+46
0% → 2%
STA 25+20
2% → 2%
STA 25+94



TYPICAL PROPOSED SUPERELEVATED CROSS SECTION

APPLIES:
STA. 29+10 TO STA. 30+10



TYPICAL PROPOSED SUPERELEVATED CROSS SECTION

APPLIES:
STA. 30+10 TO STA. 32+21 (P.O.E.)

EASTMAN ROAD SUPERELEVATION CHART
2% → 2%
STA 26+88
2% → 0%
STA 27+62
2% → 2%
STA 28+36
4% → 4%
STA 29+09 – 30+00
2% → 2%
STA 30+73
2% → 0%
STA 31+47
2% → 2%
STA 32+21

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REVISIONS			
NO.	DATE	DESCRIPTION	BY
-	-	-	-

PLAN DATE: OCTOBER 2016
PROJECT MGR: MJS
REVIEWER: RAF
SCALE: NO SCALE

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PROPOSED TYPICAL CROSS SECTIONS

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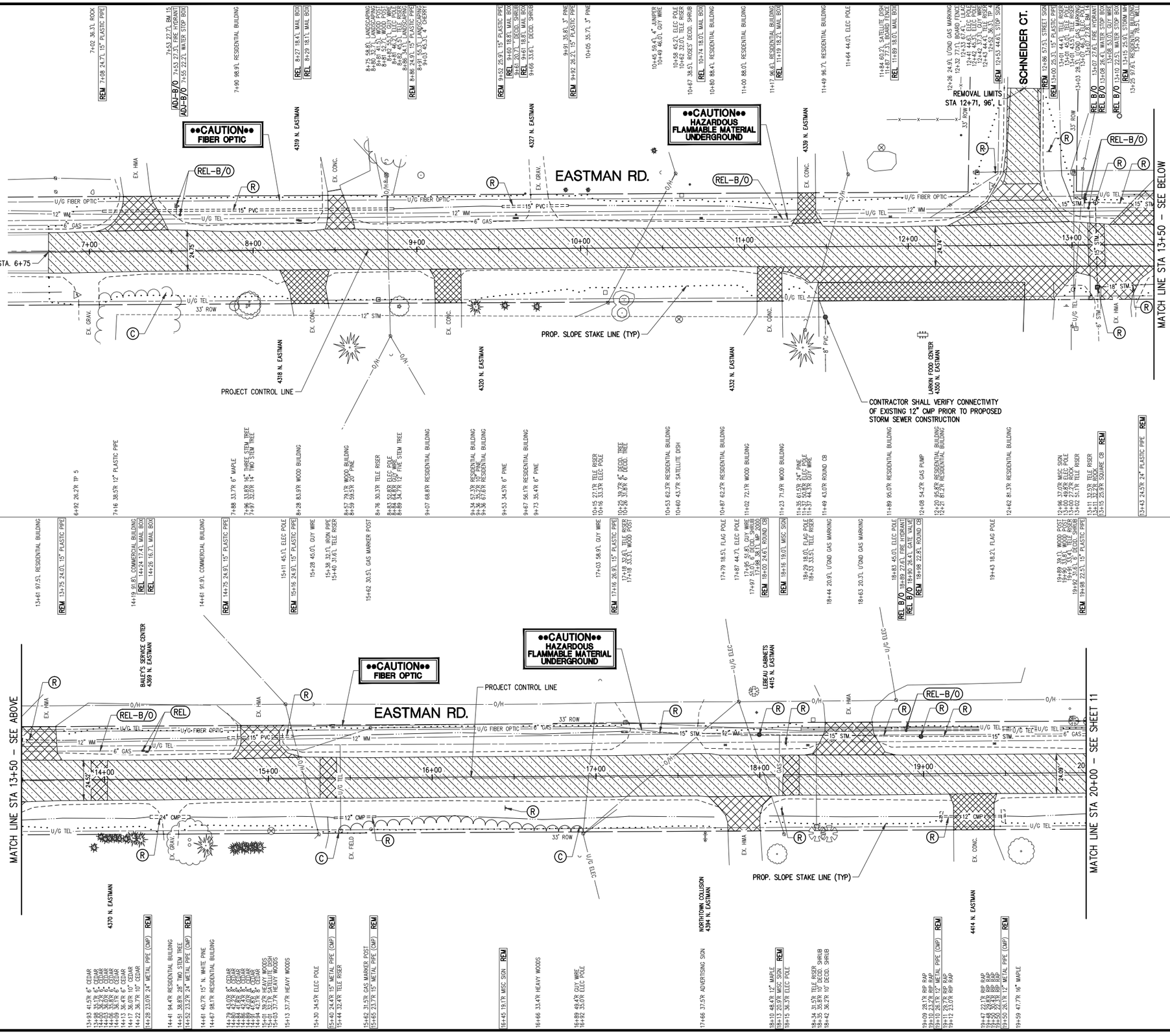
REV:

SHT# 9 OF 24

JOB No: 16M0055



SHEET QUANTITIES

DESCRIPTION	QUANTITY	UNIT
Clearing	0.1	ACRE
Culv, Rem, Less Than 24 Inch	6	EA
Dr Structure, Rem	4	EA
Sewer, Rem, Less than 24 Inch	440	FT
Pavt, Rem	662	SYD
Cold Milling HMA Surface	3849	SYD
HMA Surface, Rem	898	SYD
Sign, Type III, Rem	5	EA

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REVISIONS			
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-	-	-	-

PLAN DATE: OCTOBER 2016
PROJECT MGR: MJS
REVIEWER: RAF
SCALE: 1" = 30'

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REMOVAL SHEET

REV:
SHT# 10 OF 24
JOB No: 16M0055

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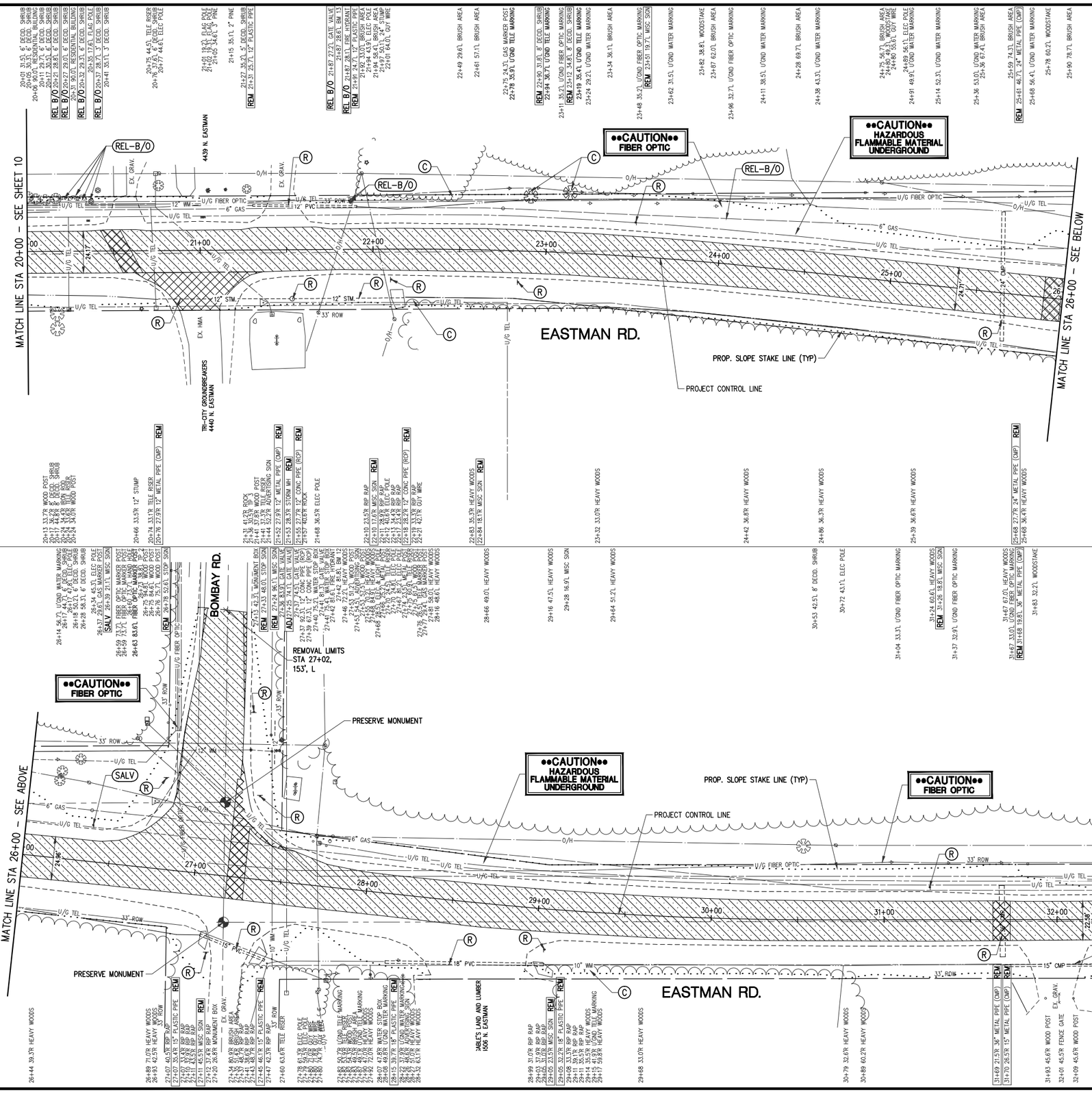

SHEET QUANTITIES

	QUANTITY	UNIT
Clearing	0.1	ACRE
Culv, Rem, Less Than 24 Inch	5	EA
Culv, Rem, 24 Inch to 48 Inch	1	EA
Dr Structure, Rem	1	EA
Sewer, Rem, Less than 24 Inch	139	FT
Cold Milling HMA Surface	3913	SYD
HMA Surface, Rem	268	SYD
Sign, Type III, Rem	9	EA
Monument Preservation	2	EA

REVISIONS

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PLAN DATE: OCTOBER 2016
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REVIEWER: RAF
SCALE: 1" = 30'

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REV:

SHT# 11 OF 24

JOB No: 16M0055

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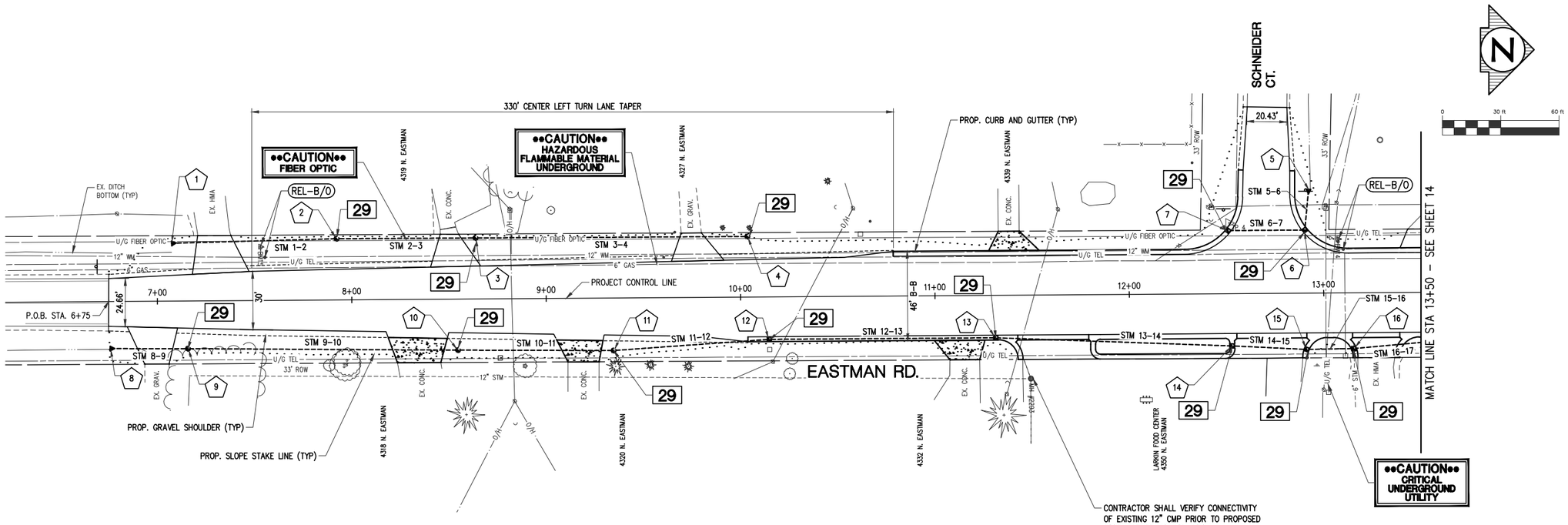

DRIVEWAY & APPROACH SCHEDULE

RIGHT OF WAY

C/L DRIVEWAY STATION	EXIST. PVMT TYPE	WIDTH AT RIGHT OF WAY (FT)	WIDTH AT OPENING (FT)	LENGTH OF DRIVE RESTORATION (FT)	DRIVEWAY OPENING, CONC, DET L (FT)	DRIVEWAY OPENING, CONC, DET M (FT)	DRIVEWAY, NONREINF CONC, 6 INCH (SYD)	APPROACH, CL I, 6 INCH, MODIFIED (SYD)	HMA APPROACH (TON)	CURB & GUTTER, CONC, DET B2 (FT)
7+00, RT	G	12.6	26.0	18.8				40	8	
7+29, LT	HMA	17.0	29.3	19.4				50	10	
8+34, RT	C	22.3	32.3	12.7			37	37		
8+50, LT	HMA	10.0	26.0	16.7				33	6	
9+19, RT	C	16.0	26.0	11.0			25	25		
9+75, LT	G	10.5	27.2	14.4				30	6	
11+15, RT	C	15.3	26.0	10.0	26.0		23	23		
11+38, LT	C	10.7	26.0	9.9	26.0		20	20		
11+63, RT	HMA/C	42.5	52.5	12.5		52.5		66	14	93
12+71, LT	HMA		84.2	75.3				81	42	118
12+74, RT	HMA/C	42.0	52.5	12.8		52.5		67	14	93
13+27, RT	HMA	19.0	44.0	10.4		44.0		25	5	32

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

UTILITY ROAD REPAIR SCHEDULE

CROSSING STATION	AVERAGE WIDTH OF REPAIR (FT)	AVERAGE LENGTH OF REPAIR (FT)	HAND PATCHING (TON)	AGGREGATE BASE, 6 INCH MODIFIED (SYD)
13+00	10.0	26.5	7	29

PROPOSED STORM SEWER PIPE TABLE

PIPE NAME	SIZE	LENGTH	SLOPE
STM 1-2	12	85	2.93%
STM 2-3	12	71	0.49%
STM 3-4	12	140	0.48%
STM 5-6	12	21	0.52%
STM 6-7	12	40	0.53%
STM 8-9	24	40	0.17%
STM 9-10	24	139	2.00%
STM 10-11	24	80	0.17%
STM 11-12	24	80	0.17%
STM 12-13	24	117	0.17%
STM 13-14	24	122	0.17%
STM 14-15	18	38	0.29%
STM 15-16	18	24	0.29%
STM 16-17	18	82	0.29%
STM 16A-EX	6	3	7.13%

PROPOSED STORM SEWER STRUCTURE TABLE

STRUCTURE NUMBER	DIAMETER	COVER TYPE	RIM ELEVATION	INVERT	STATION *	OFFSET *
1				12" 674.27 N	7+08	29.8 L
2	48"	G	RIM=679.03	12" 676.76 N 12" 676.76 S	7+92	31.5 L
3	48"	G	RIM=679.50	12" 677.11 N 12" 677.11 S	8+64	31.4 L
4	24"	G	RIM=680.53	12" 677.78 S	10+04	31.2 L
5				12" 678.62 E	12+93	53.5 L
6	48"	J	T/C=681.94	12" 678.73 S 12" 678.73 W	12+90	32.5 L
7	48"	J	T/C=682.09	12" 678.94 N	12+51	32.5 L
8				24" 672.85 N	6+76	24.2 R
9	48"	G	RIM=677.48	24" 672.92 S 24" 672.92 N	7+16	24.5 R
10	48"	G	RIM=680.46	24" 675.70 S 24" 676.45 N	8+54	26.2 R
11	48"	G	RIM=681.56	24" 676.59 S 24" 676.59 N	9+35	27.0 R
12	48"	J	T/C=682.43	24" 676.73 S 24" 676.73 N	10+15	21.8 R
13	48"	J	T/C=682.64	24" 676.93 S 24" 676.93 N	11+31	21.8 R
14	48"	J	T/C=682.39	24" 677.14 S 18" 677.14 N	12+53	26.9 R
15	48"	J	T/C=681.93	18" 677.25 S 18" 677.25 N	12+91	28.9 R
16	48"	J	T/C=681.83	18" 677.32 N 18" 677.32 S 6" 678.90 E	13+15	28.7 R

SHEET QUANTITIES

DESCRIPTION	QUANTITY	UNIT
Erosion Control, Inlet Protection, Fabric Drop	13	EA
Subbase, CIP	524	CYD
Aggregate Base, 6 inch, Modified	1098	SYD
Approach, Cl I, 6 inch, Modified	497	SYD
Shoulder, Cl II, 6 inch, Modified	194	SYD
Culv End Sect, 12 inch	1	EA
Culv, Slp End Sect, 1 on 6, 24 inch, Longit	1	EA
Sewer, Cl A, 6 inch, Tr Det B	3	FT
Sewer, Cl A, 12 inch, Tr Det B	357	FT
Sewer, Cl A, 18 inch, Tr Det B	144	FT
Sewer, Cl A, 24 inch, Tr Det B	578	FT
Sewer Tap, 6 inch	1	EA
Dr Structure Cover, Type G	6	EA
Dr Structure Cover, Type J	7	EA
Dr Structure, 24 inch dia	1	EA
Dr Structure, 48 inch dia	12	EA
Dr Structure, Add Depth of 48 inch dia, 8 foot to 15 foot	2	FT
Underdrain, Subbase, 6 inch	273	FT
Hand Patching	21	TON
HMA, 4E1	211	TON
HMA, 5E1	313*	TON
HMA Approach	105	TON
Driveway, Nonreinf Conc, 6 inch	105	SYD
Curb and Gutter, Conc, Det B2	696	FT
Driveway Opening, Conc, Det M	149	FT
Post, Mailbox	7	EA

* INCLUDES 81 TON FOR CROWN AND PROFILE CORRECTION

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PLAN DATE: OCTOBER 2016
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REVIEWER: RAF
SCALE: 1" = 30'

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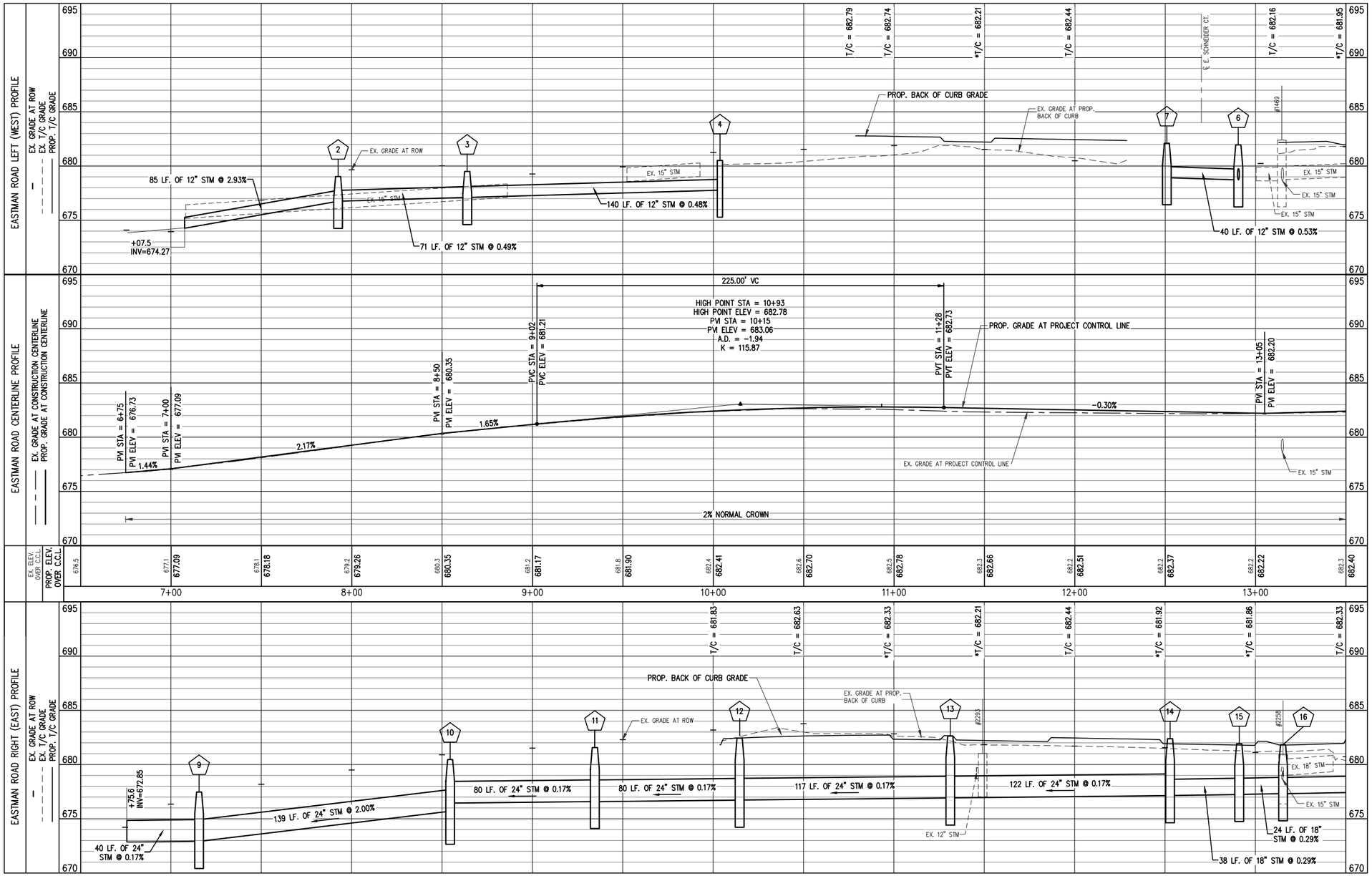

* ELEVATION IS BACK OF CURB AT M OPENING. ADD 0.38' FOR FULL CURB HEIGHT.

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REVISIONS			
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PLAN DATE: OCTOBER 2016
PROJECT MGR: MJS
REVIEWER: RAF
SCALE: HORZ. 1"=30' VERT. 1"=5'

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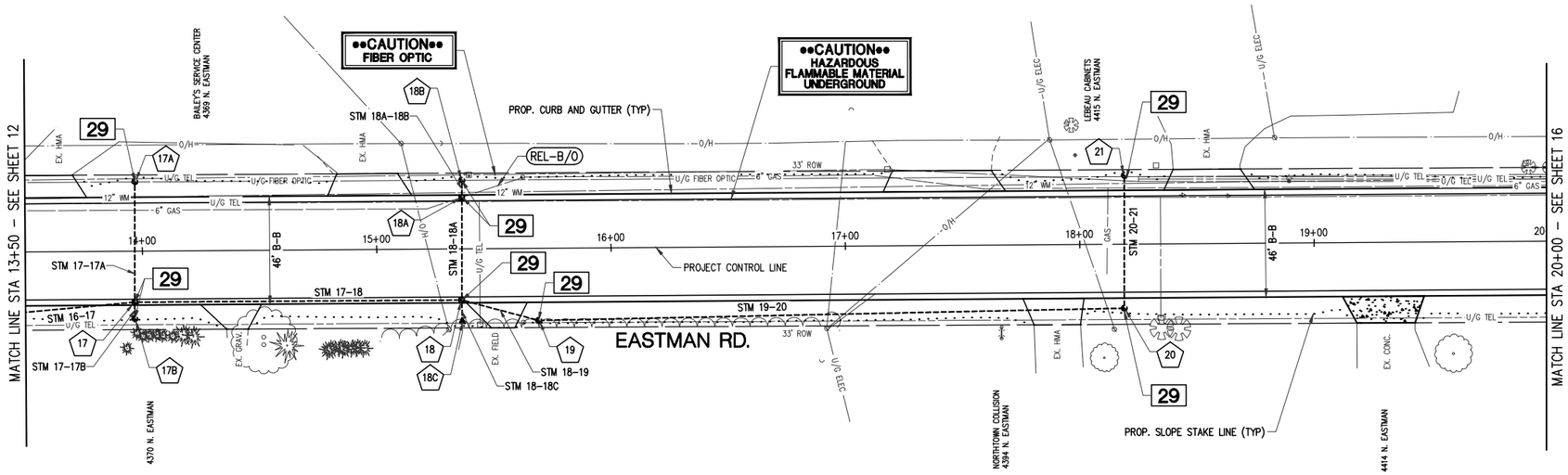

DRIVEWAY & APPROACH SCHEDULE								
RIGHT OF WAY								
C/L DRIVEWAY STATION	EXIST. PVMT TYPE	WIDTH AT RIGHT OF WAY (FT)	WIDTH AT OPENING (FT)	LENGTH OF DRIVE RESTORATION (FT)	DRIVEWAY OPENING, CONC, DET L (FT)	DRIVEWAY, NONREINF CONC, 6 INCH (SYD)	APPROACH, CL I, 6 INCH, MODIFIED (SYD)	HMA APPROACH (TON)
13+57, LT	HMA	27.0	37.0	9.6	37.0		35	7
14+40, RT	G	10.0	26.0	10.6	26.0		21	4
14+96, LT	HMA	25.9	35.9	9.4	35.9		32	6
15+54, RT	G	10.0	26.0	10.7	26.0		21	4
17+41, LT	G	42.2	52.2	9.0	52.2		47	9
17+90, RT	HMA	19.7	26.0	11.1	26.0		28	6
18+54, LT	HMA	26.7	38.7	8.8	38.7		33	6
19+30, RT	C	24.8	34.8	11.4	34.8	37	37	

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

UTILITY ROAD REPAIR SCHEDULE				
CROSSING STATION	AVERAGE WIDTH OF REPAIR (FT)	AVERAGE LENGTH OF REPAIR (FT)	HAND PATCHING (TON)	AGGREGATE BASE, 6 INCH, MODIFIED (SYD)
14+00	10.0	24.5	7	27
15+50	10.0	25.0	7	28
18+50	10.0	24.4	7	27

PROPOSED STORM SEWER PIPE TABLE			
PIPE NAME	SIZE	LENGTH	SLOPE
STM 17–17A	12	51	0.49%
STM 17–17B	12	7	0.57%
STM 17–18	18	140	0.28%
STM 18–18A	12	44	0.50%
STM 18–18C	12	10	1.01%
STM 18–19	15	34	0.38%
STM 18A–18B	12	7	0.54%
STM 19–20	15	250	0.36%
STM 20–21	12	57	0.48%

PROPOSED STORM SEWER STRUCTURE TABLE						
STRUCTURE NUMBER	DIAMETER	COVER TYPE	RIM ELEVATION	INVERT	STATION *	OFFSET *
17	48"	J	T/C=682.52	12" 677.56 E 12" 677.56 W 18" 677.56 N 18" 677.56 S	13+97	21.8 R
17A	24"	G	RIM=680.90	12" 677.81 E	13+97	29.7 L
17B	24"	G	RIM=680.22	12" 677.60 W	13+97	28.8 R
18	48"	J	T/C=683.01	18" 677.95 S 15" 677.95 N 12" 677.95 W 12" 677.95 E	15+36	21.8 R
18A	48"	J	T/C=683.01	12" 678.17 E 12" 678.17 W	15+36	21.8 L
18B	24"	G	RIM=681.16	12" 678.21 E	15+37	29.3 L
18C				12" 678.05 W	15+36	31.7 R
19	48"	G	RIM=681.73	15" 678.08 S 15" 678.08 N	15+69	30.8 R
20	48"	G	RIM=681.89	15" 678.98 S 12" 678.98 W	18+19	27.3 R
21	24"	G	RIM=682.32	12" 679.25 E	18+19	29.4 L

SHEET QUANTITIES

DESCRIPTION	QUANTITY	UNIT
Erosion Control, Inlet Protection, Fabric Drop	8	EA
Subbase, CIP	590	CYD
Aggregate Base, 6 inch, Modified	1261	SYD
Approach, CI I, 6 inch, Modified	254	SYD
Culv End Sect, 12 inch	1	EA
Sewer, CI A, 12 inch, Tr Det B	176	FT
Sewer, CI A, 15 inch, Tr Det B	284	FT
Sewer, CI A, 18 inch, Tr Det B	140	FT
Dr Structure Cover, Type G	6	EA
Dr Structure Cover, Type J	3	EA
Dr Structure, 24 inch dia	4	EA
Dr Structure, 48 inch dia	5	EA
Underdrain, Subbase, 6 inch	830	FT
Hand Patching	21	TON
HMA, 4E1	260	TON
HMA, 5E1	389*	TON
HMA Approach	42	TON
Driveway, Nonreinf Conc, 6 inch	37	SYD
Curb and Gutter, Conc, Det B2	1300	FT
Post, Mailbox	2	EA

* INCLUDES 144 TON FOR CROWN AND PROFILE CORRECTION

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PLAN DATE: OCTOBER 2016
PROJECT MGR: MJS
REVIEWER: RAF
SCALE: 1" = 30'

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REV:

SHT# 14 OF 24
JOB No: 16M0055

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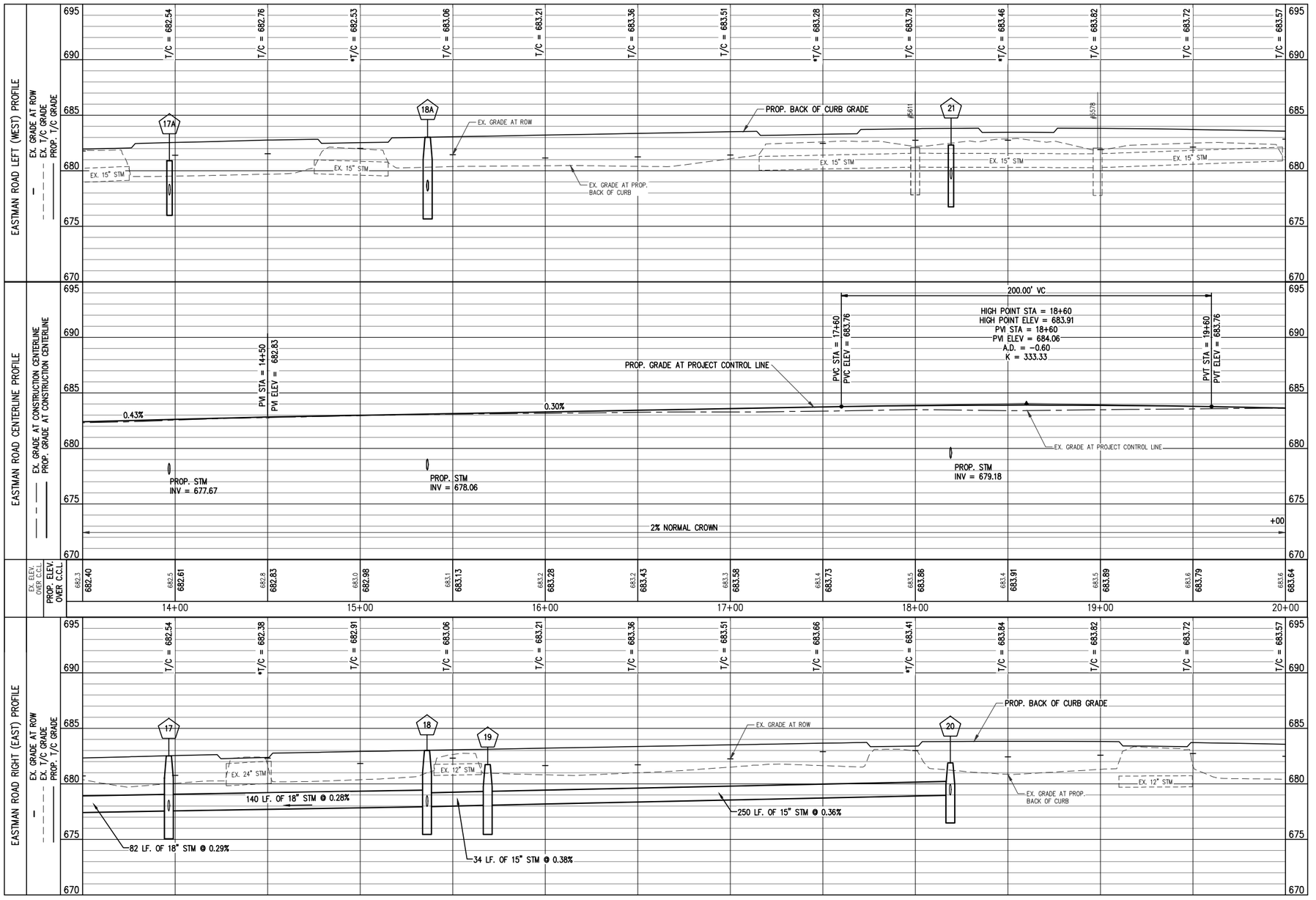

HOR: 0 30 ft 60 ft
VERT: 0 5 ft 10 ft

* ELEVATION IS BACK OF CURB AT M OPENING. ADD 0.38' FOR FULL CURB HEIGHT.

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REV:

SHT# 15 OF 24

JOB No: 16M0055

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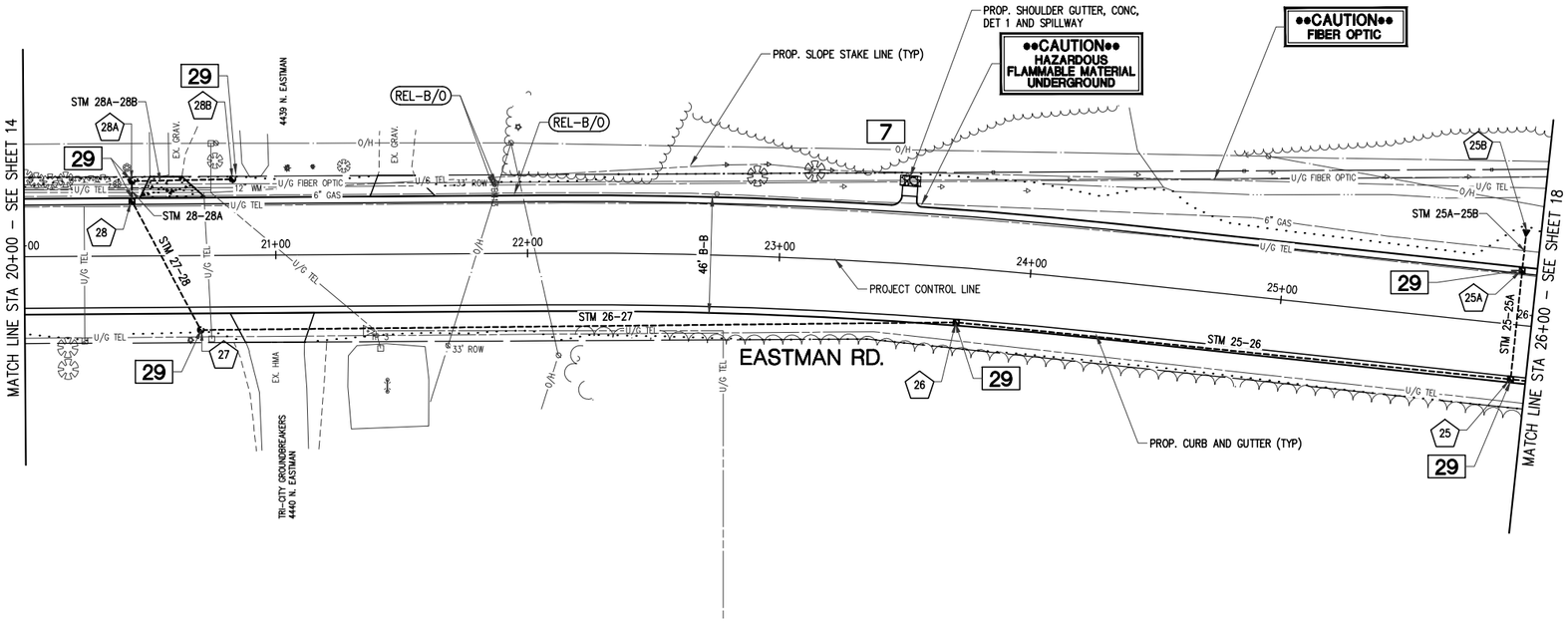

DRIVEWAY & APPROACH SCHEDULE								
RIGHT OF WAY								
C/L DRIVEWAY STATION	EXIST. PVMT TYPE	WIDTH AT RIGHT OF WAY (FT)	WIDTH AT OPENING (FT)	LENGTH OF DRIVE RESTORATION (FT)	DRIVEWAY OPENING, CONC, DET L (FT)	DRIVEWAY, NONREINF CONC, 6 INCH (SYD)	APPROACH, CL I, 6 INCH, MODIFIED (SYD)	HMA APPROACH (TON)
20+57, LT	C/G	12.8	26.0	8.4	26.0	19	19	
20+99, RT	HMA	23.4	50.0	11.6	50.0		74*	13*
21+48, LT	G	14.5	26.0	8.3	26.0		19	4

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

*CONSTRUCT 12" AGGREGATE APPROACH AND 6" HMA APPROACH AT TRI CITY GROUNDBREAKERS DRIVEWAY

UTILITY ROAD REPAIR SCHEDULE				
CROSSING STATION	AVERAGE WIDTH OF REPAIR (FT)	AVERAGE LENGTH OF REPAIR (FT)	HAND PATCHING (TON)	AGGREGATE BASE, 6 INCH, MODIFIED (SYD)
20+50	10.0	28.3	7	32
25+94	10.0	24.4	7	28

PROPOSED STORM SEWER PIPE TABLE			
PIPE NAME	SIZE	LENGTH	SLOPE
STM 25-25A	18	43	0.28%
STM 25-26	18	221	0.28%
STM 25A-25B	18	16	0.28%
STM 26-27	15	300	0.36%
STM 27-28	12	58	0.48%
STM 28-28A	12	8	0.48%
STM 28A-28B	12	40	0.60%

PROPOSED STORM SEWER STRUCTURE TABLE						
STRUCTURE NUMBER	DIAMETER	COVER TYPE	RIM ELEVATION	INVERT	STATION *	OFFSET *
25	48"	J	T/C=681.67	18" 677.62 S 24" 677.62 N 18" 677.62 W	25+94	21.7 R
25A	48"	J	T/C=681.67	18" 677.74 E 18" 677.74 W	25+94	21.7 L
25B				18" 677.79 E	25+94	37.7 L
26	48"	J	T/C=681.14	18" 678.24 N 15" 678.24 S	23+72	21.8 R
27	48"	G	RIM=681.90	15" 679.32 N 12" 679.32 SW	20+70	29.6 R
28	48"	J	T/C=683.45	12" 679.60 NE 12" 679.60 W	20+43	21.8 L
28A	48"	G	RIM=682.64	12" 679.64 N 12" 679.64 E	20+43	29.8 L
28B	24"	G	RIM=682.68	12" 679.88 S	20+83	30.3 L

SHEET QUANTITIES

DESCRIPTION	QUANTITY	UNIT
Erosion Control, Inlet Protection, Fabric Drop	7	EA
Subbase, CIP	546	CYD
Aggregate Base, 6 inch, Modified	1154	SYD
Approach, CI I, 6 inch, Modified	112	SYD
Culv, End Sect, 12 inch	1	EA
Sewer, CI A, 12 inch, Tr Det B	106	FT
Sewer, CI A, 15 inch, Tr Det B	300	FT
Sewer, CI A, 18 inch, Tr Det B	280	FT
Dr Structure Cover, Type G	3	EA
Dr Structure Cover, Type J	4	EA
Dr Structure, 24 inch dia	1	EA
Dr Structure, 48 inch dia	6	EA
Underdrain, Subbase, 6 inch	603	FT
Hand Patching	14	TON
HMA, 4E1	241	TON
HMA, 5E1	329*	TON
HMA Approach	17	TON
Driveway, Nonreinf Conc, 6 inch	19	SYD
Curb and Gutter, Conc, Det B2	1200	FT
Shoulder Gutter, Conc, Det 1	1	EA
Spillway, Conc	4	FT
Riprap, Plain	10	SYD

* INCLUDES 103 TON FOR CROWN AND PROFILE CORRECTION

Know what's **below.**
Call before you dig.

REVISIONS

NO.	DATE	DESCRIPTION	BY
-	-	-	-

PLAN DATE: OCTOBER 2016
PROJECT MGR: MJS
REVIEWER: RAF
SCALE: 1" = 30'

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SHT# 16 OF 24
JOB No: 16M0055

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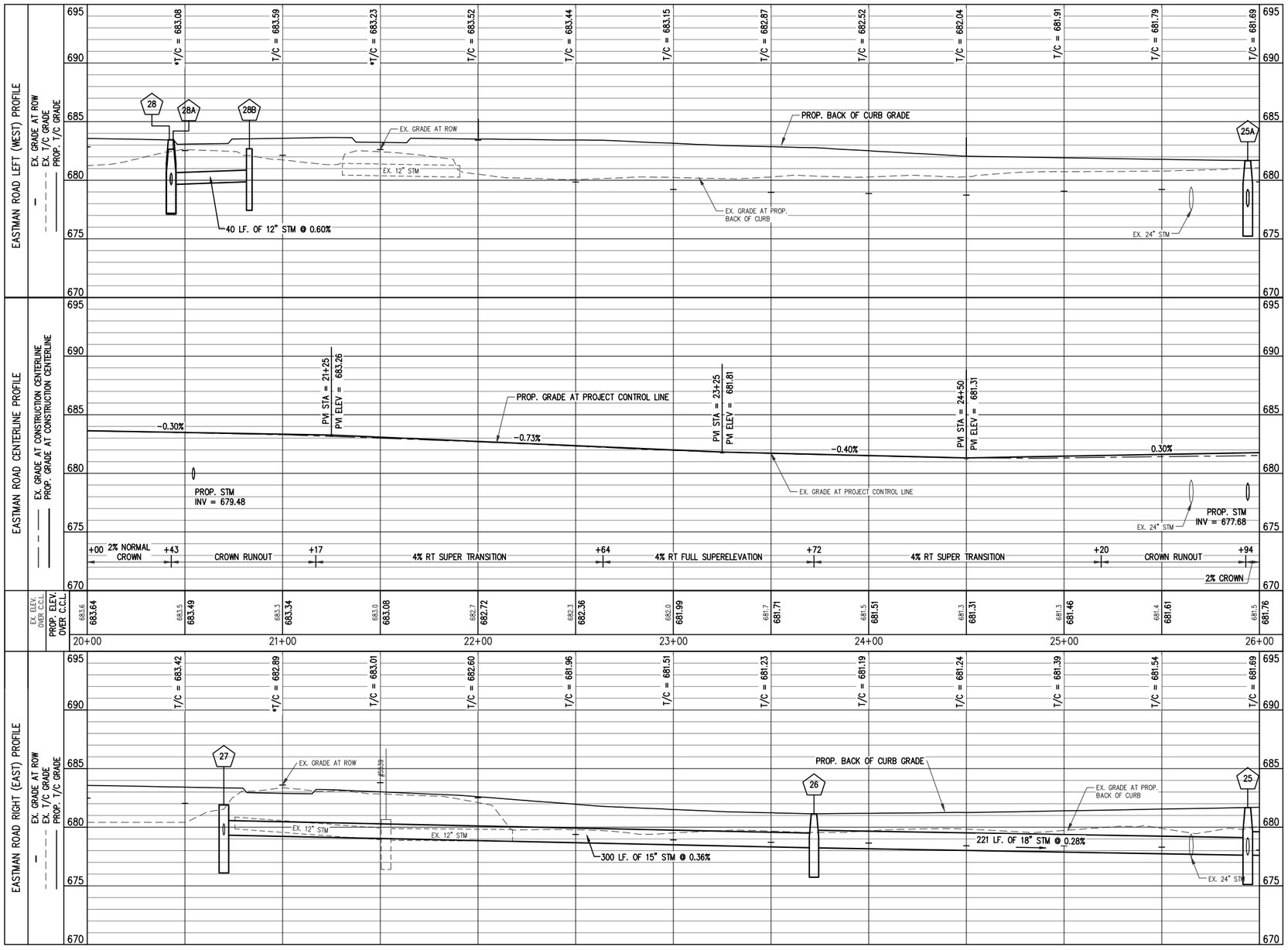

HOR: 0 30 ft 60 ft
VERT: 0 5 ft 10 ft

* ELEVATION IS BACK OF CURB AT M OPENING. ADD 0.38' FOR FULL CURB HEIGHT.

Know what's **below.**
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REVISIONS			
NO.	DATE	DESCRIPTION	BY
-	-	-	-

PLAN DATE: OCTOBER 2016
PROJECT MGR: MJS
REVIEWER: RAF
SCALE: HORZ. 1"=30' VERT. 1"=5'

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REV:

SHT# 17 OF 24
JOB No: 16M0055

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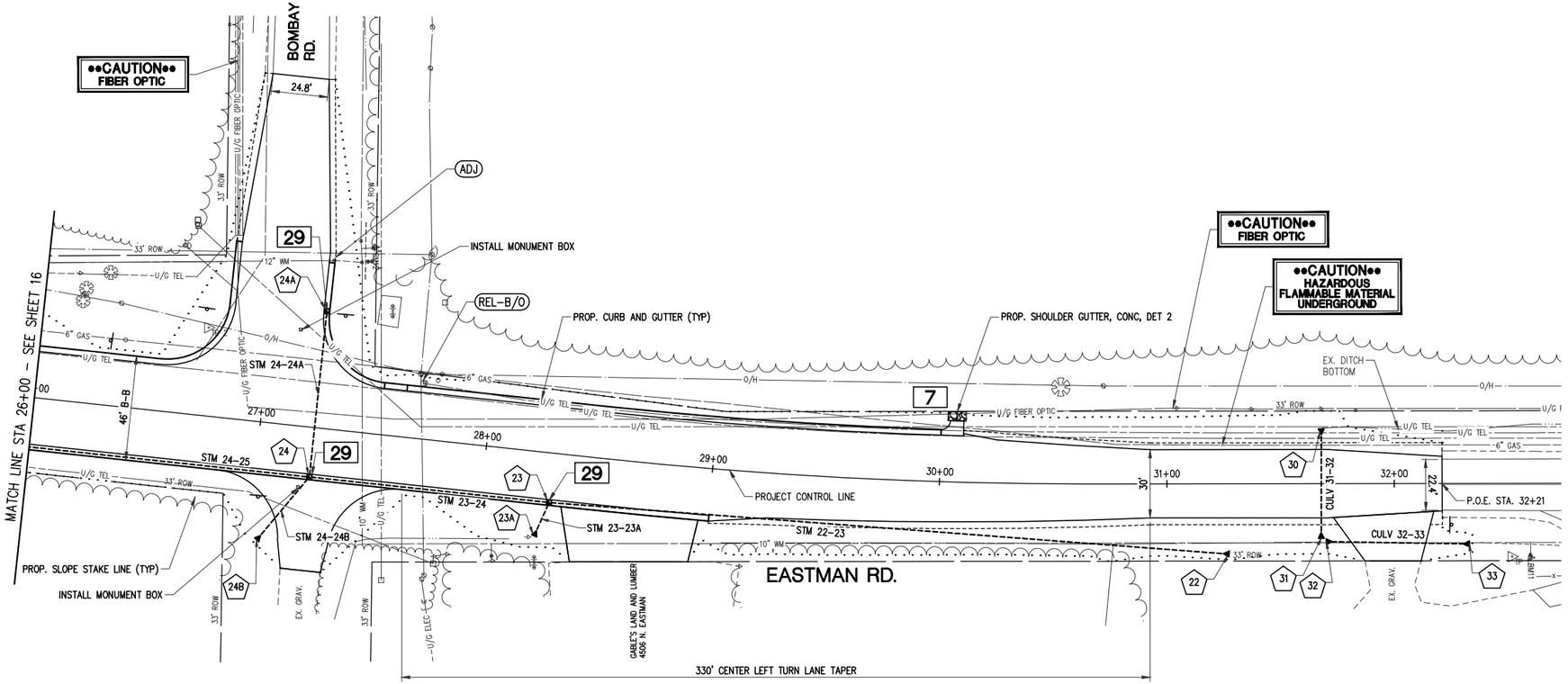

DRIVEWAY & APPROACH SCHEDULE								
RIGHT OF WAY								
C/L DRIVEWAY STATION	EXIST. PVMT TYPE	WIDTH AT RIGHT OF WAY (FT)	WIDTH AT OPENING (FT)	LENGTH OF DRIVE RESTORATION (FT)	DRIVEWAY OPENING, CONC, DET L (FT)	APPROACH, CL I, 6 INCH, MODIFIED (SYD)	HMA APPROACH (TON)	CURB & GUTTER, CONC, DET B2 (FT)
27+04, LT	HMA	N/A	99.0	133.0		174	104	162
27+27, RT	G	N/A	64.5	8.0	64.5	138	27	
28+73, RT	G	62.6	80.0	24.2	80.0	132	26	
31+99, RT	G	24.7	44.3	20.5		79	15	

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

UTILITY ROAD REPAIR SCHEDULE				
CROSSING STATION	AVERAGE WIDTH OF REPAIR (FT)	AVERAGE LENGTH OF REPAIR (FT)	HAND PATCHING (TON)	AGGREGATE BASE, 6 INCH, MODIFIED (TON)
27+24	10.0	54.7	16	72
31+50	10.0	22.9	6	25

PROPOSED STORM SEWER PIPE TABLE			
PIPE NAME	SIZE	LENGTH	SLOPE
STM 22-23	24	300	0.17%
STM 23-23A	12	16	1.00%
STM 23-24	24	106	0.17%
STM 24-24A	12	73	0.48%
STM 24-24B	12	36	1.00%
STM 24-25	24	130	0.17%

PROPOSED STORM SEWER STRUCTURE TABLE						
STRUCTURE NUMBER	DIAMETER	COVER TYPE	RIM ELEVATION	INVERT	STATION *	OFFSET *
22				24" 676.71 S	31+27	30.9 R
23	48"	J	T/C=683.28	24" 677.22 N 24" 677.22 S 12" 677.22 SE	28+30	21.7 R
23A				12" 677.38 NW	28+25	37.0 R
24	48"	D	T/C=681.94	24" 677.40 S 12" 677.40 W 24" 677.40 N 12" 677.40 SE	27+24	21.8 R
24A	48"	J	T/C=682.09	12" 677.76 E	27+24	51.5 L
24B				12" 677.76 NW	27+04	51.7 R

SHEET QUANTITIES

DESCRIPTION	QUANTITY	UNIT
Erosion Control, Inlet Protection, Fabric Drop	3	EA
Subbase, CIP	505	CYD
Aggregate Base, 6 inch, Modified	1082	SYD
Approach, Cl I, 6 inch, Modified	523	SYD
Shoulder, Cl II, 6 inch, Modified	163	SYD
Culv End Sect, 12 inch	2	EA
Culv End Sect, 15 inch	2	EA
Culv, Cl E, 36 inch	48	FT
Culv, Cl F, 15 inch	63	FT
Culv, Slp End Sect, 1 on 4, 36 inch, Transv	2	EA
Culv, Slp End Sect, 1 on 6, 24 inch, Longit	1	EA
Sewer, Cl A, 12 inch, Tr Det B	125	EA
Sewer, Cl A, 24 inch, Tr Det B	536	EA
Dr Structure Cover, Type D	1	EA
Dr Structure Cover, Type J	2	EA
Dr Structure, 48 inch dia	3	EA
Dr Structure, Add Depth of 48 inch dia, 8 foot to 15 foot	1	FT
Underdrain, Subbase, 6 inch	397	FT
Hand Patching	22	TON
HMA, 4E1	199	TON
HMA, 5E1	316*	TON
HMA Approach	172	TON
Curb and Gutter, Conc, Det B2	605	FT
Shoulder Gutter, Conc, Det 2	1	EA
Riprap, Plain	10	SYD
Monument Box	2	EA
Gate Box, Adj, Case 1	1	EA

* INCLUDES 103 TON FOR CROWN AND PROFILE CORRECTION

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REVISIONS			
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PLAN DATE: OCTOBER 2016
PROJECT MGR: MJS
REVIEWER: RAF
SCALE: 1" = 30'

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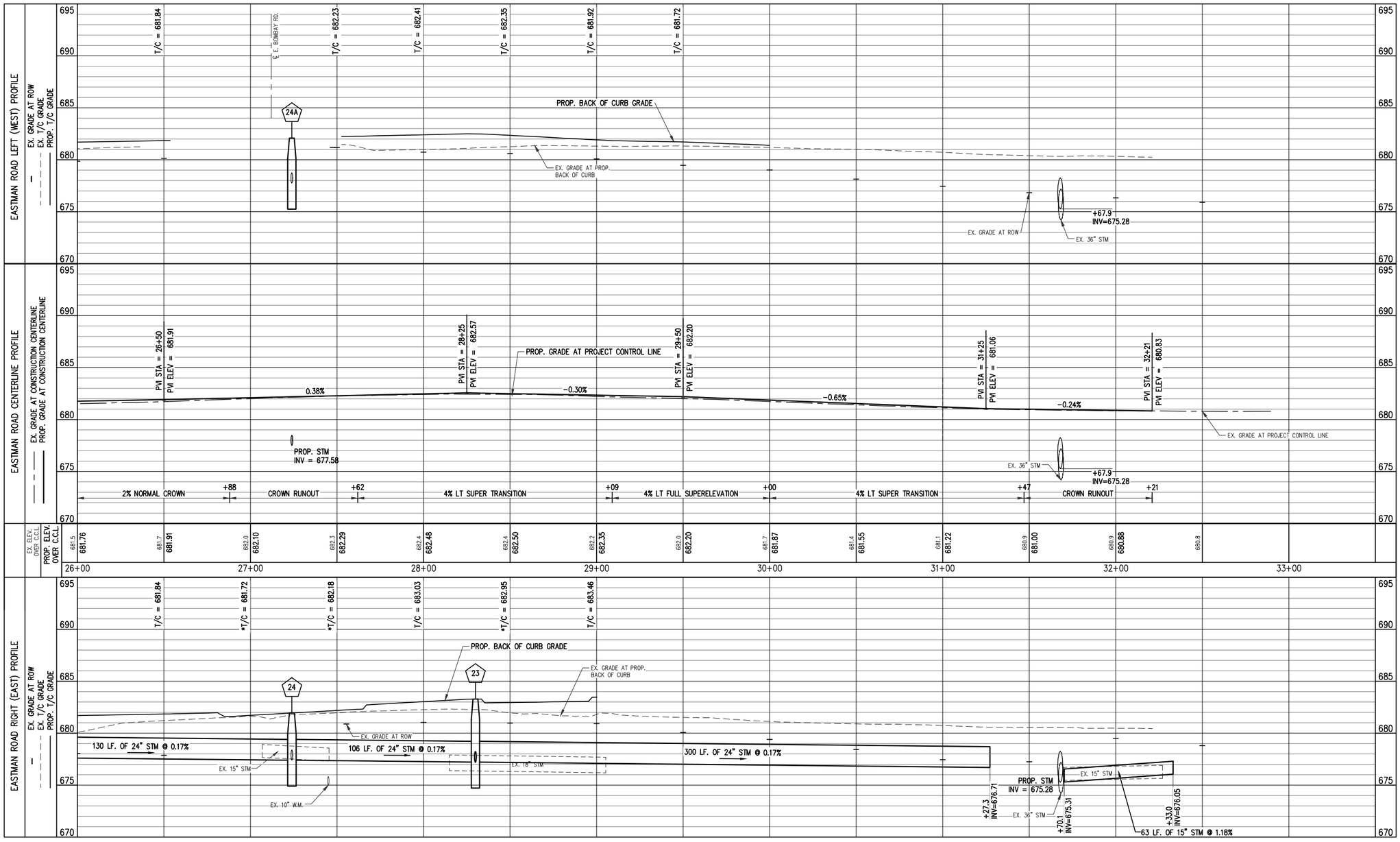

HOR: 0 30 ft 60 ft
VERT: 0 5 ft 10 ft

* ELEVATION IS BACK OF CURB AT M OPENING. ADD 0.38' FOR FULL CURB HEIGHT.

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SHT# 19 OF 24
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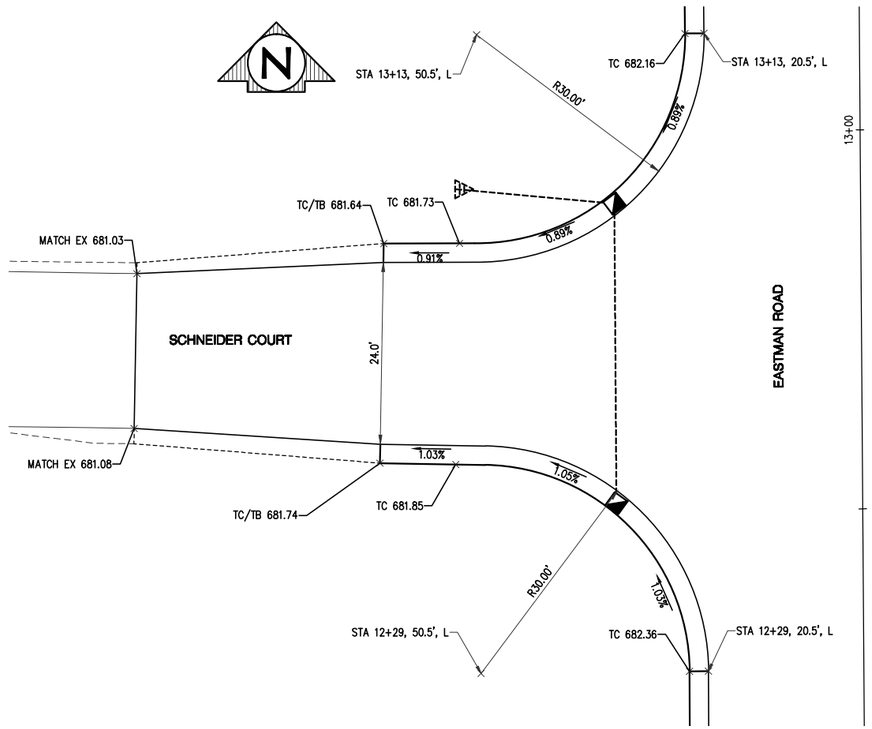
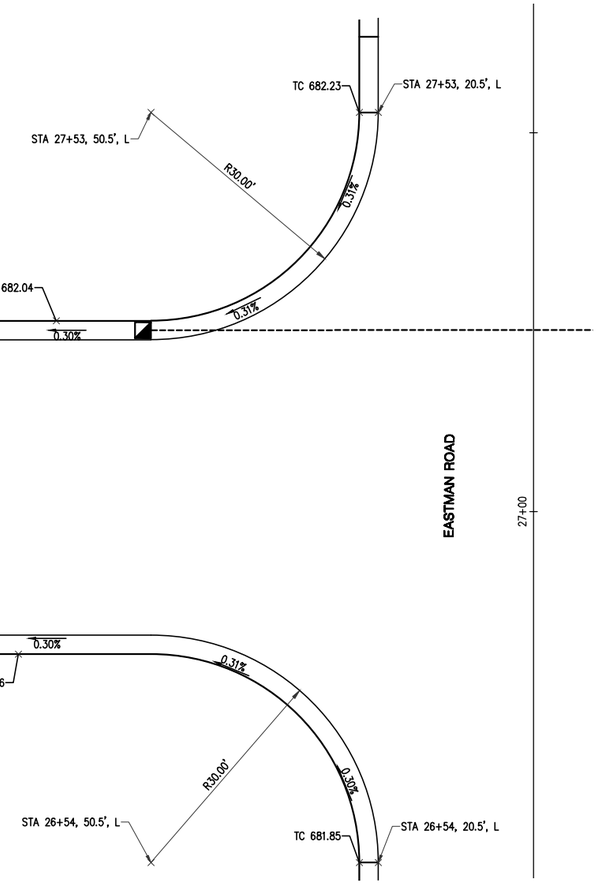
LEGEND

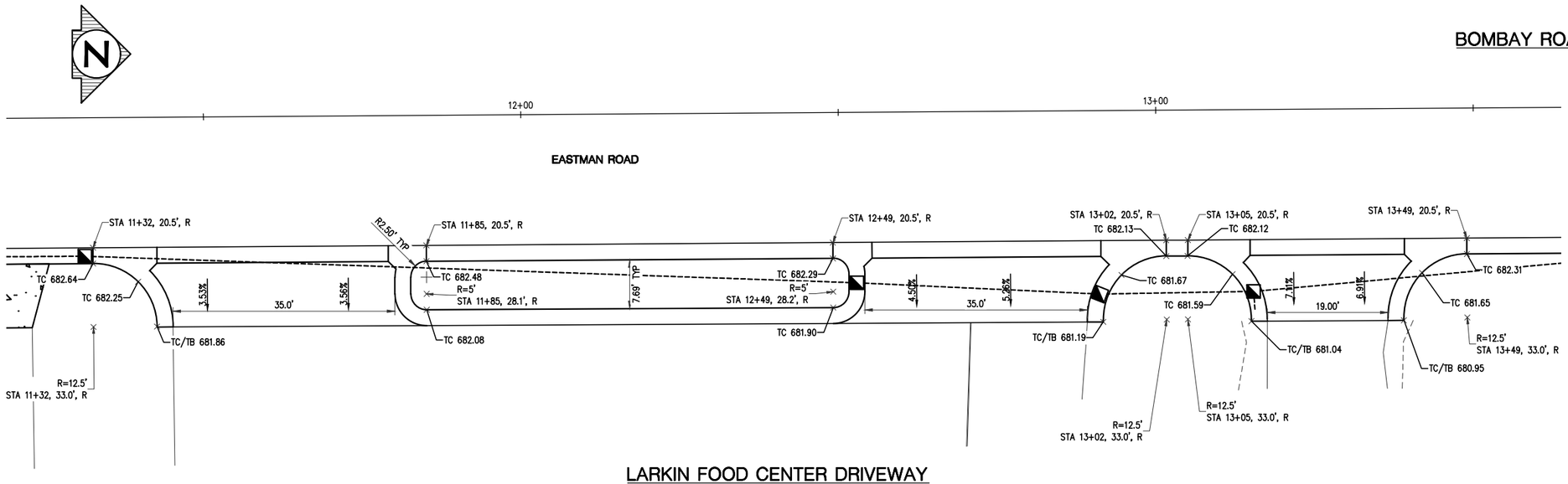
TC – TOP OF CURVE
TB – TOP OF BIT



SCHNEIDER COURT INTERSECTION
1" = 10'



BOMBAY ROAD INTERSECTION
1" = 10'



LARKIN FOOD CENTER DRIVEWAY
1" = 10'

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PROJECT MGR: MJS
REVIEWER: RAF
SCALE: 1"=10'

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DETAIL GRADES

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JOB No: 16M0055

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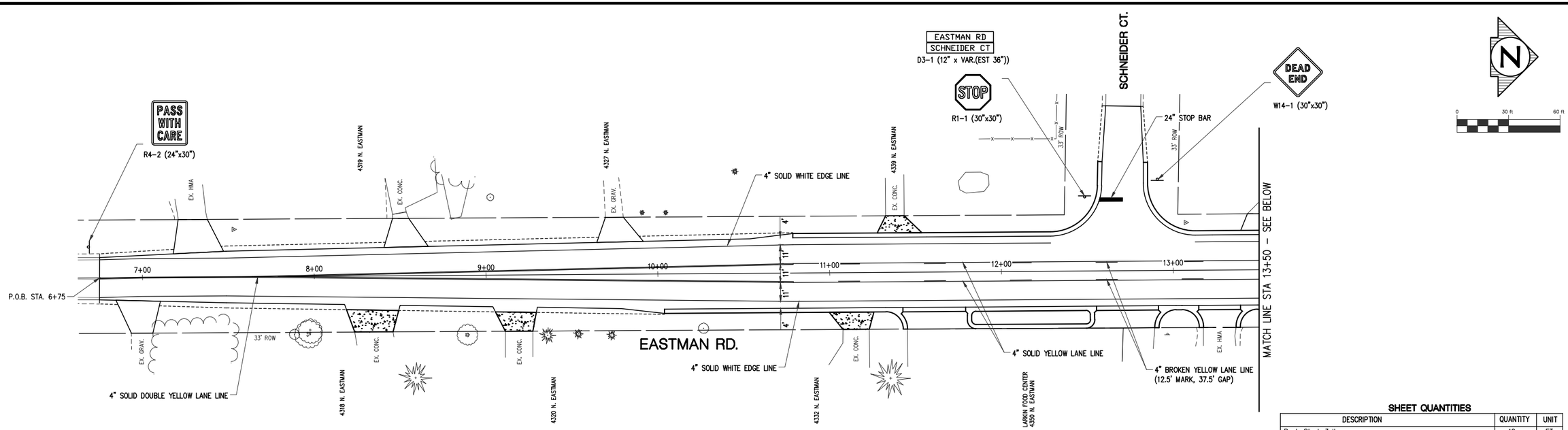
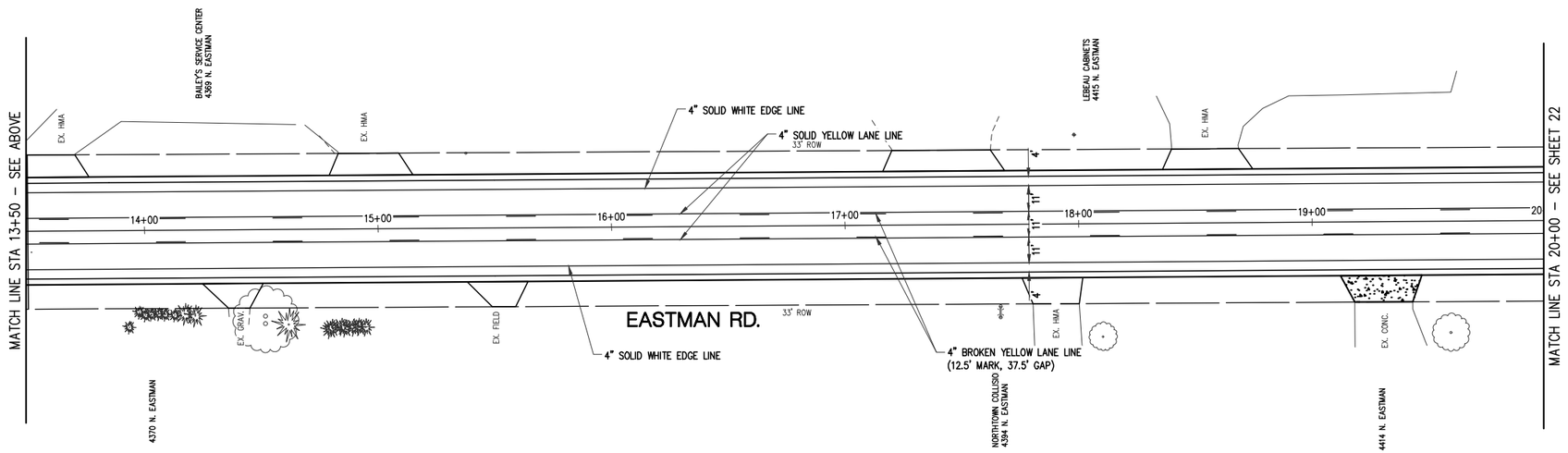


SHEET QUANTITIES

DESCRIPTION	QUANTITY	UNIT
Post, Steel, 3 lb	42	FT
Sign, Type IIIA	7	SFT
Sign, Type IIIB	18	SFT
Pavt Mrkg, Waterborne, 4 inch, White	2246	FT
Pavt Mrkg, Waterborne, 4 inch, Yellow	3668	FT
Pavt Mrkg, Waterborne, 2nd Application, 4 inch, White	2246	FT
Pavt Mrkg, Waterborne, 2nd Application, 4 inch, Yellow	3668	FT
Pavt Mrkg, Owy Cold Plastic, 24 inch, Stop Bar	14	FT



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PLAN DATE: OCTOBER 2016
PROJECT MGR: MJS
REVIEWER: RAF
SCALE: 1" = 30'

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SHT# 21 OF 24

JOB No: 16M0055

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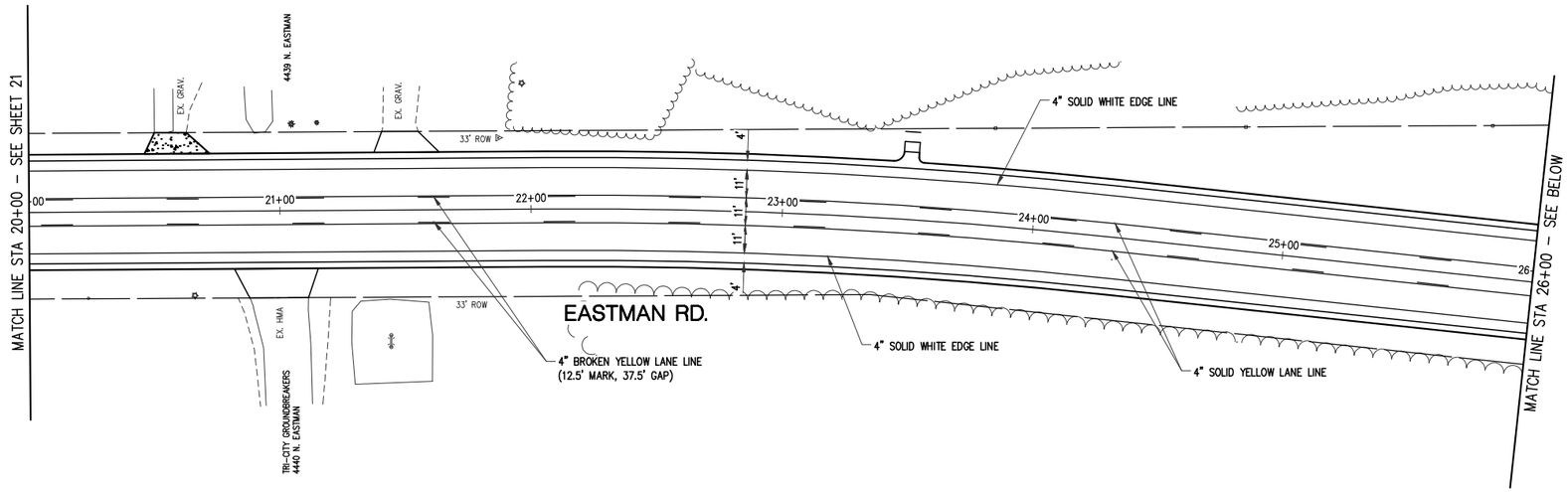
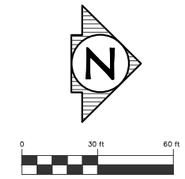
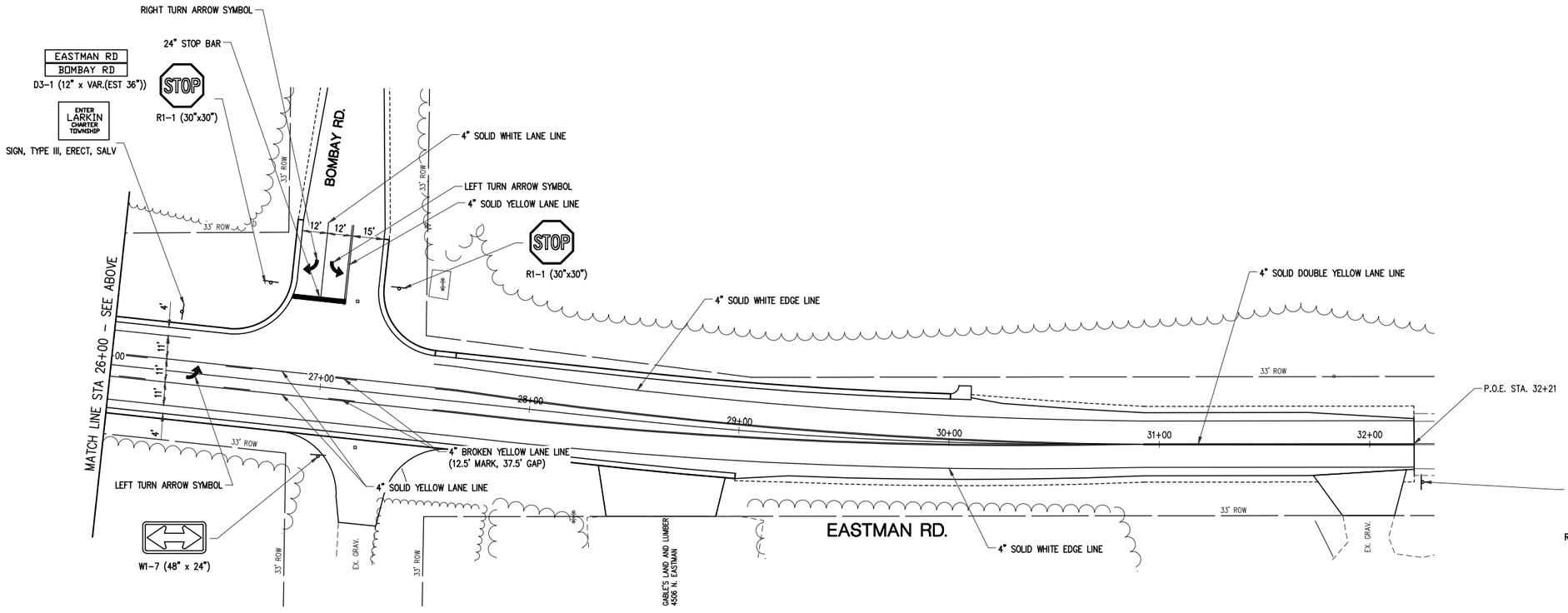




SHEET QUANTITIES

DESCRIPTION	QUANTITY	UNIT
Post, Steel, 3 lb	70	FT
Sign, Type III, Erect, Salv	1	EA
Sign, Type IIIA	16	SFT
Sign, Type IIIB	19	SFT
Pavt Mrkg, Waterborne, 4 inch, White	2363	FT
Pavt Mrkg, Waterborne, 4 inch, Yellow	3475	FT
Pavt Mrkg, Waterborne, 2nd Application, 4 inch, White	2363	FT
Pavt Mrkg, Waterborne, 2nd Application, 4 inch, Yellow	3475	FT
Pavt Mrkg, Ovly Cold Plastic, 24 inch, Stop Bar	26	FT
Pavt Mrkg, Ovly Cold Plastic, Lt Turn Arrow Sym	2	EA
Pavt Mrkg, Ovly Cold Plastic, Rt Turn Arrow Sym	1	EA



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REVISIONS

NO.	DATE	DESCRIPTION	BY
-	-	-	-

PLAN DATE: OCTOBER 2016
PROJECT MGR: MJS
REVIEWER: RAF
SCALE: 1" = 30'

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SNYDER & STALEY ENGINEERING, P.L.C.

SOIL BORING LOG

Boring No: B1

Project: Proposed Eastman Road Reconstruction Project No: 16-039-137

Location: Midland County, Michigan Client: Rowe Professional Services Co.

Description of Material	DEPTH (ft)	Sample Length	Sample I.D.	Sample Type	Standard Penetration "N" Blows Per Ft.	Hand Penetrometer qp (tsf)	Unconfined compression qu (tsf)	Torvane Shear cs (tsf)	Moisture Content w (%)	Natural Unit Weight γ (pcf)
Driller reported 9 ¼" of Asphalt PAVEMENT and Millings overlaying 2 ¼" of sandy gravel BASE COURSE – (GP–BASE COURSE).										
Fine SAND; trace silt and fine gravel – brown – damp to moist – medium dense (SP)			S1	SS	13					
	5		S2	SS	16					
Boring Terminated at 5 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	1 of 5
NONE Immediately After Completion	Started: 06/26/2016 Drawn By: C. MARKHART	
_ @ _ After Completion	Completed: 06/26/2016 Approved: M. STALEY	

SNYDER & STALEY ENGINEERING, P.L.C.

SOIL BORING LOG

Boring No: B2

Project: Proposed Eastman Road Reconstruction Project No: 16-039-137

Location: Midland County, Michigan Client: Rowe Professional Services Co.

Description of Material	DEPTH (ft)	Sample Length	Sample I.D.	Sample Type	Standard Penetration "N" Blows Per Ft.	Hand Penetrometer qp (tsf)	Unconfined compression qu (tsf)	Torvane Shear cs (tsf)	Moisture Content w (%)	Natural Unit Weight γ (pcf)
Driller reported 10" of sandy TOPSOIL; trace root structures, silt, fine gravel and clay – damp – dark brown (SP–TOPSOIL)										
Fine SAND; trace silt and fine gravel – brown – damp to moist – loose (SP)			S1	SS	4					
	5		S2	SS	8					
			S3	SS	7					
Silty CLAY; trace to some sand, trace fine gravel – gray (CL)	10		S4	SS						
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	2 of 5
NONE Immediately After Completion	Started: 06/26/2016 Drawn By: C. MARKHART	
_ @ _ After Completion	Completed: 06/26/2016 Approved: M. STALEY	

SNYDER & STALEY ENGINEERING, P.L.C.

SOIL BORING LOG

Boring No: B3

Project: Proposed Eastman Road Reconstruction Project No: 16-039-137

Location: Midland County, Michigan Client: Rowe Professional Services Co.

Description of Material	DEPTH (ft)	Sample Length	Sample I.D.	Sample Type	Standard Penetration "N" Blows Per Ft.	Hand Penetrometer qp (tsf)	Unconfined compression qu (tsf)	Torvane Shear cs (tsf)	Moisture Content w (%)	Natural Unit Weight γ (pcf)
Driller reported 4 ½" of ASPHALT; overlaying 7 ½" crushed limestone BASE COURSE (GP–BASECOURSE)										
Fine SAND; trace silt and fine gravel – brown – damp to moist – medium dense (SP)			S1	SS	10					
	5		S2	SS	27					
Silty CLAY; trace sand, fine gravel – mottled; gray and brown – stiff to very stiff (CL)			S3	SS	9	1			12	
	10		S4	SS	19	2½			11	
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	3 of 5
NONE Immediately After Completion	Started: 06/26/2016 Drawn By: C. MARKHART	
_ @ _ After Completion	Completed: 06/26/2016 Approved: M. STALEY	

SNYDER & STALEY ENGINEERING, P.L.C.

SOIL BORING LOG

Boring No: B4

Project: Proposed Eastman Road Reconstruction Project No: 16-039-137

Location: Midland County, Michigan Client: Rowe Professional Services Co.

Description of Material	DEPTH (ft)	Sample Length	Sample I.D.	Sample Type	Standard Penetration "N" Blows Per Ft.	Hand Penetrometer qp (tsf)	Unconfined compression qu (tsf)	Torvane Shear cs (tsf)	Moisture Content w (%)	Natural Unit Weight γ (pcf)
Driller reported 4 ½" of Asphalt PAVEMENT, overlaying 12 ½" of sandy gravel BASE COURSE – (GP–BASE COURSE)										
Fine SAND; trace silt and fine gravel – brown – damp to moist – medium dense (SP)			S1	SS	12					
	5		S2	SS	22					
Boring Terminated at 5 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	4 of 5
NONE Immediately After Completion	Started: 06/26/2016 Drawn By: C. MARKHART	
_ @ _ After Completion	Completed: 06/26/2016 Approved: M. STALEY	

SNYDER & STALEY ENGINEERING, P.L.C.

SOIL BORING LOG

Boring No: B5

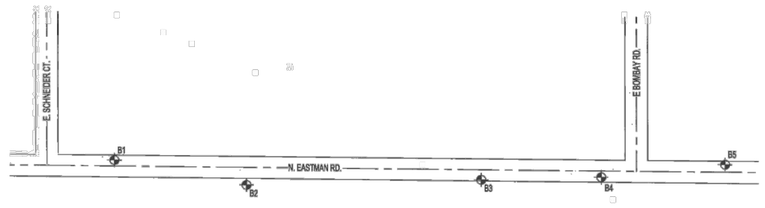
Project: Proposed Eastman Road Reconstruction Project No: 16-039-137

Location: Midland County, Michigan Client: Rowe Professional Services Co.

Description of Material	DEPTH (ft)	Sample Length	Sample I.D.	Sample Type	Standard Penetration "N" Blows Per Ft.	Hand Penetrometer qp (tsf)	Unconfined compression qu (tsf)	Torvane Shear cs (tsf)	Moisture Content w (%)	Natural Unit Weight γ (pcf)
Driller reported 1"–2 ½" of Asphalt PAVEMENT and Millings overlaying 6 ½" of crushed limestone BASE COURSE (GP–BASE COURSE)										
Fine silty SAND; trace clay, fine gravel – brown – damp to moist – medium dense (SP)			S1	SS	21					
	5		S2	SS	23					
Boring Terminated at 5 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	5 of 5
NONE Immediately After Completion	Started: 06/26/2016 Drawn By: C. MARKHART	
_ @ _ After Completion	Completed: 06/26/2016 Approved: M. STALEY	



NORTH

SOIL BORING LOCATION DIAGRAM

NOT TO SCALE

PROJECT NUMBER: 16-039-137	DATE: 09/27/2016	PROJECT TITLE: PROPOSED RECONSTRUCTION OF N. EASTMAN RD, MIDLAND MI	SNYDER & STALEY ENGINEERING, P.L.C. CONSULTING ENGINEERS 3080 BAY ROAD, SUITE 6 SAGINAW, MI 48603 PH: (989) 797-1710 FX: (989) 797-1718
SHEET NUMBER: SK1 SHT 1 OF 1	DRAWN BY: CAM	SHEET TITLE: SOIL BORING LOCATION DIAGRAM	
	CHK'D BY: MDS		

Know what's **below.** **Call** before you dig.

REVISIONS			
NO.	DATE	DESCRIPTION	BY
–	–	–	–

PLAN DATE: OCTOBER 2016
PROJECT MGR: MJS
REVIEWER: RAF
SCALE: NO SCALE

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

PREPARED FOR
MIDLAND COUNTY ROAD COMMISSION
EASTMAN RD SAFETY IMPROVEMENTS

SOIL BORING SHEET

REV:

SHT# 23 OF 24

JOB No: 16M0055

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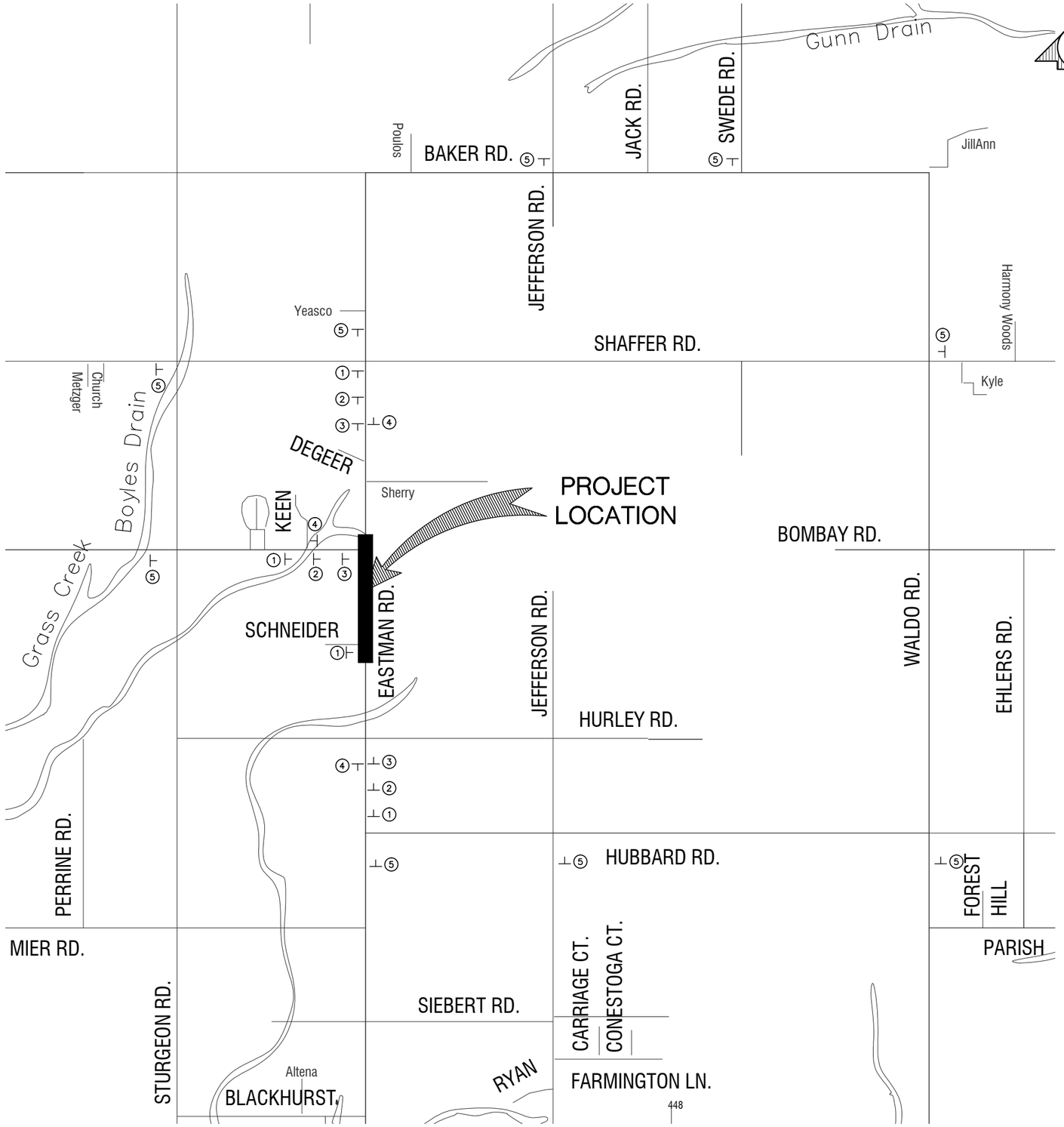

TRAFFIC CONTROL

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, LIGHTED, 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. SEE SPECIAL PROVISIONS FOR MAINTAINING TRAFFIC AND MDOT TYPICAL DETAILS FOR ADDITIONAL INFORMATION.

14. ADVANCED WARNING SIGNS SHALL BE PLACED PRIOR TO WORK AREA UTILIZING THE MICHIGAN DEPARTMENT OF TRANSPORTATION MAINTAINING TRAFFIC TYPICAL M0040A.

15. SIGNING FOR SHOULDER CLOSURES SHALL BE IN ACCORDANCE WITH MDOT MAINTAINING TRAFFIC TYPICAL M0120A.

16. SIGNING FOR TRAFFIC REGULATOR CONTROL SHALL BE IN ACCORDANCE WITH MDOT MAINTAINING TRAFFIC TYPICAL M0150A.

SIGN LEGEND

SYMBOL	SIGN	DESIGNATION	SIZE	NUMBER OF SIGNS
①	ROAD WORK AHEAD	W20-1	48" x 48"	4
②	INJURE/KILL A WORKER / FINE - $ 7500 / JAIL - 15 YRS	R5-18bLA	42" x 60"	3
③	WORK ZONE BEGINS / TRAFFIC FINES DOUBLED	R5-18cLA	42" x 60"	3
④	END ROAD WORK	G20-2	24" x 48"	3
⑤	EASTMAN ROAD WORK AT BOMBAY ROAD	*SPECIAL	60" X 30"	9

SYMBOL LEGEND

⊥ SIGNS

CONSTRUCTION ZONE

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