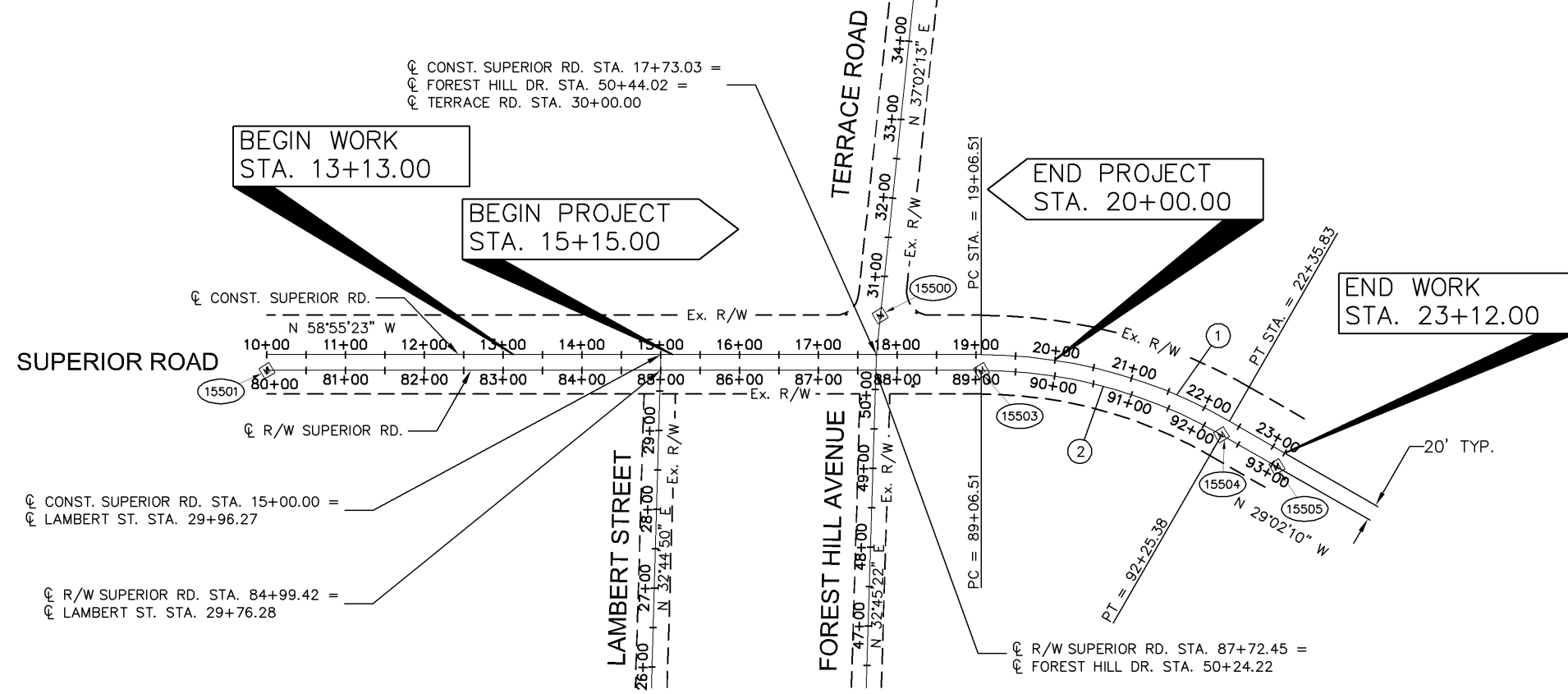
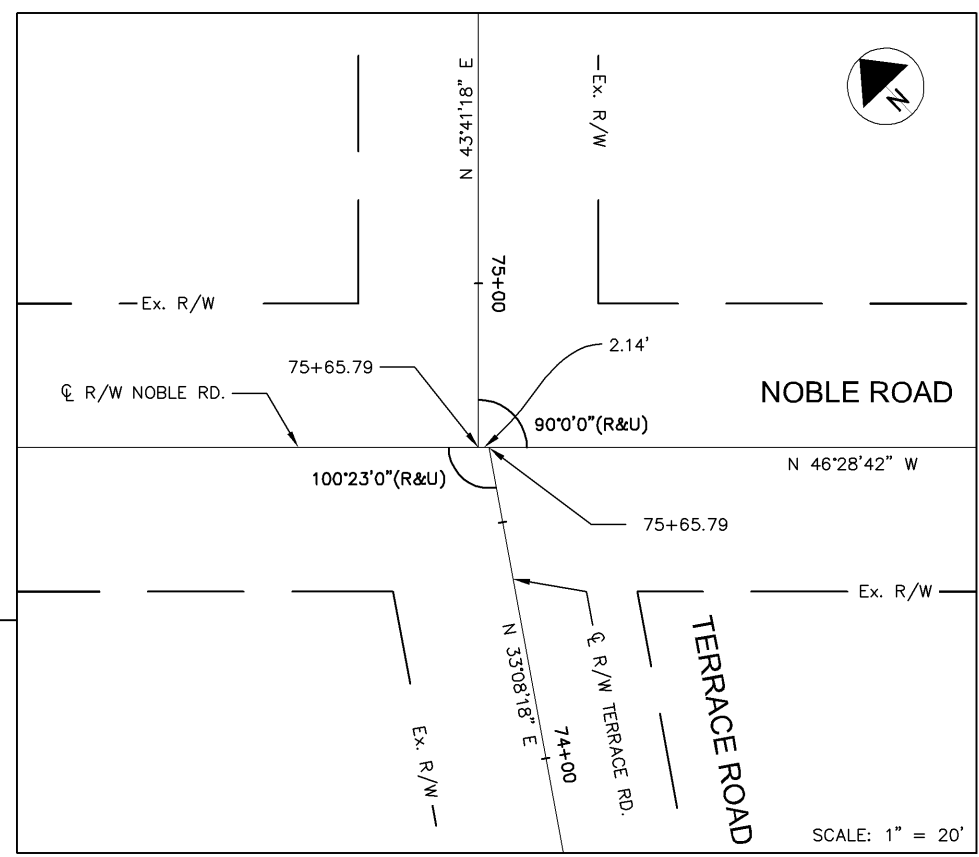
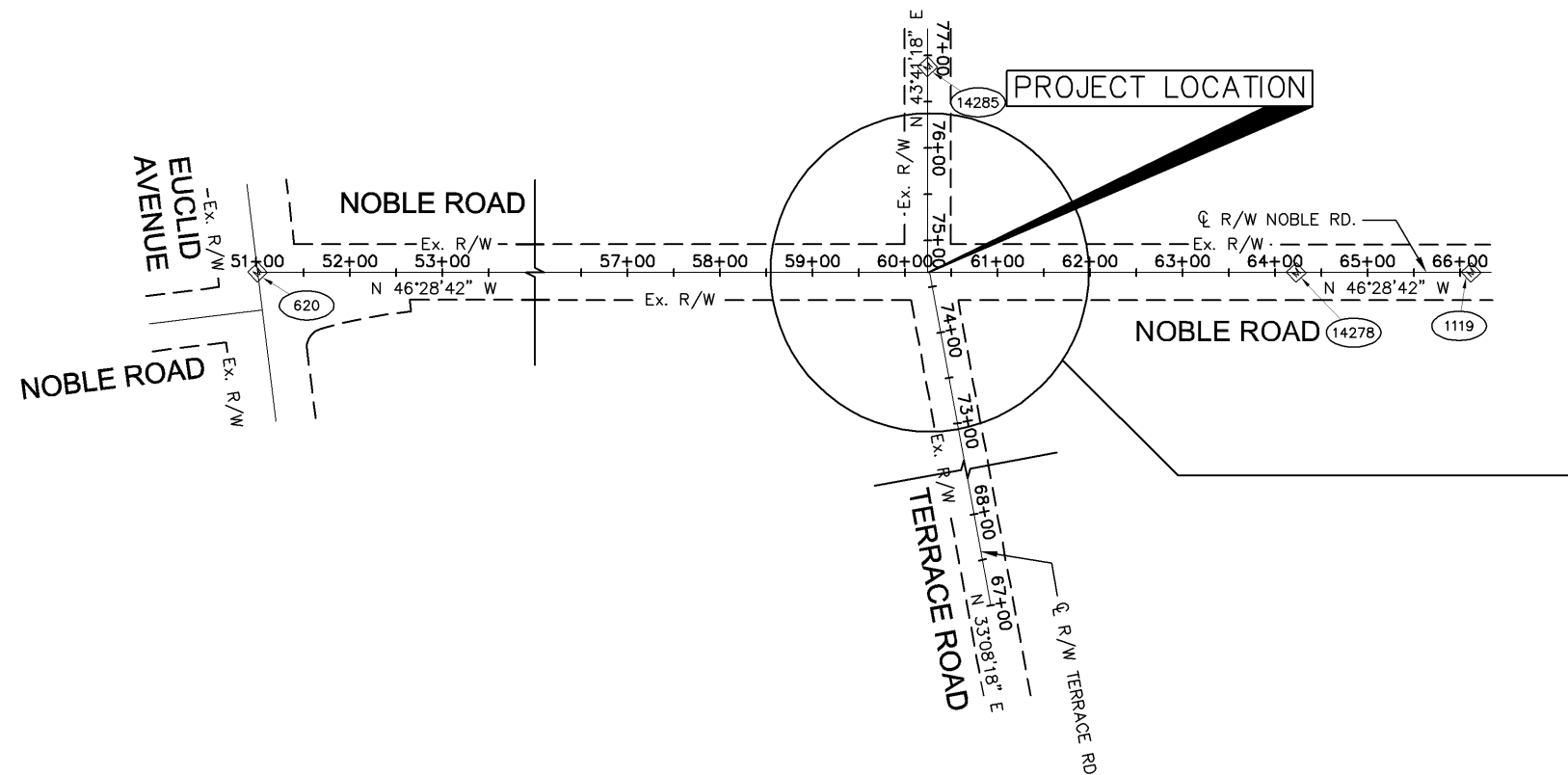


POINT NUMBER	DESCRIPTION	NORTHING	EASTING	☉ R/W STATION	ELEVATION
620	MONUMENT, DRILL HOLE FOUND	685214.17	2223586.10	51+00, 0.00' RT.	684.24
1119	MONUMENT, DRILL HOLE FOUND	684173.32	2224682.10	66+11.54, 0.05' LT.	781.97
14278	MONUMENT, STONE	683953.80	2223851.70	64+22.57, 0.16' RT.	721.64
14285	IPF, 3/8 REBAR	684761.71	2224396.78	76+95.96, 24.86' LT.	725.59



- ① CURVE DATA
- Dc = 9.09
 - Δ = 29°56'27"
 - R = 630.19
 - T = 168.51
 - L = 329.32
 - CH = 325.58
 - CH. BRG. = N 43°57'09" W
 - PC STA. 19+06.51
 - PT STA. 22+35.83

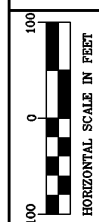
- ② CURVE DATA
- Dc = 9.39
 - Δ = 29°56'27"
 - R = 610.19
 - T = 163.16
 - L = 318.87
 - CH = 315.25
 - CH. BRG. = N 43°57'09" W
 - PC STA. 89+06.51
 - PT STA. 92+25.38

POINT NUMBER	DESCRIPTION	NORTHING	EASTING	☉ CONST. STATION	☉ R/W STATION	ELEVATION
15500	MONUMENT, DRILL HOLE	677222.89	2218751.36	17+78.02, 49.87' LT.	87+78.02, 69.87' LT.	714.16
15501	MONUMENT, 3/8" REBAR	677564.65	2218048.94	10+00.00, 20.00' RT.	80+00.00, 0.00' RT.	688.04
15503	MONUMENT, 3/8" REBAR	677096.72	2218825.35	19+06.51, 20.00' RT.	89+06.51, 0.00' RT.	718.88
15504	MONUMENT, 3/8" REBAR	676869.76	2219044.15	22+35.83, 20.00' RT.	92+25.38, 0.00' RT.	737.49
15505	MONUMENT, 1" REBAR	676798.82	2219083.53	23+16.96, 20.00' RT.	93+06.52, 0.00' RT.	742.35

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 Date: 10/05/2012
 Technician: wemple

Twist: -1.57079633

SEE PLAN

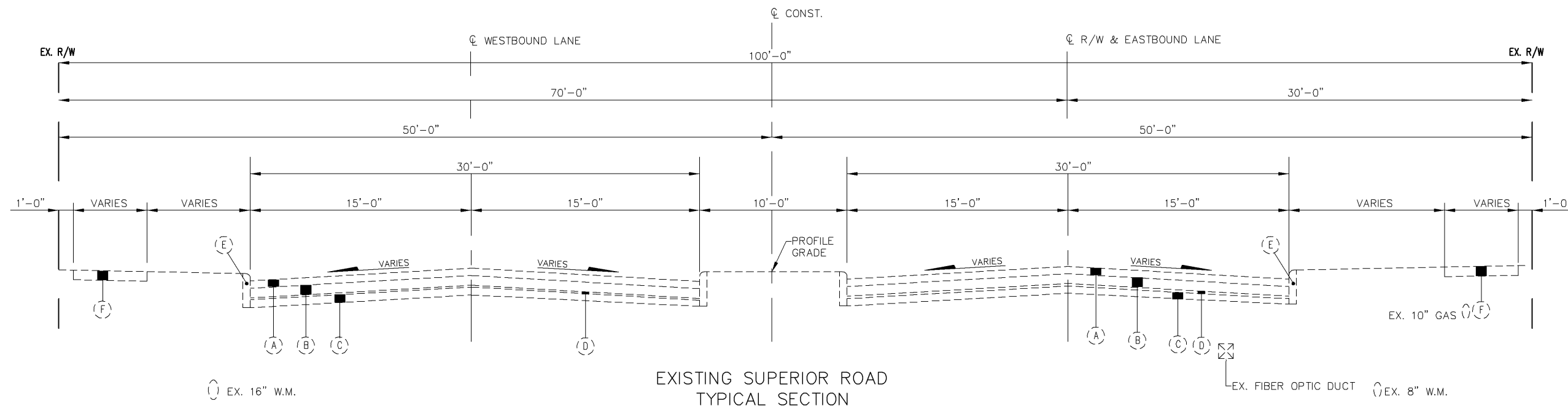


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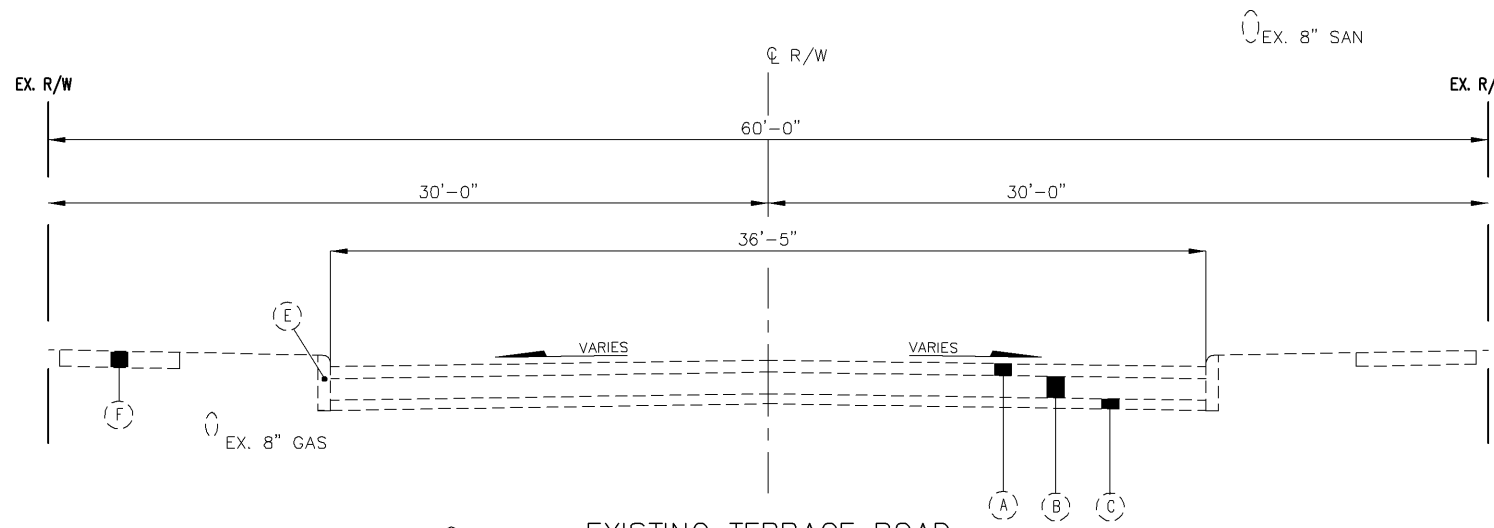
SCHEMATIC PLAN

CUY-SUPERIOR RD/NOBLE RD

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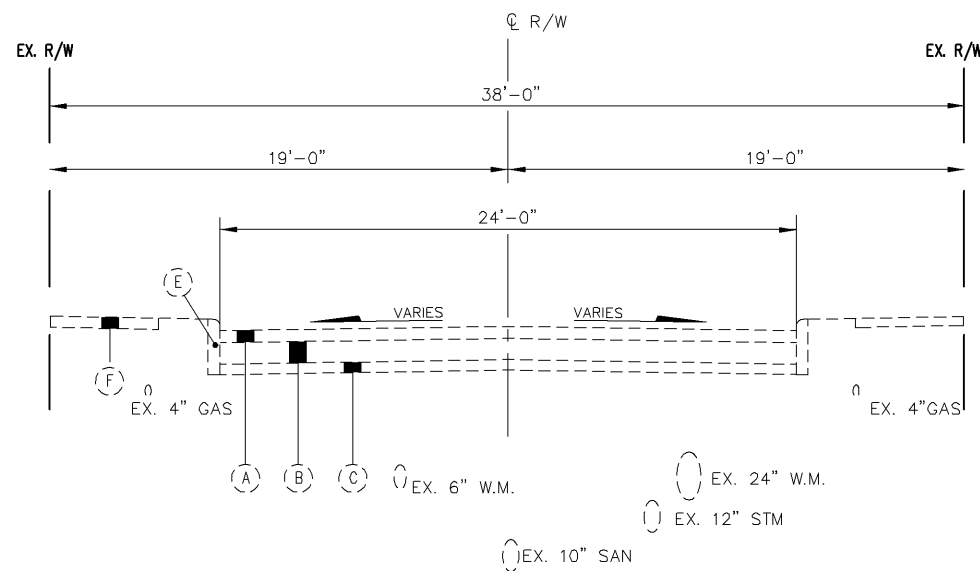


EXISTING SUPERIOR ROAD
TYPICAL SECTION

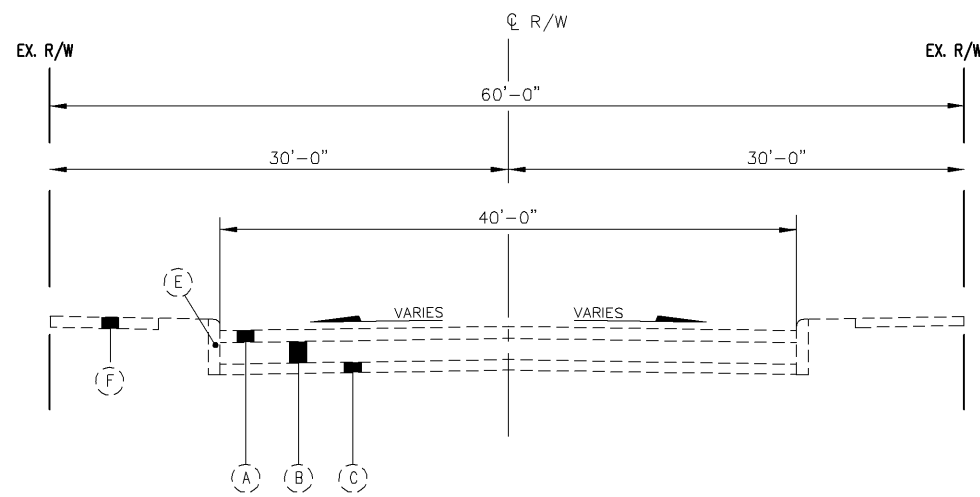


EXISTING TERRACE ROAD
TYPICAL SECTION

- EXISTING LEGEND**
- (A) EXISTING ASPHALT
 - (B) EXISTING BRICK OR CONCRETE
 - (C) EXISTING CONCRETE BASE
 - (D) EXISTING SAND CUSHION
 - (E) EXISTING CURB (CONCRETE OR GRANITE)
 - (F) EXISTING WALK



EXISTING FOREST HILLS AVENUE
TYPICAL SECTION



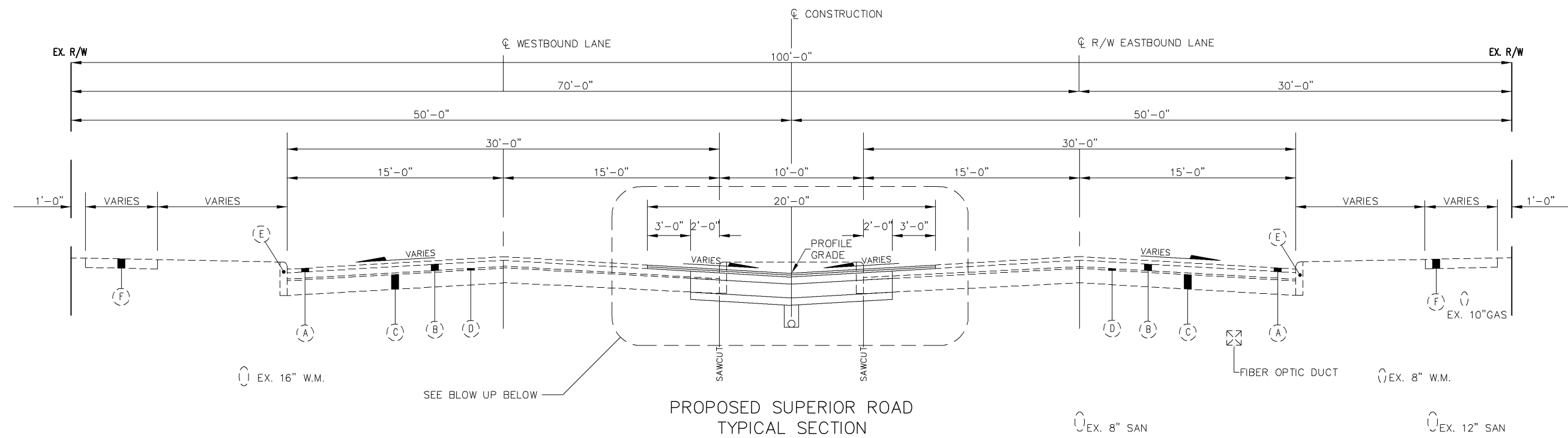
EXISTING NOBLE ROAD
TYPICAL SECTION

EXISTING TYPICAL SECTIONS

CUY-SUPERIOR RD/NOBLE RD

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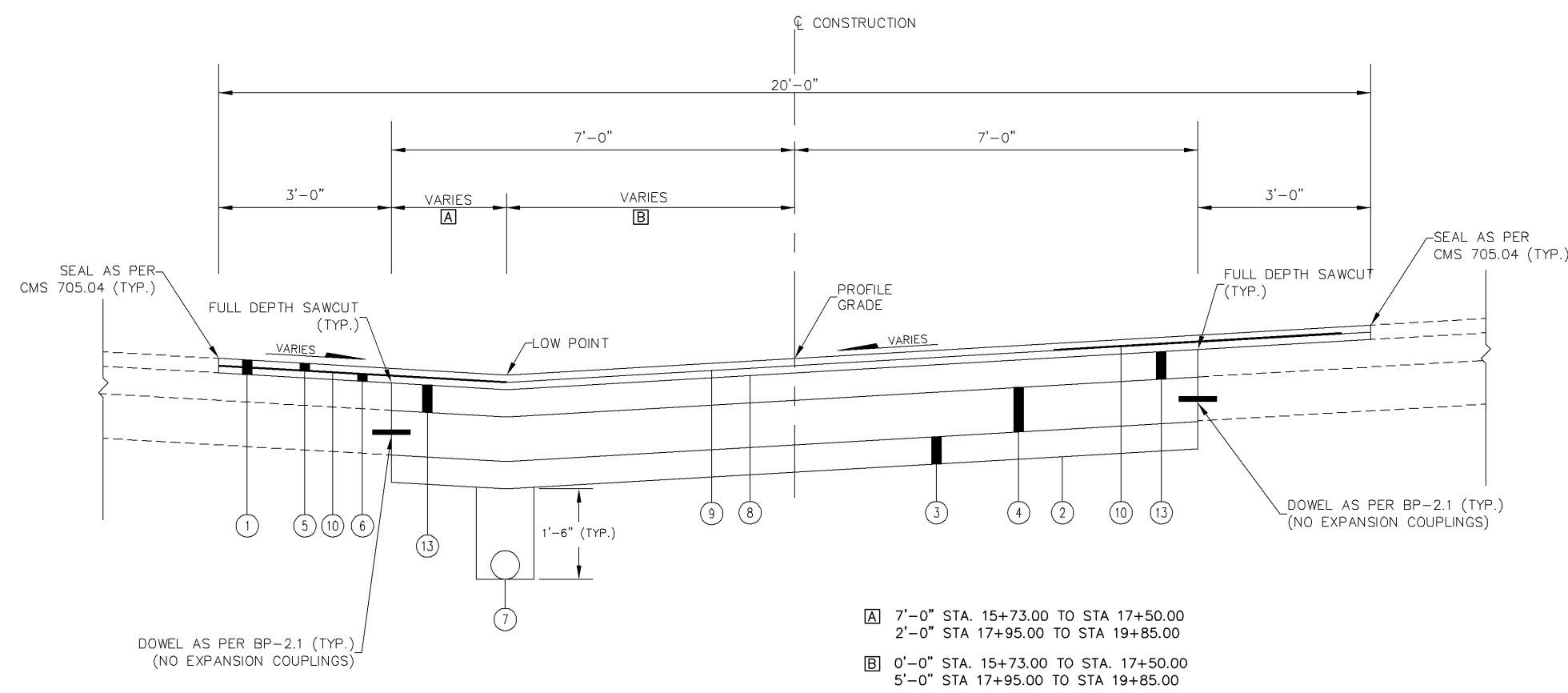
PROPOSED SUPERIOR ROAD
TYPICAL SECTION

STA. 15+73.00 TO STA. 17+50.00 = 177.00 LF
 STA. 17+95.00 TO STA. 19+85.00 = 190.00 LF

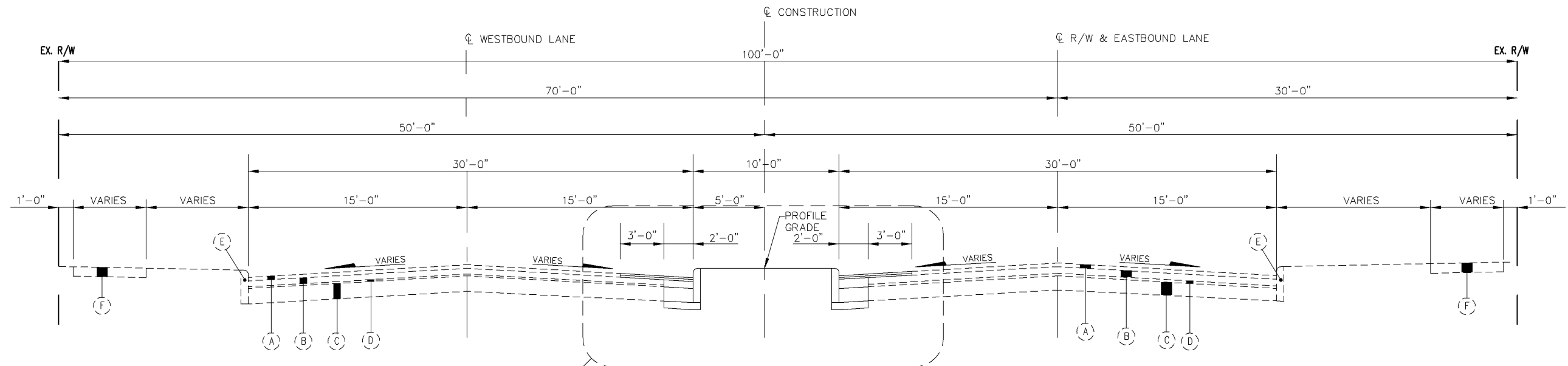
BREAK AT INTERSECTION
 STA. 17+50.00 TO STA. 17+95.00 = 45.00 LF

LEGEND

- (A) 3"± EXISTING ASPHALT
- (B) 3"± EXISTING BRICK OR CONCRETE
- (C) 9"± EXISTING CONCRETE BASE
- (D) 1"± EXISTING SAND CUSHION
- (E) EXISTING CURB
- (F) EXISTING WALK
- ① ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE
- ② ITEM 204 - SUBGRADE COMPACTION AND PROOF ROLLING
- ③ ITEM 304 - 6" AGGREGATE BASE
- ④ ITEM 451 - 9" REINFORCED CONCRETE PAVEMENT
- ⑤ ITEM 448 - 1-1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG 64-22, AS PER PLAN
- ⑥ ITEM 448 - 1-1/2" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, PG 64-22
- ⑦ ITEM 605 - 6" BASE PIPE UNDERDRAIN
- ⑧ ITEM 407 - TACK COAT @ 0.08 GAL/SY
- ⑨ ITEM 407 - TACK COAT FOR INTERMEDIATE COURSE @ 0.04 GAL/SY
- ⑩ SPECIAL - PAVEMENT OVERLAY FABRIC COMPOSITE, AS PER PLAN
- ⑪ ITEM 609 - CURB, TYPE 2-B, USING CLASS MS CONCRETE
- ⑫ ITEM 659 - SEEDING AND MULCHING
- ⑬ ITEM 301 - 4" ASPHALT CONCRETE BASE, PG64-22



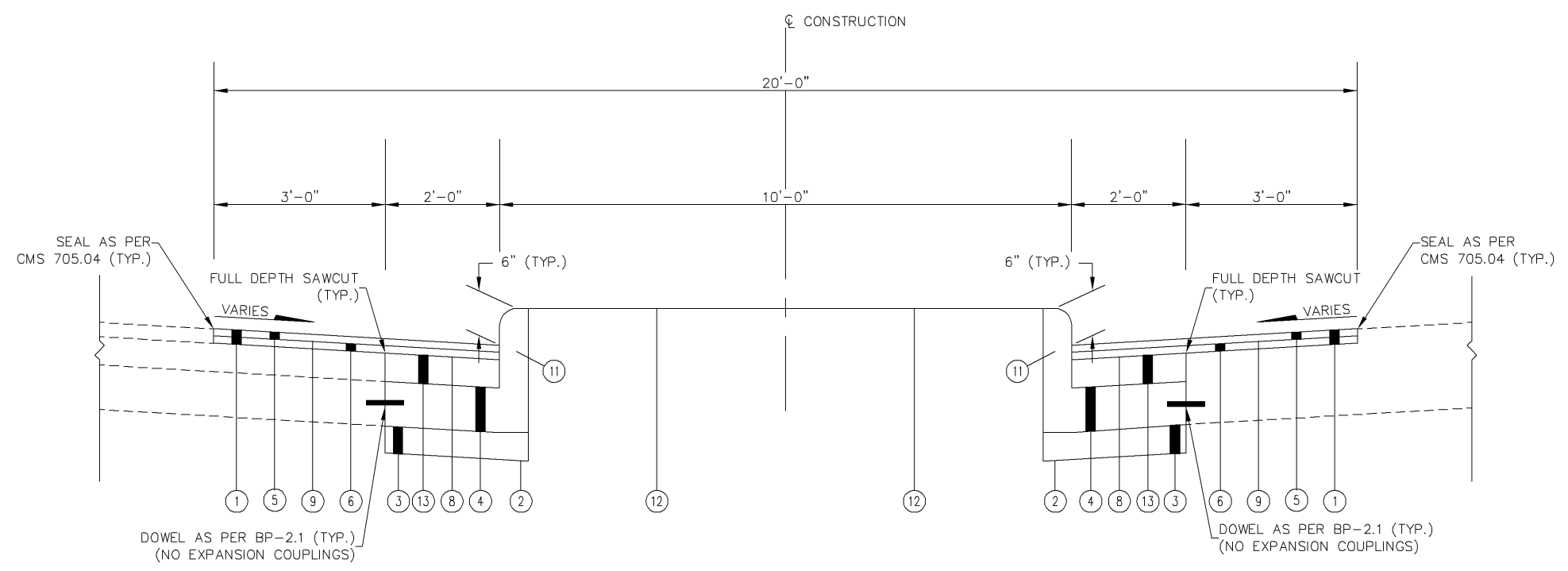
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 Technician: wexample



SEE BLOW UP BELOW

**PROPOSED SUPERIOR ROAD
TYPICAL SECTION**

STA. 15+58.00 TO STA. 15+73.00 = 15.00 LF
 STA. 19+85.00 TO STA. 20+00.00 = 15.00 LF

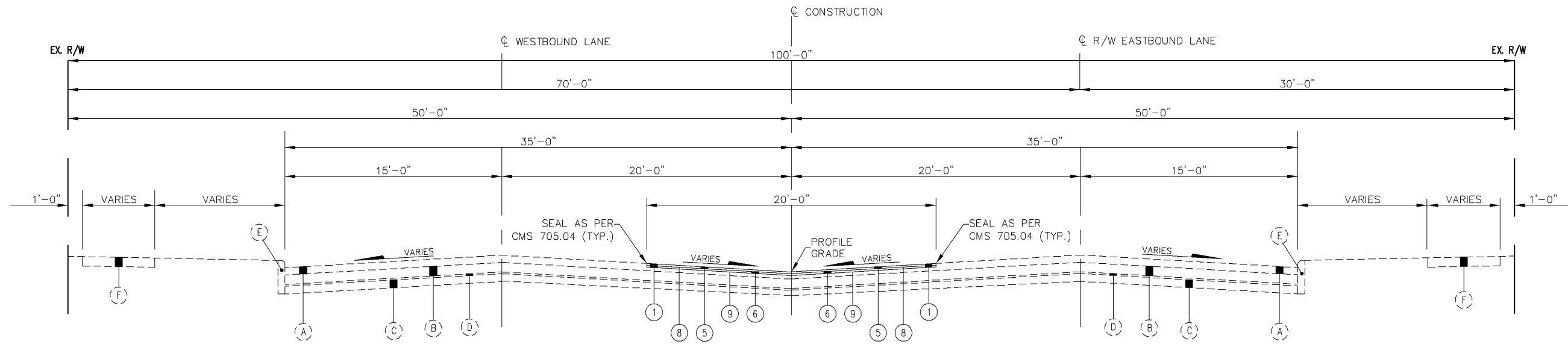


FOR LEGEND, SEE SHEET 4

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 Date: 10/05/2012
 Technician: wexample

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 Time: 10:05:00
 Technician: wexample

Twist: -1.57079633



PROPOSED SUPERIOR ROAD
 TYPICAL SECTION
 STA. 17+50.00 TO STA. 17+95.00 = 45.00 LF

FOR LEGEND, SEE SHEET 4

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PROPOSED TYPICAL SECTIONS

CUY-SUPERIOR RD/NOBLE RD

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SCOPE OF WORK

THE WORK WITHIN THE LIMITS OF THIS IMPROVEMENT INCLUDES THE REMOVAL OF CONCRETE MEDIAN, NEW FULL DEPTH PAVEMENT, SIGNALS, PAVEMENT MARKINGS, AS WELL AS PAVEMENT PLANING, ADJUSTMENT OR RECONSTRUCTION TO GRADE OF DRAINAGE, WATER SUPPLY, AND SANITARY STRUCTURES AND/OR APPURTENANCES WITHIN THE SUBJECT WORK LIMITS. THE CONSTRUCTION OF AN ASPHALT OVERLAY, INCLUDING PAVING MAT, AND THE INSTALLATION OF RELATED ITEMS OF WORK ARE SHOWN IN THE SUPERIOR ROAD & FOREST HILL AVENUE/TERRACE ROAD INTERSECTION AND NOBLE ROAD & TERRACE ROAD INTERSECTION, IN THE CITY OF EAST CLEVELAND.

UTILITIES

LISTED BELOW ARE ALL UTILITIES LOCATED WITHIN THE PROJECT CONSTRUCTION LIMITS ALONG WITH THEIR RESPECTIVE OWNERS:

CALL OHIO UTILITIES PROTECTION SERVICE TWO (2) WORKING DAYS BEFORE YOU DIG.
TOLL FREE NO. 1-800-362-2764
(NON MEMBERS MUST BE CALLED DIRECTLY)

CALL OHIO OIL & GAS PRODUCERS UNDERGROUND PROTECTION SERVICE (OGPUPS)
TOLL FREE NO. 1-800-925-0988

ILLUMINATING COMPANY
6896 MILLER RD.
BRECKSVILLE, OHIO 44141
ATTN: MR. MARK ROBINSON
PHONE: (440) 717-6845

CITY OF CLEVELAND
DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER AND HEAT
1201 LAKESIDE AVENUE
CLEVELAND, OHIO 44114
ATTN: MR. GUY SINGER
PHONE: (216) 664-2342

TIME WARNER CABLE
ENGINEERING AND DESIGN DIVISION
14300 S. INDUSTRIAL PARKWAY
MAPLE HEIGHTS, OHIO 44131
ATTN: MR. LOUIE RUBERTINO
PHONE: (216) 663-4001

DOMINION EAST OHIO GAS COMPANY
320 SPRINGSIDE DRIVE, SUITE 320
AKRON, OHIO 44333
ATTN: MRS. MARY LONG
PHONE: (216) 736-6831

AT&T OHIO
13630 LORAIN AVENUE
CLEVELAND, OHIO 44111
ATTN: MR. TOM FOGARTY
PHONE: (216) 476-6142

CITY OF EAST CLEVELAND
CITY ENGINEER & SERVICE DIRECTOR
1610 EDDY ROAD
EAST CLEVELAND, OHIO 44112
ATTN: MR. ROSS M. BRANKATELLI, P.E.
PHONE (216) 681-2422

CUYAHOGA COUNTY SANITARY ENGINEER
2100 SUPERIOR VIADUCT
CLEVELAND, OHIO 44113
ATTN: MR. BILL SCHNEIDER
PHONE: (216) 443-8205

NEORS
14021 LAKE SHORE BOULEVARD
CLEVELAND, OHIO 44110
ATTN: MR. GARY HOFFMAN
PHONE: (216) 881-6600

THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS, AS REQUIRED BY SECTION 153.64 O.R.C.

STATIONING AND LOCATIONS

STATIONING AND LOCATION ON THESE PLANS ARE APPROXIMATE. ALL LOCATIONS AND ITEMS CALLED OUT BY STATION ARE SUBJECT TO ADJUSTMENT IN THE FIELD "AS DIRECTED BY THE ENGINEER".

WORK LIMITS

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. PROVIDE THE INSTALLATION AND OPERATION OF ALL WORK ZONE TRAFFIC CONTROL AND WORK ZONE TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

ROADWAY

ITEM 202 - REMOVAL MISC.: MEDIAN REMOVED, AS PER PLAN

THIS WORK SHALL CONSIST OF REMOVING THE EXISTING EARTHEN MEDIAN AND ALL MATERIALS ENCOUNTERED NOT BEING REMOVED UNDER ANOTHER ITEM AND DISPOSING OFF-SITE ACCORDING TO ODOT CMS 105.16 AND 105.17. THE WORK WILL ALSO INCLUDE PREPARING THE AREA FOR PAVEMENT AS OUTLINED IN THE TYPICAL SECTIONS AND THE INTERSECTION DETAILS AND ACCORDING TO ITEM 203 - ROADWAY EXCAVATION AND EMBANKMENT FROM APPROXIMATELY TWO FEET (2.0') BEYOND THE FACE OF CURB ON EITHER SIDE OF THE MEDIAN. CURB REMOVED, PAVEMENT REMOVED, AND FULL DEPTH SAWCUTTING WILL BE PAID FOR UNDER SEPARATE ITEMS. PAYMENT FOR THIS WORK SHALL BE AT THE LUMP SUM AMOUNT BID AND SHALL CONSTITUTE FULL COMPENSATION FOR FURNISHING, HANDLING, AND REMOVING ALL MATERIALS REQUIRED TO COMPLETE THE WORK OUTLINED AND FOR ALL LABOR, EQUIPMENT, TOOLS, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.

ITEM 202 - REMOVAL MISC.: MEDIAN REMOVED, AS PER PLAN LUMP

ITEM 202 - WALK REMOVED

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY FOR WALK REMOVED, AS DIRECTED BY THE ENGINEER:

ITEM 202 - WALK REMOVED 100 SQ. FT.

ITEM 608 - 4" CONCRETE WALK

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY FOR 4" CONCRETE WALK, AS DIRECTED BY THE ENGINEER:

ITEM 608 - 4" CONCRETE WALK 100 SQ. FT.

ITEM 608 - CURB RAMPS

UNLESS OTHERWISE DIRECTED BY THE ENGINEER, INSTALLATION OF THE CURB RAMPS WILL BE PERFORMED PRIOR TO MAINLINE RESURFACING.

ITEM 690 - SPECIAL - MISC.: PRECONSTRUCTION VIDEO TAPING

THE CITY OF EAST CLEVELAND SHALL REQUIRE AN AUDIOVISUAL TAPE OF THE PROJECT LIMITS AND ADJACENT AREAS, ESPECIALLY DRIVEWAY APRONS, MAILBOXES, AND APPROACHES PRIOR TO CONSTRUCTION. THE TAPE SHALL BE DVD FORMAT AND A COPY SHALL BE RETAINED AT THE CITY SERVICE DIRECTOR'S OFFICE. THIS TAPE SHALL BE MADE IN ACCORDANCE WITH CITY SPECIFICATIONS AND SHALL BE PAID FOR AS A LUMP SUM, TO BE COMPLETED TO THE SATISFACTION OF THE ENGINEER.

ITEM 690 - SPECIAL - MISC.: PRECONSTRUCTION VIDEO TAPING LUMP

EROSION CONTROL

ITEM 659 - SEEDING AND MULCHING, AS PER PLAN

WHEN THE ABOVE ITEM IS CALLED FOR ON THE PLANS OR IN THE PROPOSAL, ALL APPLICABLE PROVISIONS OF ITEM 659, AS SET FORTH IN THE CONSTRUCTION AND MATERIAL SPECIFICATIONS, SHALL APPLY UNLESS MODIFIED HEREIN.

THE QUANTITIES FOR ITEM 659 SEEDING AND MULCHING, AS PER PLAN IS CALCULATED IN THE ROADWAY SUBSUMMARY AND CARRIED TO THE GENERAL SUMMARY.

THE FOLLOWING ITEMS WILL ALSO BE FURNISHED AND PLACED ACCORDING TO ODOT CMS AND SHALL BE CONSIDERED INCIDENTAL TO THE UNIT PRICE BID FOR ITEM 659 - SEEDING AND MULCHING, AS PER PLAN:

- ITEM 659 - SOIL ANALYSIS TEST
- ITEM 659 - COMMERCIAL FERTILIZER
- ITEM 659 - LIME
- ITEM 659 - WATER
- ITEM 659 - MOWING

ITEM 832 - EROSION CONTROL, AS PER PLAN

ALL APPLICABLE PROVISIONS OF ITEM 832 SHALL APPLY EXCEPT AS MODIFIED HEREIN:

CONTRACTOR SHALL PROVIDE INLET PROTECTION AT ALL CATCH BASINS WITHIN PROJECT LIMITS. DANDY BAGS OR SIMILAR DEVICES APPROVED BY THE ENGINEER SHALL BE INSTALLED PRIOR TO BEGINNING CONSTRUCTION AND SHALL REMAIN IN PLACE UNTIL DIRECTED FOR REMOVAL BY THE ENGINEER. ALL DEVICES USED SHALL BE SECURELY FASTENED AND SHALL PROHIBIT SEDIMENT AND DEBRIS FROM ENTERING THE STRUCTURE.

THE FOLLOWING ESTIMATED QUANTITY IS PROVIDED FOR TEMPORARY SEDIMENT AND EROSION CONTROL (TSEC) IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF ODOT SUPPLEMENTAL SPECIFICATION 832:

ITEM 832 - EROSION CONTROL, AS PER PLAN 1000 EACH

UNSUITABLE SUBGRADE MATERIAL

WHERE UNSUITABLE SUBGRADE MATERIAL IS ENCOUNTERED, IT SHALL BE REMOVED TO THE DEPTH DETERMINED BY THE ENGINEER AND REPLACED IN EIGHT (8) INCH MAXIMUM (LOOSE DEPTH) MECHANICALLY COMPACTED LAYERS. SUITABLE EMBANKMENT MATERIAL (204.02) REQUIRED TO REPLACE THE UNDERCUT SUBGRADE SHALL, TO THE EXTENT POSSIBLE, EXHIBIT THE SAME PHYSICAL PROPERTIES AS THE ADJACENT SOUND SUBGRADE MATERIALS. HOWEVER, USE OF SLAG, IN ANY FORM, IS NOT PERMITTED.

REMOVAL OF UNSUITABLE SUBGRADE SHALL BE PAID UNDER ITEM 204 - EXCAVATION OF SUBGRADE. THE COST OF FURNISHING AND COMPACTING SUITABLE EMBANKMENT MATERIAL IN PLACE SHALL BE PAID FOR UNDER ITEM 204 - GRANULAR EMBANKMENT.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR BE USED AS DIRECTED BY THE ENGINEER:

ITEM 204 - EXCAVATION OF SUBGRADE 17 CU. YD.
ITEM 204 - GRANULAR EMBANKMENT 17 CU. YD.
ITEM 204 - GEOTEXTILE FABRIC 50 SQ. YD.

DRAINAGE

ITEM 604 - CATCH BASIN, NO. 2-3, AS PER PLAN

THE FOLLOWING MODIFICATION SHALL BE APPLIED TO ALL CATCH BASIN NO. 2-3 SPECIFIED IN THE PLANS. ALL GRATES SHALL BE TRAFFIC BEARING AND BICYCLE SAFE. NO SIDE INLET OPENINGS ARE SPECIFIED ON ANY BASIN.

ITEM 604 - DRAINAGE STRUCTURE, MISC.: CATCH BASIN CLEANED

THIS WORK SHALL CONSIST OF CLEANING EACH CATCH BASIN, INCLUDING THE CATCH BASIN SUMPS, AS DIRECTED BY THE ENGINEER, OF ALL DEBRIS, SUCH AS BUT NOT LIMITED TO LEAVES, ROCKS AND STONES, MASONRY, ASPHALT, AND LOOSE CONCRETE BY VACUUM OR OTHER APPROVED MEANS. ALL DEBRIS SHALL BE TESTED AND DISPOSED AT AN OHIO EPA APPROVED LANDFILL. DOCUMENTATION OF TEST AND APPROVED LANDFILL SHALL BE SUBMITTED PRIOR TO THE FINAL PAYMENT.

PAYMENT FOR THIS WORK SHALL BE AT THE CONTRACT UNIT PRICE BID PER EACH FOR CATCH BASIN CLEANED WHICH PRICE SHALL CONSTITUTE FULL COMPENSATION FOR FURNISHING, HANDLING, AND REMOVING ALL DEBRIS MATERIALS, TESTING AND DISPOSAL AT AN APPROVED LANDFILL, AND FOR ALL LABOR, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK. THE FOLLOW QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 604 - DRAINAGE STRUCTURE, MISC.: CATCH BASIN CLEANED 4 EACH

MISCELLANEOUS

ITEM 623 - CONSTRUCTION LAYOUT STAKES, AS PER PLAN GENERAL

1. ALL HORIZONTAL CONTROL AND, IF NECESSARY, VERTICAL CONTROL REQUIRED FOR THE COMPLETE LAYOUT AND PERFORMANCE OF THE WORK UNDER THIS CONTRACT SHALL BE DONE BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE AND MAY BE PERIODICALLY REVIEWED BY THE ENGINEER. ANY INSPECTION OR REVIEWING OF THE CONTRACTOR'S LAYOUT BY THE ENGINEER AND THE ACCEPTANCE OF ALL OR ANY PART OF IT SHALL NOT RELIEVE THE CONTRACTOR OF HIS/HER RESPONSIBILITY TO PRODUCE THE PROPER WORK DIMENSIONS, GRADES AND ELEVATIONS. THE REQUIREMENTS OF SECTION 107.10 OF THE GENERAL PROVISIONS ALSO APPLY.
2. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND, IF APPLICABLE, ALL GRADES, LINES AND LEVELS AS INDICATED ON THE DRAWINGS AND SPECIFICATIONS, AND HE/SHE SHALL REPORT ANY ERRORS OR INCONSISTENCIES IN THE ABOVE TO THE ENGINEER BEFORE COMMENCING WORK OR ORDERING ANY MATERIAL.
3. THE CONTRACTOR SHALL MARK (PAINT) OR STAKE THE PROJECT STATION NUMBERS AT THE INTERVALS SPECIFIED IN 623.02 AND AS DIRECTED OR APPROVED BY THE ENGINEER BEFORE COMMENCING THE WORK.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PRESERVATION OF ALL STAKES AND MARKS AND SHALL REPLACE THEM AT HIS/HER EXPENSE IF THEY ARE DAMAGED, LOST, DISPLACED OR REMOVED. THE CONTRACTOR SHALL USE COMPETENT PERSONNEL AND SUITABLE EQUIPMENT FOR THE LAYOUT WORK REQUIRED AND SHALL PROVIDE THAT IT IS DONE UNDER THE SUPERVISION OF A REGISTERED SURVEYOR.

BASIS OF PAYMENT

PAYMENT WILL BE MADE UNDER:

ITEM 623 - CONSTRUCTION LAYOUT STAKES, AS PER PLAN LUMP

GENERAL NOTES

CUY-SUPERIOR RD/NOBLE RD

PAVEMENT

ITEM 251 – PARTIAL DEPTH PAVEMENT REPAIR, AS PER PLAN

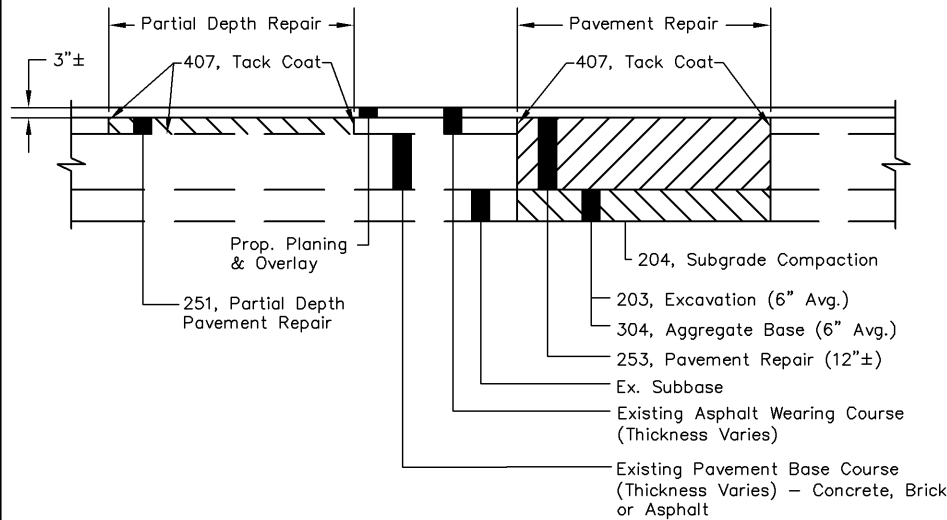
A QUANTITY OF THIS ITEM SHALL BE PROVIDED FOR USE AS DIRECTED BY THE ENGINEER. THE ITEM SHALL CONSIST OF REPAIRING EXISTING LOCATIONS EXHIBITING SURFACE DETERIORATION AND PLACING 3"± OF ITEM 448 ASPHALT CONCRETE, TYPE 2. THE ASPHALT CONCRETE SHALL BE COMPACTED WITH A TYPE I PNEUMATIC TIRE ROLLER AND A STEEL ROLLER AS PER 401.13. IT IS NOT THE INTENT TO REPAIR EVERY DETERIORATED AREA WITHIN THE PROJECT. THE ENGINEER SHALL DETERMINE WHICH AREAS ARE TO BE REPAIRED. UNLESS OTHERWISE DIRECTED BY THE ENGINEER, THIS ITEM SHALL BE PERFORMED AFTER THE COMPLETION OF MAINLINE PAVEMENT PLANING. PAYMENT SHALL BE BASED ON THE ACTUAL NUMBER OF SQUARE YARDS OF PAVEMENT REPAIR. THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 251 – PARTIAL DEPTH PAVEMENT REPAIR, AS PER PLAN 16 SQ. YD.

ITEM 253 – PAVEMENT REPAIR, AS PER PLAN

A QUANTITY OF THIS ITEM SHALL BE PROVIDED FOR USE AS DIRECTED BY THE ENGINEER. THIS ITEM SHALL CONSIST OF CUTTING AND REMOVING DETERIORATED PAVEMENT FULL DEPTH AND PLACING 12"± 301 ASPHALT CONCRETE BASE, PG64-22. THE MAXIMUM COMPACTED DEPTH OF ANY ONE LAYER SHALL BE 6 INCHES. UNLESS OTHERWISE DIRECTED BY THE ENGINEER, THIS ITEM SHALL BE PERFORMED AFTER THE COMPLETION OF MAINLINE PAVEMENT PLANING. IT IS NOT THE INTENT TO REPAIR EVERY DETERIORATED AREA WITHIN THE PROJECT. THE ENGINEER SHALL DETERMINE WHICH AREAS TO BE REPAIRED. PAYMENT SHALL BE BASED ON THE ACTUAL NUMBER OF SQUARE YARDS OF PAVEMENT REMOVED AND REPLACED TO THE LIMITS DESIGNATED BY THE ENGINEER. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 253 – PAVEMENT REPAIR, AS PER PLAN 16 SQ. YD.



PAVEMENT REPAIR DETAIL

ITEM 448 – ASPHALT CONCRETE, SURFACE COURSE, TYPE 1, PG 64-22, AS PER PLAN

ASPHALT CONCRETE SURFACE COURSE SEALING REQUIREMENTS

IN ADDITION TO THE GUTTER SEALING REQUIREMENTS SPECIFIED ON SCD BP-3.1 AND IN 401.15, AFTER COMPLETION OF THE SURFACE COURSE, THE CONTRACTOR SHALL SEAL, WITH A CERTIFIED PG BINDER, THE FOLLOWING LOCATIONS:

- ALL CASTINGS INCLUDING BUT NOT LIMITED TO MONUMENTS, MANHOLES, WATER VALVES, CATCH BASINS, CURB INLETS.
- BUTT JOINTS AND FEATHER JOINTS.
- PERIMETER OF ALL PAVEMENT REPAIRS OR OTHER ASPHALT INLAYS WHEN PAVEMENT REPAIRS/INLAYS ARE NOT OVERLAID WITH AN ASPHALT CONCRETE SURFACE COURSE.
- ALL COLD TRANSVERSE CONSTRUCTION JOINTS PER 401.17
- ALL COLD LONGITUDINAL JOINTS BETWEEN PAVED SHOULDERS AND GUARDRAIL ASPHALT.
- THE MATERIAL USED SHALL BE A CERTIFIED 702.01 PG BINDER. THE WIDTH OF THE SEALER SHALL BE 2 INCHES.

ANY ADDITIONAL COSTS ASSOCIATED WITH THE WORK IDENTIFIED IN THIS NOTE SHALL BE INCLUDED IN THE APPROPRIATE ASPHALT CONCRETE SURFACE ITEM OF WORK.

ITEM SPECIAL – PAVEMENT OVERLAY FABRIC COMPOSITE, AS PER PLAN

DESCRIPTION

THIS WORK SHALL CONSIST OF FURNISHING AND INSTALLING PAVEMENT OVERLAY FABRIC COMPOSITE AS SHOWN ON THE PLANS AND AT LOCATIONS DESIGNATED BY THE ENGINEER. THIS FABRIC COMPOSITE MAY BE PLACED ON A MILLED SURFACE.

MATERIALS

PAVEMENT OVERLAY FABRIC COMPOSITE SHALL BE CONSTRUCTED OF LONG CHAIN SYNTHETIC POLYMERS COMPOSED OF AT LEAST 85 PERCENT OF POLYOLEPHINES, POLYESTERS, AND POLYAMIDES BY WEIGHT, SHALL BE RESISTANT TO CHEMICAL ATTACK, MILDEW, ROT, AND ATTACHED TO A FIBERGLASS GRID. COMPOSITE SHALL MEET THE FOLLOWING PHYSICAL REQUIREMENTS:

PROPERTY	SPECIFICATION	TEST METHOD
PAVING FABRIC:		
GRAB TENSILE STRENGTH, LBS.	90 MIN.	ASTM D 1682
GRAB ELONGATION, PERCENT	50 MIN.	ASTM D 1682
ASPHALT RETENTION GAL./SY.	0.20 MIN.	AASHTO M-288
COMPOSITE		
ULTIMATE TENSILE STRENGTH (LBS/FT)	MD 6720 MIN XD 13440 MIN	ASTM D 6637
MAXIMUM ELONGATION	LESS THAN 3%	ASTM D 6637
PERCENT OPEN AREA	>50	TEX-621-J
	"TESTING GEOGRIDS"	
MELTING POINT MINIMUM (DEGREES F)	1000	ASTM C338
LOSS ON IGNITION %	>15	TEX-621-J "TESTING GEOGRIDS"
MASS/UNIT AREA	16.0 OZ. /SY MIN	ASTM D 5261-92

THE COMPOSITE FABRIC SHALL NOT BE EXPOSED TO ULTRAVIOLET RADIATION FOR MORE THAN 7 DAYS. THE FABRIC SHALL BE AT LEAST 60 INCHES BUT NO MORE THAN 150 INCHES IN WIDTH AND FURNISHED IN ROLLS OF APPROXIMATELY 104 YARDS IN LENGTH. THE FABRIC CAN BE CUT TO A 30 INCH WIDTH IF A 30 INCH WIDTH IS SPECIFIED IN THE PLAN.

THE ASPHALT SEALANT SHALL BE PG64-22 MEETING THE REQUIREMENTS OF 702.01.

CERTIFICATION SHALL BE FURNISHED IN ACCORDANCE WITH 101.061 BEFORE THE FABRIC IS PLACED. THE ENGINEER MAY REQUIRE SAMPLING FOR TESTING PURPOSES AS DIRECTED BY THE LABORATORY.

EQUIPMENT

THE CONTRACTOR SHALL PROVIDE EQUIPMENT FOR HEATING AND APPLYING BITUMINOUS MATERIAL. HEATING EQUIPMENT AND DISTRIBUTORS SHALL MEET THE REQUIREMENTS OF 407.

THE MECHANICAL LAYDOWN EQUIPMENT SHALL BE MOUNTED ON A FOUR-WHEELED VEHICLE THAT IS CAPABLE OF DRIVING OVER THE FABRIC WHILE IT IS BEING INSTALLED TO CONTROL THE TENSION ON THE MATERIAL. THE LAYDOWN MACHINE SHALL BE EQUIPPED WITH CLUTCHES TO ADJUST THE ROLL TENSION AND BROOMS TO SMOOTH OUT WRINKLES DURING INSTALLATION. MANUAL LAYDOWN MAY ONLY BE USED IN AREAS INACCESSIBLE TO THE LAYDOWN MACHINE.

CONSTRUCTION DETAILS

1. SURFACE PREPARATION – THE CRACKS AND ENTIRE ROAD SURFACE TO BE TREATED, AND AT LEAST ONE ADDITIONAL FOOT ON EACH SIDE, SHALL BE CLEANED BY SWEEPING, BLOWING, OR OTHER METHODS UNTIL ALL DUST, MUD, CLAY LUMPS, VEGETATION, AND FOREIGN MATERIAL ARE REMOVED ENTIRELY FROM THE PAVEMENT BEFORE THE BITUMINOUS MATERIAL IS APPLIED. CARE SHALL BE EXERCISED TO PREVENT MATERIAL SO REMOVED FROM BECOMING MIXED WITH THE NEW SURFACE. LARGE CRACKS AND POTHOLES SHOULD BE FILLED.

2. APPLICATION OF ASPHALT SEALANT – THE APPLICATION OF THE ASPHALT SEALANT SHALL CONFORM TO THE APPLICABLE PORTIONS OF 407. THE ASPHALT SEALANT SHALL BE UNIFORMLY SPRAYED OVER THE AREA TO BE COVERED BY FABRIC AT A RATE OF 0.25 TO 0.30 GALLON PER SQUARE YARD.

THE QUANTITY APPLIED WILL VARY WITH THE SURFACE CONDITION OF THE EXISTING PAVEMENT (DEGREE OF POROSITY, FOR EXAMPLE). THE FABRIC ALONE, UNDER HEAT OF THE OVERLAY, WILL ABSORB AT LEAST 0.20 GALLON PER SQUARE YARD. WITHIN INTERSECTIONS OR OTHER ZONES WHERE VEHICLE BRAKING IS COMMON PLACE, THE APPLICATION SHALL BE REDUCED 20 PERCENT. THE SEALANT SHALL BE APPLIED TO AN AREA TWO TO SIX INCHES WIDER THAN THE WIDTHS OF THE FABRIC BEING PLACED, BUT RESTRICTED TO THE AREA OF IMMEDIATE FABRIC LAYDOWN. APPLICATION SHALL BE BY DISTRIBUTOR WITH HAND SPRAYING ALLOWED ONLY WHERE THE DISTRIBUTOR CANNOT BE USED. ASPHALT SPILLS SHALL BE CLEANED FROM THE ROAD SURFACE TO AVOID FLUSHING AND POSSIBLE MOVEMENT AT THESE ASPHALT RICH AREAS.

THE ASPHALT CEMENT USED AS A SEALANT SHALL HAVE DISTRIBUTOR TANK TEMPERATURE BETWEEN 300 DEGREES AND 350 DEGREES F. APPLICATION TEMPERATURE IS NOT CRITICAL AFTER THE ASPHALT IS SPRAYED ON THE PAVEMENT. IF THE FABRIC IS TO BE OVER-SPRAYED, DISTRIBUTOR TANK TEMPERATURES SHOULD NOT EXCEED 350 DEGREES F TO AVOID DAMAGE TO THE FABRIC.

3. COMPOSITE FABRIC PLACEMENT – THE COMPOSITE FABRIC SHALL BE PLACED ON THE ASPHALT SEALANT AS SOON AS PRACTICAL AND BEFORE THE TACKINESS OF THE SEALANT IS LOST. THE COMPOSITE SHALL BE PLACED AS SMOOTHLY AS POSSIBLE TO AVOID WRINKLES. IT SHALL BE UNROLLED SO THAT THE SOFT SIDE IS UNWOUND INTO THE SEALANT AND THE GRID SIDE UP, THUS PROVIDING OPTIMUM BOND BETWEEN FABRIC AND PAVEMENT DURING THE CONSTRUCTION PROCESS. WRINKLES SEVERE ENOUGH TO CAUSE "FOLDS" SHALL BE SLIT AND LAID FLAT. SMALL WRINKLES, WHICH FLATTEN UNDER COMPACTION ARE NOT DETRIMENTAL TO PERFORMANCE. THE COMPOSITE SHALL BE BROOMED OR SQUEEGEED TO REMOVE AIR BUBBLES AND MAKE COMPLETE CONTACT WITH THE ROAD SURFACE AS RECOMMENDED BY THE FABRIC MANUFACTURER. THE FABRIC SHALL BE LAID STRAIGHT, WITHIN THE SEALANT AREA. MODERATE CURVES CAN BE NEGOTIATED BY STRETCHING THE FABRIC ON THE OUTSIDE OF THE CURVE BY ADJUSTING THE DRAG ON THE BRAKES OF THE LAYDOWN EQUIPMENT. TRANSVERSE JOINTS SHALL BE "SHINGLED" IN THE DIRECTION OF PAVING.

LONGITUDINAL JOINTS SHALL BE MADE BY OVERLAPPING THE FABRIC ONE TO TWO INCHES. TRANSVERSE JOINTS SHALL BE MADE BY OVERLAPPING THE FABRIC MINIMUM OF FOUR INCHES. ADDITIONAL SEALANT (ABOUT 0.20 GAL. PER SQ. YD.) SHALL BE ADDED TO THE JOINTS AS REQUIRED. THE ADDITIONAL SEALANT FOR TRANSVERSE JOINTS MAY BE APPLIED BY HAND SPRAYING OR WITH MOP AND BUCKET IF EXTREME CARE IS TAKEN TO NOT EXCEED THE SPECIFIED RATE.

TO ENHANCE THE BOND OF THE FABRIC WITH THE EXISTING PAVEMENT AND TO SMOOTH OUT ANY WRINKLES FOR FOLDS IN THE FABRIC, THE CONTRACTOR MAY BE REQUIRED TO PNEUMATICALLY ROLL THE FABRIC AFTER IT IS PLACED.

4. TREATMENT OF THE APPLIED COMPOSITE PRIOR TO THE ASPHALT CONCRETE – IT IS UNNECESSARY TO TACK COAT THE FABRIC PRIOR TO PLACEMENT OF THE OVERLAY UNLESS THERE ARE CIRCUMSTANCES SUCH AS DELAY OF OVERLAY, DUST ACCUMULATION OR UNDER APPLICATION OF SEALANT WHICH WOULD MAKE TACK COATING DESIRABLE. IF A TACK COAT IS REQUIRED, EMULSIFIED ASPHALT SHALL BE APPLIED AT A RATE OF 0.02 TO 0.05 GALLON PER SQUARE YARD RESIDUAL ASPHALT. PLACEMENT OF THE ASPHALT CONCRETE OVERLAY SHALL CLOSELY FOLLOW FABRIC LAYDOWN. IN THE EVENT THAT THE SEALANT BLEEDS THROUGH THE FABRIC BEFORE THE ASPHALT CONCRETE IS PLACED, IT MAY BE NECESSARY TO BLOT THE SEALANT BY SPREADING SAND OR ASPHALT CONCRETE OVER THE AFFECTED AREAS. THIS WILL PREVENT ANY TENDENCY FOR CONSTRUCTION EQUIPMENT TO PICK UP THE FABRIC WHEN DRIVING OVER IT.

TURNING OF THE PAVER AND OTHER VEHICLES SHALL BE GRADUAL TO AVOID MOVEMENT OR DAMAGE TO THE COMPOSITE. UNNECESSARY TRAFFIC ON COMPOSITE SHOULD BE ELIMINATED. IF IT IS NECESSARY TO OPEN THE ROAD TO TRAFFIC AFTER FABRIC PLACEMENT, BUT PRIOR TO PAVING, IT IS ADVISABLE TO SPREAD A SMALL AMOUNT OF SAND OVER THE MEMBRANE TO PREVENT TIRES FROM STICKING TO THE SEALANT OR PULLING UP THE COMPOSITE. THIS PRACTICE IS TO BE AVOIDED IF POSSIBLE TO PREVENT DAMAGE TO THE MEMBRANE. QUICK STOPS AND SHARP TURNS MAY DAMAGE THE MATERIAL. IF RAIN PRIOR TO THE OVERLAY SHOULD CAUSE A BLISTERED APPEARANCE AND SOME BOND LOSS THROUGHOUT THE MEMBRANE, IT SHOULD BE CORRECTED BY PNEUMATIC ROLLING UNTIL ADHESION IS RESTORED.

5. ASPHALT CONCRETE – THE ASPHALT CONCRETE OVERLAY SHALL CONFORM TO 401 SPECIFICATION WITH A MINIMUM THICKNESS OF 1.5"

METHOD OF MEASUREMENT

THE ACCEPTED FABRIC COMPOSITE PLACED IN ACCORDANCE WITH THESE SPECIFICATIONS AND AS DIRECTED WILL BE MEASURED BY THE SQUARE YARD OF ROADWAY, RAMPS, AND TURNOUTS COVERED BY THE COMPOSITE FABRIC. LAPS IN COMPOSITE FABRIC WILL NOT BE MEASURED.

BLOTTING THE SEALANT, SPREADING SAND OR ASPHALT CONCRETE OVER THE MEMBRANE TO PREVENT TIRES FROM STICKING TO THE SEALANT OR PULLING UP THE FABRIC, ROLLING TO RESTORE BOND, OR APPLICATION OF A TACK COAT WILL NOT BE MEASURED FOR DIRECT PAYMENT BUT SHALL BE CONSIDERED A NECESSARY PART OF THE CONSTRUCTION INVOLVED AND THE COST THEREFORE SHALL BE INCLUDED IN OTHER APPROPRIATE CONTRACT UNIT PRICES.

BASIS OF PAYMENT. THE ACCEPTED QUANTITIES OF PAVEMENT OVERLAY FABRIC COMPOSITE WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE YARD, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL LABOR, MATERIALS (INCLUDING ASPHALT SEALANT AND OVERLAP), TOOLS, EQUIPMENT AND INCIDENTALS FOR DOING ALL THE WORK INVOLVED IN FURNISHING AND PLACING THE COMPOSITE COMPLETE IN PLACE AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

ITEM	UNIT	DESCRIPTION
SPECIAL 690E12060	SQUARE YARD	PAVEMENT OVERLAY FABRIC COMPOSITE, AS PER PLAN

NOTIFICATION AND CONTACTS

THE CONTRACTOR SHALL NOTIFY THE FOLLOWING ENTITIES IN WRITING AND VIA TELEPHONE AT LEAST EIGHTEEN (18) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION ACTIVITIES. INCLUDED IN THE NOTIFICATION SHALL BE PROJECTED DATES AND THE TIME FRAMES OF ANY LANE CLOSURES.

ODOT DISTRICT 12
5500 TRANSPORTATION BLVD.
GARFIELD HEIGHTS, OHIO 44125
PHONE: 216-581-2100

EAST CLEVELAND POLICE DEPARTMENT
14340 EUCLID AVE.,
CLEVELAND, OHIO 44112
PHONE: 216-451-1234

EAST CLEVELAND FIRE STATION 1
1822 MARLOES AVE.,
EAST CLEVELAND, OHIO 44112

EAST CLEVELAND FIRE STATION 2
14301 SHAW AVE.,
EAST CLEVELAND, OHIO 44112
PHONE: 216-681-2414

EAST CLEVELAND BOARD OF EDUCATION
14305 SHAW AVE.,
EAST CLEVELAND, OHIO 44112
PHONE: 216-268-6600

CUYAHOGA COUNTY SHERIFF
1215 WEST 3RD STREET
CLEVELAND, OHIO 44113
(216) 443-6000

SHOULD ANY OF THE PROJECTED DATES AND TIME FRAMES OF THE START AND END OF THE ROAD CLOSURES CHANGE THROUGHOUT THE DURATION OF THE PROJECT, THE AGENCIES LISTED ABOVE MUST BE NOTIFIED IMMEDIATELY OF SUCH CHANGES.

SEQUENCE OF CONSTRUCTION

PHASE 1

THE CONTRACTOR SHALL ERECT SIGNAGE AND DRUMS TO SHIFT TRAFFIC ON SUPERIOR ROAD AT THE SUPERIOR ROAD & TERRACE ROAD/FOREST HILL AVENUE INTERSECTION AS SHOWN ON THE MAINTENANCE OF TRAFFIC PLANS. DURING THIS PHASE, THE CONTRACTOR SHALL BE PERMITTED TO LIMIT SUPERIOR ROAD TO TWO LANES IN EACH DIRECTION. THE CONTRACTOR SHALL REMOVE THE RAISED CURBED GRASS MEDIANS AND INSTALL PERMANENT PAVEMENT. THE CONTRACTOR SHALL PROCEED TO PHASE 2 WHEN PHASE 1 WORK IS COMPLETE.

PHASE 2

AFTER COMPLETION OF PHASE 1 CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL PLACE THE SURFACE COURSE OF PAVEMENT, COMPLETE THE CURB RAMP RECONSTRUCTION, AND PLACE PERMANENT PAVEMENT MARKINGS AND SIGNAGE THROUGHOUT THE PROJECT LIMITS. THE CONTRACTOR SHALL COMPLETE THE CONSTRUCTION OF THE PROPOSED PERMANENT TRAFFIC SIGNAL SYSTEMS. PAVING OPERATIONS AT THE INTERSECTION SHALL BE COMPLETED DURING OFF-PEAK HOURS (PEAK HOURS ARE TO BE CONSIDERED 6-9AM AND 4-7PM). PHASE 2 OF CONSTRUCTION SHALL INCLUDE THE DESCRIBED WORK FOR BOTH THE SUPERIOR ROAD & TERRACE ROAD/FOREST HILL AVENUE INTERSECTION AS WELL AS THE NOBLE ROAD & TERRACE ROAD INTERSECTION.

RESTRICTIONS

THE FOLLOWING RESTRICTIONS ARE PLACED ON THE CONTRACTOR IN ADDITION TO THE REQUIREMENTS SPECIFIED IN THE SEQUENCE OF CONSTRUCTION AND PLANS.

1. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PROPERTIES WITHIN THE WORK LIMITS AT ALL TIMES DURING CONSTRUCTION.

THE ABOVE RESTRICTIONS ARE ALSO PLACED ON THE CONTRACTOR IN THE EVENT AN ALTERNATE MAINTENANCE OF TRAFFIC METHOD IS SELECTED. ANY APPROVED ALTERNATE MUST INCLUDE THESE RESTRICTIONS.

ITEM 614, MAINTAINING TRAFFIC (LANE CLOSURE/REDUCTION REQUIRED)

LENGTH AND DURATION OF LANE CLOSURES AND RESTRICTION SHALL BE AT THE APPROVAL OF THE ENGINEER. IT IS THE INTENT TO MINIMIZE THE IMPACT TO THE TRAVELING PUBLIC. LANE CLOSURES OR RESTRICTIONS OVER SEGMENTS OF THE PROJECT IN WHICH NO WORK IS ANTICIPATED WITHIN A REASONABLE TIME FRAME, AS DETERMINED BY THE ENGINEER, SHALL NOT BE PERMITTED. THE LEVEL OF UTILIZATION OF MAINTENANCE OF TRAFFIC DEVICES SHALL BE COMMENSURATE WITH THE WORK IN PROGRESS.

MAINTENANCE OF TRAFFIC

THIS ITEM SHALL CONSIST OF MAINTENANCE OF TRAFFIC ON EXISTING ROADWAYS IN ACCORDANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, CURRENT EDITION, LATEST REVISION, THE SPECIFICATIONS, AND THE FOLLOWING:

1. A MINIMUM OF TWO (2) TEN FOOT LANE IN EACH DIRECTION SHALL BE MAINTAINED ON THE EXISTING PAVEMENT DURING CONSTRUCTION OF THE WORK.
2. THE CONTRACTOR SHALL INFORM THE ODOT DISTRICT OFFICE (216) 581-2100, EIGHTEEN (18) DAYS PRIOR TO THE BEGINNING OF WORK.
3. CONES SHALL NOT BE ACCEPTABLE TRAFFIC CONTROL DEVICES FOR LANE RESTRICTIONS OR LANE REDUCTIONS THAT ARE IN OPERATION FROM ONE-HALF HOUR AFTER SUNSET TO ONE HALF-HOUR BEFORE SUNRISE. ALL NIGHTTIME LANE RESTRICTIONS SHALL REQUIRE DRUMS OR BARRICADES AT A MAXIMUM SPACING OF THIRTY-FIVE (35) FEET.
4. LANE RESTRICTIONS OR LANE REDUCTIONS SHALL NOT BE PERMITTED AFTER NORMAL WORKING HOURS. NORMAL WORKING HOURS SHALL BE THOSE HOURS DURING WHICH THE CONTRACTOR HAS A FULL COMPLEMENT OF EMPLOYEES AND EQUIPMENT ACTIVELY REMOVING AND/OR PLACING PAVEMENT MATERIALS.
5. THE CONTRACTOR SHALL FURNISH, ERECT, MAINTAIN AND SUBSEQUENTLY REMOVE ALL FLAGS, BARRICADES, SIGNS, SIGN SUPPORTS AND FURNISH AND MAINTAIN ALL FLAGGERS, WATCHERS, AND INCIDENTALS RELATED THERETO.
6. ALL FULL DEPTH PAVEMENT REMOVAL AND REPLACEMENT OPERATIONS SHALL BE COMPLETED THE SAME DAY THE EXCAVATION IS MADE. IF THE CONTRACTOR CANNOT COMPLETE THE WORK, THE EXCAVATION SHALL BE BACKFILLED OR PROTECTED AS DIRECTED BY THE ENGINEER. AS A MINIMUM, STEEL ROADWAY PLATES MAY BE USED IN APPROVED LOCATIONS AND MUST BE PINNED IN PLACE AND PROPERLY RAMPED WITH FIRM AND UNYIELDING MATERIAL WITH APPROPRIATE WARNING SIGNS POSTED. THIS PROTECTION SHALL BE INCLUDED AND PAID UNDER THE LUMP SUM BID FOR ITEM 614 - MAINTAINING TRAFFIC.
7. ONLY DURING OFF-PEAK PERIODS (IE ANY PERIOD OTHER THAN 6-9AM AND 4-7PM) SHALL THE CONTRACTOR INSTALL AND SUBSEQUENTLY RESET ALL TRAFFIC CONTROL NECESSARY FOR THE WORK ZONE FOR EACH CONSTRUCTION PHASE.
8. ADDITION TO THE REQUIREMENTS OF 614 WORK ZONE PAVEMENT MARKINGS (614.11), AT THE END OF EACH DAY OF WORK, THE CONTRACTOR SHALL REPLACE (WITH WORK ZONE MARKINGS) ALL LANE, EDGE, STOP OR CHANNELIZING LINES THAT WERE REMOVED OR COVERED DURING THE PAVEMENT REMOVAL OR PLACEMENT OPERATIONS. QUANTITIES FOR EACH PLACEMENT ARE CARRIED AS PART OF THE ITEMS LISTED UNDER 614 WORK ZONE PAVEMENT MARKINGS.
9. PRIOR TO OPENING TO TRAFFIC EACH LANE SHALL BE IN A SAFE, PASSABLE CONDITION. ALL TRANSVERSE JOINTS SHALL EXTEND ACROSS THE FULL LANE AND SHOULDER WIDTH AND EACH LANE SHALL BE FREE FROM UNEVEN LONGITUDINAL JOINTS. THE CONTRACTOR SHALL PROVIDE ASPHALT WEDGES FOR TRANSVERSE JOINTS WHEREVER THERE ARE PAVEMENT ELEVATION DIFFERENCES.

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH CMS 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

ITEM 614 - MAINTAINING TRAFFIC (LANES OPEN DURING HOLIDAYS OR SPECIAL EVENTS)

NO WORK SHALL BE PERFORMED AND ALL EXISTING LANES SHALL BE OPEN TO TRAFFIC DURING THE FOLLOWING DESIGNATED HOLIDAYS OR EVENTS:

CHRISTMAS	FOURTH OF JULY
NEW YEARS	LABOR DAY
MEMORIAL DAY	THANKSGIVING

THE PERIOD OF TIME THAT THE LANES ARE TO BE OPEN DEPENDS ON THE DAY OF THE WEEK ON WHICH THE HOLIDAY OR EVENT FALLS. THE FOLLOWING SCHEDULE SHALL BE USED TO DETERMINE THIS PERIOD:

DAY OF THE WEEK	TIME ALL LANES MUST BE OPEN TO TRAFFIC
SUNDAY	12:00N FRIDAY THROUGH 6:00AM MONDAY
MONDAY	12:00N FRIDAY THROUGH 6:00AM TUESDAY
TUESDAY	12:00N MONDAY THROUGH 6:00AM WEDNESDAY
WEDNESDAY	12:00N TUESDAY THROUGH 6:00AM THURSDAY
THURSDAY	12:00N WEDNESDAY THROUGH 6:00AM MONDAY
FRIDAY	12:00N THURSDAY THROUGH 6:00AM MONDAY
SATURDAY	12:00N FRIDAY THROUGH 6:00AM MONDAY

NO EXTENSIONS OF TIME SHALL BE GRANTED FOR DELAYS IN MATERIAL DELIVERIES, UNLESS SUCH DELAYS ARE INDUSTRY-WIDE, OR FOR LABOR STRIKES, UNLESS SUCH STRIKES ARE AREA-WIDE.

SHOULD THE CONTRACTOR FAIL TO MEET ANY OF THESE REQUIREMENTS, THE CONTRACTOR SHALL BE ASSESSED A DISINCENTIVE IN THE AMOUNT OF \$1,500 FOR EACH CALENDAR DAY THE ABOVE RESTRICTION IS VIOLATED.

DUST CONTROL

THE CONTRACTOR SHALL FURNISH AND APPLY WATER FOR DUST CONTROL AS DIRECTED BY THE ENGINEER. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED FOR DUST CONTROL PURPOSES:

ITEM 616, WATER 5 M. GAL.

ITEM 614 - LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE DURING CONSTRUCTION OPERATIONS

USE OF LAW ENFORCEMENT OFFICERS (LEOS) BY CONTRACTORS OTHER THAN THE USES SPECIFIED BELOW WILL NOT BE PERMITTED AT PROJECT COST. LEOS SHOULD NOT BE USED WHERE THE OMTUCD INTENDS THAT FLAGGERS BE USED.

IN ADDITION TO THE REQUIREMENTS OF CMS 614 AND THE OMTUCD, A UNIFORMED LEO WITH AN OFFICIAL PATROL CAR (CAR WITH TOP-MOUNTED EMERGENCY FLASHING LIGHTS AND COMPLETE MARKINGS OF THE APPROPRIATE LAW ENFORCEMENT AGENCY) SHALL BE PROVIDED FOR THE FOLLOWING TRAFFIC CONTROL TASKS:

DURING THE ENTIRE ADVANCE PREPARATION AND CLOSURE SEQUENCE WHERE COMPLETE BLOCKAGE OF TRAFFIC IS REQUIRED.

DURING A TRAFFIC SIGNAL INSTALLATION WHEN IMPACTING THE NORMAL FUNCTION OF THE SIGNAL OR THE FLOW OF TRAFFIC OR WHEN TRAFFIC NEEDS TO BE DIRECTED THROUGH AN ENERGIZED TRAFFIC SIGNAL CONTRARY TO THE SIGNAL DISPLAY (E.G., DIRECTING MOTORISTS THROUGH A RED LIGHT).

IN ADDITION TO THE REQUIREMENT OF CMS 614 AND THE OMTUCD, A UNIFORMED LEO WITH AN OFFICIAL PATROL CAR (CAR WITH TOP-MOUNTED EMERGENCY FLASHING LIGHTS AND COMPLETE MARKINGS OF THE APPROPRIATE LAW ENFORCEMENT AGENCY) SHOULD BE PROVIDED FOR THE FOLLOWING TRAFFIC CONTROL TASKS:

FOR LANE CLOSURES: DURING INITIAL SET-UP PERIODS, TEAR DOWN PERIODS, SUBSTANTIAL SHIFTS OF A CLOSURE POINT OR WHEN NEW LANE CLOSURE ARRANGEMENTS ARE INITIATED FOR LONG-TERM LANE CLOSURES/SHIFTS (FOR THE FIRST AND LAST DAY OF MAJOR CHANGES IN TRAFFIC CONTROL SETUP). IN GENERAL, LEOS SHOULD BE POSITIONED AT THE POINT OF LANE RESTRICTION OR ROAD CLOSURE AND TO MANUALLY CONTROL TRAFFIC MOVEMENTS THROUGH INTERSECTIONS IN WORK ZONES.

WHEN CONSTRUCTION VEHICLES ARE ENTERING/EXITING THE ZONE DIRECTLY FROM/INTO AN OPEN LANE OF TRAFFIC. IF A LANE HAS BEEN CLOSED TO PROVIDE AN ACCELERATION/DECELERATION LANE FOR THE VEHICLE, THE LEO WILL NOT BE REQUIRED.

LEOS SHOULD NOT FORGO THEIR TRAFFIC CONTROL RESPONSIBILITIES TO APPREHEND MOTORISTS FOR ROUTINE TRAFFIC VIOLATIONS. HOWEVER, IF A MOTORIST'S ACTIONS ARE CONSIDERED TO BE RECKLESS, THEN PURSUIT OF THE MOTORIST IS APPROPRIATE.

THE LEOS WORK AT THE DIRECTION OF THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR SECURING THE SERVICES OF THE LEOS WITH THE APPROPRIATE AGENCIES AND COMMUNICATING THE INTENTIONS OF THE PLANS WITH RESPECT TO DUTIES OF THE LEOS. THE ENGINEER SHALL HAVE FINAL CONTROL OVER THE LEOS' DUTIES AND PLACEMENT, AND WILL RESOLVE ANY ISSUES THAT MAY ARISE BETWEEN THE TWO PARTIES.

THE LEO SHALL REPORT IN TO THE CONTRACTOR PRIOR TO THE START OF THE SHIFT, IN ORDER TO RECEIVE INSTRUCTIONS REGARDING SPECIFIC WORK ASSIGNMENTS DURING HIS/HER SHIFT. THE LEO IS EXPECTED TO STAY AT THE PROJECT SITE FOR THE ENTIRE DURATION OF HIS/HER SHIFT. THE LEO SHALL REPORT TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT. ONCE THE LEO HAS COMPLETED THE DUTIES DESCRIBED ABOVE AND STILL HAS TIME REMAINING ON HIS/HER SHIFT, THE LEO MAY BE ASKED TO PATROL THROUGH THE WORK ZONE (WITH FLASHING LIGHTS OFF) OR BE PLACED AT A LOCATION TO DETER MOTORISTS FROM SPEEDING. SHOULD IT BE NECESSARY TO LEAVE THE PROJECT SITE, THE LEO SHALL NOTIFY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE THE LEO WITH A TWO-WAY COMMUNICATION DEVICE WHICH SHALL BE RETURNED TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT.

LEOS (WITH PATROL CAR) REQUIRED BY THE TRAFFIC MAINTENANCE TASKS ABOVE SHALL BE PAID FOR ON A UNIT PRICE (HOURLY) BASIS UNDER ITEM 614, LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE 80 HOURS

THE HOURS PAID SHALL INCLUDE ANY MINIMUM SHOW-UP TIME REQUIRED BY THE LAW ENFORCEMENT AGENCY INVOLVED.

ANY ADDITIONAL COSTS (ADMINISTRATIVE OR OTHERWISE) INCURRED BY THE CONTRACTOR TO OBTAIN THE SERVICES OF AN LEO ARE INCLUDED WITH THE BID UNIT PRICE FOR ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE

ITEM 614 - MAINTAINING TRAFFIC (WINTER TRAFFIC LIMITATIONS)

ALL EXISTING LANES SHALL BE OPEN TO TRAFFIC BETWEEN NOVEMBER 15 AND APRIL 1. NOVEMBER 14 SHALL BE CONSIDERED TO CONSTITUTE AN INTERIM COMPLETION DATE AND LIQUIDATED DAMAGES SHALL BE ASSESSED IN ACCORDANCE WITH CMS 108.07 FOR EACH CALENDAR DAY THAT ALL LANES ARE NOT OPEN AND AVAILABLE TO TRAFFIC.

MAINTENANCE OF TRAFFIC SIGNAL/FLASHER INSTALLATION

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING TRAFFIC SIGNAL/FLASHER INSTALLATIONS WITHIN THE PROJECT UNDER THE FOLLOWING CONDITIONS:

1. EXISTING SIGNAL/FLASHER INSTALLATIONS WHICH THE PLANS REQUIRE THE CONTRACTOR TO ADJUST, MODIFY, ADD ONTO OR REMOVE, OR WHICH THE CONTRACTOR ACTUALLY ADJUSTS, MODIFIES OR OTHERWISE DISTURBS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ENTIRE INSTALLATION (AT AN INTERSECTION) FROM THE TIME HIS OPERATIONS FIRST DISTURB THE INSTALLATION UNTIL THE INSTALLATION HAS BEEN SUBSEQUENTLY REMOVED OR MODIFIED AND THE WORK IS ACCEPTED.
2. NEW OR REUSED SIGNAL/FLASHER INSTALLATIONS OR DEVICES, INSTALLED BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF THESE FROM THE TIME OF INSTALLATION UNTIL THE WORK IS ACCEPTED.

THE CONTRACTOR SHALL CORRECT AS QUICKLY AS POSSIBLE ALL OUTAGES OR MALFUNCTIONS. HE SHALL PROVIDE THE MAINTAINING AGENCY AND THE ENGINEER SUCH ADDRESSES AND PHONE NUMBERS WHERE HIS MAINTENANCE FORCES CAN BE CONTACTED. THE CONTRACTOR SHALL PROVIDE ONE OR MORE PERSONS TO RECEIVE ALL CALLS AND DISPATCH THE NECESSARY MAINTENANCE FORCES TO CORRECT OUTAGES. SUCH A PERSON OR PERSONS MAY BE USED TO PERFORM OTHER DUTIES AS LONG AS PROMPT ATTENTION IS GIVEN TO THESE CALLS AND A PERSON IS READILY AVAILABLE CONTINUOUSLY 24 HOURS A DAY, 7 DAYS A WEEK. ALL LAMP OUTAGES, CABLE OUTAGES, ELECTRICAL FAILURES, EQUIPMENT MALFUNCTIONS AND MISALIGNED SIGNAL HEADS SHALL BE CORRECTED TO THE SATISFACTION OF THE ENGINEER WITH THE SIGNAL BACK TO SERVICE WITHIN FOUR HOURS AFTER THE CONTRACTOR HAS BEEN NOTIFIED OF THE OUTAGE.

IN THE EVENT NEW SIGNALS ARE DAMAGED PRIOR TO ACCEPTANCE, ALL DAMAGED EQUIPMENT EXCEPT POLES AND CONTROL EQUIPMENT SHALL BE REPLACED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER WITH THE SIGNAL BACK IN SERVICE WITHIN 8 HOURS AFTER THE CONTRACTOR'S NOTIFICATION OF THE OUTAGE. THE CONTRACTOR SHALL ARRANGE FOR FULL TRAFFIC CONTROL UNTIL THE SIGNAL IS BACK IN OPERATION.

IF POLES AND/OR CONTROL EQUIPMENT ARE DAMAGED AND MUST BE REPLACED, THE CONTRACTOR SHALL MAKE TEMPORARY REPAIRS AS NECESSARY TO BRING THE SIGNAL BACK INTO FULL OPERATION WITHIN THE ALLOWED 8-HOUR PERIOD, AND SHALL MAKE PERMANENT REPAIRS OR REPLACEMENT AS SOON THEREAFTER AS POSSIBLE.

NONE OF THE ABOVE SHALL BE CONSTRUED AS COLLECTIVE OR CONSECUTIVE OUTAGE TIME PERIODS AT ANY ONE LOCATION. THAT IS, WHERE MORE THAN ONE OUTAGE OCCURS AT ANY ONE LOCATION THEN THE ALLOTTED TIME LIMIT SHALL BE FOR THE WORST SINGLE OUTAGE.

WHERE OUTAGES ARE THE DIRECT RESULT OF A VEHICLE ACCIDENT THE RESPONSE OF THE CONTRACTOR SHALL BE AS OUTLINED ABOVE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COLLECTION OF ANY COMPENSATION FOR THIS WORK FROM THOSE PARTIES RESPONSIBLE FOR THE DAMAGE.

WHERE THE CONTRACTOR HAS FAILED TO, OR CANNOT RESPOND TO, AN OUTAGE OR SIGNAL EQUIPMENT MALFUNCTION, AT THESE LOCATIONS WITHIN HIS RESPONSIBILITY, WITHIN PERIODS AS SPECIFIED ABOVE, THE ENGINEER MAY INVOKE THE PROVISIONS OF SECTION 105.15 AND ANY SUBSEQUENT BILLINGS TO THE STATE OR THE CITY OF EAST CLEVELAND FOR POLICE SERVICES AND MAINTENANCE SERVICES BY CITY FORCES SHALL BE DEDUCTED FROM MONIES DUE OR TO BECOME DUE THE CONTRACTOR IN ACCORDANCE WITH PROVISIONS OF SECTION 105.15.

THE CONTRACTOR SHALL PROVIDE THE MAINTENANCE SERVICE ENTIRELY WITH HIS FORCES OR HE MAY CHOOSE TO ENTER INTO A COOPERATIVE UNDERSTANDING WITH THE LOCAL MAINTAINING AGENCY TO PROVIDE THE MAINTENANCE. THE CONTRACTOR SHALL INFORM THE ENGINEER, IN WRITING, OF THE MAINTENANCE METHOD SELECTED.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO ANY TRAFFIC SIGNAL COMPONENTS REQUIRED TO BE HANDLED DURING THE RELOCATION OF POLES AND REVISIONS TO THE SIGNAL SYSTEM. WHEN A TRAFFIC SIGNAL MUST BE TAKEN OUT OF SERVICE BY THE CONTRACTOR, DUE TO CONSTRUCTION PROCEDURES, THIS OUTAGE SHALL NOT EXCEED 4 HOURS AND SHALL NOT INCLUDE THE HOURS OF 6:00-9:00AM AND 4:00-7:00PM. ANY SIGNALIZED INTERSECTION, WHERE THE SIGNAL IS OUT OF SERVICE DUE TO CONSTRUCTION PROCEDURES, OR DUE TO AN OUTAGE OR MALFUNCTION OF EQUIPMENT AS DESCRIBED ABOVE, SHALL BE PROTECTED, BY THE CONTRACTOR, BY THE INSTALLATION OF TEMPORARY "STOP" SIGNS, EXCEPT FOR THE FOLLOWING INTERSECTIONS WHICH SHALL BE PROTECTED BY OFF-DUTY CITY OF EAST CLEVELAND POLICE, HIRED BY THE CONTRACTOR:

1. SUPERIOR ROAD & FOREST HILL AVENUE/TERRACE ROAD INTERSECTION
2. NOBLE ROAD & TERRACE ROAD INTERSECTION

ANY VEHICULAR TRAFFIC SIGNAL HEAD, EITHER NEW OR EXISTING WHICH WILL BE OUT OF OPERATION SHALL BE COVERED IN THE MANNER DESCRIBED IN 632.25. THE CONTRACTOR SHALL MAINTAIN COMPLETE RECORDS OF MALFUNCTIONS INCLUDING:

1. TIME OF NOTIFICATION OF MALFUNCTION;
2. TIME OF WORK CREWS ARRIVAL TO CORRECT THE MALFUNCTION;
3. ACTIONS TAKEN TO CORRECT THE MALFUNCTION, INCLUDING A LIST OF PARTS REPAIRED OR REPLACED;
4. A DIAGNOSIS OF REASON FOR THE MALFUNCTION AND PROBABILITY OF REOCCURRENCE;
5. TIME OF COMPLETION OF THE REPAIR AND SYSTEM RESTORED TO FULL SERVICE.

A COPY OF THESE RECORDS SHALL BE PROVIDED TO THE ENGINEER WITHIN THREE (3) WORKING DAYS FOLLOWING COMPLETION OF EACH REPAIR.

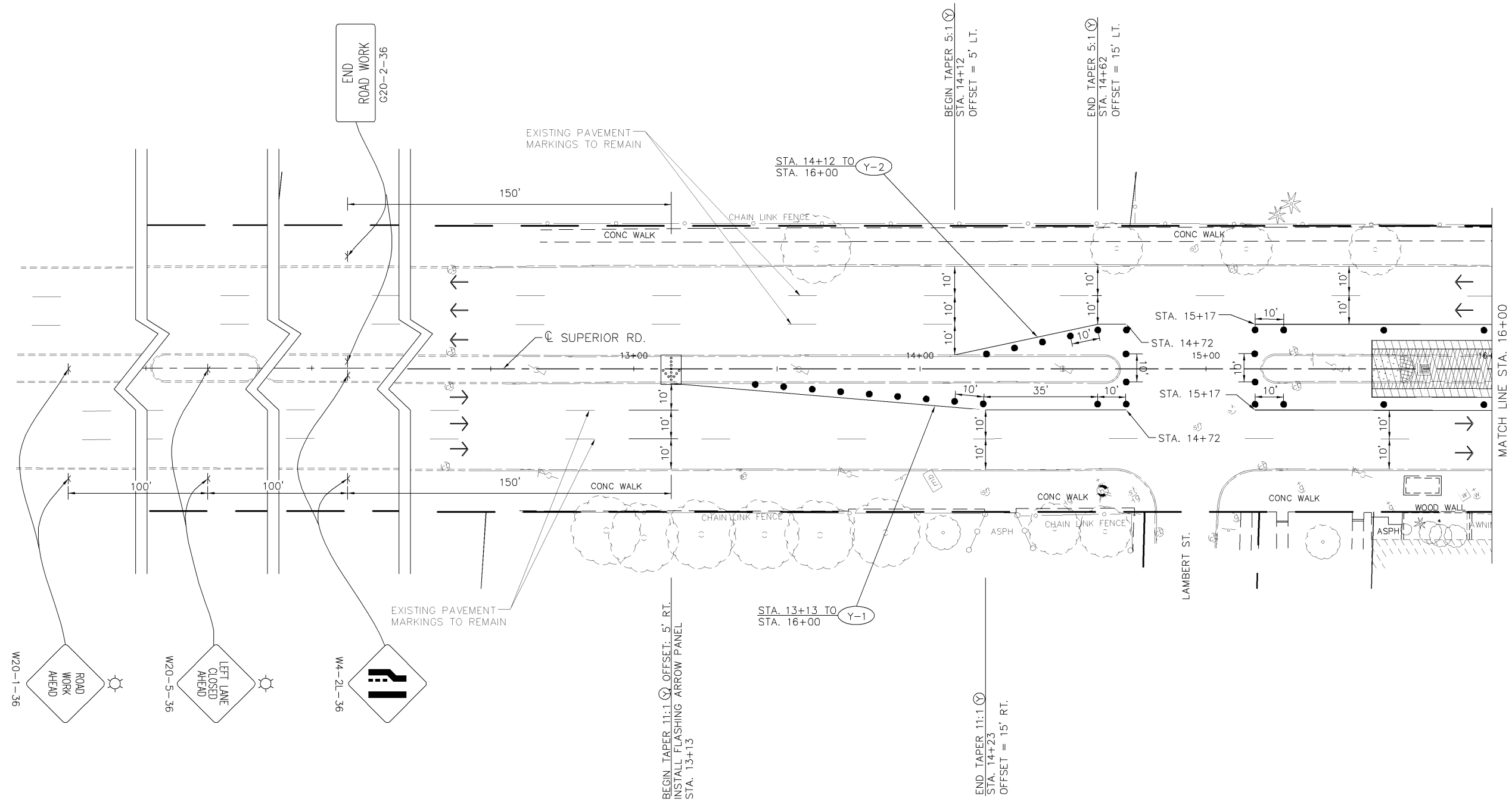
ALL COSTS RESULTING FROM THE ABOVE REQUIREMENTS SHALL BE CONSIDERED TO BE INCLUDED IN THE LUMP SUM BID FOR ITEM 614, MAINTAINING TRAFFIC.

CALCULATED
JWG
CHECKED
MAH

MAINTENANCE OF TRAFFIC NOTES

CUY-SUPERIOR RD/NOBLE RD

16
55



- NOTES:
1. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL RESIDENTIAL AND COMMERCIAL DRIVEWAYS AT ALL TIMES.
 2. THE CONTRACTOR SHALL REMOVE ALL CONFLICTING PAVEMENT MARKINGS AND SIGNAGE PRIOR TO THE START OF CONSTRUCTION.
 3. MAINTENANCE OF TRAFFIC WORK ZONE PAVEMENT MARKINGS SHALL BE CLASS 1, 740.06, TYPE 1 REMOVABLE PAVEMENT MARKINGS AS PER ODOT CMS 740.06.

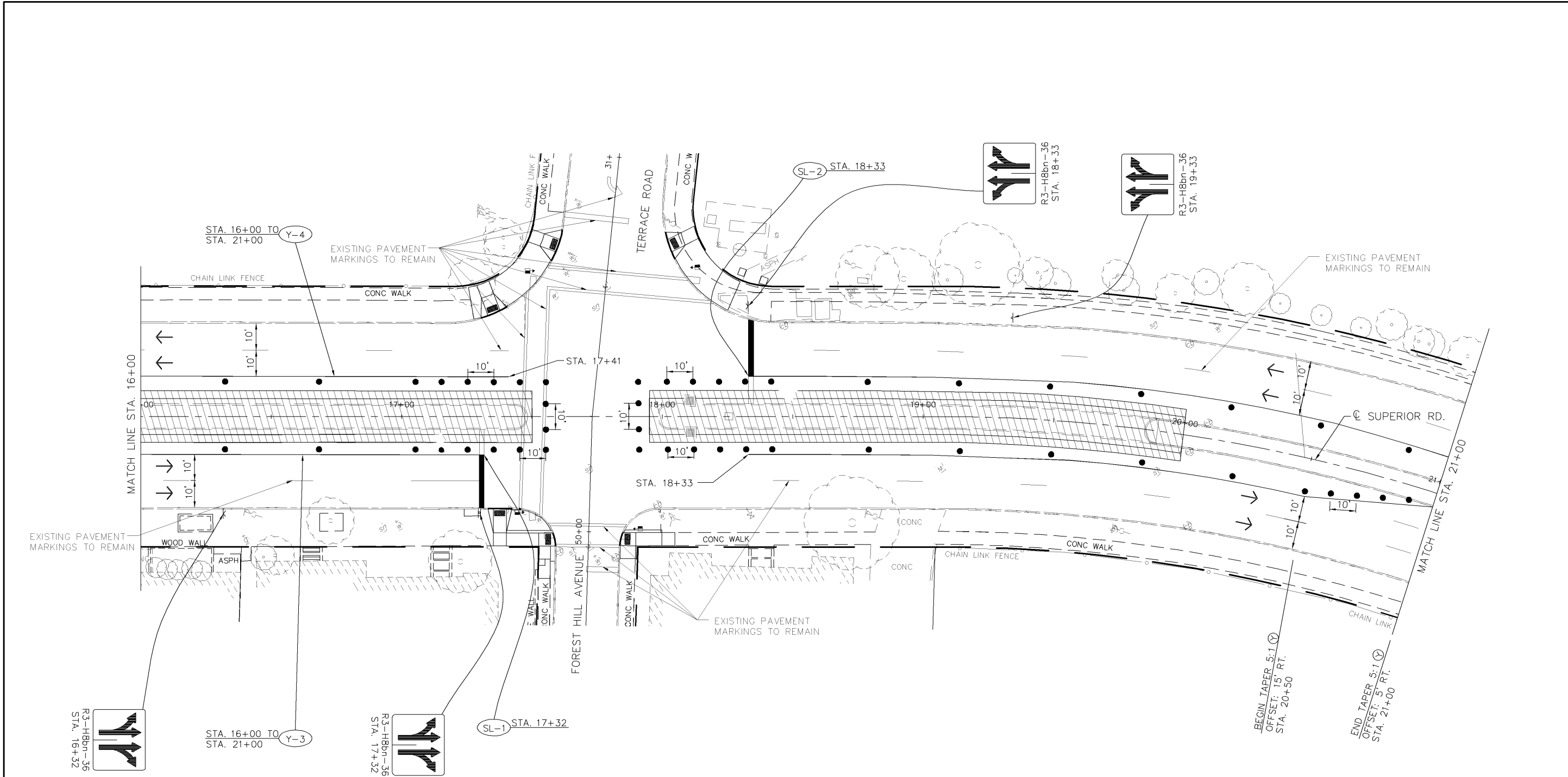
LEGEND	
	WARNING LIGHT TYPE A SIGN
	CONSTRUCTION BARREL (SPACING AT 35' C/C UNLESS NOTED OTHERWISE)
	WORK AREA
	TRAFFIC FLOW ARROW
	FLASHING ARROW PANEL (TYPE AS PER MT-35.10)
	TEMPORARY EDGE LINE, YELLOW
	TEMPORARY STOP LINE

CALCULATED
JWG
CHECKED
MAH

HORIZONTAL SCALE IN FEET

MAINTENANCE OF TRAFFIC PLAN
 SUPERIOR ROAD/FORREST HILL AVENUE/TERRACE ROAD INTERSECTION

CUY-SUPERIOR RD/INOBLE RD



- NOTES:
1. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL RESIDENTIAL AND COMMERCIAL DRIVEWAYS AT ALL TIMES.
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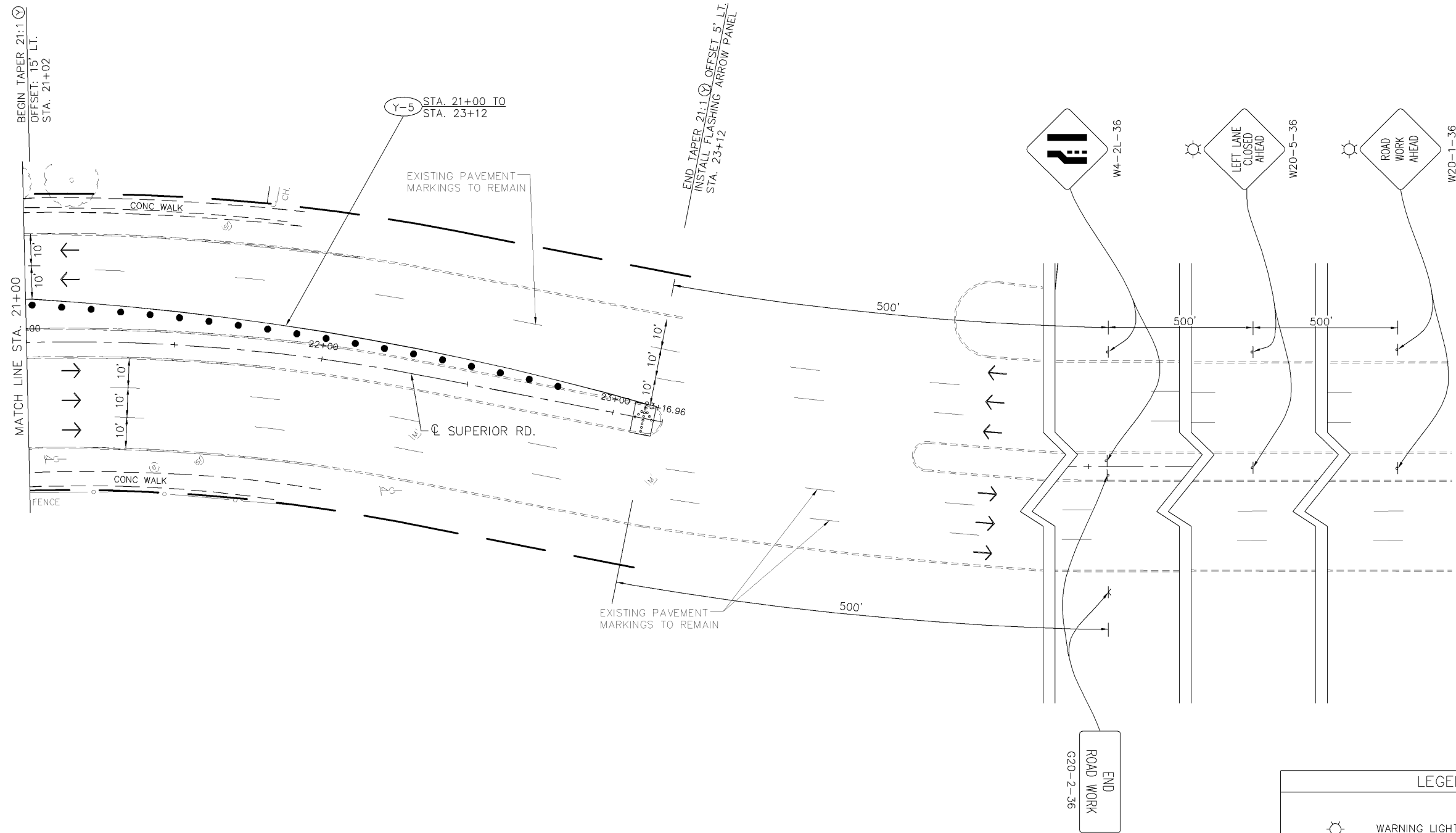
LEGEND	
	WARNING LIGHT TYPE A
	SIGN
	CONSTRUCTION BARREL (SPACING AT 35' C/C UNLESS NOTED OTHERWISE)
	WORK AREA
	TRAFFIC FLOW ARROW
	FLASHING ARROW PANEL (TYPE AS PER MT-35.10)
	TEMPORARY EDGE LINE, YELLOW
	TEMPORARY STOP LINE

CALCULATED
JWG

CHECKED
MAH

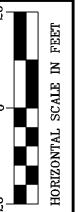
HORIZONTAL SCALE IN FEET

MAINTENANCE OF TRAFFIC PLAN
 SUPERIOR ROAD/FOREST HILL AVENUE/TERRACE ROAD INTERSECTION



- NOTES:
1. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL RESIDENTIAL AND COMMERCIAL DRIVEWAYS AT ALL TIMES.
 2. THE CONTRACTOR SHALL REMOVE ALL CONFLICTING PAVEMENT MARKINGS AND SIGNAGE PRIOR TO THE START OF CONSTRUCTION.
 3. MAINTENANCE OF TRAFFIC WORK ZONE PAVEMENT MARKINGS SHALL BE CLASS 1, 740.06, TYPE 1 REMOVABLE PAVEMENT MARKINGS AS PER ODOT CMS 740.06.

LEGEND	
	WARNING LIGHT TYPE A SIGN
	CONSTRUCTION BARREL (SPACING AT 35' C/C UNLESS NOTED OTHERWISE)
	WORK AREA
	TRAFFIC FLOW ARROW
	FLASHING ARROW PANEL (TYPE AS PER MT-35.10)
	TEMPORARY EDGE LINE, YELLOW
	TEMPORARY STOP LINE



CALCULATED
JWG
CHECKED
MAH

MAINTENANCE OF TRAFFIC PLAN
 SUPERIOR ROAD/FORREST HILL AVENUE/TERRACE ROAD INTERSECTION

CUY-SUPERIOR RD/INOBLE RD

Drawing File: N:\2011\2011148\00\dwg\2011148.00 Subsummary.dwg
 Layout: 2011148S001
 Date: 4/9/2013
 Time: 4:09
 Technician: eastonltsch

REF. NUMBER	SHEET NUMBER	STATION		SIDE	202	202	202	202	608	608				609	609		659							
		FROM	TO		PAVEMENT REMOVED	WALK REMOVED	CURB REMOVED	CATCH BASIN REMOVED		4" CONCRETE WALK	CURB RAMP				CURB, TYPE 2-B, USING CLASS MS CONCRETE	CONCRETE MEDIAN		SEEDING AND MULCHING, AS PER PLAN						
					SQ. YD.	SQ. FT.	FT.	EACH	SQ. FT.	SQ. FT.				FT.	SQ. YD.		SQ. YD.							
SW-1	20			LT.		72			72															
SW-2	20			RT.		40			40															
SW-3	20			LT.		95			95															
SW-4	20			RT.		75			75															
	21	15+58.00	17+50.00	RT. / LT.	89																			
	21	17+95.00	20+00.00	RT. / LT.	96																			
CR-1	21	15+58.00	17+48.29	RT. / LT.			387																	
C-1	21	15+58.00	15+73.00	RT. / LT.										36	4		10							
CR-2	21	17+97.86	20+00.00	RT. / LT.			410																	
D-3	21	18+10.49		LT.				1																
D-4	21	18+10.74		RT.				1																
C-2	21	19+85.00	20+00.00	RT. / LT.										36	4		10							
CX-7	21	17+34.76		LT.		125			45	80														
CX-8	21	17+37.64		RT.		188			99	89														
CX-9	21	17+56.16		RT.		160			29	131														
CX-10	21	17+58.29		LT.		360			281	79														
CX-11	21	17+86.57		RT.		149			25	124														
CX-12	21	18+04.55		LT.		383			312	71														
TOTALS CARRIED TO GENERAL SUMMARY					185	1647	797	2		1073	574						72	8		20				

CALCULATED ERS	ROADWAY SUBSUMMARY
CHECKED JRC	
17 55	CUY-SUPERIOR RD/NOBLE RD

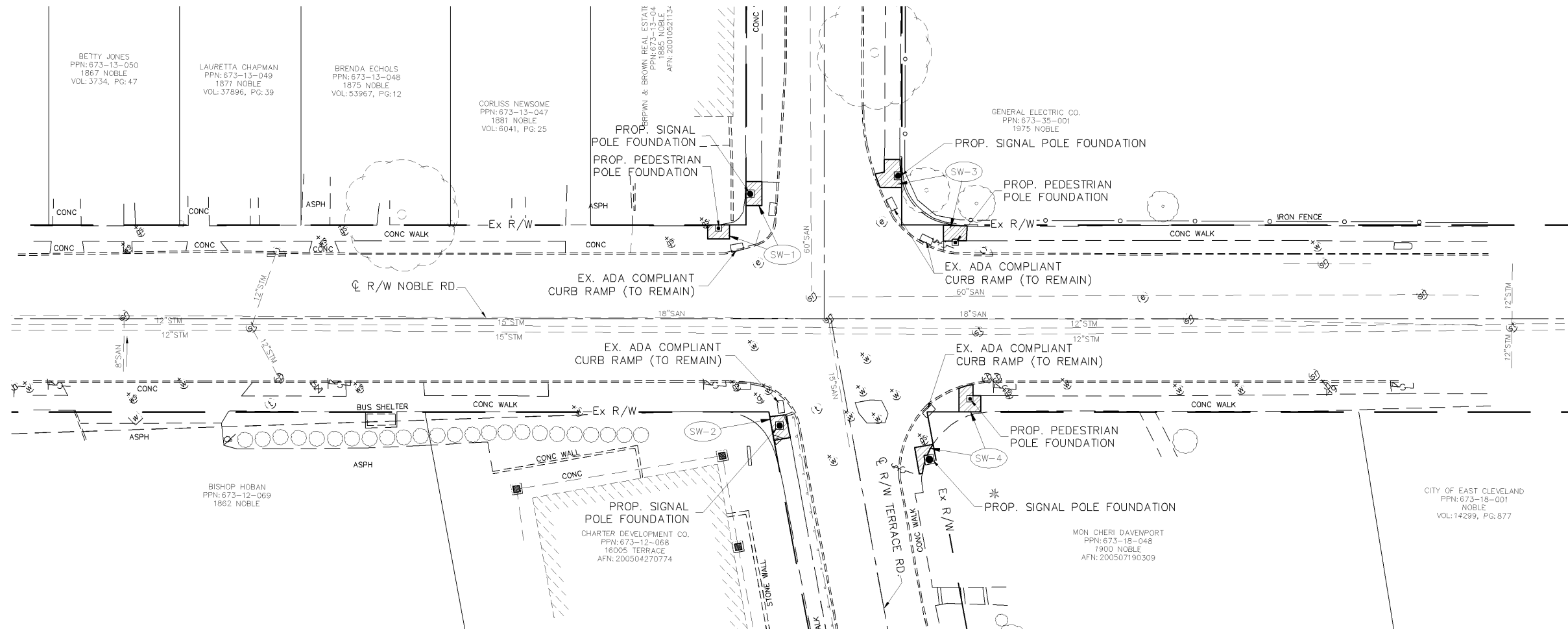
Drawing File: N:\2011\2011148\00\dwg\2011148.00_Subsummary.dwg
 Layout: 2011148C001
 Date: Nov 30, 2012
 Technician: eastonisch

STATION		SIDE	LENGTH (L)	AVERAGE WIDTH (W)	SURFACE AREA (A = LxW)	SURFACE AREA (AUTOCADD)	204	204		254	255		301	304		407	407		448	448		451		SPECIAL	
FROM	TO	FT.	FT.	FT.	SQ. FT.	SQ. FT.	SQ. YD.	PROOF ROLLING		SQ. YD.	FT.		CU. YD.	CU. YD.		GAL.	GAL.		CU. YD.	CU. YD.		SQ. YD.		SQ. YD.	
SUPERIOR ROAD																									
15+58.00	15+73.00	RT.	15.00	3.00	45.00					5						0.40	0.20		0.21	0.21					
15+58.00	15+73.00	LT.	15.00	3.00	45.00					5						0.40	0.20		0.21	0.21					
15+58.00	15+73.00	RT.	15.00	2.00		35.21	4	0.01			15		1	1		0.31	0.16		0.16	0.16		3			
15+58.00	15+73.00	LT.	15.00	2.00		35.21	4	0.01			15		1	1		0.31	0.16		0.16	0.16		3			
15+73.00	17+50.00	RT.	177.00	3.00	531.00					59						4.72	2.36		2.46	2.46				99	
15+73.00	17+50.00	LT.	177.00	3.00	531.00					59						4.72	2.36		2.46	2.46				99	
15+73.00	17+50.00	RT.	177.00								177														
15+73.00	17+50.00	LT.	177.00								177														
15+73.00	17+50.00	RT. / LT.	177.00	14.00	2478.00		276	0.14			14		31	46		22.03	11.01		11.47	11.47		207			
17+50.00	17+95.00	RT. / LT.	45.00	20.00	900.00					100						8.00	4.00		4.17	4.17					
17+95.00	19+85.00	RT.	190.00	3.00	570.00					64						5.07	2.53		2.64	2.64				106	
17+95.00	19+85.00	LT.	190.00	3.00	570.00					64						5.07	2.53		2.64	2.64				106	
17+95.00	19+85.00	RT.	190.00								190														
17+95.00	19+85.00	LT.	190.00								190														
17+95.00	19+85.00	RT. / LT.	190.00	14.00	2660.00		296	0.15			14		33	50		23.64	11.82		12.31	12.31		222			
19+85.00	20+00.00	RT.	15.00	3.00	45.00					5						0.40	0.20		0.21	0.21					
19+85.00	20+00.00	LT.	15.00	3.00	45.00					5						0.40	0.20		0.21	0.21					
19+85.00	20+00.00	RT.	15.00	2.00		35.52	4	0.01			15		1	1		0.32	0.16		0.16	0.16		3			
19+85.00	20+00.00	LT.	15.00	2.00		35.52	4	0.01			15		1	1		0.32	0.16		0.16	0.16		3			
TOTALS CARRIED TO GENERAL SUMMARY							588	1		366	822		68	100		77	39		40	40		441		410	

PAVEMENT SUBSUMMARY	CUY-SUPERIOR RD/NOBLE RD
CALCULATED ERS	CHECKED JRC
19	55

Drawing File: N:\2011\2011148\00\dwg\Plan Noble-Superior.dwg
 Layout: 2011148P001
 Date: 11/18/2013
 Time: 10:18 am
 Technician: eastontsch

Twist: -1.57079633



- FULL DEPTH PAVEMENT
- CONC. WALK REMOVE/REPLACE
- RESURFACING
- SEEDING AND MULCHING
- 6" NON-REINFORCED PAVEMENT
- EXIST. CURB REMOVE/REPLACE
- UTILITY POLE TO BE REMOVED (BY OTHERS)

CALCULATED
ERS

CHECKED
MA

PLAN
NOBLE ROAD/TERRACE ROAD INTERSECTION

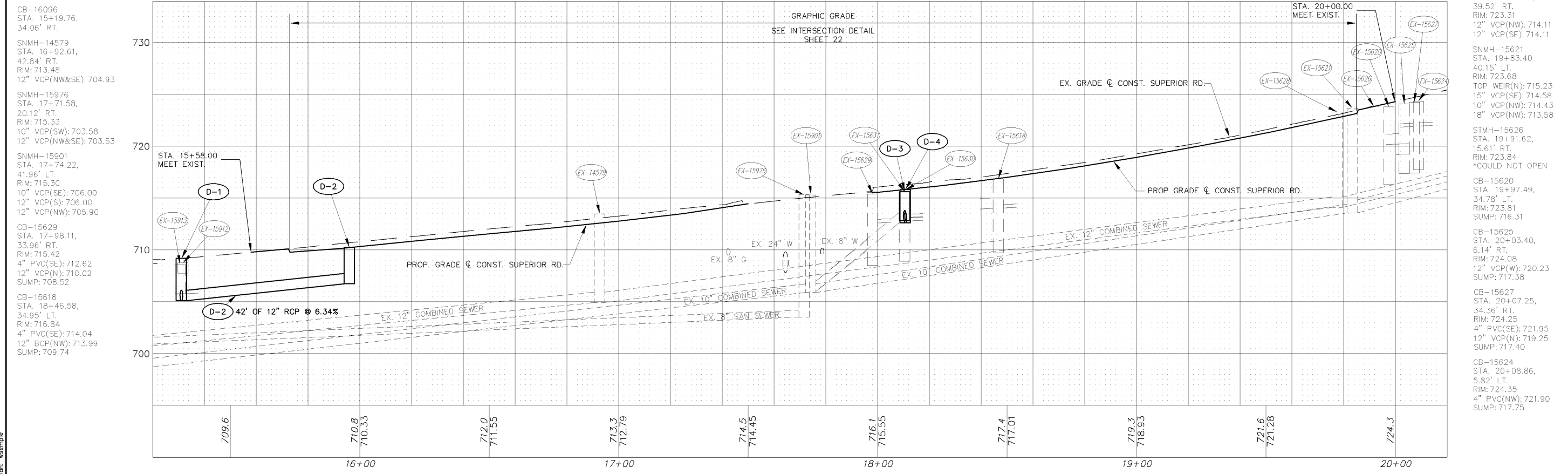
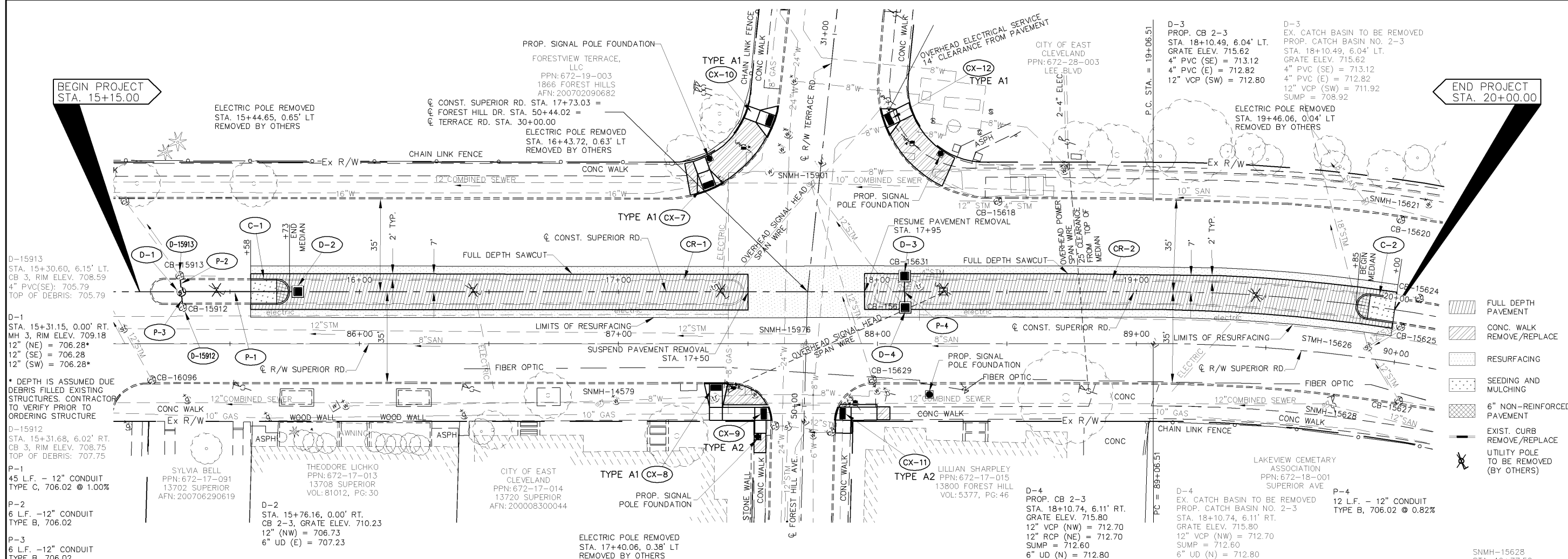
CUY-SUPERIOR RD/NOBLE RD

20
55



BEGIN PROJECT
 STA. 15+15.00

END PROJECT
 STA. 20+00.00



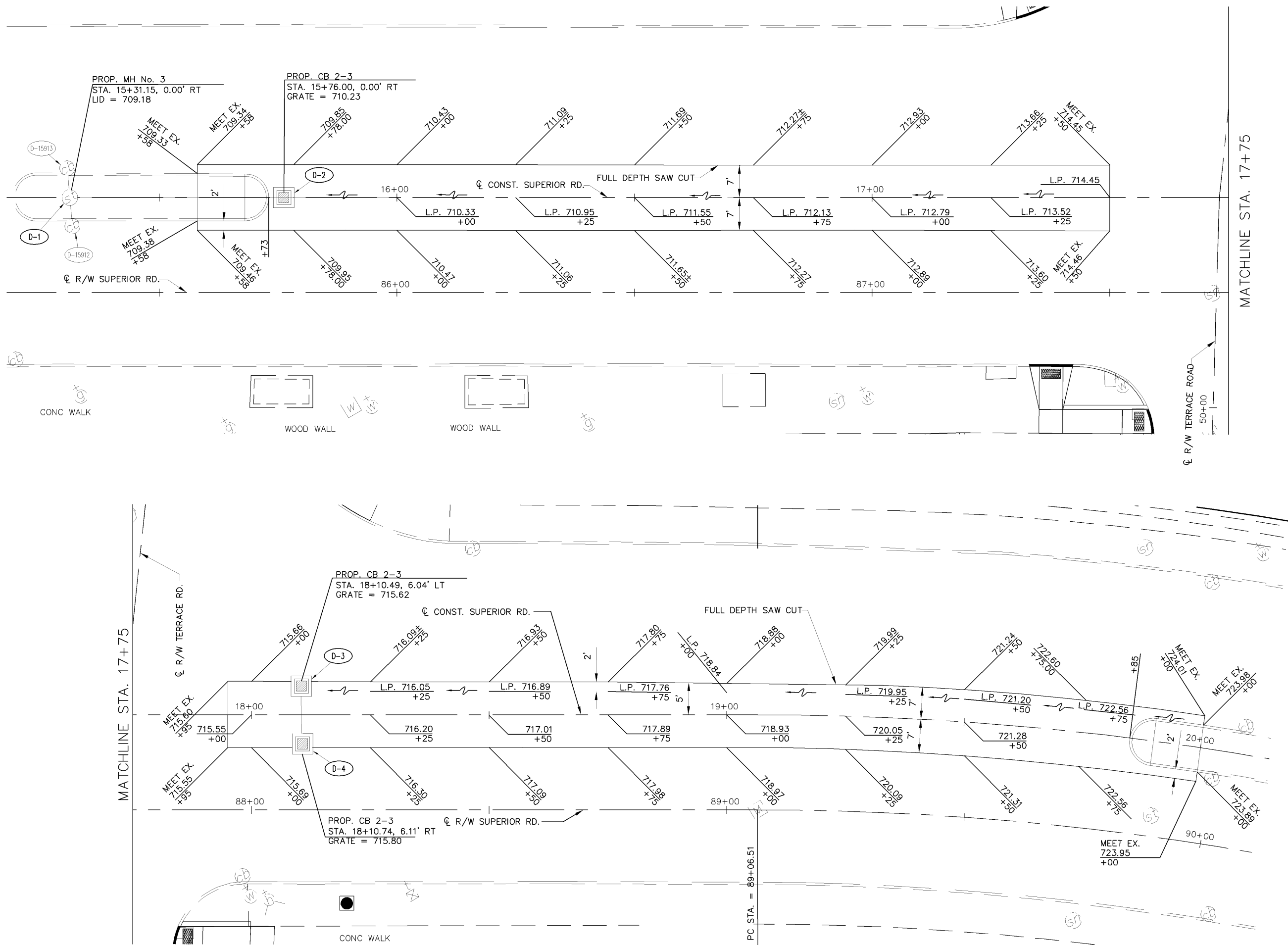
- FULL DEPTH PAVEMENT
- CONC. WALK REMOVE/REPLACE
- RESURFACING
- SEEDING AND MULCHING
- 6" NON-REINFORCED PAVEMENT
- EXIST. CURB REMOVE/REPLACE
- UTILITY POLE TO BE REMOVED (BY OTHERS)

- SNMH-15628
 STA. 19+77.50,
 39.52' RT.
 RIM: 723.31
 12" VCP(NW): 714.11
 12" VCP(SE): 714.11
- SNMH-15621
 STA. 19+83.40
 40.15' LT.
 RIM: 723.68
 TOP WEIR(N): 715.23
 15" VCP(SE): 714.58
 10" VCP(NW): 714.43
 18" VCP(NW): 713.58
- STMH-15626
 STA. 19+91.62,
 15.61' RT.
 RIM: 723.84
 *COULD NOT OPEN
- CB-15620
 STA. 19+97.49,
 34.78' LT.
 RIM: 723.81
 SUMP: 716.31
- CB-15625
 STA. 20+03.40,
 6.14' RT.
 RIM: 724.08
 12" VCP(W): 720.23
 SUMP: 717.38
- CB-15627
 STA. 20+07.25,
 34.36' RT.
 RIM: 724.25
 4" PVC(SE): 721.95
 12" VCP(N): 719.25
 SUMP: 717.40
- CB-15624
 STA. 20+08.86,
 5.82' LT.
 RIM: 724.35
 4" PVC(NW): 721.90
 SUMP: 717.75

Drawing File: N:\2011\2011148\00\dwg\Plan&Profile.dwg
 Layout: 2011148P002
 Date: 10/30/2012
 Technician: wsempke

Drawing File: N:\2011\2011148\00\dwg\2011128.00 Intersection Detail.dwg
 Layout: INTERSECTION DETAIL
 Date: 10/05/2012
 Technician: wexample

Twist: -1.57079633



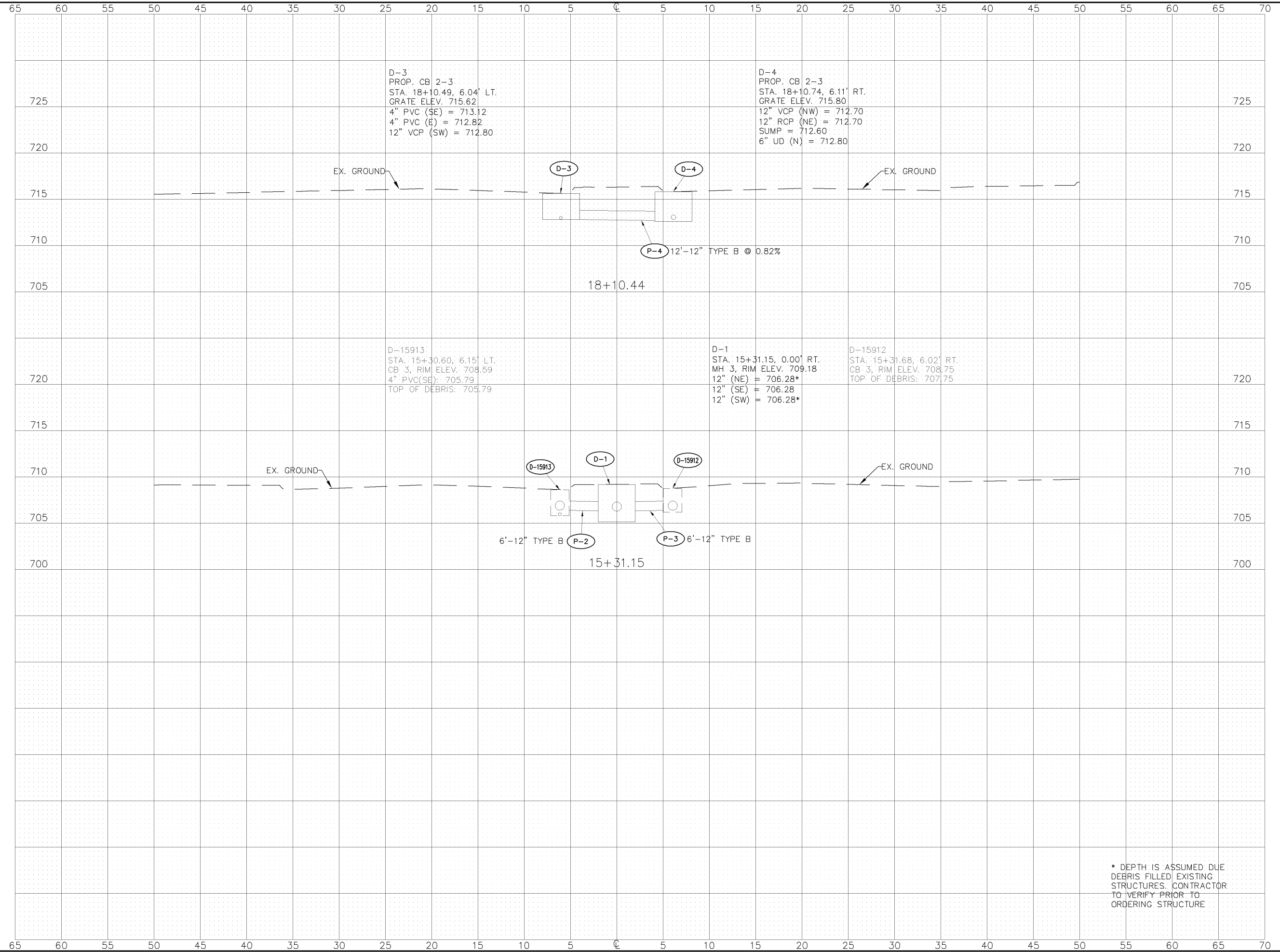
CALCULATED MA
 CHECKED DN

0 10 20
 Horizontal
 Scale in Feet

INTERSECTION DETAIL
 SUPERIOR ROAD/TERRACE ROAD

Drawing File: N:\2011\2011148\00\dwg\2011148.00 Drainage Details.dwg
 Layout: 20111480001
 Date: 10/05/2012
 Technician: wexample

Twist: -1.57079633



* DEPTH IS ASSUMED DUE
 DEBRIS FILLED EXISTING
 STRUCTURES. CONTRACTOR
 TO VERIFY PRIOR TO
 ORDERING STRUCTURE

CALCULATED
 ERS
 CHECKED
 MA

DRAINAGE DETAILS

CUY-SUPERIOR RD/NOBLE RD

ITEM 631 – REMOVAL OF SIGN SERVICE AND DISPOSAL, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF CMS ITEM 631, THE CONTRACTOR SHALL COORDINATE WITH FIRST ENERGY PRIOR TO THE DISCONNECTION, REMOVAL, AND DISPOSAL OF THE EXISTING FLASHING SCHOOL ZONE SPEED LIMIT SIGN.

PAYMENT FOR "ITEM 631 – REMOVAL OF SIGN SERVICE AND DISPOSAL, AS PER PLAN" SHALL BE AT THE UNIT PRICE BID PER EACH. THIS SHALL INCLUDE ALL COORDINATION, LABOR, AND MATERIALS NECESSARY TO COMPLETE THE REQUIRED WORK.

ITEM 631 – SCHOOL SPEED LIMIT SIGN ASSEMBLY, SOLAR-POWERED, AS PER PLAN

THIS SPECIFICATION APPLIES TO SCHOOL SIGN FLASHERS POWERED BY BATTERIES AND RECHARGED BY SOLAR PANELS.

THE ENTIRE SCHOOL ZONE FLASHER AND SIGN ASSEMBLY SHALL MEET THE REQUIREMENTS SET FORTH IN THE ODOTCD. THE SIGN SIZE SHALL BE 24" X 48" AND SIGN CODE S5-H1.

THE FLASHER CONTROL AND BATTERY WILL BE HOUSED IN ONE OR MORE STAINLESS STEEL OR ALUMINUM ENCLOSURES WITH A NEMA RATING OF AT LEAST 3R. ENCLOSURE EXTERIOR SURFACES SHALL BE BARE OR POWDER COAT ALUMINUM OR STAINLESS STEEL. THE ENCLOSURE INTERIOR SURFACES SHALL BE THE SAME AS THE EXTERIOR.

IF CONTAINED IN A SINGLE ENCLOSURE, THE CONTROL ELECTRONICS AND BATTERY SHALL BE SEPARATED IN A MANNER TO PREVENT DAMAGE TO THE CONTROL ELECTRONICS IF THE BATTERY ENVELOPE IS COMPROMISED.

ONLY SEALED GEL-CELL LEAD ACID OR AGM (ABSORBED GLASS MAT) BATTERIES WILL BE USED FOR POWER.

THE BATTERY COMPARTMENT MUST BE CAPABLE OF ACCOMMODATING AT LEAST ONE 105 AMP-HOUR BATTERY.

LED SIGNAL BEACONS MEETING THE CURRENT ITE VEHICLE TRAFFIC CONTROL SIGNAL HEADS (VTCSH) STANDARD WILL BE USED UNLESS OTHERWISE SPECIFIED. THE MANUFACTURER OF THE SIGNAL BEACON SHALL BE LISTED ON THE DEPARTMENT'S QUALIFIED PRODUCTS LIST FOR LED VEHICULAR SIGNAL HEADS.

THE SOLAR PANEL AND/OR CONTROLLER MANUFACTURER WILL PROVIDE SIGNED COPIES OF CALCULATIONS USED TO SIZE THE SOLAR PANEL AND BATTERIES. INCLUDED IN THESE CALCULATIONS WILL BE THE INSOLATION VALUE USED AND ITS SOURCE, THE SOLAR PANEL EFFICIENCY, CHARGER/CONTROLLER EFFICIENCY, INVERTER EFFICIENCY, PROPOSED LED LAMP LOAD, AND A FIGURE REPRESENTING ANTICIPATED MISCELLANEOUS LOSSES.

SOLAR PANEL MANUFACTURER MUST TEST PANEL ACCORDING TO IEC61215 OR EQUIVALENT APPROVED STANDARD. SOLAR PANEL MOUNTING MUST BE RATED FOR 90MPH DESIGN WIND.

RUN REQUIREMENTS ARE 4 HOURS PER DAY FOR TWO WEEKS UNDER CONTINUOUS WORST-CASE (MINIMUM) INSOLATION FIGURES (USUALLY DECEMBER) FOR THE PROPOSED GEOGRAPHIC LOCATION, USING A PANEL ELEVATION ANGLE APPROPRIATE TO THE SITE LATITUDE, AT A SUSTAINED TEMPERATURE OF 25 DEGREES FAHRENHEIT (-4 DEGREES CELSIUS).

IF VOLTAGES OVER 50V AC OR DC ARE PRESENT, GROUNDING AND BONDING REQUIREMENTS SPECIFIED IN THE ODOT CMS WILL BE FOLLOWED.

ANY TIMER INCLUDED IN THE ASSEMBLY MUST SATISFY THE REQUIREMENTS OF 731.10 AND BE LISTED ON THE ODOT QUALIFIED PRODUCTS LIST.

PAYMENT FOR 631 SCHOOL SPEED LIMIT SIGN ASSEMBLY, SOLAR POWERED, AS PER PLAN, SHALL BE MADE AT THE CONTRACT UNIT PRICE BID PER EACH. PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS, TOOLS, EQUIPMENT, TESTING, CERTIFICATIONS AND OTHER INCIDENTALS NECESSARY TO FURNISH THE SOLAR POWERED SCHOOL ZONE FLASHER COMPLETE IN PLACE, INCLUDING ALL CONNECTIONS MADE, WIRING COMPLETE, TESTED AND ACCEPTED.

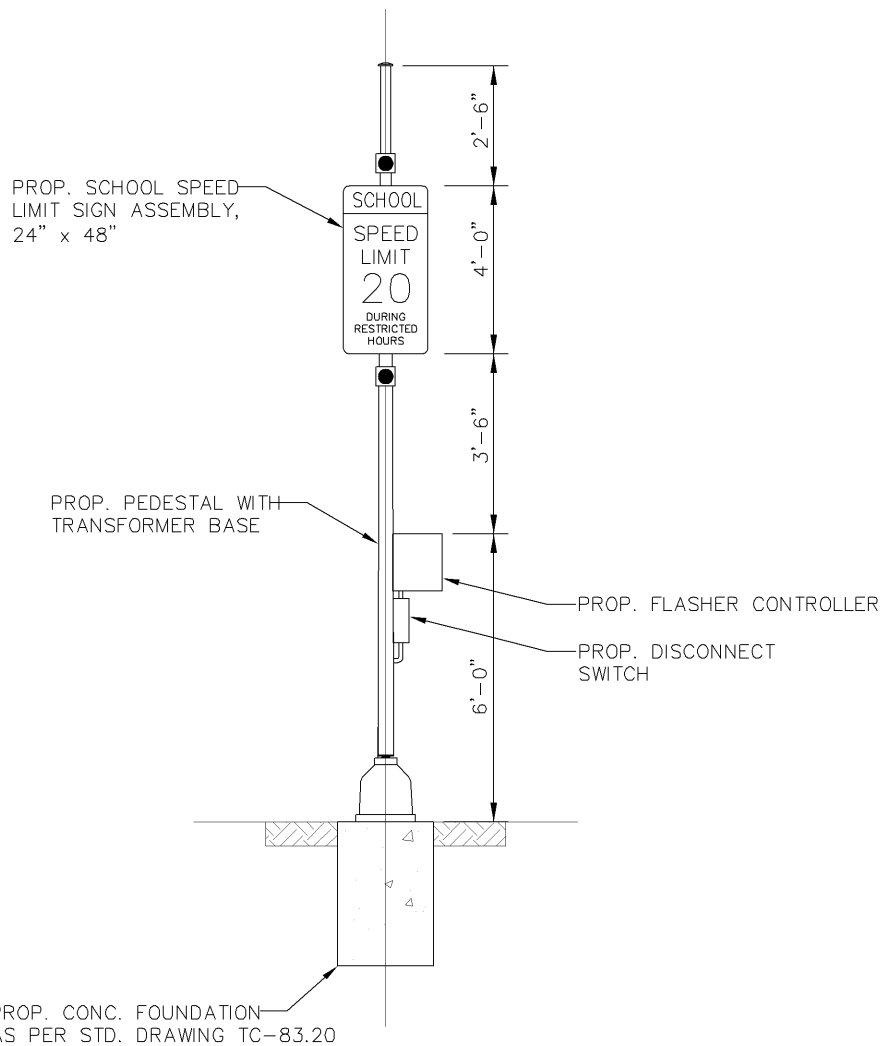
SCHOOL SPEED LIMIT SIGN CONSTRUCTION

THE CONTRACTOR SHALL INSTALL THE PROPOSED SCHOOL SPEED LIMIT SIGNS IN PROPER WORKING CONDITION AS APPROVED BY THE ENGINEER PRIOR TO REMOVAL OF THE EXISTING FLASHING SCHOOL SPEED LIMIT SIGN.

ITEM 632 – SIGNALIZATION MISC.: PEDESTAL, 16', TRANSFORMER BASE

THIS ITEM SHALL BE IN ACCORDANCE WITH CMS ITEM 632.19 AND ITEM 732.15. THE HEIGHT OF THE PEDESTAL SHALL BE 16 FEET.

PAYMENT FOR ITEM 631 – SIGNALIZATION MISC.: PEDESTAL, 16', TRANSFORMER BASE SHALL BE MADE AT THE CONTRACT UNIT PRICE BID PER EACH. PAYMENT SHALL INCLUDE ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY FOR EACH PEDESTAL COMPLETE AND IN PLACE.



SCHOOL ZONE SIGN
ELEVATION VIEW AND DETAILS
NOT TO SCALE

* SOLAR PANEL NOT SHOWN IN DETAIL.

SHEET NUMBER											PARTICIPATION		ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
26	27	28	29	FEDERAL	LOCAL													
		206	66			272		630	02100	272	FT	GROUND MOUNTED SUPPORT, NO. 2 POST						
		126	55			181		630	03100	181	FT	GROUND MOUNTED SUPPORT, NO. 3 POST						
		12	13			25		630	08510	25	FT	STREET NAME SIGN SUPPORT, NO. 2 POST						
		2				2		630	79100	2	EACH	SIGN HANGER ASSEMBLY, MAST ARM						
		2				2		630	79500	2	EACH	SIGN SUPPORT ASSEMBLY, POLE MOUNTED						
		159	49			208		630	80100	208	SQ FT	SIGN, FLAT SHEET						
		4	2			6		630	80500	6	EACH	SIGN, DOUBLE FACED, STREET NAME						
		6				6		630	84900	6	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL						
		7	1			8		630	85100	8	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION						
		7	2			9		630	86002	9	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL						
		8	2			10		630	87500	10	EACH	REMOVAL OF POLE MOUNTED SIGN AND DISPOSAL						
		1				1		631	93250	1	EACH	SCHOOL SPEED LIMIT SIGN ASSEMBLY, MISC.: SOLAR POWERED	24					
		1				1		631	94413	1	EACH	REMOVAL OF SIGN SERVICE AND DISPOSAL, AS PER PLAN	24					
		1				1		632	64020	1	EACH	PEDESTAL FOUNDATION						
		1				1		632	90400	1	EACH	SIGNALIZATION MISC.: PEDESTAL, 16', TRANSFORMER BASE	24					
	0.04	0.04				0.08		644	00100	0.08	MILE	EDGE LINE, 4"						
	0.10	0.15				0.25		644	00200	0.25	MILE	LANE LINE, 4"						
	0.02	0.20				0.22		644	00300	0.22	MILE	CENTER LINE						
		471				471		644	00400	471	FT	CHANNELIZING LINE, 8"						
		120				120		644	00500	120	FT	STOP LINE						
		287				287		644	00600	287	FT	CROSSWALK LINE						
	83	175				258		644	00700	258	FT	TRANSVERSE/DIAGONAL LINE						
	154	128					282	644	01200	282	FT	PARKING LOT STALL MARKING						
		9				9		644	01300	9	EACH	LANE ARROW						
	439					439		644	30000	439	FT	REMOVAL OF PAVEMENT MARKING						
	3					3		644	30020	3	EACH	REMOVAL OF PAVEMENT MARKING						
	0.49					0.49		644	30030	0.49	MILE	REMOVAL OF PAVEMENT MARKING						

TRAFFIC CONTROL GENERAL SUMMARY

CUY-SUPERIOR RD/NOBLE RD

CALCULATED
JWG
CHECKED
MAH

Drawing File: N:\2011\2011148\00\Traffic\Sheets\2011148.00 TS001.dwg
 Layout: PAVEMENT MARKING (2 OF 2)
 Date: Jun 30, 2013
 Technician: ddombrosky

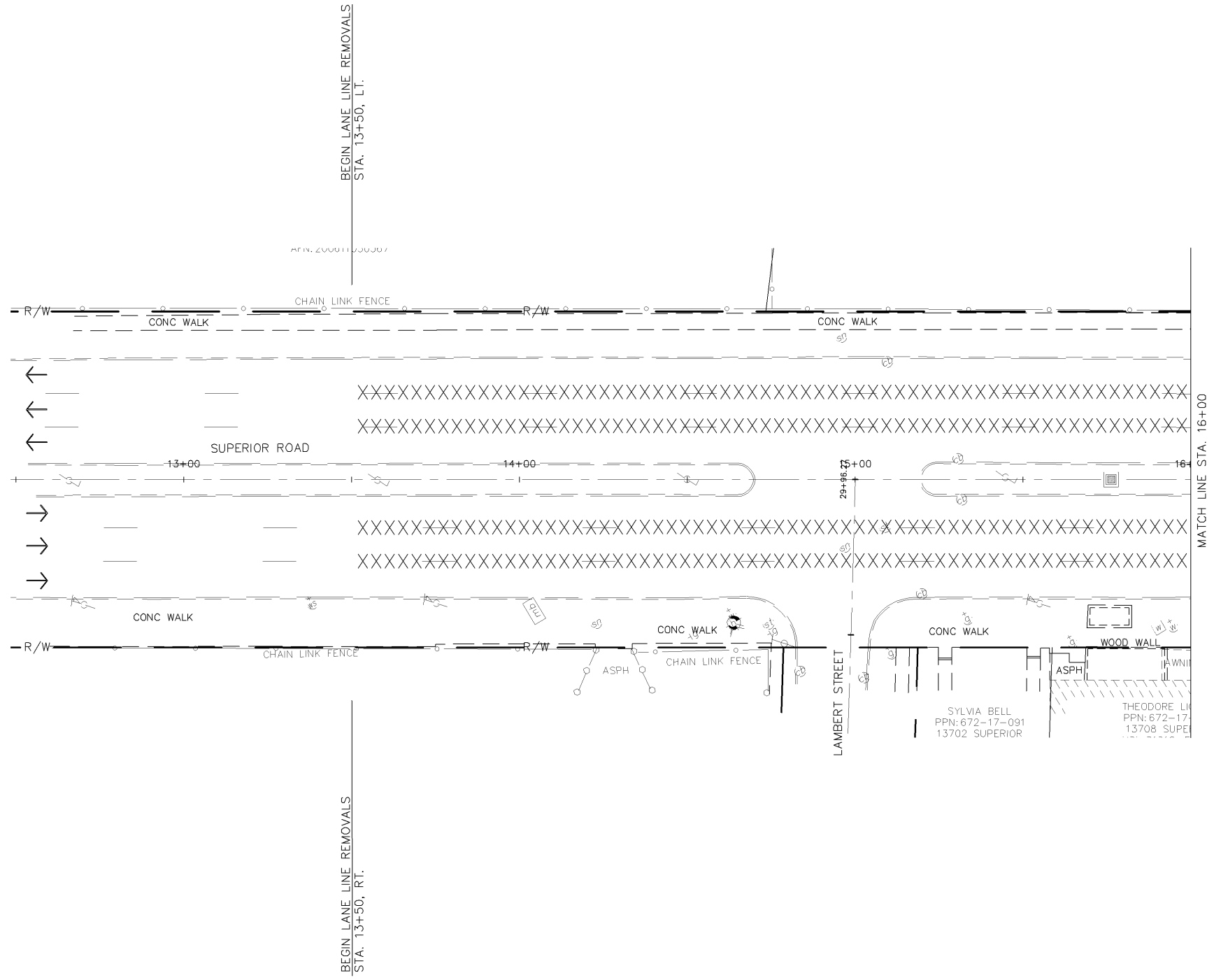
SHEET NO.	REFERENCE NO.	LOCATION	STATION		SIDE	644	644	644	644	644	644	644	644	644	644	644	644								
			EDGE LINE, 4"	LANE LINE, 4"		CENTER LINE	CHANNELIZING LINE, 8"	STOP LINE	CROSSWALK LINE	TRANSVERSE/DIAGONAL LINE (YELLOW)	TRANSVERSE/DIAGONAL LINE (WHITE)	PARKING LOT STALL MARKING	LANE ARROW	REMOVAL OF PAVEMENT MARKING	REMOVAL OF PAVEMENT MARKING	REMOVAL OF PAVEMENT MARKING	FROM	TO	FT	FT	FT	FT	FT	FT	FT
33	LL-3	SUPERIOR RD.	16+00	19+85	LT		385.00																		
33	LL-4	SUPERIOR RD.	16+00	19+85	RT		385.00																		
33	ELW-3	FOREST HILL/SUPERIOR RD	50+03	19+85	RT/RT	207.00																			
33	CDS-3	SUPERIOR RD.	16+00	16+26	RT/LT			26.00																	
33	CDS-4	SUPERIOR RD.	16+00	19+85	LT/RT			385.00																	
33	CDS-5	SUPERIOR RD.	19+35	19+85	RT/LT			50.00																	
33	CDS-6	FOREST HILL AVE.	30+77	31+00	CEN			23.00																	
33	CL-1	SUPERIOR RD.	16+36	17+26	RT			90.00																	
33	CL-2	SUPERIOR RD.	18+35	19+25	LT			90.00																	
33	CL-3	TERRACE RD.	30+77	31+00	LT			23.00																	
33	CL-4	SUPERIOR RD.	18+35	19+85	LT			150.00																	
33	SL-1	SUPERIOR RD.	17+28		LT/RT				41.00																
33	SL-2	TERRACE RD.	30+75		LT/RT				24.50																
33	SL-3	SUPERIOR RD.	18+33		LT/RT				42.00																
33	SL-4	FOREST HILL AVE.	49+89		RT				12.50																
33	CWL-1	SUPERIOR RD.	17+41		LT/RT					149.50															
33	CWL-2	TERRACE RD.	30+61		LT/RT					85.50															
33	CWL-3	FOREST HILL AVE.	50+03		LT/RT					52.00															
33	TLY-2	SUPERIOR RD.	16+00	16+26	LT					8.00															
33	TLY-3	SUPERIOR RD.	19+35	19+85	RT/LT					23.00															
33	TLW-3	FOREST HILL/SUPERIOR RD	50+03	19+85	RT/RT						68.00														
33	PS-14	SUPERIOR RD.	16+00		LT							11.00													
33	PS-15	SUPERIOR RD.	16+25		LT							14.00													
33	PS-16	SUPERIOR RD.	16+50		LT							14.00													
33	PS-17	SUPERIOR RD.	16+75		LT							14.00													
33	PS-18	SUPERIOR RD.	16+95		LT							11.00													
33	PS-19	SUPERIOR RD.	16+00		RT							11.00													
33	PS-20	SUPERIOR RD.	16+25		RT							14.00													
33	PS-21	SUPERIOR RD.	16+50		RT							14.00													
33	PS-22	SUPERIOR RD.	16+75		RT							14.00													
33	PS-23	SUPERIOR RD.	16+95		RT							11.00													
33	LA-1	SUPERIOR RD.	16+52		CEN								1												
33	LA-2	SUPERIOR RD.	17+18		CEN								1												
33	LA-3	TERRACE RD.	30+85		CEN								1												
33	LA-4	SUPERIOR RD.	18+43		LT								1												
33	LA-5	SUPERIOR RD.	19+09		LT								1												
33	LA-6	SUPERIOR RD.	19+75		LT								1												
33	LA-7	SUPERIOR RD.	18+43		CEN								1												
33	LA-8	SUPERIOR RD.	19+09		CEN								1												
34	CDS-7	TERRACE RD.	32+28	34+04	RT/LT			176.00																	
34	CDS-8	TERRACE RD.	31+00	34+50	RT/CEN			350.00																	
34	CL-5	TERRACE RD.	31+00	32+18	LT				118.00																
34	TLY-4	TERRACE RD.	32+28	34+04	RT/LT						76.00														
34	LA-9	TERRACE RD.	31+51		CEN								1												
TOTALS CARRIED TO TRAFFIC CONTROL GENERAL SUMMARY						207	770	1,010	471	120	287	107	68	128	9										
MILE						0.04	0.15	0.20																	

CALCULATED JWG	CHECKED MAH		
PAVEMENT MARKING SUBSUMMARY (SHEET 2 OF 2)			
CUY-SUPERIOR RD/NOBLE RD			
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27			
55			

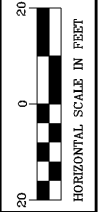
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 Date: Jan 31, 2013
 Time: 10:00 AM
 Technician: jpramm

SHEET NO.	REFERENCE NO.	LOCATION	STATION	SIDE	CODE	SIZE (INCHES)	630	630	630	630	630	630	630	630	630	631	631	632	632	
							GROUND MOUNTED SUPPORT, NO. 2 POST	GROUND MOUNTED SUPPORT, NO. 3 POST	STREET NAME SIGN SUPPORT, NO. 2 POST	SIGN HANGER ASSEMBLY, MAST ARM	SIGN SUPPORT ASSEMBLY, POLE MOUNTED	SIGN, FLAT SHEET	SIGN, DOUBLE FACED, STREET NAME	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	REMOVAL OF POLE MOUNTED SIGN AND DISPOSAL	SCHOOL SPEED LIMIT SIGN ASSEMBLY, MISC.: SOLAR POWERED	REMOVAL OF SIGN SERVICE AND DISPOSAL, AS PER PLAN	PEDESTAL FOUNDATION
							FT	FT	FT	EACH	EACH	SQ FT	EACH	EACH	EACH	EACH	EACH	EACH	EACH	
35	S-1	SUPERIOR RD.	14+38	RT	SPECIAL	12" x 18"	12.00					1.50								
35	S-2	SUPERIOR RD.	15+53	RT	S1-1-36	36" x 36"		13.50				9.00								
35	S-3	SUPERIOR RD.	15+38	LT	R3-2-36	36" x 36"		13.50				9.00								
35	S-32	SUPERIOR RD.	10+25	RT	W9-1-36	36" x 36"		14.74				9.00								
35	R-1	SUPERIOR RD.		RT	S1-1															
35	R-2	SUPERIOR RD.		LT	SPECIAL								1		1					
36	S-4	SUPERIOR RD.	16+36	RT	R3-H8cg-48	48' x 30"	13.00/13.00					10.00								
36	S-5	SUPERIOR RD.	17+26	RT	R3-H8cg-48	48' x 30"	13.00/13.00					10.00								
36	S-6	SUPERIOR RD.	17+43	RT	S5-3-30	30" x 48"		14.50				10.00								
36	S-7	FOREST HILL AVE.	49+88	RT	R3-H6b-42	42" x 36"	13.50/13.50					10.50								
36	S-8	SUPERIOR RD.	17+90	RT	D3-1-60	60" x 12"			11.92				1							
					D3-1-48	48" x 12"							1							
36	S-9	SUPERIOR RD.	18+80	RT	SPECIAL	12" x 18"	12.00					1.50								
36	S-10	SUPERIOR RD.	19+41	RT	R2-1-24	24" x 30"	13.00					5.00								
36	S-11	SUPERIOR RD.	19+90	CEN	R4-7b-24	24" x 30"	13.00					5.00								
36	S-12	SUPERIOR RD.	16+44	LT	S5-H1-24	24" x 48"									1					
36	S-13	SUPERIOR RD.	17+12	LT	S4-5-24	24" x 48"		14.50				8.00						1	1	
					S4-H8P-24	24" x 10"						1.67								
					S4-1P-24	24" x 10"						1.67								
36	S-14	TERRACE RD.	30+62	LT	R3-H8BH-36	36" x 30"		13.00				7.50								
36	S-15	SIGNAL SUPPORT #4			D3-1-48	48" x 12"					1		1							
					D3-1-48	48" x 12"					1		1							
36	S-16	SUPERIOR RD.	19+47	LT	S1-1-36	36" x 36"		13.50				9.00								
36	S-17	SUPERIOR RD.	18+33	LT	R3-H8cg-54	54" x 30"	13.00/13.00					11.25								
36	S-18	SUPERIOR RD.	19+85	LT	R3-H8cg-54	54" x 30"	13.00/13.00					11.25								
36	S-19	SIGNAL SUPPORT #3			R10-12-24	24" x 30"				1		5.00								
36	S-20	SIGNAL SUPPORT #1			R10-12-24	24" x 30"				1		5.00								
36	S-33	SUPERIOR RD.	18+50	RT	SPECIAL		13.00													
					SPECIAL															
36	R-3	SUPERIOR RD.		RT	SPECIAL								1		1					
					SPECIAL										1					
					SPECIAL										1					
36	R-4	SUPERIOR RD.		RT	D3-1													1		
					D3-1													1		
36	R-5	SUPERIOR RD.		RT	R7-1													1		
36	R-6	SUPERIOR RD.		CEN	R2-1													1		
36	R-7	SUPERIOR RD.		CEN	S5-H5													1		
36	R-8	SUPERIOR RD.		LT	SPECIAL								1		1					
36	R-9	SUPERIOR RD.		LT	SPECIAL													1		
					SPECIAL													1		
36	R-10	SUPERIOR RD.		LT	S1-1								1		1					
36	R-16	SUPERIOR RD.			SPECIAL										1					
					SPECIAL										1					
37	S-21	TERRACE RD.	31+40	LT	SPECIAL		11.50													
					SPECIAL															
37	S-22	TERRACE RD.	32+15	LT	R3-H8bh-36	36" x 30"		14.58				7.50								
					SPECIAL	12" x 18"						1.50								
37	S-23	TERRACE RD.	33+27	LT	S1-1-36	36" x 36"		13.50				9.00								
					SPECIAL										1					
37	R-11	TERRACE RD.		LT	R3-H8bh								1		2					
					SPECIAL								1							
37	R-12	TERRACE RD.		LT	S1-1													1		
37	R-12A	TERRACE RD.													1					
															1					
TOTALS CARRIED TO TRAFFIC CONTROL GENERAL SUMMARY							206	126	12	2	2	159	4	6	7	7	8	1	1	1

CALCULATED	JWG
CHECKED	MAH
SIGNING SUBSUMMARY (SHEET 1 OF 2)	
CUY-SUPERIOR RD/NOBLE RD	
28	55



LEGEND	
XXXX	EXISTING PAVEMENT MARKINGS TO BE REMOVED

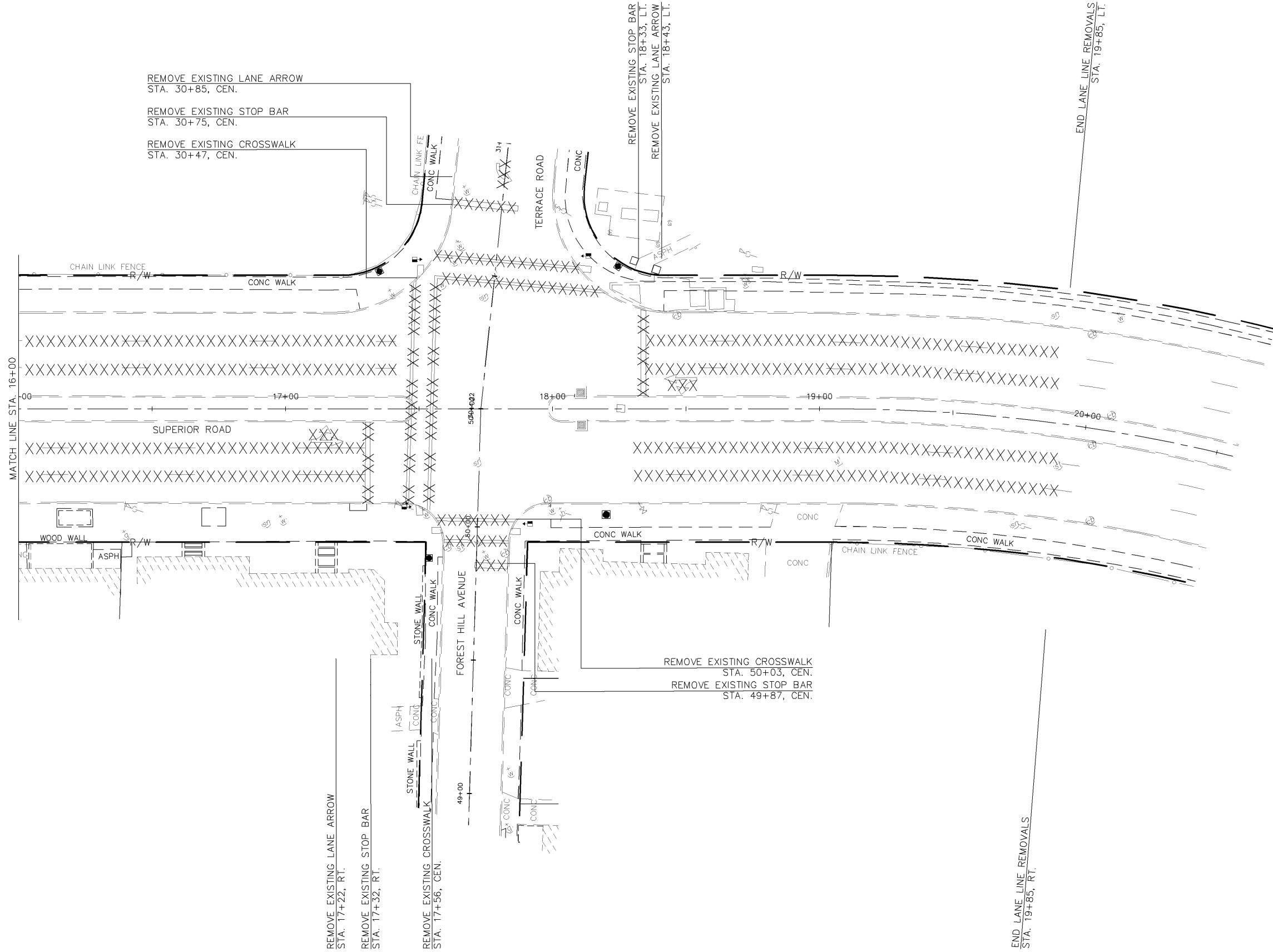


CALCULATED
 JWG
 CHECKED
 MAH

PAVEMENT MARKING REMOVAL PLAN
SUPERIOR ROAD/FORREST HILL AVENUE/TERRACE ROAD INTERSECTION

CUY-SUPERIOR RD/NOBLE RD





LEGEND
 XXXX EXISTING PAVEMENT MARKINGS TO BE REMOVED

CALCULATED
JWG

CHECKED
MAH

20
0
20
HORIZONTAL SCALE IN FEET

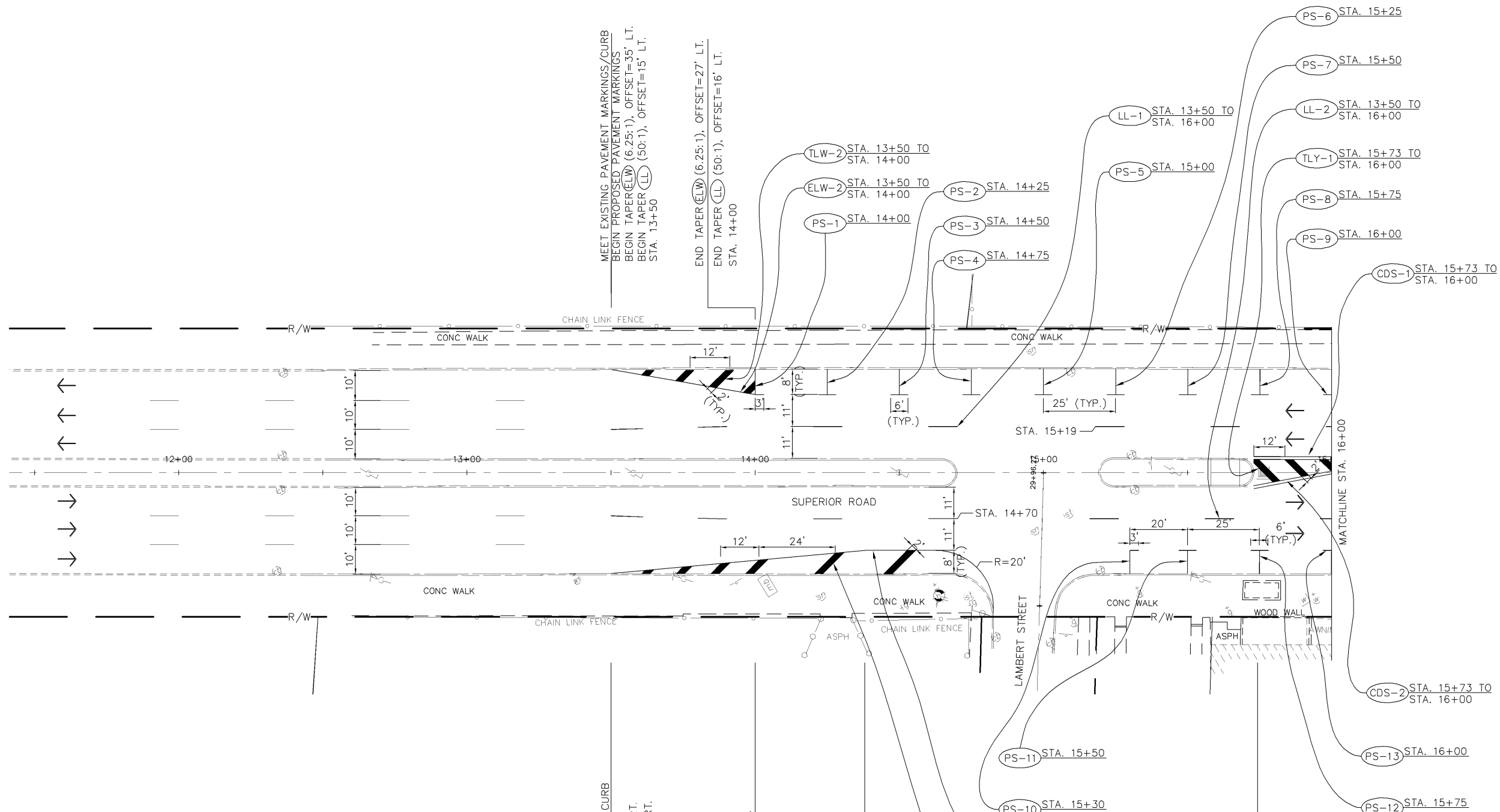
CUY-SUPERIOR RD/NOBLE RD

PAVEMENT MARKING REMOVAL PLAN

SUPERIOR ROAD/FOREST HILL AVENUE/TERRACE ROAD INTERSECTION

LEGEND			
LL-#	LANE LINE	PS-#	PARKING STALL
CDS-#	CENTER LINE, DOUBLE SOLID (YELLOW)	LA-#	LANE ARROW
TLY-#	TRANSVERSE / DIAGONAL LINE (YELLOW)	CL-#	CHANNELIZING LINE
SL-#	STOP LINE	TLW-#	TRANSVERSE / DIAGONAL LINE (WHITE)
CWL-#	CROSSWALK LINE	→	TRAFFIC FLOW ARROW
ELW-#	EDGE LINE (WHITE)		

FOR SIGNING PLANS, SEE SHEET 35.



MEET EXISTING PAVEMENT MARKINGS / CURB
 BEGIN PROPOSED PAVEMENT MARKINGS
 BEGIN TAPER (ELW) (6.25:1), OFFSET=35' LT.
 BEGIN TAPER (LL) (50:1), OFFSET=15' LT.
 STA. 13+50

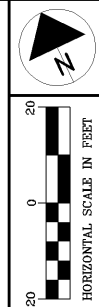
END TAPER (ELW) (6.25:1), OFFSET=27' LT.
 END TAPER (LL) (50:1), OFFSET=16' LT.
 STA. 14+00

MEET EXISTING PAVEMENT MARKINGS / CURB
 BEGIN PROPOSED PAVEMENT MARKINGS
 BEGIN TAPER (ELW) (11:1), OFFSET=35' RT.
 BEGIN TAPER (LL) (50:1), OFFSET=15' RT.
 STA. 13+50

END TAPER (LL) (50:1), OFFSET=16' RT.
 STA. 14+00

END TAPER (ELW) (11:1), OFFSET=27' RT.
 STA. 14+38

BEGIN TAPER (CDS) (5:1), OFFSET=5' RT.
 STA. 12+76

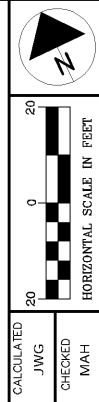
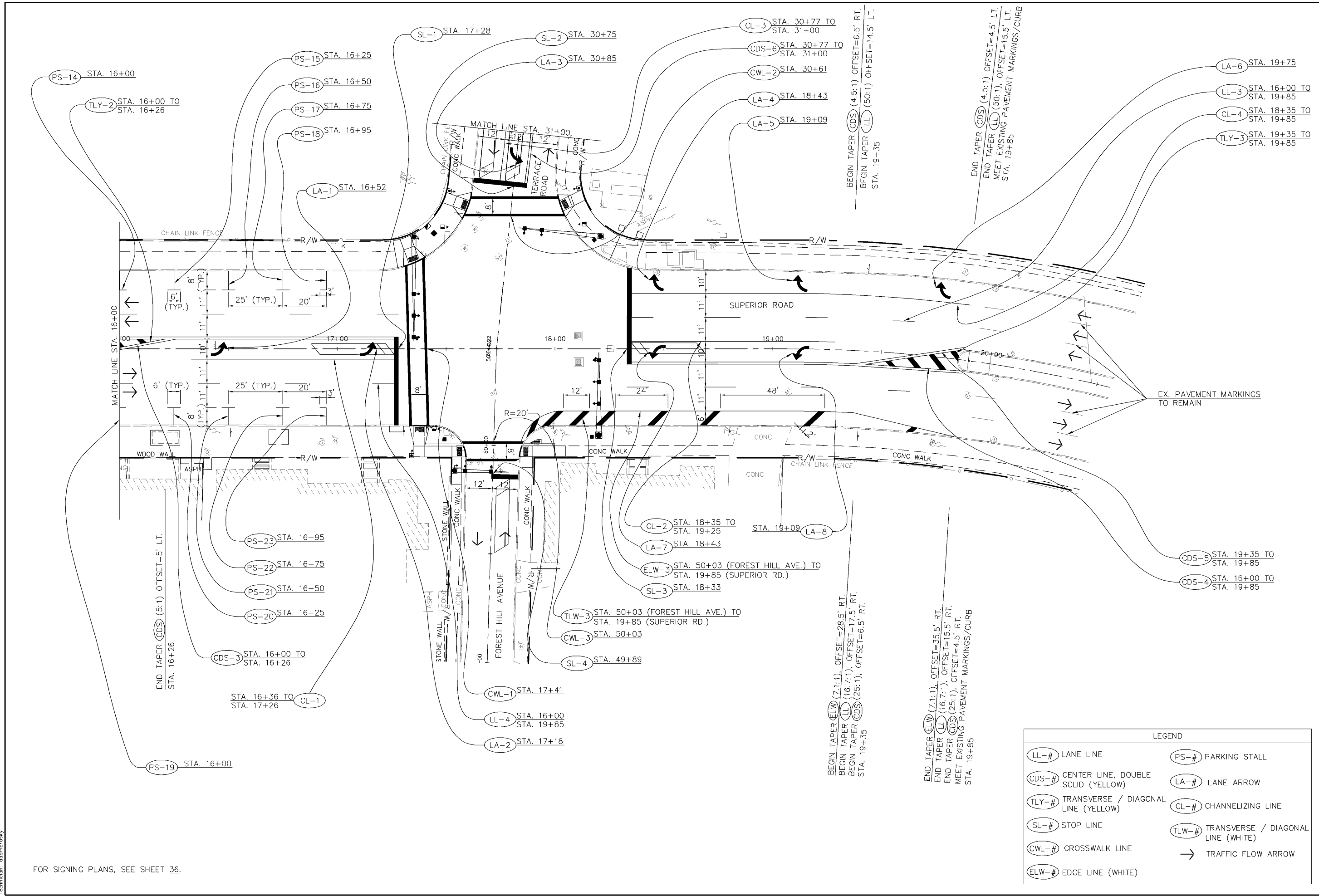


CALCULATED
 JWG
 CHECKED
 MAH

PAVEMENT MARKING PLAN
 SUPERIOR ROAD - BEGIN TO STA. 16+00

CUY-SUPERIOR RD/INOBLE RD

FOR SIGNING PLANS, SEE SHEET 36.



CALCULATED	JWG
CHECKED	MAH

PAVEMENT MARKING PLAN
SUPERIOR ROAD - STA. 16+00 TO END

CUI-SUPERIOR RD/INOBLE RD

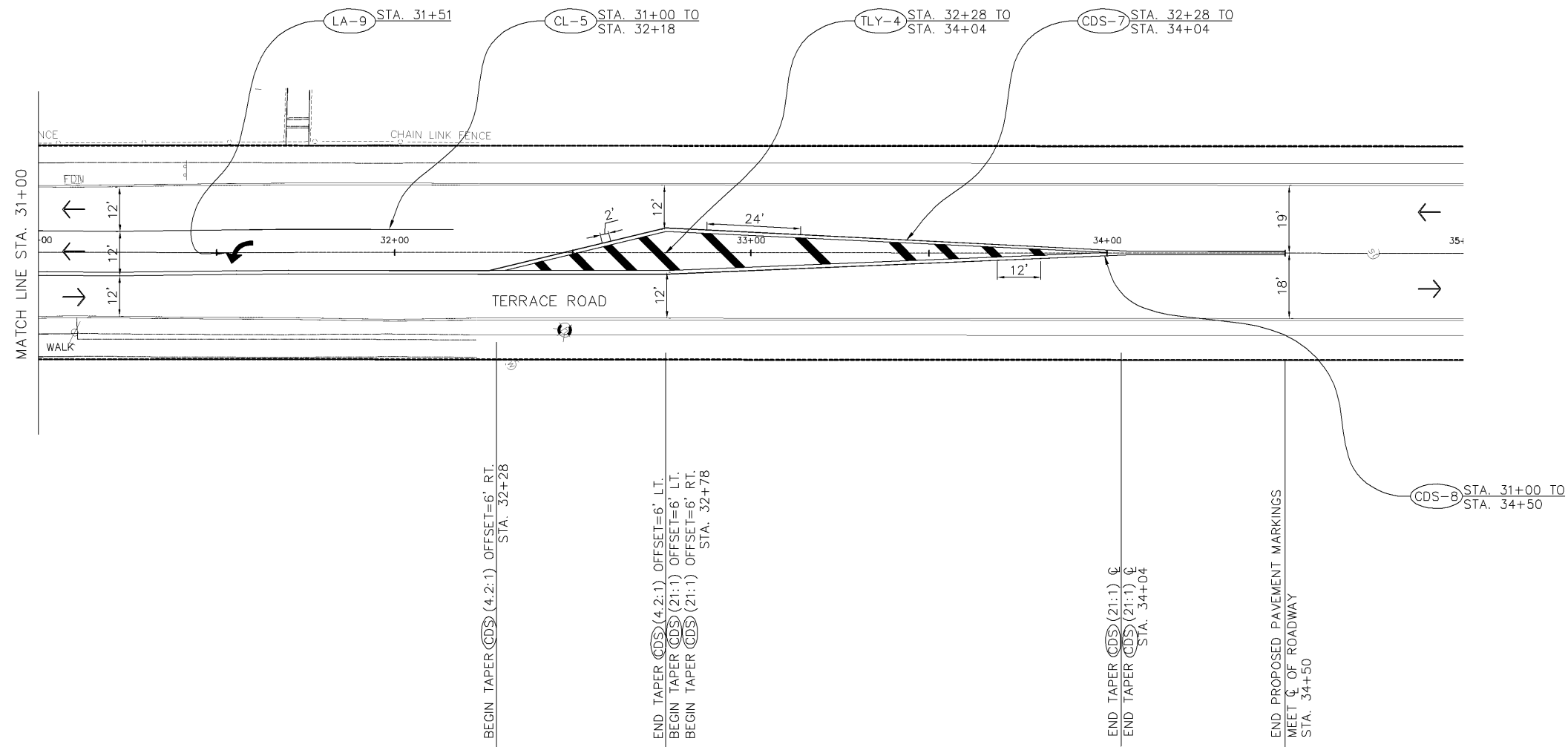
LEGEND			
LL-#	LANE LINE	PS-#	PARKING STALL
CDS-#	CENTER LINE, DOUBLE SOLID (YELLOW)	LA-#	LANE ARROW
TLY-#	TRANSVERSE / DIAGONAL LINE (YELLOW)	CL-#	CHANNELIZING LINE
SL-#	STOP LINE	TLW-#	TRANSVERSE / DIAGONAL LINE (WHITE)
CWL-#	CROSSWALK LINE	→	TRAFFIC FLOW ARROW
ELW-#	EDGE LINE (WHITE)		

BEGIN TAPER CDS (4.5:1) OFFSET=6.5' RT. STA. 19+35
 END TAPER CDS (4.5:1) OFFSET=4.5' LT. STA. 19+85
 MEET EXISTING PAVEMENT MARKINGS/CURB STA. 19+85

BEGIN TAPER ELW (7:1), OFFSET=28.5' RT. STA. 19+35
 END TAPER ELW (7:1), OFFSET=35.5' RT. STA. 19+85
 MEET EXISTING PAVEMENT MARKINGS/CURB STA. 19+85

BEGIN TAPER LL (16.7:1), OFFSET=15.5' RT. STA. 19+35
 END TAPER LL (16.7:1), OFFSET=15.5' RT. STA. 19+85
 MEET EXISTING PAVEMENT MARKINGS/CURB STA. 19+85

FOR SIGNING PLANS, SEE SHEET 3Z.



LEGEND	
(LL-#) LANE LINE	(PS-#) PARKING STALL
(CDS-#) CENTER LINE, DOUBLE SOLID (YELLOW)	(LA-#) LANE ARROW
(TLY-#) TRANSVERSE / DIAGONAL LINE (YELLOW)	(CL-#) CHANNELIZING LINE
(SL-#) STOP LINE	(TLW-#) TRANSVERSE / DIAGONAL LINE (WHITE)
(CWL-#) CROSSWALK LINE	→ TRAFFIC FLOW ARROW
(ELW-#) EDGE LINE (WHITE)	

CALCULATED
JWG

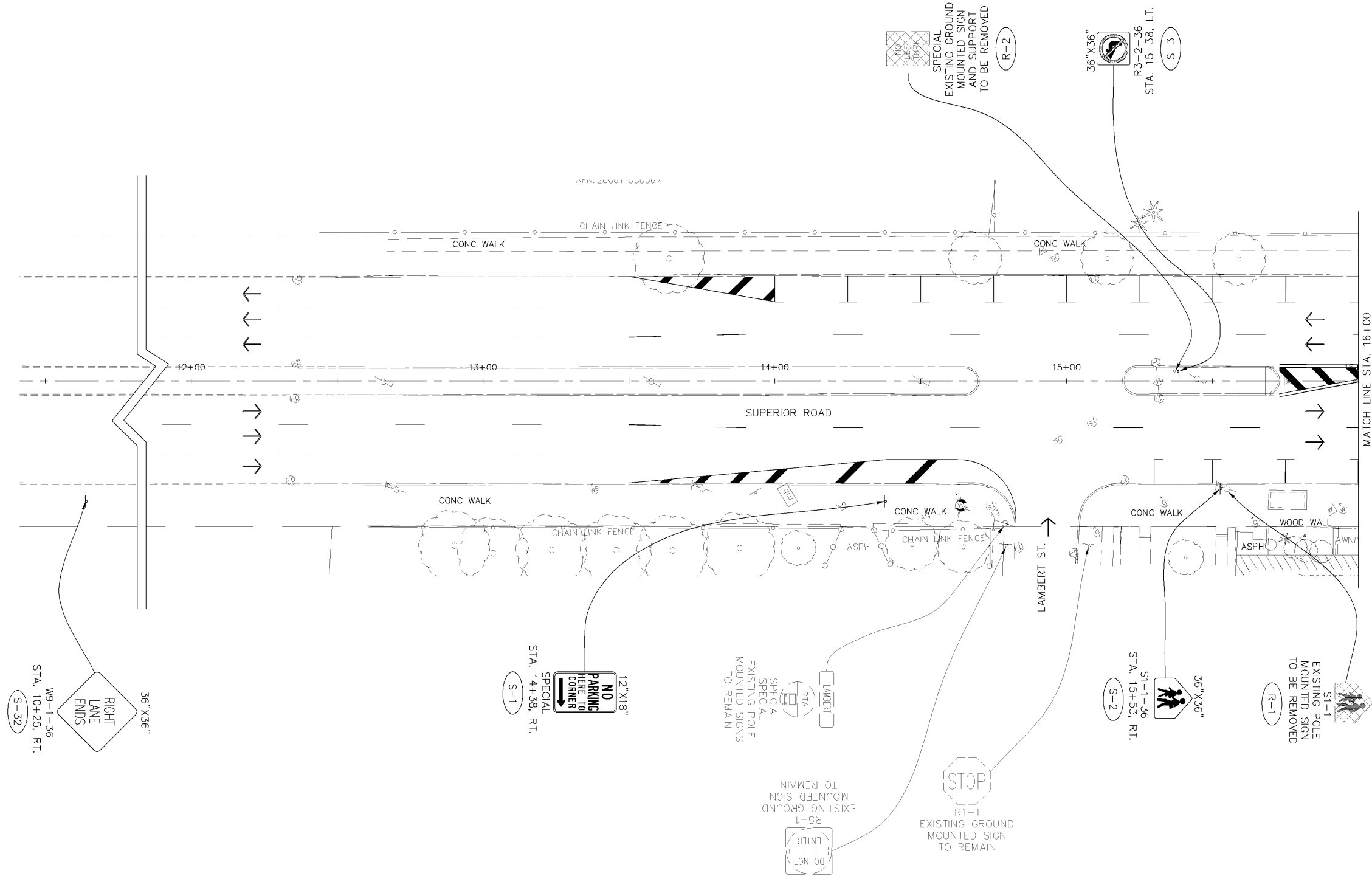
CHECKED
MAH

HORIZONTAL SCALE IN FEET

PAVEMENT MARKING PLAN
 TERRACE ROAD - STA. 31+00 TO END

CUY-SUPERIOR RD/INOBLE RD

FOR PAVEMENT MARKING PLANS, SEE SHEET 32.



LEGEND	
(R-#)	EXISTING SIGN & SUPPORT(S) TO BE REMOVED
(S-#)	PROPOSED SIGN & SUPPORT(S)
—/+—	SIGN, GROUND OR POLE MOUNTED
[]	EXISTING SIGN TO REMAIN
[X]	EXISTING SIGN TO BE REMOVED
[]	PROPOSED SIGN
→	TRAFFIC FLOW ARROW

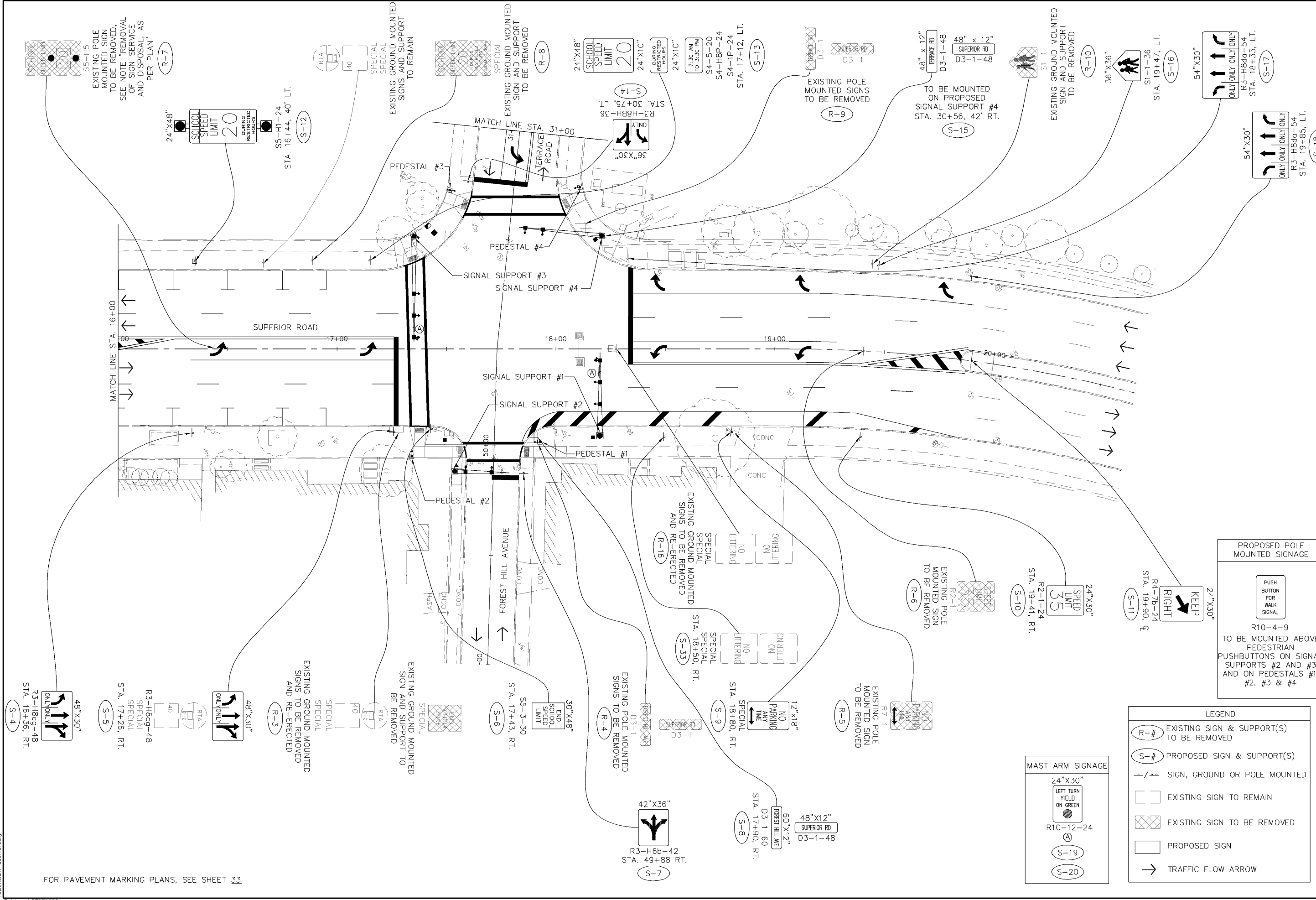
CALCULATED
JWG

CHECKED
MAH

HORIZONTAL SCALE IN FEET

SIGNING PLAN
SUPERIOR ROAD - BEGIN TO STA. 16+00

FOR PAVEMENT MARKING PLANS, SEE SHEET 33.



LEGEND

- (R-#) EXISTING SIGN & SUPPORT(S) TO BE REMOVED
- (S-#) PROPOSED SIGN & SUPPORT(S)
- +/-/+ SIGN, GROUND OR POLE MOUNTED
- [] EXISTING SIGN TO REMAIN
- [X] EXISTING SIGN TO BE REMOVED
- [] PROPOSED SIGN
- TRAFFIC FLOW ARROW

MAST ARM SIGNAGE

- 24"X30" LEFT TURN YIELD ON GREEN R10-12-24
- S-19
- S-20

PROPOSED POLE MOUNTED SIGNAGE

- PUSH BUTTON FOR WALK SIGNAL
- R10-4-9 TO BE MOUNTED ABOVE PEDESTRIAN PUSHBUTTONS ON SIGNAL SUPPORTS #2 AND #3 AND ON PEDESTALS #1, #2, #3 & #4

CUY-SUPERIOR RD/INOBLE RD

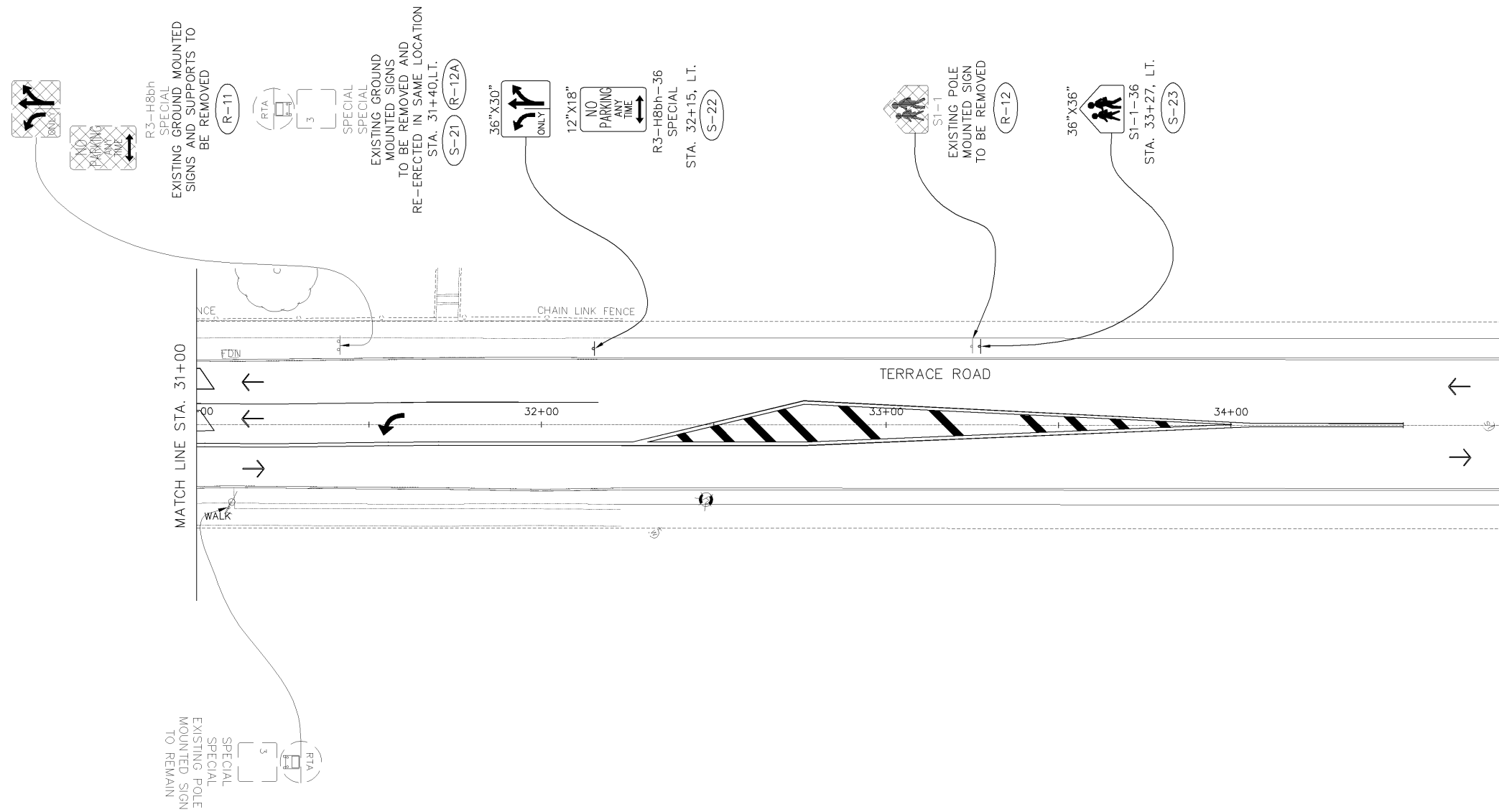
SIGNING PLAN
SUPERIOR ROAD - STA. 16+00 TO END

CALCULATED: JWG
 CHECKED: MAH

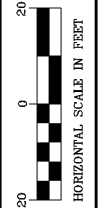
0 20 40
 HORIZONTAL SCALE IN FEET

36
 55

FOR PAVEMENT MARKING PLAN, SEE SHEET 34.



LEGEND	
(R-#)	EXISTING SIGN & SUPPORT(S) TO BE REMOVED
(S-#)	PROPOSED SIGN & SUPPORT(S)
-/-	SIGN, GROUND OR POLE MOUNTED
[]	EXISTING SIGN TO REMAIN
[X]	EXISTING SIGN TO BE REMOVED
[]	PROPOSED SIGN
→	TRAFFIC FLOW ARROW

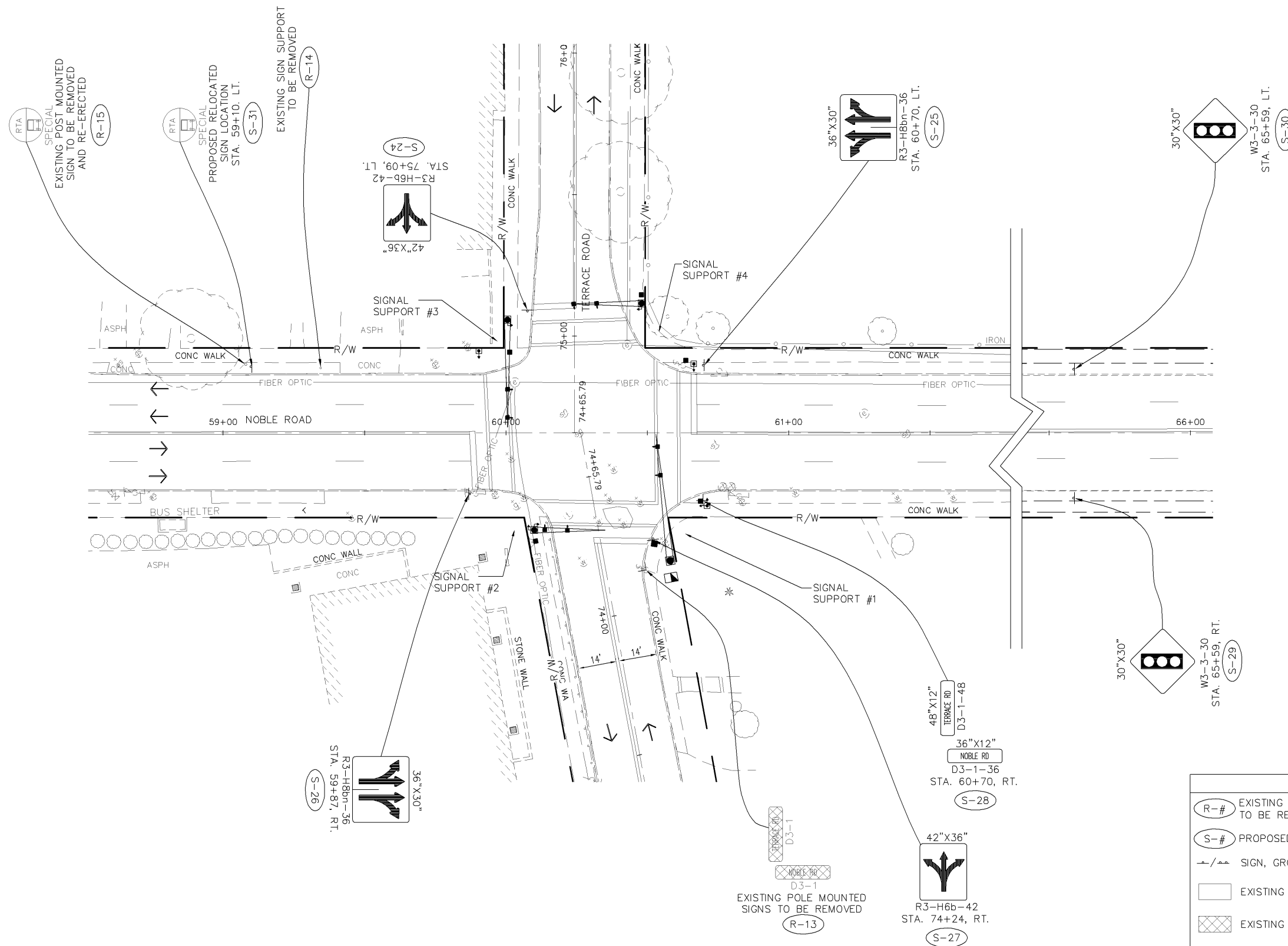


CALCULATED
JWG
CHECKED
MAH

SIGNING PLAN
TERRACE ROAD - STA. 31+00 TO END

CUY-SUPERIOR RD/INOBLE RD

NOTE: ALL EXISTING PAVEMENT MARKINGS SHALL REMAIN



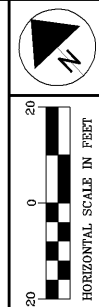
PROPOSED POLE MOUNTED SIGNAGE

PUSH BUTTON FOR WALK SIGNAL

R10-4-9
 TO BE MOUNTED ABOVE PEDESTRIAN PUSHBUTTONS ON SIGNAL SUPPORTS #1, #2, #3 AND #4

LEGEND

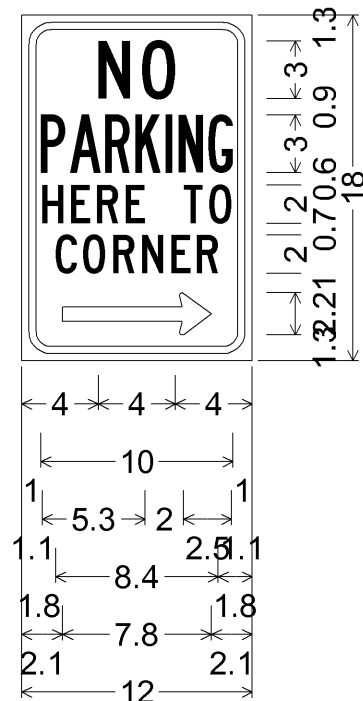
(R-#)	EXISTING SIGN & SUPPORT(S) TO BE REMOVED
(S-#)	PROPOSED SIGN & SUPPORT(S)
—/—/—	SIGN, GROUND OR POLE MOUNTED
[]	EXISTING SIGN TO REMAIN
[X]	EXISTING SIGN TO BE REMOVED
[]	PROPOSED SIGN
→	TRAFFIC FLOW ARROW



CALCULATED JWG
 CHECKED MAH

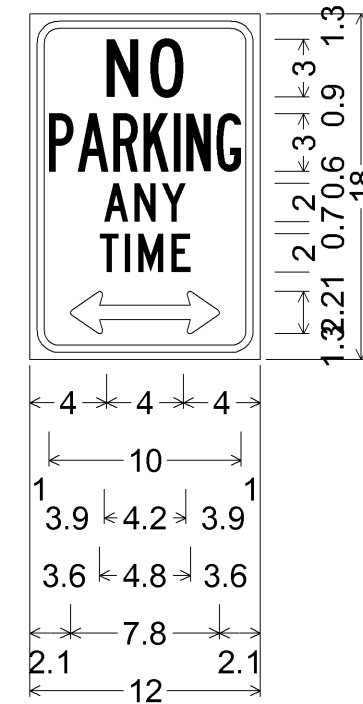
SIGNING PLAN
 NOBLE ROAD/TERRACE ROAD INTERSECTION

CUY-SUPERIOR RD/NOBLE RD



SPECIAL;
 1.5" Radius, 0.4" Border, 0.4" Indent, Red on White;
 [NO] C;
 [PARKING] B specified length;
 [HERE TO] C;
 [CORNER] C;
 Standard Arrow Custom 7.8" X 2.2" 0°;
 Table of letter and object lefts.

N	O					
4.0	6.3					
P	A	R	K	I	N	G
1.0	2.5	4.4	5.9	7.5	8.2	9.7
H	E	R	E			
1.1	2.6	3.9	5.4			
T	O					
8.4	9.8					
C	O	R	N	E	R	
1.8	3.2	4.8	6.3	7.8	9.1	
→						
2.1						



SPECIAL;
 1.5" Radius, 0.4" Border, 0.4" Indent, Red on White;
 [NO] C;
 [PARKING] B specified length;
 [ANY] C;
 [TIME] C;
 Double Headed Arrow Custom - 7.8" 0°;
 Table of letter and object lefts.

N	O					
4.0	6.3					
P	A	R	K	I	N	G
1.0	2.5	4.4	5.9	7.5	8.2	9.7
A	N	Y				
3.9	5.5	6.9				
T	I	M	E			
3.6	5.0	5.7	7.4			
↔						
2.1						

NOTES: 1. SIGNS ARE NOT TO SCALE.
 2. ALL DIMENSIONS ARE IN INCHES.

GUARANTEE

THE CONTRACTOR SHALL GUARANTEE THAT THE TRAFFIC CONTROL SYSTEM INSTALLED AS PART OF THIS CONTRACT SHALL OPERATE SATISFACTORILY FOR A PERIOD OF 180 DAYS FOLLOWING COMPLETION OF THE 10-DAY PERFORMANCE TEST. IN THE EVENT OF UNSATISFACTORY OPERATION, THE CONTRACTOR SHALL CORRECT FAULTY INSTALLATIONS, MAKE REPAIRS AND REPLACE DEFECTIVE PARTS WITH NEW PARTS OF EQUAL OR BETTER QUALITY AS APPROVED BY ENGINEER. EQUIPMENT, MATERIAL AND LABOR COSTS INCURRED IN CORRECTING AN UNSATISFACTORY OPERATION SHALL BE BORNE BY THE CONTRACTOR.

THE GUARANTEE SHALL COVER ALL ITEMS ASSOCIATED WITH THE TRAFFIC CONTROL SYSTEMS.

CUSTOMARY MANUFACTURER'S GUARANTEES FOR ALL TRAFFIC SIGNAL SYSTEM ITEMS SHALL BE TURNED OVER TO THE STATE OR THE CITY OF EAST CLEVELAND FOLLOWING ACCEPTANCE OF THE EQUIPMENT.

THE COST OF GUARANTEEING THE TRAFFIC CONTROL SYSTEM WILL BE INCIDENTAL TO AND INCLUDED IN THE CONTRACT UNIT PRICE OF THE VARIOUS ITEMS MAKING UP THE SYSTEM.

ITEM 632 - REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER PLAN

TRAFFIC SIGNAL INSTALLATION, INCLUDING SIGNAL HEADS, CABLE, ETC., SHALL BE REMOVED IN ACCORDANCE WITH CMS 632.26 AND AS INDICATED ON THE PLANS. REMOVED ITEMS SHALL BE REUSED AS PART OF A NEW INSTALLATION ON THE PROJECT OR STORED ON THE PROJECT FOR SALVAGE BY THE CITY OF EAST CLEVELAND IN ACCORDANCE WITH THE LISTING GIVEN HEREIN.

ITEMS TO BE REUSED:
NONE

ITEMS TO BE STORED:

- SUPERIOR RD/FOREST HILL AVE/TERRACE RD
- 1 - POLE MOUNTED CONTROLLER
- 6 - SIGNAL HEADS, 3-SECTION, 1-WAY
- 1 - SIGNAL HEAD, 5-SECTION, 1-WAY
- 5 - PEDESTRIAN SIGNAL HEADS

- NOBLE RD/TERRACE RD
- 1 - POLE MOUNTED CONTROLLER
- 1 - SIGNAL HEAD, 3-SECTION, 4-WAY

IN THE EVENT THE ITEMS STORED ON THE PROJECT FOR SALVAGE BY THE LOCAL AGENCY ARE NOT REMOVED, THE CONTRACTOR SHALL, WHEN DIRECTED BY THE ENGINEER IN WRITING, REMOVE AND DISPOSE OF THE ITEMS AT NO ADDITIONAL COST TO THE PROJECT.

ITEM 632 - SIGNAL SUPPORT, TYPE-81.21 (BY TYPE), AS PER PLAN

THIS ITEM SHALL CONFORM TO ITEM 632.14 AND 732.11, EXCEPT THAT POLES SHALL BE TAPERED TUBES OF A CONTINUOUS TAPER. POLES CONSISTING OF STRAIGHT SECTIONS WITH A TAPERED EFFECT ACCOMPLISHED BY USE OF REDUCERS SHALL NOT BE PERMITTED.

SIGNAL POLES SHALL NOT BE ORDERED UNTIL THE FOUNDATION HAS BEEN PERMANENTLY LOCATED AND EXCAVATED FOR FOUNDATION PLACEMENT.

ITEM 632 - DETECTOR LOOP, AS PER PLAN

IN ADDITION TO REQUIREMENTS OF CMS ITEM 632.11 AND 632.23 THE FOLLOWING SHALL ALSO APPLY:

THE CONTRACTOR SHALL RECEIVE WRITTEN APPROVAL FROM THE ENGINEER FOR PROPOSED DETECTOR LOOP LOCATIONS PRIOR TO CONSTRUCTING THE DETECTOR LOOPS.

ITEM 632 - PEDESTRIAN PUSHBUTTON, AS PER PLAN

IN ORDER TO CONFORM TO THE AMERICANS WITH DISABILITIES ACT (ADA), THE REQUIREMENTS OF CMS ITEMS 632.09 AND 732.06 ARE MODIFIED AS FOLLOWS:

1. THE MAXIMUM FORCE REQUIRED TO OPERATE THE PUSHBUTTON SHALL BE 5 POUNDS PER FOOT (22.2 NEWTONS).
2. THE PUSHBUTTON SHALL BE RAISED AND SHALL BE A MINIMUM OF 2 INCHES (50 MILLIMETERS) AT ITS SMALLEST DIMENSION.
3. THE PUSHBUTTON SHALL BE EQUIPPED TO EMIT AN AUDIBLE CHIRP AS THE BUTTON IS PUSHED TO CONFIRM THAT THE PEDESTRIAN CALL HAS BEEN PLACED.
4. THE PUSHBUTTON SHALL BE EQUIPPED WITH A RED INDICATOR LIGHT WHICH STAYS ILLUMINATED UNTIL THE PEDESTRIAN PHASE IS INITIATED.

THIS ITEM SHALL INCLUDE ALL LABOR AND MATERIAL COSTS ASSOCIATED WITH THE PROVISION AND INSTALLATION OF THE PUSHBUTTON AS OUTLINED ABOVE. PAYMENT FOR THIS WORK SHALL BE AT THE CONTRACT UNIT PRICE FOR ITEM 632 - PEDESTRIAN PUSHBUTTON, AS PER PLAN AND WILL BE MEASURED BY THE NUMBER OF COMPLETE UNITS FURNISHED, INSTALLED AND ACCEPTED BY THE CITY.

ITEM 632 - VEHICULAR SIGNAL HEAD (LED), BY TYPE, POLYCARBONATE, WITH BACKPLATE, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF CMS ITEM 632 AND CMS 732, THE FOLLOWING REQUIREMENTS SHALL APPLY:

SIGNAL SECTIONS:

1. SIGNAL HEADS AND VISORS SHALL BE CONSTRUCTED OF POLYCARBONATE PLASTIC AND MEET ITE SPECIFICATIONS.
2. PIPE, SPACERS AND FITTINGS CONSTRUCTED OF POLYCARBONATE PLASTIC MAY BE USED IN LIEU OF GALVANIZED STEEL OR ALUMINUM.
3. SIGNAL HEAD HOUSING COLOR SHALL BE YELLOW.
4. PROPER EXTERIOR COLORS SHALL BE OBTAINED BY USE OF COLORED PLASTIC MATERIAL RATHER THAN PAINTING.
5. GLASS LENSES SHALL BE USED FOR ANY LENSES NOT USING AN LED LAMP.
6. ALL SIGNAL HEADS SHALL HAVE BACKPLATES.

MOUNTING HARDWARE:

1. ALL SIGNAL HEADS SHALL BE RIGIDLY MOUNTED TO THE MAST ARM WITH THE RED LENS LOCATED IN FRONT OF THE MAST ARM.
2. ALL UPPER SIGNAL SUPPORT HARDWARE AND PIPING UP TO AND INCLUDING THE WIRE INLET FITTING SHALL BE FERROUS METAL FOR SIGNAL DISPLAYS OF TWO OR MORE SECTIONS.
3. THE ENTRANCE FITTING SHALL BE OF THE TRI-STUD DESIGN WITH SERRATED RINGS IN ORDER TO ACHIEVE POSITIVE LOCKING.

ITEM 632 - VEHICULAR SIGNAL HEAD (LED), BY TYPE, POLYCARBONATE, WITH BACKPLATE, AS PER PLAN WILL BE MEASURED BY THE NUMBER OF COMPLETE UNITS FURNISHED AND INSTALLED, AND WILL INCLUDE ALL SUPPORT AND MOUNTING HARDWARE, DISCONNECT HANGERS, CLOSURE CAPS, DIMMERS, AND LAMPS AS SPECIFIED.

ITEM 632 - PEDESTRIAN SIGNAL HEAD, (LED), (COUNTDOWN), TYPE D2, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF CMS ITEM 632 AND CMS 732, THE FOLLOWING REQUIREMENTS SHALL APPLY:

SIGNAL SECTIONS:

1. SIGNAL HEADS AND VISORS SHALL BE CONSTRUCTED OF POLYCARBONATE PLASTIC AND MEET ITE SPECIFICATIONS.
2. PIPE, SPACERS AND FITTINGS CONSTRUCTED OF POLYCARBONATE PLASTIC MAY BE USED IN LIEU OF GALVANIZED STEEL OR ALUMINUM.
3. SIGNAL HEAD HOUSING COLOR SHALL BE BLACK.
4. PROPER EXTERIOR COLORS SHALL BE OBTAINED BY USE OF COLORED PLASTIC MATERIAL RATHER THAN PAINTING.

ITEM 632 - PEDESTRIAN SIGNAL HEAD, (LED), (COUNTDOWN), TYPE D2, AS PER PLAN WILL BE MEASURED BY THE NUMBER OF COMPLETE UNITS FURNISHED AND INSTALLED, AND WILL INCLUDE ALL SUPPORT AND MOUNTING HARDWARE, DISCONNECT HANGERS, CLOSURE CAPS, DIMMERS, AND LAMPS AS SPECIFIED.

ITEM 690 - SPECIAL MISC.: TEST HOLE PERFORMED

IT IS ANTICIPATED THAT THE CONTRACTOR WILL ENCOUNTER UNDERGROUND UTILITIES WHILE EXCAVATING FOR SIGNAL SUPPORT FOUNDATIONS. IF, AFTER ACCURATELY IDENTIFYING THE PROPOSED LOCATION OF THE FOUNDATION, AS SHOWN IN THE PLAN, AND AFTER MODIFYING THAT LOCATION, IF NECESSARY, BASED ON THE FIELD MARKING OF UNDERGROUND UTILITY LOCATION, THE CONTRACTOR DISCOVERS A UTILITY CONFLICT DURING HIS EXCAVATION OPERATION, HE WILL BE COMPENSATED FOR THE LABOR AND EQUIPMENT COST ASSOCIATED FOR EACH PARTIAL FOUNDATION EXCAVATION ACCORDING TO HIS BID PRICE.

BEFORE THE CONTRACTOR BEGINS THE EXCAVATION AT THE MODIFIED LOCATION, HE SHALL VERIFY THAT THERE WILL BE NO OVERHEAD UTILITY CONFLICTS RESULTING FROM THE NEW SIGNAL SUPPORT LOCATION.

THE CONTRACTOR'S WORK UNDER THIS BID ITEM SHALL INCLUDE BACKFILLING, COMPACTING, AND RESTORATION OF THE EXCAVATION TO ITS ORIGINAL CONDITION.

EXCAVATIONS SHALL NOT BE LEFT OPEN OVERNIGHT.

PAYMENT FOR THIS ITEM SHALL BE AT THE UNIT PRICE BID PER EACH ITEM 690 - SPECIAL MISC.: TEST HOLE PERFORMED. A QUANTITY OF 2 HAS BEEN CARRIED TO THE SIGNALIZATION GENERAL SUMMARY.

ITEM 632 - POWER SERVICE, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF 632.24, THE CONTRACTOR SHALL PROVIDE A DISCONNECT SWITCH FOR THE SIGNAL AND A DISCONNECT SWITCH FOR THE LIGHTING, POWER SERVICE CABLE #6 AWG, CONDUIT, CONDUIT RISER, WEATHERHEAD, METER AND PULL BOXES AS NECESSARY TO PROVIDE POWER TO THE PROPOSED INSTALLATION. THE SIGNAL DISCONNECT SHALL BE LABELED 'TRAFFIC' WITH ENGRAVED PLASTIC TABS. IF THE POWER SERVICE LOCATION IS TO BE DIFFERENT AS TO WHAT IS SHOWN ON THE SIGNAL PLANS, THE REVISED LOCATION SHALL BE APPROVED BY THE ENGINEER. THE CONTRACTOR SHALL COORDINATE RELATED WORK WITH THE ILLUMINATING COMPANY. WHEN THE POWER CABLE IS IN PLACE AND THE NEW INSTALLATION IS READY FOR SERVICE, THE CONTRACTOR SHALL CONTACT THE ILLUMINATING COMPANY WHO WILL MAKE THE ELECTRICAL SERVICE CONNECTION. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR SPLICE THE POWER CABLE INTO THE ILLUMINATING COMPANY'S CIRCUITRY. ANY FEES ASSOCIATED WITH OBTAINING POWER SHALL BE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL PAY ALL POWER CHARGES UNTIL THE SIGNAL IS ACCEPTED BY THE MAINTAINING AGENCY. POWER SUPPLIED SHALL BE 120 VOLTS.

THE COST FOR ALL NECESSARY ITEMS AND ASSOCIATED LABOR SHALL BE INCLUDED IN THE CONTRACT BID PRICE FOR ITEM 632 - POWER SERVICE, AS PER PLAN.

ITEM 633 - CONTROLLER UNIT, TYPE TS2/A2, WITH CABINET, TYPE TS1, AS PER PLAN

THE OVERLAP PROGRAMMING SHALL BE BY USE OF AN INTERCHANGEABLE PLUG IN PRINTED CIRCUIT BOARD ASSEMBLY AS DESCRIBED IN PART 14 OF TS-1-1989.

IN ADDITION TO NEMA REQUIREMENTS, THE CONFLICT MONITOR SHALL ALSO HAVE EXTENDED MONITORING OPERATIONAL FOR EACH LOAD SWITCH IN USE (IN ACCORDANCE WITH 733.03.A2). THE MONITOR SHALL MONITOR EACH LOAD SWITCH SEPARATELY. EACH SIGNALIZED APPROACH TO THE SIGNAL SHALL HAVE A SEPARATE LOAD SWITCH. THE DESIGN OF THE MONITOR SHALL USE MICROPROCESSOR ARCHITECTURE.

THE MINIMUM NUMBER OF LOAD SWITCH SOCKETS IN THE CABINET FOR 2 THROUGH 4 PHASE CONTROLLERS SHALL BE 8. THE MINIMUM NUMBER OF LOAD SWITCH SOCKETS IN THE CABINET FOR 5, 6, 7 AND 8 PHASE CONTROLLERS SHALL BE 16. DUMMY LOAD SWITCHES SHALL BE PROVIDED ON LEFT TURN PHASES REGARDLESS OF CONTROLLER PROGRAMMING CAPABILITIES. LOOP DETECTOR DELAYS SHALL NOT BE PROGRAMMED INTO THE CONTROLLER. "NO SKIP" WIRES SHALL BE PROVIDED ON THE BACKPANEL WHEN PHASES 1 AND/OR 5 ARE IN USE.

THE CONTROLLER CABINET SHALL NOT BE PAINTED. PRINTED BOARD TYPE BACK PANELS OF THE CONTROLLER CABINET WILL NOT BE ACCEPTABLE. SOLDERED CONNECTIONS WILL BE PERMITTED FOR WRING ON THE BACK SIDE OF THE BACK PANEL.

ALL SIGNAL CABLE AND LOOP DETECTOR LEADIN CABLE TERMINATIONS IN THE CABINET SHALL HAVE NO MORE THAN FOUR (4) INCHES OF THE OUTER INSULATING JACKET REMOVED.

THE FOUNDATION SHALL BE ORIENTED WITH RESPECT TO THE INTERSECTION IN A MANNER THAT WILL PROVIDE MAINTENANCE PERSONNEL WITH A VIEW OF THE INTERSECTION WHILE WORKING ON THE CONTROLLER.

PAYMENT FOR ITEM 633 CONTROLLER UNIT, TYPE TS2/A2, WITH CABINET, TYPE TS1, AS PER PLAN WILL BE AT THE CONTRACT BID PRICE PER EACH COMPLETE AND IN PLACE INCLUDING ALL CONNECTIONS TESTED AND ACCEPTED.

UTILITY CLEARANCES

PRIOR TO ORDERING MATERIALS FOR THE SIGNAL SUPPORTS AND MAST ARMS, THE CONTRACTOR SHALL FIELD VERIFY THE CLEARANCES FOR THE UNDERGROUND AND OVERHEAD UTILITIES IN THE VICINITY OF THE EQUIPMENT. THE CONTRACTOR SHALL RECEIVE APPROVAL BY THE ENGINEER SHOULD THE CONTRACTOR NEED TO ORDER DIFFERENT ITEMS THAN ORIGINALLY DESIGNED DUE TO UTILITY CLEARANCE CONFLICTS.

ITEM 625 - TRENCH IN PAVED AREA, TYPE B, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF CMS ITEM 625.13 THE FOLLOWING SHALL ALSO APPLY:

THE CONTRACTOR SHALL REPAIR ALL PERMANENT PAVEMENT MARKINGS DISTURBED DUE TO LIMITS OF TRENCH WORK AS APPROVED BY THE ENGINEER. THIS PAVEMENT MARKING REPLACEMENT SHALL BE DONE IN ACCORDANCE WITH CMS ITEM 642. ALL WORK AND MATERIALS REQUIRED TO REPLACE THE EXISTING PAVEMENT MARKINGS SHALL BE CONSIDERED INCIDENTAL TO AND INCLUDED IN THE PRICE BID (FT) FOR ITEM 625 - TRENCH IN PAVED AREA, TYPE B, AS PER PLAN.

ITEM 625 - TRENCH IN PAVED AREA, TYPE B, AS PER PLAN WILL BE MEASURED PER LINEAR FOOT OF TRENCH AND INCLUDE ALL LABOR AND MATERIALS NECESSARY TO COMPLETE THE ABOVE DESCRIBED WORK.

GROUNDING AND BONDING

1. ALL METALLIC PARTS CONTAINING ELECTRICAL CONDUCTORS SHALL BE PERMANENTLY JOINED TO FORM AN EFFECTIVE GROUND FAULT CURRENT PATH BACK TO THE GROUNDED CONDUCTOR IN THE POWER SERVICE DISCONNECT SWITCH.
 - A. PROVIDE AN EQUIPMENT GROUNDING CONDUCTOR IN METALLIC CONDUITS (725.04) IN ADDITION TO THE CONDUCTORS SPECIFIED AND BOND THE CONDUIT TO THIS GROUNDING CONDUCTOR.
 - B. WHEN AN EQUIPMENT GROUNDING CONDUCTOR IS REQUIRED IN PLASTIC CONDUIT (725.05), THE INSTALLATION SHALL INCLUDE A SEPARATE EQUIPMENT GROUNDING CONDUCTOR IN ADDITION TO THE CONDUCTORS SPECIFIED.
 - C. METALLIC CONDUIT CARRYING THE LOOP WIRES FROM IN THE PAVEMENT TO THE PULL BOX SPLICE LOCATION WILL ONLY BE BONDED AT THE PULL BOX END, AND WILL NOT CONTAIN AN EQUIPMENT GROUNDING CONDUCTOR.
 - D. IF MULTIPLE CONDUIT RUNS BEGIN AND END AT THE SAME POINTS, ONLY ONE EQUIPMENT GROUNDING CONDUCTOR IS REQUIRED.
 - E. IF AN EQUIPMENT GROUNDING CONDUCTOR IS NEEDED IN CONDUIT BETWEEN SIGNALIZED INTERSECTIONS FOR UNDERGROUND INTERCONNECT CABLE, THE GROUNDING SYSTEM FOR EACH SIGNALIZED INTERSECTION WILL BE SEPARATED ABOUT MIDWAY BETWEEN THE INTERSECTIONS.
 - F. THE MESSENGER WIRE AT SIGNALIZED INTERSECTIONS WILL BE USED AS THE CONDUCTIVE PATH FROM CORNER TO CORNER IF CONDUIT IS NOT PROVIDED UNDER THE ROADWAY. WHEN CONDUIT CONNECTS THE CORNERS OF AN INTERSECTION, AN EQUIPMENT GROUNDING CONDUCTOR SHALL BE USED IN THE CONDUIT.

2. CONDUITS.

- A. THE 725.04 CONDUIT SHALL HAVE GROUNDING BUSHINGS INSTALLED AT ALL TERMINATION POINTS. THE BUSHING MATERIAL SHALL BE COMPATIBLE WITH GALVANIZED STEEL CONDUIT AND THE GROUNDING LUG MATERIAL SHALL BE COMPATIBLE FOR USE WITH COPPER WIRE. THREADED OR COMPRESSION TYPE BUSHINGS MAY BE USED.
- B. THE 725.05 CONDUIT SHALL HAVE THE INSIDE AND OUTSIDE DIAMETERS OF THE CONDUIT DEBURRED AT ALL TERMINATION POINTS.
- C. BOTH ENDS OF METALLIC CONDUIT SHALL BE BONDED TO THE EQUIPMENT GROUNDING CONDUCTOR.
- D. METALLIC CONDUIT MAY BE BONDED TO METALLIC BOXES THROUGH THE USE OF CONDUIT FITTINGS UL APPROVED FOR THIS TYPE OF CONNECTION, WITH THE BOX BONDED TO THE EQUIPMENT GROUNDING CONDUCTOR.

3. WIRE FOR GROUNDING AND BONDING.

- A. USE INSULATED, COPPER WIRE FOR THE EQUIPMENT GROUNDING CONDUCTOR. BONDING JUMPERS IN BOXES AND ENCLOSURES MAY BE BARE OR INSULATED COPPER WIRE. WIRE SIZE SHALL BE AS FOLLOWS:
 - I. USE 4 AWG BETWEEN THE POWER SERVICE AND SUPPORTS, POLES, PEDESTALS, CONTROLLER OR FLASHER CABINETS.
 - II. USE A MINIMUM 8 AWG BETWEEN LOOP DETECTOR PULL BOXES AND THE FIRST CONDUIT THAT REQUIRES A LARGER SIZE AS SPECIFIED IN 3.A.I ABOVE.
 - III. USE A MINIMUM 8 AWG BETWEEN THE "PREPARE TO STOP WHEN FLASHING" INSTALLATION (INCLUDING SUPPORT) AND THE FIRST CONDUIT THAT REQUIRES A LARGER SIZE AS SPECIFIED IN 3.A.I ABOVE.
 - IV. THE INSULATION SHALL BE GREEN OR GREEN WITH YELLOW STRIPE(S). FOR 4 AWG OR LARGER, INSULATION MAY ALSO BE BLACK WITH GREEN TAPE/LABELS INSTALLED AT ALL ACCESS POINTS.
- B. IN A HIGHWAY LIGHTING SYSTEM, THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE THE SAME WIRE SIZE AS THE DUCT CABLE OR DISTRIBUTION CABLE CIRCUIT CONDUCTORS, WITH THE MINIMUM CONDUCTOR SIZE OF 4 AWG. BONDING JUMPERS WILL BE A MINIMUM SIZE 4 AWG.

4. GROUND ROD.

- A. A 3/4 INCH SCHEDULE 40 PVC CONDUIT WILL BE USED IN FOUNDATIONS AND CONCRETE WALLS FOR THE GROUNDING CONDUCTOR (GROUND WIRE) RACEWAY TO THE GROUND ROD. SHOULD METALLIC CONDUIT BE USED, BOTH ENDS OF THE CONDUIT SHALL BE BONDED TO THE GROUNDING CONDUCTOR.
- B. THE TYPICAL GROUNDING CONDUCTOR (GROUND WIRE) SHALL BE 4 AWG INSULATED, COPPER.

5. THE GREEN CONDUCTOR IN SIGNAL CABLES (CONDUCTOR #4) SHALL NOT BE USED TO SUPPLY POWER TO A SIGNAL INDICATION. IT WILL BE CONNECTED TO THE SIGNAL BODY AS AN EQUIPMENT GROUND IN ALUMINUM HEADS AND IT WILL BE UNUSED IN PLASTIC HEADS. UNUSED CONDUCTORS SHALL BE GROUNDED IN THE CABINET. TYPICAL USE OF CONDUCTORS IS AS FOLLOWS:

COND. NO.	COLOR	VEHICLE SIGNAL	PEDESTRIAN SIGNAL
1	BLACK	GREEN BALL	#1 WALK
2	WHITE	AC NEUTRAL	AC NEUTRAL
3	RED	RED BALL	#1 DW/FDW
4	GREEN	EQUIPMENT GROUND	EQUIPMENT GROUND
5	ORANGE	YELLOW BALL	#2 DW/FDW
6	BLUE	GREEN ARROW	#2 WALK
7	WHITE/BLACK STRIPE	YELLOW ARROW	NOT USED

6. POWER SERVICE AND DISCONNECT SWITCH.

- A. AT THE POWER SERVICE LOCATION, THE GROUNDING CONDUCTOR (GROUND WIRE) FROM THE DISCONNECT SWITCH NEUTRAL (AC-) BAR TO THE GROUND ROD SHALL BE A CONTINUOUS, UNSPLICED CONDUCTOR. IF SPLICED, IT SHALL BE AN EXOTHERMIC WELD BUTT SPICE.
- B. THE SERVICE NEUTRAL (AC-) SHALL ONLY BE CONNECTED TO GROUND AT THE PRIMARY POWER SERVICE DISCONNECT SWITCH.
 - I. NEMA CONTROLLER CABINETS: IF A POWER SERVICE DISCONNECT SWITCH IS LOCATED BEFORE THE CONTROLLER CABINET, THE NEUTRAL (AC-) AND THE GROUNDING BARS IN THE CONTROLLER CABINET SHALL NOT BE CONNECTED TOGETHER AS SHOWN IN NEMA TS-2, FIGURE 5-4.
 - II. IF SECONDARY DISCONNECT SWITCHES ARE CONNECTED AFTER THE PRIMARY DISCONNECT SWITCH, THE NEUTRAL (AC-) SHALL ONLY BE GROUNDED AT THE PRIMARY SWITCH. EQUIPMENT GROUNDING CONDUCTORS SHALL BE BROUGHT TO THE PRIMARY SWITCH, BUT SHALL BE GROUNDED AT BOTH SECONDARY AND PRIMARY SWITCHES.

7. PAYMENT – ALL MATERIALS AND WORK REQUIRED TO COMPLETE THE EFFECTIVE GROUND FAULT CIRCUIT PATH SYSTEM ARE INCIDENTAL TO THE CONDUCTORS INSTALLED BY CONTRACT.

CALCULATED
JWG
CHECKED
MAH

SIGNALIZATION NOTES

CUY-SUPERIOR RD/NOBLE RD

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SHEET NUMBER						PARTICIPATION		ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
40	43	FEDERAL	LOCAL										
			102			102		625	25400	102	FT	CONDUIT, 2", 725.04	
			402			402		625	25500	402	FT	CONDUIT, 3", 725.04	
			259			259		625	25900	259	FT	CONDUIT, JACKED OR DRILLED , 3"	
			28			28		625	29000	28	FT	TRENCH	
			155			155		625	29500	155	FT	TRENCH IN PAVED AREA, TYPE A	
			265			265		625	29601	265	FT	TRENCH IN PAVED AREA, TYPE B, AS PER PLAN	40
			8			8		625	30700	8	EACH	PULL BOX, 725.08, 18"	
			2			2		625	30706	2	EACH	PULL BOX, 725.08, 24"	
			17			17		625	32000	17	EACH	GROUND ROD	
			448			448		625	36000	448	FT	PLASTIC CAUTION TAPE	
			16			16		632	05005	16	EACH	VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN	40
			2			2		632	05085	2	EACH	VEHICULAR SIGNAL HEAD, (LED), 5-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN	40
			14			14		632	20731	14	EACH	PEDESTRIAN SIGNAL HEAD (LED), (COUNTDOWN), TYPE D2, AS PER PLAN	40
			14			14		632	26001	14	EACH	PEDESTRIAN PUSHBUTTON, AS PER PLAN	40
			5			5		632	26500	5	EACH	DETECTOR LOOP	
			2			2		632	26501	2	EACH	DETECTOR LOOP, AS PER PLAN	40
			2,386			2,386		632	40500	2,386	FT	SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG	
			1,752			1,752		632	40700	1,752	FT	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG	
			8			8		632	64010	8	EACH	SIGNAL SUPPORT FOUNDATION	
			7			7		632	64020	7	EACH	PEDESTAL FOUNDATION	
			3,202			3,202		632	65200	3,202	FT	LOOP DETECTOR LEAD-IN CABLE	
			2			2		632	70001	2	EACH	POWER SERVICE, AS PER PLAN	40
			3			3		632	80103	3	EACH	SIGNAL SUPPORT, TYPE TC-81.21, DESIGN 1, AS PER PLAN	40
			2			2		632	80303	2	EACH	SIGNAL SUPPORT, TYPE TC-81.21, DESIGN 3, AS PER PLAN	40
			1			1		632	80403	1	EACH	SIGNAL SUPPORT, TYPE TC-81.21, DESIGN 4, AS PER PLAN	40
			1			1		632	80503	1	EACH	SIGNAL SUPPORT, TYPE TC-81.21, DESIGN 11, AS PER PLAN	40
			1			1		632	80603	1	EACH	SIGNAL SUPPORT, TYPE TC-81.21, DESIGN 12, AS PER PLAN	40
			7			7		632	89900	7	EACH	PEDESTAL, 8", TRANSFORMER BASE	
			2			2		632	90101	2	EACH	REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER PLAN	40
			2			2		633	01581	2	EACH	CONTROLLER UNIT, TYPE TS2/A2, WITH CABINET, TYPE TS1, AS PER PLAN	40
			2			2		633	67000	2	EACH	CABINET RISER	
			2			2		633	67100	2	EACH	CABINET FOUNDATION	
			1			1		633	67200	1	EACH	CONTROLLER WORK PAD	
		2				2		SPECIAL	690E98000	2	EACH	MISC.: TEST HOLE PERFORMED	40

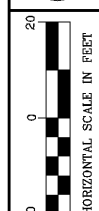
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SIGNALIZATION GENERAL SUMMARY
CUY-SUPERIOR RD/NOBLE RD
42
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 Date: 11/23/2011
 Time: 2:27:47
 Technician: ddombrosky

SHEET	LOCATION	625	625	625	625	625	625	625	625	625	625	632	632	632	632	632	632	632	632	632	632	632	632	
		CONDUIT, 2", 725.04	CONDUIT, 3", 725.04	CONDUIT, JACKED OR DRILLED, 3"	TRENCH	TRENCH IN PAVED AREA, TYPE A	TRENCH IN PAVED AREA, TYPE B, AS PER PLAN	PULL BOX, 725.08, 18"	PULL BOX, 725.08, 24"	GROUND ROD	PLASTIC CAUTION TAPE	VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN	VEHICULAR SIGNAL HEAD, (LED), 5-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN	PEDESTRIAN SIGNAL HEAD (LED), (COUNTDOWN), TYPE D2, AS PER PLAN	PEDESTRIAN PUSHBUTTON, AS PER PLAN	DETECTOR LOOP	DETECTOR LOOP, AS PER PLAN	SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG	SIGNAL SUPPORT FOUNDATION	PEDESTAL FOUNDATION	LOOP DETECTOR LEAD-IN CABLE	POWER SERVICE, AS PER PLAN	SIGNAL SUPPORT, TYPE TC-81.21, DESIGN 1, AS PER PLAN
		FT	FT	FT	FT	FT	FT	EACH	EACH	EACH	FT	EACH	EACH	EACH	EACH	EACH	FT	FT	EACH	EACH	FT	EACH	EACH	
44	SUPERIOR / TERRACE / FOREST HILL	82	42	259	28	97		3	1	9	125	8	2	6	6	5		758	763	4	4	1270	1	1
50	NOBLE / TERRACE	20	360			58	265	5	1	8	323	8		8	8		2	1628	975	4	3	1932	1	2
TOTALS CARRIED TO GENERAL SUMMARY		102	402	259	28	155	265	8	2	17	448	16	2	14	14	5	2	2386	1752	8	7	3202	2	3
SHEET	LOCATION	632	632	632	632	632	632	633	633	633	633													
		SIGNAL SUPPORT, TYPE TC-81.21, DESIGN 3, AS PER PLAN	SIGNAL SUPPORT, TYPE TC-81.21, DESIGN 4, AS PER PLAN	SIGNAL SUPPORT, TYPE TC-81.21, DESIGN 11, AS PER PLAN	SIGNAL SUPPORT, TYPE TC-81.21, DESIGN 12, AS PER PLAN	PEDESTAL, 8', TRANSFORMER BASE	REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER PLAN	CONTROLLER UNIT, TYPE TS2/A2, WITH CABINET, TYPE TS1, AS PER PLAN	CABINET RISER	CABINET FOUNDATION	CONTROLLER WORK PAD													
		EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH													
44	SUPERIOR / TERRACE / FOREST HILL	1	1		1	4	1	1	1	1														
50	NOBLE / TERRACE	1		1		3	1	1	1	1	1													
TOTALS CARRIED TO GENERAL SUMMARY		2	1	1	1	7	2	2	2	2	1													

SIGNALIZATION SUBSUMMARY

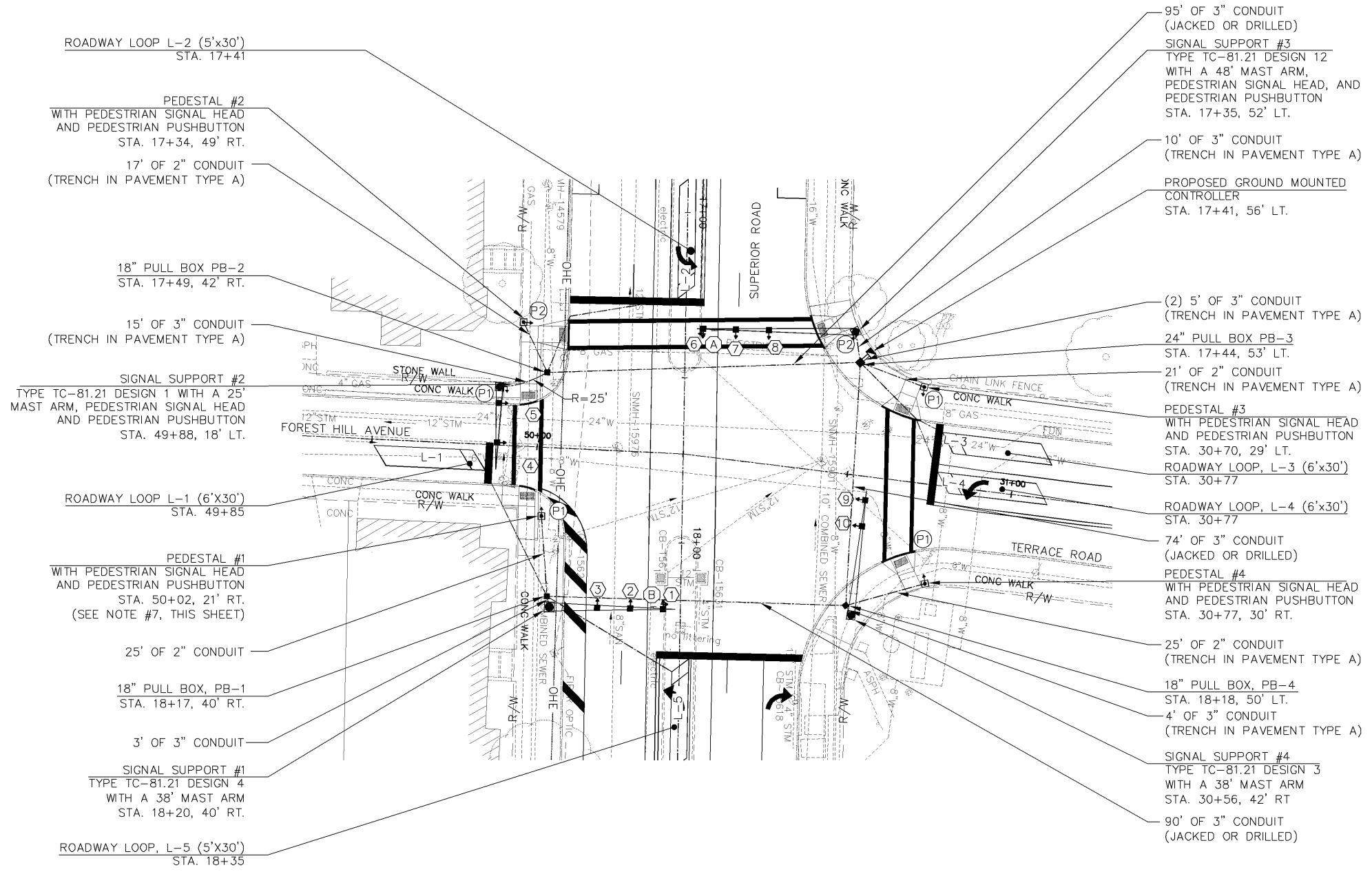
CUY-SUPERIOR RD/NOBLE RD



CALCULATED
JWG
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SIGNALIZATION PLAN
SUPERIOR ROAD / FOREST HILL AVENUE / TERRACE ROAD INTERSECTION

CUY-SUPERIOR RD/INOBLE RD



NOTES:

1. THE CONTRACTOR SHALL ENSURE THAT ALL SIGNAL FACES ARE CLEARLY VISIBLE TO ALL ONCOMING VEHICLES; CLEAR OF ANY OBSTRUCTION ONCE MOUNTED TO THE MAST ARMS.
2. ALL VEHICULAR LOOP DETECTORS SHALL BE PLACED IN THE CENTER OF THE LANE, WITH DRILLED CORNERS.
3. ALL LOOP DETECTORS ARE DESIGNED AS POWERHEAD DETECTOR LOOPS.
4. THE CONTRACTOR SHALL FIELD VERIFY THE LOCATIONS OF ALL UTILITIES AND EXISTING SIGNAL HARDWARE PRIOR TO EXCAVATION.
5. ALL SIGNAL HEADS SHALL HAVE BACKPLATES. BACKPLATES SHALL BE OBTAINED FROM THE SAME MANUFACTURER AS SIGNAL HOUSINGS TO ENSURE PROPER FIT.
6. FOR REFERENCE TO SIGNS (A) & (B) SEE SHEET 36.
7. POSSIBLE UNDERGROUND UTILITY CONFLICT, THE CONTRACTOR SHALL HAND EXCAVATE FOR THE PROPOSED PEDESTAL #1 AND SIGNAL SUPPORT #1 FOUNDATIONS IN ORDER TO ENSURE THE PROPOSED FOUNDATIONS DO NOT CONFLICT WITH ANY EXISTING UNDERGROUND UTILITIES.

SIGNAL TYPES

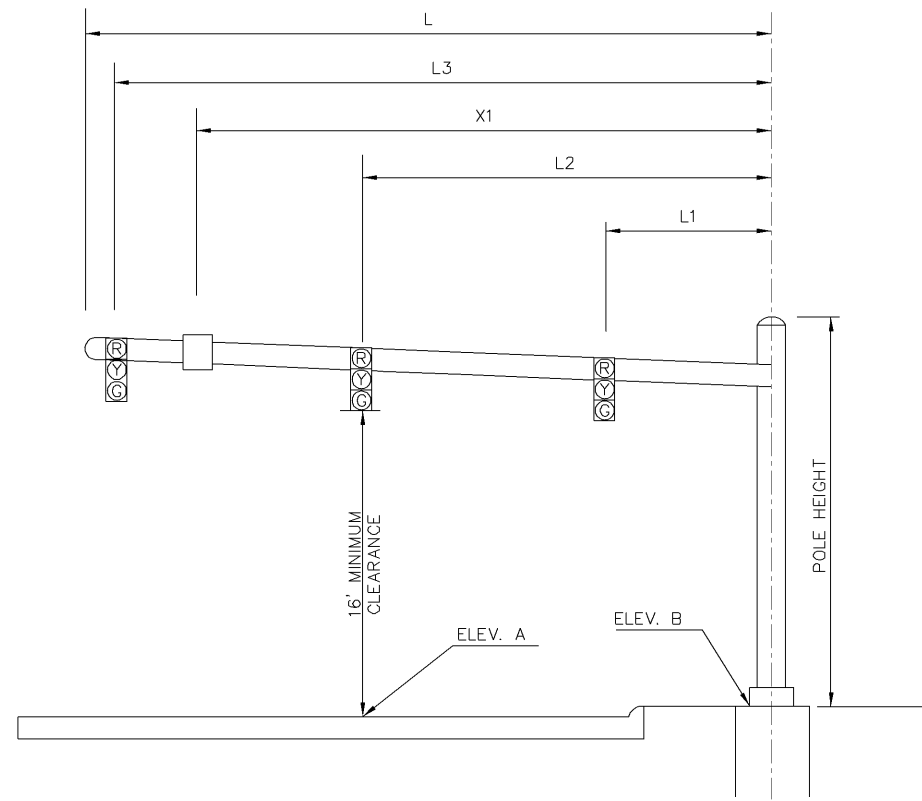
<p>NO'S. ②, ③, ④, ⑤, ⑦, ⑧, ⑨ & ⑩</p>	<p>NO'S. ① & ⑥</p>	<p>PORTLAND ORANGE LUNAR WHITE PEDESTRIAN SIGNAL HEADS SHALL BE CONSTRUCTED WITH HAND/ MAN OVERLAYS AND COUNTDOWN TIMER PROPOSED: NO'S. (P1) & (P2)</p>
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NOTE: ALL LENSES SHALL BE 12".

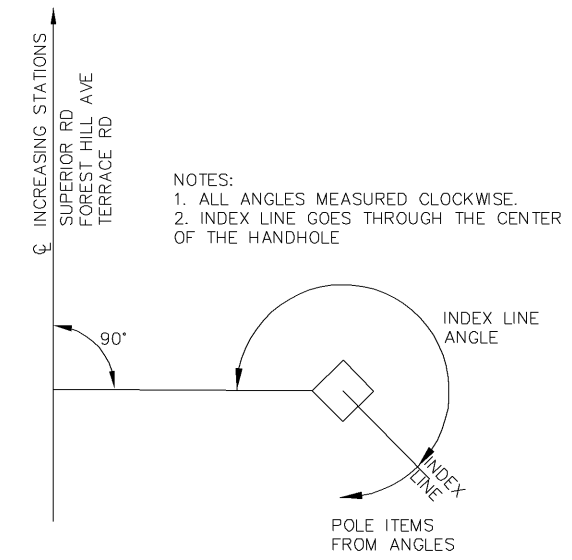
LEGEND

	PROPOSED MAST ARM SIGNAL SUPPORT
	PROPOSED SIGNAL HEAD
	PROPOSED GROUND MOUNTED CONTROLLER
	PROPOSED PULL BOX
	PROPOSED CONDUIT
	VEHICLE LOOP DETECTOR

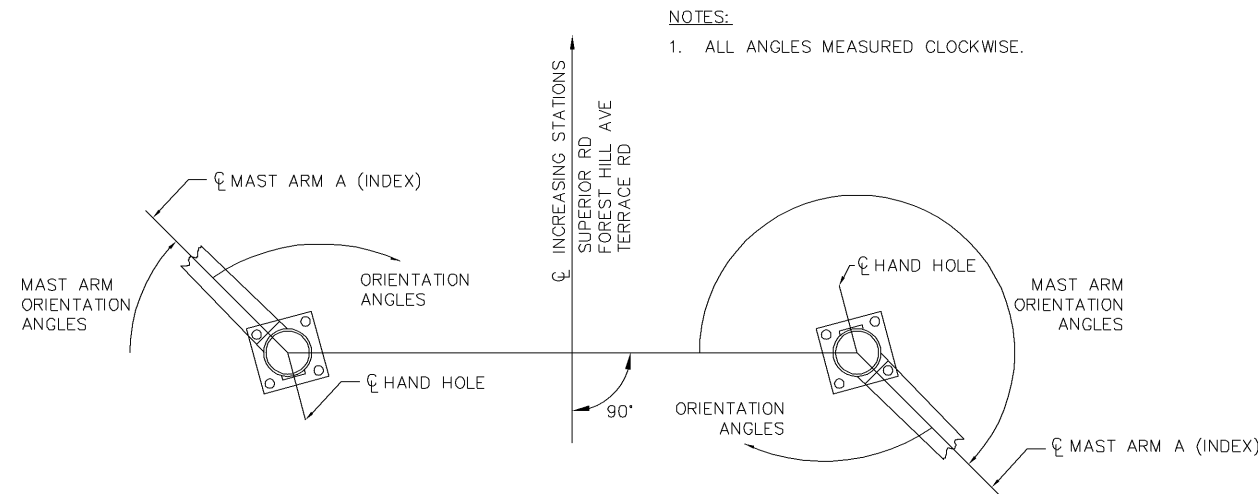
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 Date: 2/29/13
 Technician: ddombrosky



SIGNAL ELEVATION VIEW
NOT TO SCALE



PEDESTAL ORIENTATION DIAGRAM
NOT TO SCALE



TYPE TC-81.21 SUPPORT ORIENTATION DIAGRAM

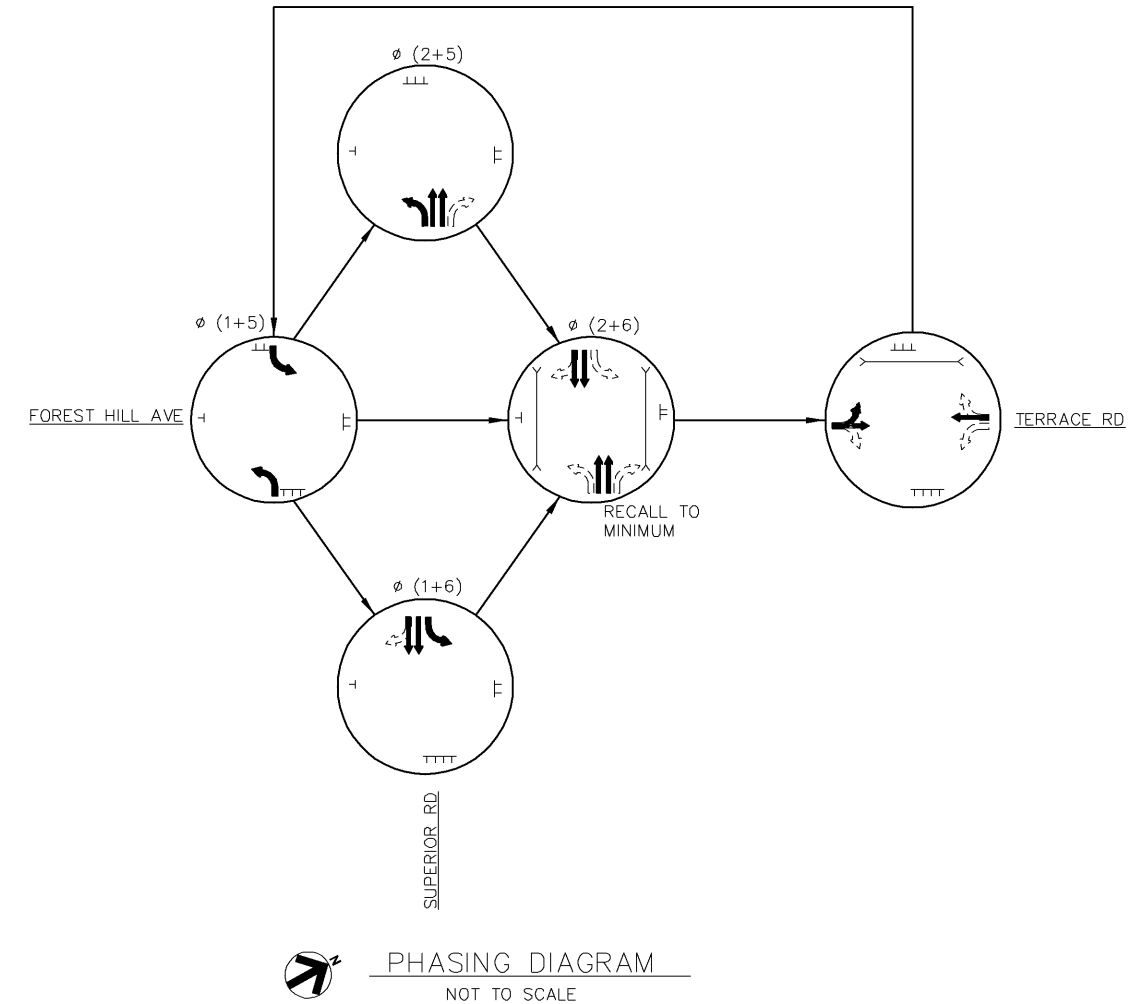
NOTES:
1. ALL ANGLES MEASURED CLOCKWISE.

PEDESTAL DATA						
PEDESTAL NO.	LOCATION	STATION	OFFSET	INDEX LINE ANGLE	ANGLE FROM INDEX LINE	
					PUSH BUTTON	PEDESTRIAN SIGNALS
1	FOREST HILL AVE	50+02	21' RT.	180°	90°	TOP MOUNTED
2	SUPERIOR RD	17+34	49' RT.	180°	180°	TOP MOUNTED
3	TERRACE RD	30+70	29' LT.	180°	180°	TOP MOUNTED
4	TERRACE RD	30+77	30' RT.	162°	180°	TOP MOUNTED

TYPE TC-81.21 SUPPORT POLE DATA																	
POLE NO.	DESIGN NO.	POLE HEIGHT (FT)	MAST ARM LENGTH (FT)	MOUNTING HEIGHT (FT)	L1 (FT)	L2 (FT)	L3 (FT)	X1 (FT)	LOCATION	STATION	OFFSET	ELEV. A	ELEV. B	MAST ARM 'A' ANGLE	ORIENTATION FROM MAST ARM 'A'		
															HAND HOLE	PEDESTRIAN SIGNAL HEAD	PEDESTRIAN PUSHBUTTON
1	4	21	38	19.5	14.5	24.5	34.5	30.5	SUPERIOR ROAD	18+20	40' RT.	716.24	716.55	0°	180°	-	-
2	1	21	25	19.5	5	17	-	-	FOREST HILL AVENUE	49+88	18' LT.	715.34	715.26	0°	90°	270°	0°
3	12	21	48	19.5	26	36	46	42	SUPERIOR ROAD	17+35	52' LT.	714.12	714.71	0°	152°	270°	0°
4	3	20	38	18.5	27	35	-	-	TERRACE ROAD	30+56	42' RT.	715.15	716.27	0°	180°	-	-

SIGNAL DISPLAY CHART													
PHASE	SIGNAL NUMBER												DESCRIPTION OF INTERVAL
	1	2	3	4	5	6	7	8	9	10	P1	P2	
ø (1+5)	←G/R	R	R	R	R	←G/R	R	R	R	R	DW	DW	GREEN
	←Y/R	R	R	R	R	←G/R	R	R	R	R	DW	DW	YELLOW CLEAR TO ø (2+5)
	R	R	R	R	R	←G/R	R	R	R	R	DW	DW	RED CLEAR TO ø (2+5)
	←G/R	R	R	R	R	←Y/R	R	R	R	R	DW	DW	YELLOW CLEAR TO ø (1+6)
	←G/R	R	R	R	R	R	R	R	R	R	DW	DW	RED CLEAR TO ø (1+6)
	←Y/R	R	R	R	R	←Y/R	R	R	R	R	DW	DW	YELLOW CLEAR TO ø (2+6)
	R	R	R	R	R	R	R	R	R	R	DW	DW	RED CLEAR TO ø (2+6)
ø (2+5)	R	R	R	R	R	←G/G	G	G	R	R	DW	DW	GREEN
	R	R	R	R	R	←Y/G	G	G	R	R	DW	DW	YELLOW CLEAR TO ø (2+6)
	R	R	R	R	R	G	G	G	R	R	DW	DW	RED CLEAR ø (2+6)
ø (1+6)	←G/G	G	G	R	R	R	R	R	R	R	DW	DW	GREEN
	←Y/G	G	G	R	R	R	R	R	R	R	DW	DW	YELLOW CLEAR TO ø (2+6)
ø (2+6)	G	G	G	R	R	R	R	R	R	R	DW	DW	RED CLEAR ø (2+6)
	G	G	G	R	R	G	G	G	R	R	W	DW	GREEN + WALK
	G	G	G	R	R	G	G	G	R	R	FDW	DW	GREEN + PED CLEAR
	Y	Y	Y	R	R	Y	Y	Y	R	R	DW	DW	YELLOW CLEAR
ø (4+8)	R	R	R	R	R	R	R	R	R	R	DW	DW	RED CLEAR
	R	R	R	G	G	R	R	R	G	G	DW	W	GREEN + WALK
	R	R	R	G	G	R	R	R	G	G	DW	FDW	GREEN + PED CLEAR
	R	R	R	Y	Y	R	R	R	Y	Y	DW	DW	YELLOW CLEAR
FLASH	Y	Y	Y	R	R	Y	Y	Y	R	R	OFF	OFF	FLASH

VEHICLE LOOP DETECTOR CHART						
LOOP IDENTIFICATION	LOCATION	SIZE	TYPE	DELAY (SEC.)	DELAY INHIBITED BY	DESCRIPTION
L-1	FOREST HILL AVENUE, STA. 49+85	6' x 30'	PRESENCE	10.0	ø 8	NB CALL
L-2	SUPERIOR ROAD, STA. 17+41	5' x 30'	PRESENCE	5.0	ø 1	EB LEFT CALL
L-3	TERRACE ROAD, STA. 30+77	6' x 30'	PRESENCE	10.0	ø 4	SB CALL
L-4	TERRACE ROAD, STA. 30+77	6' x 30'	PRESENCE	5.0	ø 4	SB CALL
L-5	SUPERIOR ROAD, STA. 18+35	5' x 30'	PRESENCE	5.0	ø 5	WB LEFT CALL



PROPOSED TRAFFIC SIGNAL CONTROL TIMING CHART										
INTERSECTION: SUPERIOR RD/FOREST HILL AVE/TERRACE RD										
MAINTAINING AGENCY : CITY OF EAST CLEVELAND										
START UP			DUAL ENTRY ●							
START IN: Y/R FLASH ●; ALL RED ○			REST IN RED: RING 1 ○ : RING 2 ○							
TIME FOR FLASH OR ALL RED 5			OVERLAP							
FIRST PHASE(S) ø (2+6)			PHASES							
COLOR DISPLAYED: GREEN			CONTROLLER MOVEMENT NO.							
INTERVAL OF FEATURE			1	2	3	4	5	6	7	8
INTERSECTION MOVEMENT			↙	↑	↘	←	↘	↓	↙	→
MINIMUM GREEN TIME (SEC.)			5.0	20.0		10.0	5.0	20.0		10.0
PASSAGE TIME (SEC.)			3.0			3.0	3.0			3.0
MAXIMUM GREEN TIME (SEC.)			20.0	40.0		40.0	20.0	40.0		40.0
YELLOW CHANGE (SEC.)			4.0	4.0		4.0	4.0	4.0		4.0
ALL RED CLEARANCE (SEC.)			2.0	2.0		2.0	2.0	2.0		2.0
WALK (MIN.) (SEC.)				7.0		7.0		7.0		7.0
PEDESTRIAN CLEARANCE (SEC.)				15.0		23.0		15.0		23.0
RECALL	MAXIMUM (ON/OFF)									
	MINIMUM (ON/OFF)			ON				ON		
	PEDESTRIAN (ON/OFF)									

* FREE OPERATION TIMING

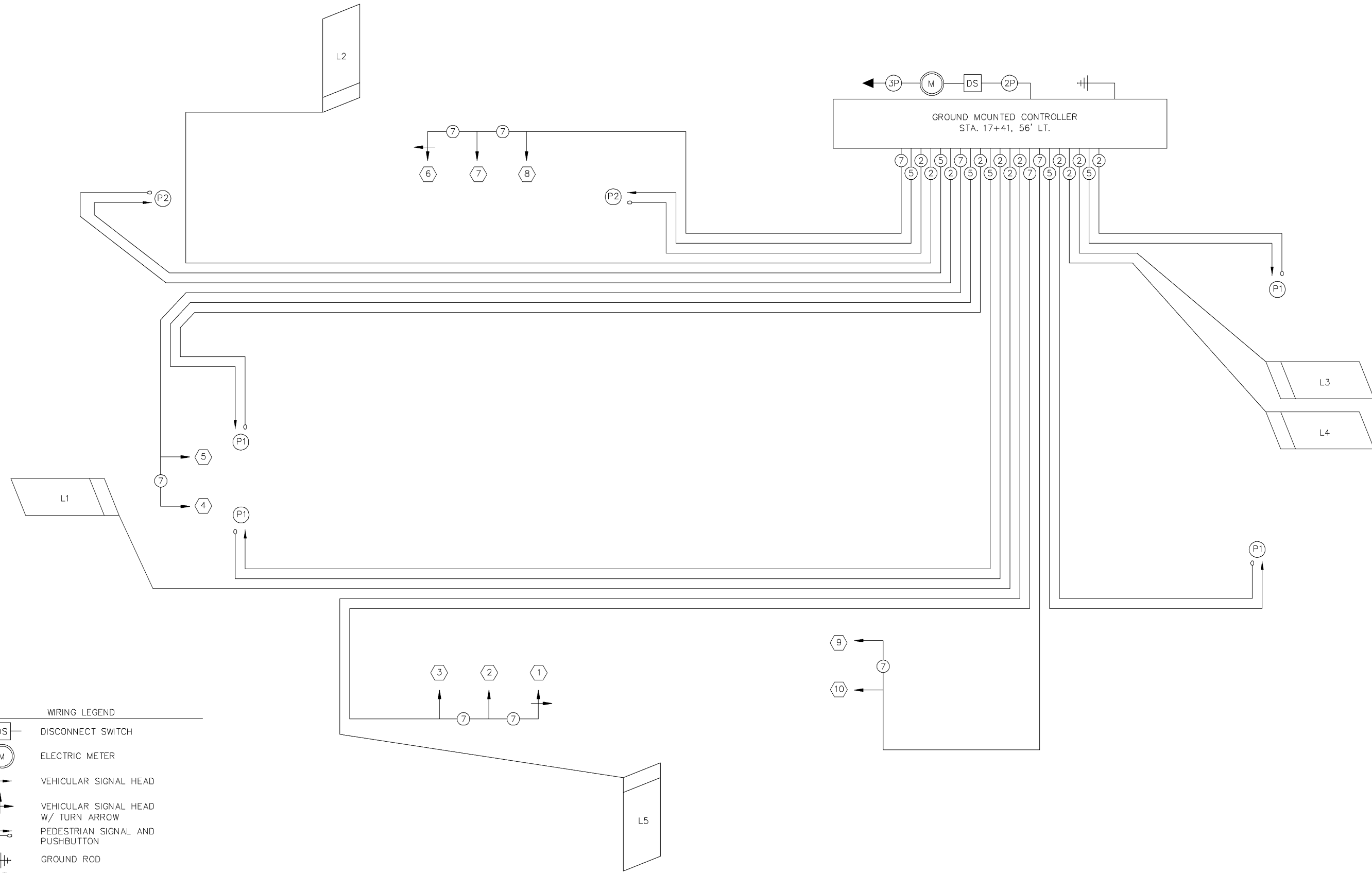
SIGNALIZATION DETAILS
 SUPERIOR ROAD / FOREST HILL AVENUE / TERRACE RD

CUY-SUPERIOR RD/NOBLE RD

CALCULATED
 JWG
 CHECKED
 MAH

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 Date: 07/30/2013
 Time: 3:17:04
 Technician: adombrosky

Twist: -1.57079633



- WIRING LEGEND**
- DISCONNECT SWITCH
 - ELECTRIC METER
 - VEHICULAR SIGNAL HEAD
 - VEHICULAR SIGNAL HEAD W/ TURN ARROW
 - PEDESTRIAN SIGNAL AND PUSHBUTTON
 - GROUND ROD
 - 2/C #14 AWG. (LEAD-IN CABLE)
 - 5/C #14 AWG.
 - 7/C #14 AWG.
 - 2/C #14 AWG. (POWER)
 - 3/C #14 AWG. (POWER)

WIRING DIAGRAM
NOT TO SCALE

CALCULATED
JWVG
CHECKED
MAH

SIGNALIZATION DETAILS
 SUPERIOR ROAD / FOREST HILL AVENUE / TERRACE RD

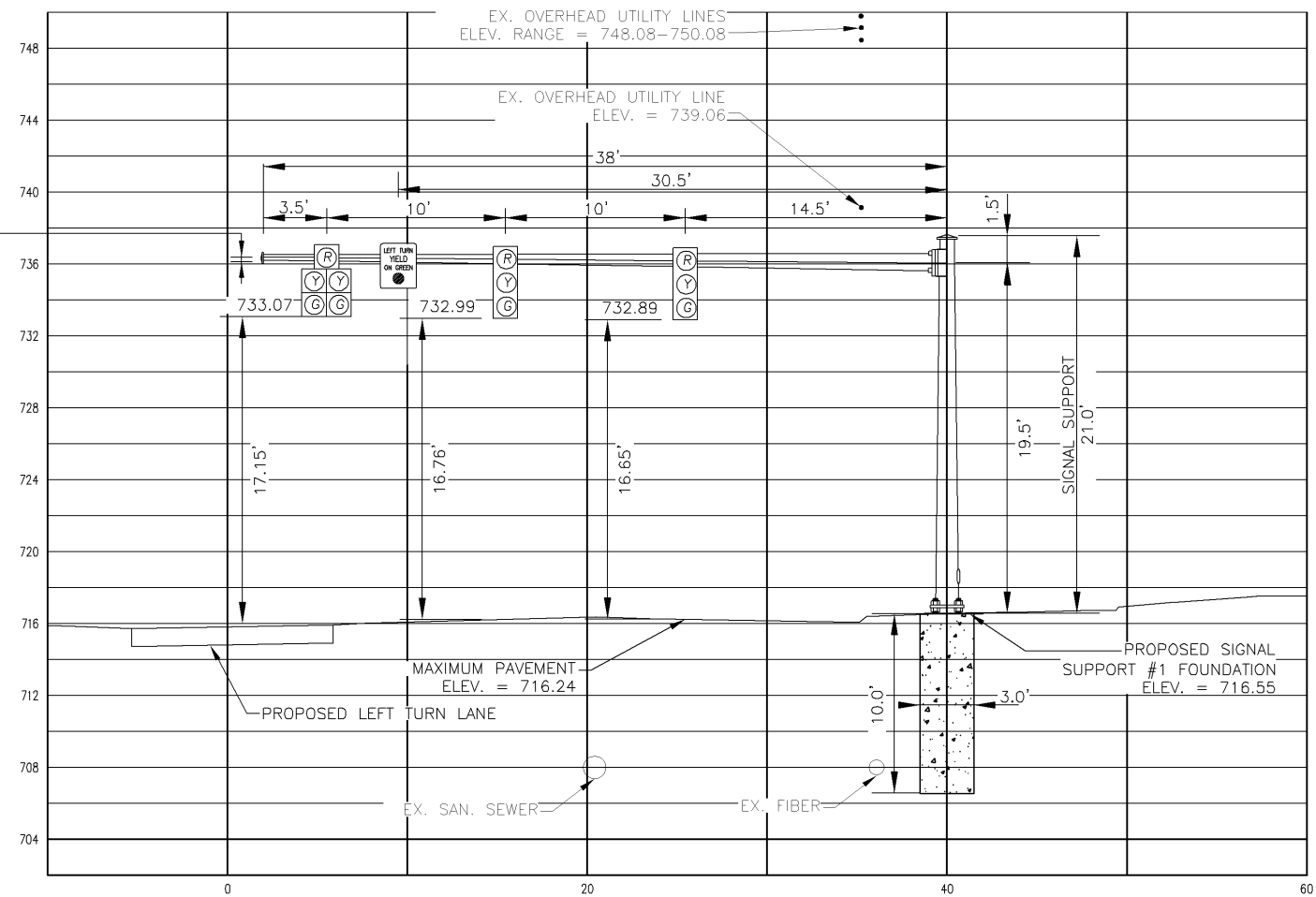
CUY-SUPERIOR RD/NOBLE RD

47
55

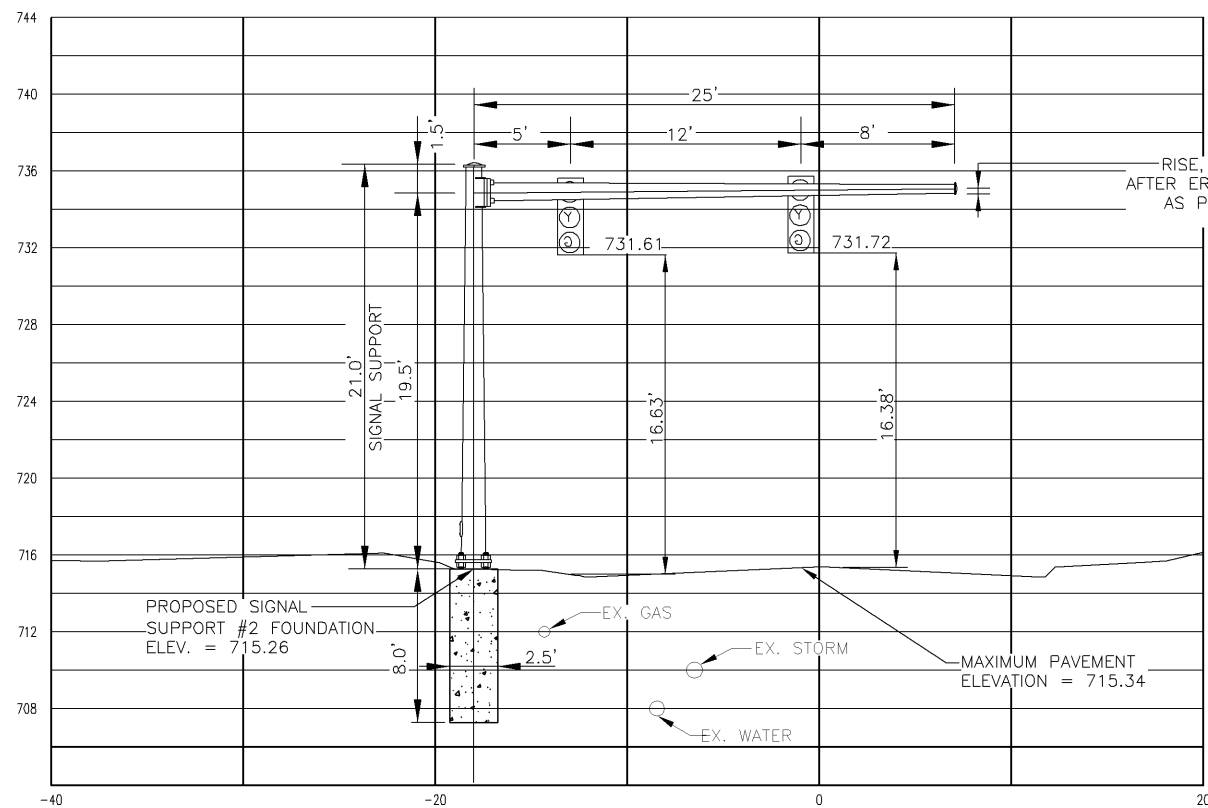
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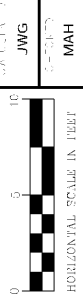
RISE, 3" MIN., 12" MAX.,
 AFTER ERECTION OF SIGNALS
 AS PER ODOT STANDARD
 DRAWING TC-81.21



SIGNAL SUPPORT #1 TYPE 81.21, DESIGN 4
 STA. 18+20, 40' RT. SUPERIOR ROAD
 LOOKING SOUTHEAST

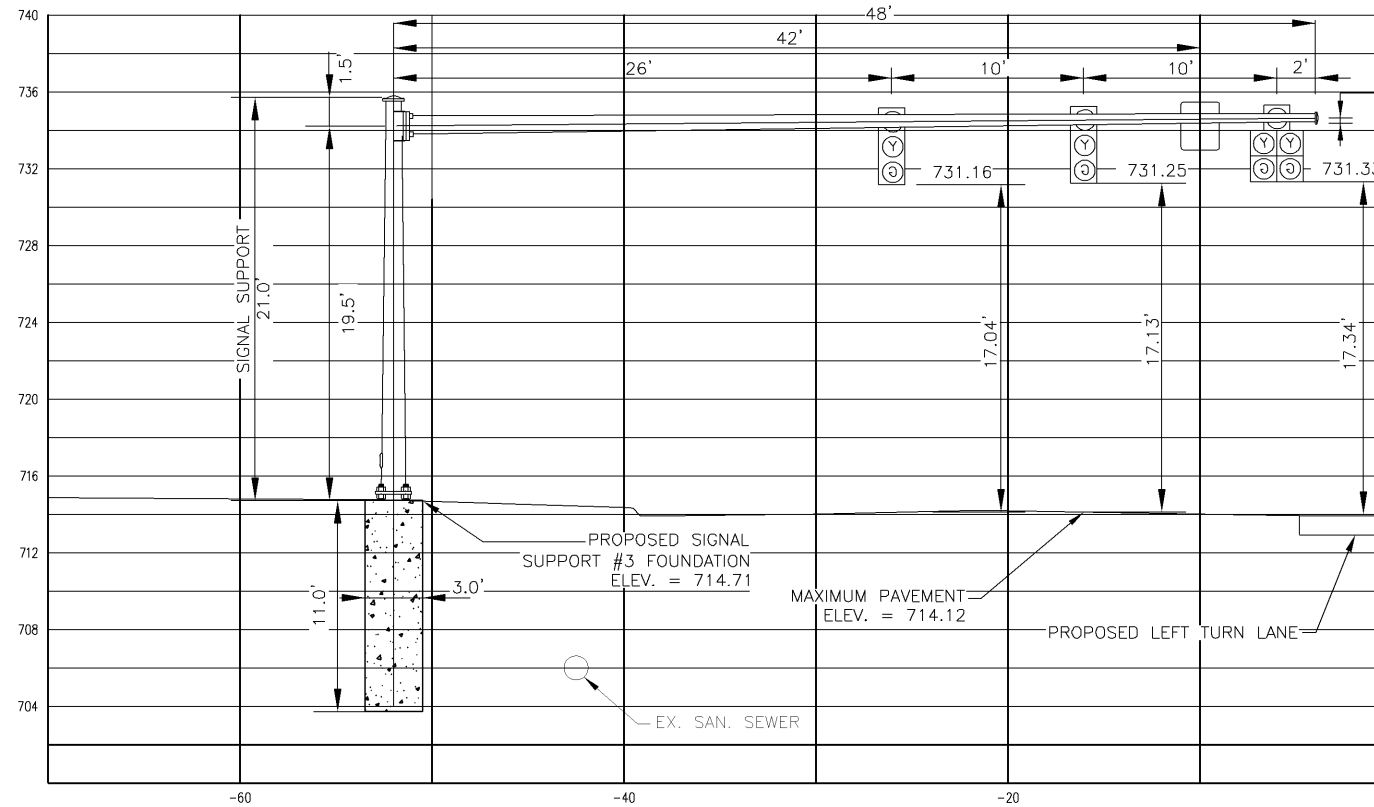


SIGNAL SUPPORT #2 TYPE 81.21, DESIGN 1
 STA. 49+88, 18' LT., FOREST HILL AVENUE
 LOOKING NORTHEAST



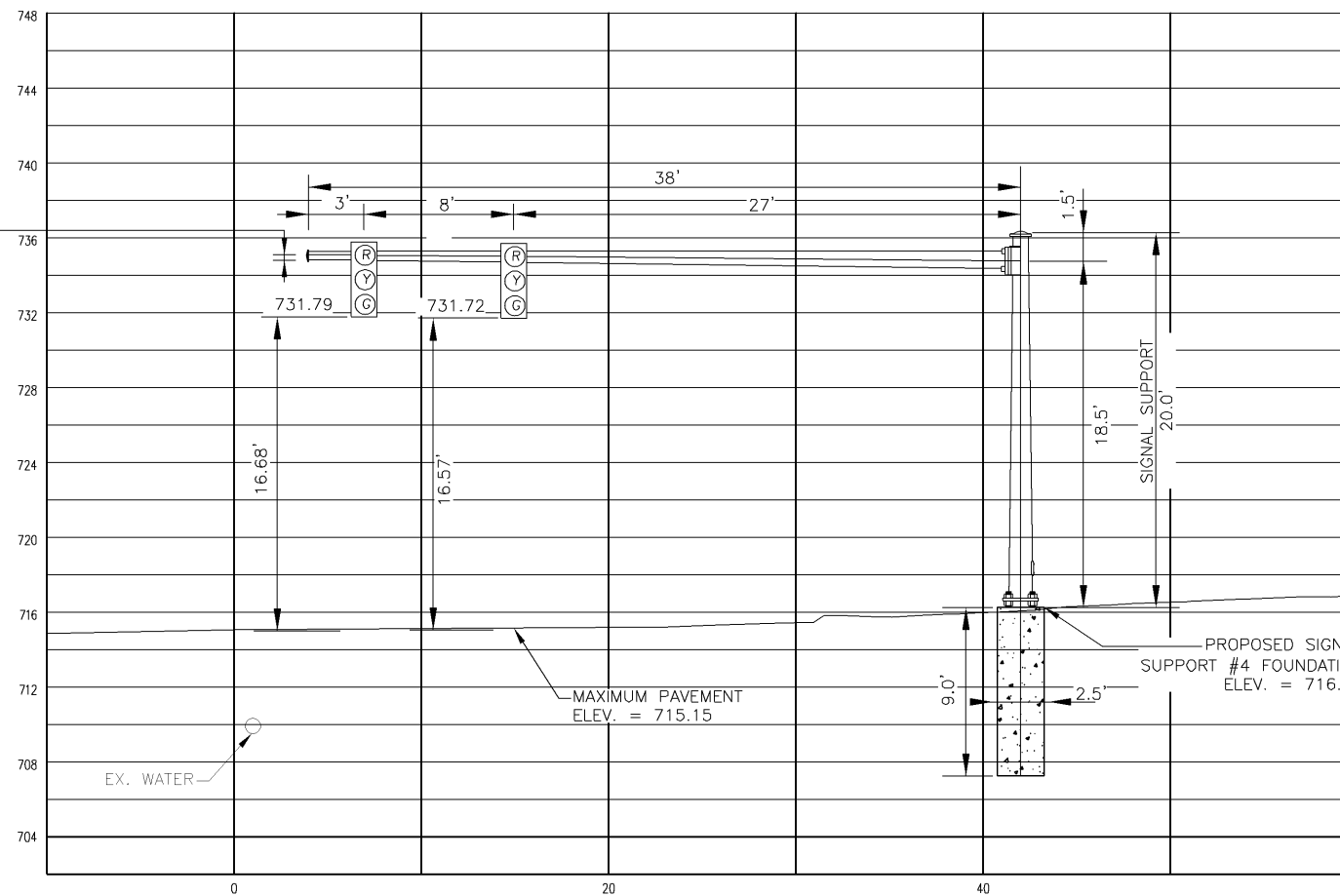
SIGNAL ELEVATION VIEW
 SUPERIOR ROAD / FOREST HILL AVENUE / TERRACE ROAD

CUY-SUPERIOR RD/NOBLE RD



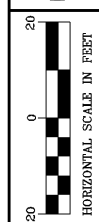
RISE, 3" MIN., 12" MAX.,
AFTER ERECTION OF SIGNALS
AS PER ODOT STANDARD
DRAWING TC-81.21

SIGNAL SUPPORT #3 TYPE 81.21, DESIGN 12
STA. 17+35, 52' LT. SUPERIOR ROAD
LOOKING SOUTHEAST



3" MIN., 12" MAX.,
ERECTION OF SIGNALS
AS PER ODOT STANDARD
DRAWING TC-81.21

SIGNAL SUPPORT #4 TYPE 81.21, DESIGN 3
STA. 30+56, 42' RT. TERRACE ROAD
LOOKING NORTHEAST



CALCULATED
JWG
CHECKED
MAH

SIGNALIZATION PLAN
NOBLE ROAD / TERRACE ROAD INTERSECTION

CUY-SUPERIOR RD/NOBLE RD

55
55

SIGNAL SUPPORT #2
TYPE TC-81.21 DESIGN 1 WITH A 25'
MAST ARM, (2) PEDESTRIAN SIGNAL HEADS
AND (2) PEDESTRIAN PUSHBUTTONS
STA. 60+10, 34' RT.

4' OF 3" CONDUIT
(TRENCH IN PAVED AREA, TYPE A)

18" PULL BOX, PB-2
STA. 60+11, 34' RT.

60' OF 3" CONDUIT
(TRENCH IN PAVED AREA, TYPE B)

(2) 42' OF 3" CONDUIT
(TRENCH IN PAVED AREA, TYPE B)

ROADWAY LOOP L-1 (6'x30')
STA. 74+24

24" PULL BOX, PB-1
STA. 60+52, 39' RT.

(2) 15' OF 3" CONDUIT
(TRENCH IN PAVED AREA, TYPE A)

9' OF 3" CONDUIT
(TRENCH IN PAVED AREA, TYPE A)

PROPOSED GROUND MOUNTED
CONTROLLER WITH WORK PAD
STA. 60+60, 51' RT.

SIGNAL SUPPORT #1
TYPE TC-81.21 DESIGN 11
WITH A 45' MAST ARM
STA. 60+58, 45' RT.

18" PULL BOX, PB-6
STA. 60+69, 24' RT.
(SEE NOTE 6, THIS SHEET)

PEDESTAL #1
WITH (2) PEDESTRIAN SIGNAL HEADS
AND (2) PEDESTRIAN PUSHBUTTONS
STA. 60+71, 26' RT.
(SEE NOTE 6, THIS SHEET)

PEDESTAL #2
WITH PEDESTRIAN SIGNAL HEAD AND
PEDESTRIAN PUSHBUTTON
STA. 50+90, 29' LT.

11' OF 2" CONDUIT
(TRENCH IN PAVED AREA, TYPE A)

18" PULL BOX, PB-3
STA. 60+01, 29' LT.

10' OF 3" CONDUIT
(TRENCH IN PAVED AREA, TYPE A)

SIGNAL SUPPORT #3
TYPE TC-81.21 DESIGN 3 WITH A 38' MAST
ARM, PEDESTRIAN SIGNAL HEAD, AND
PEDESTRIAN PUSHBUTTON
STA. 60+00, 40' LT.

62' OF 3" CONDUIT
(TRENCH IN PAVED AREA, TYPE B)

ROADWAY LOOP L-2 (6'x30')
STA. 75+11

51' OF 3" CONDUIT
(TRENCH IN PAVED AREA, TYPE B)

18" PULL BOX, PB-4
STA. 60+48, 49' LT.

3' OF 2" CONDUIT
(TRENCH IN PAVED AREA, TYPE A)

SIGNAL SUPPORT #4
TYPE TC-81.21 DESIGN 1 WITH A 25' MAST
ARM, PEDESTRIAN SIGNAL HEAD, AND
PEDESTRIAN PUSHBUTTON
STA. 60+48, 46' LT.

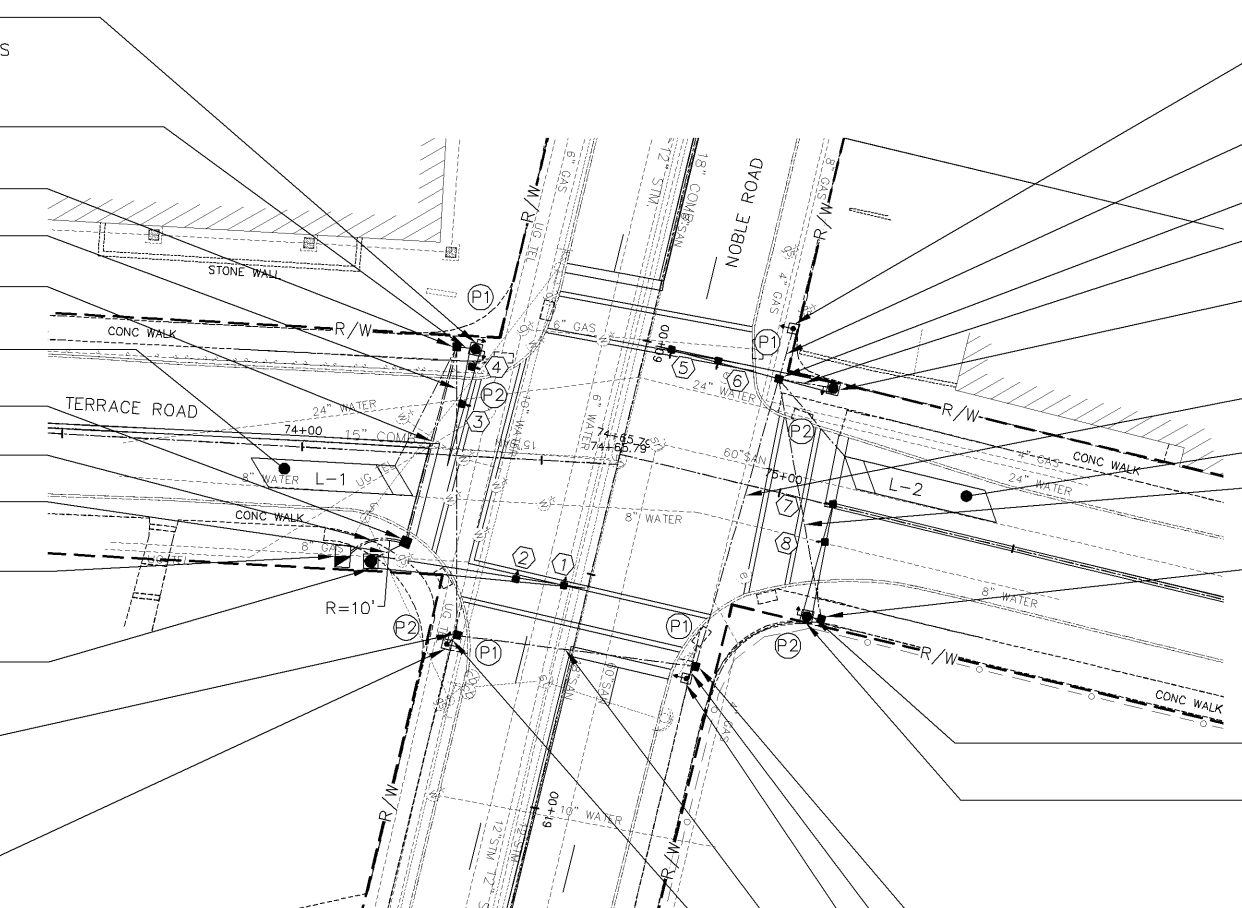
18" PULL BOX, PB-5
STA. 61+64, 26' LT.

3' OF 2" CONDUIT
(TRENCH IN PAVED AREA, TYPE A)

PEDESTAL #3
WITH PEDESTRIAN SIGNAL HEAD AND
PEDESTRIAN PUSHBUTTON
STA. 61+66, 24' LT.

50' OF 3" CONDUIT
(TRENCH IN PAVED AREA, TYPE B)

3' OF 2" CONDUIT
(TRENCH IN PAVED AREA, TYPE A)



- NOTES:
1. THE CONTRACTOR SHALL ENSURE THAT ALL SIGNAL FACES ARE CLEARLY VISIBLE TO ALL ONCOMING VEHICLES; CLEAR OF ANY OBSTRUCTION ONCE MOUNTED TO THE MAST ARMS.
 2. ALL VEHICULAR LOOP DETECTORS SHALL BE PLACED IN THE CENTER OF THE LANE, WITH DRILLED CORNERS.
 3. ALL LOOP DETECTORS ARE DESIGNED AS POWERHEAD DETECTOR LOOPS.
 4. THE CONTRACTOR SHALL FIELD VERIFY THE LOCATIONS OF ALL UTILITIES AND EXISTING SIGNAL HARDWARE PRIOR TO EXCAVATION.
 5. ALL SIGNAL HEADS SHALL HAVE BACKPLATES. BACKPLATES SHALL BE OBTAINED FROM THE SAME MANUFACTURER AS SIGNAL HOUSINGS TO ENSURE PROPER FIT.
 6. POSSIBLE UTILITY CONFLICT, THE CONTRACTOR SHALL HAND EXCAVATE FOR THE PROPOSED PEDESTAL #1 FOUNDATION AND FOR PULL BOX #6 IN ORDER TO ENSURE THERE ARE NO CONFLICTS WITH ANY EXISTING UTILITIES.

SIGNAL TYPES

	PORTLAND ORANGE	PEDESTRIAN SIGNAL HEADS SHALL BE CONSTRUCTED WITH HAND/ MAN OVERLAYS AND COUNTDOWN TIMER
	LUNAR WHITE	

NO'S. ①, ②, ③, ④, ⑤, ⑥, ⑦ & ⑧

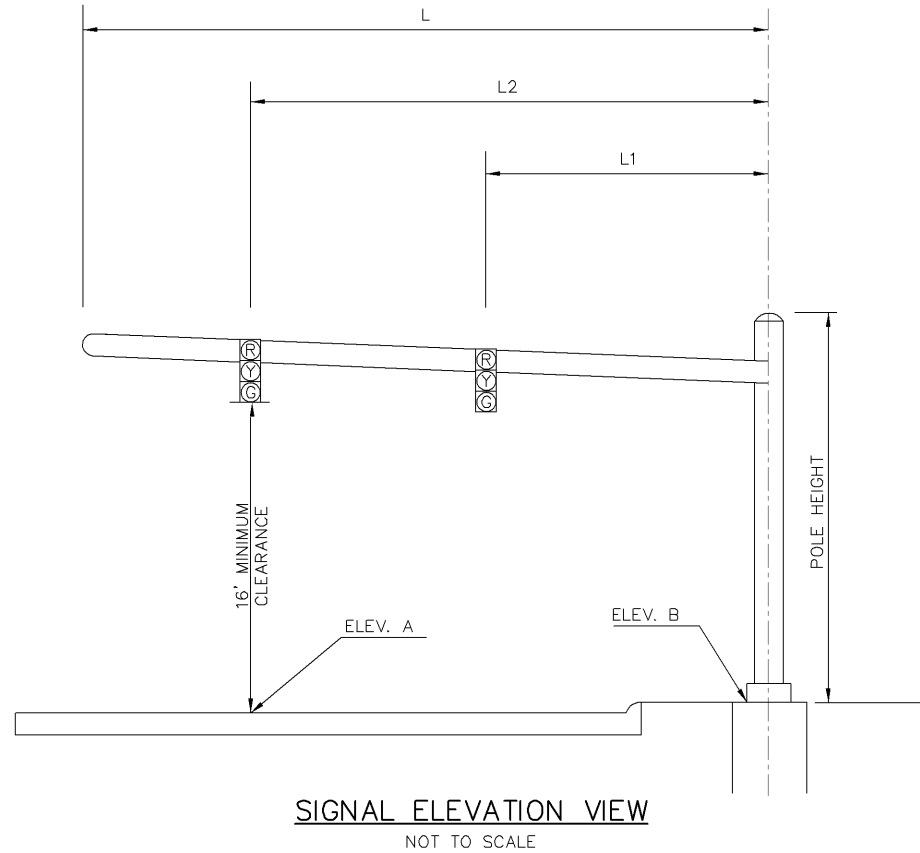
NOTE: ALL LENSES SHALL BE 12".

PROPOSED:
NO'S. (P1) & (P2)

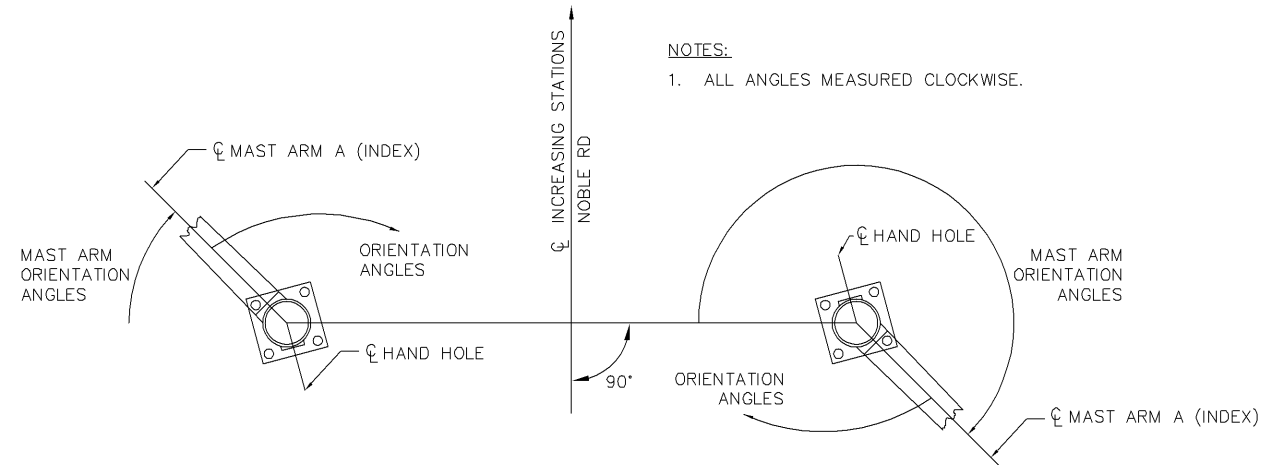
LEGEND

	PROPOSED MAST ARM SIGNAL SUPPORT
	PROPOSED SIGNAL HEAD
	PROPOSED GROUND MOUNTED CONTROLLER
	PROPOSED PULL BOX
	PROPOSED CONDUIT
	VEHICLE LOOP DETECTOR

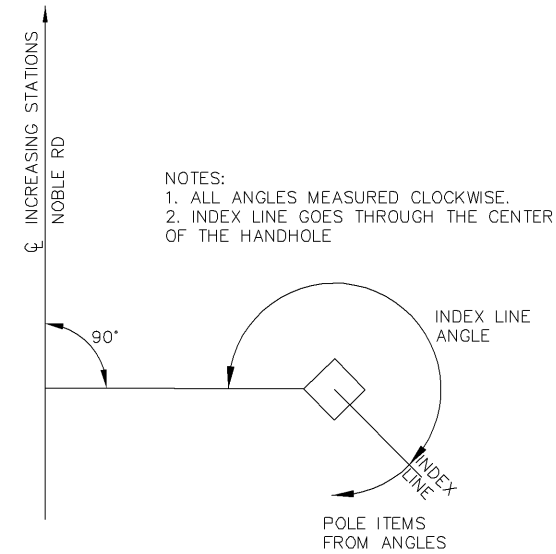
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Time: 11:48 am
Technician: adombrosky



SIGNAL ELEVATION VIEW
NOT TO SCALE



TYPE TC-81.21 SUPPORT ORIENTATION DIAGRAM



PEDESTAL ORIENTATION DIAGRAM
NOT TO SCALE

TYPE TC-81.21 SUPPORT POLE DATA

POLE NO.	DESIGN NO.	POLE HEIGHT (FT)	MAST ARM LENGTH (FT)	MOUNTING HEIGHT (FT)	L1 (FT)	L2 (FT)	LOCATION	STATION	OFFSET	ELEV. A	ELEV. B	MAST ARM 'A' ANGLE	ORIENTATION FROM MAST ARM 'A'		
													HAND HOLE	PEDESTRIAN SIGNAL HEAD	PEDESTRIAN PUSHBUTTON
1	11	23	45	21.5	30.5	40.5	NOBLE RD.	60+58	45' RT.	733.29	731.09	353'	83'	N/A	N/A
2	1	22	25	20.5	4	12	NOBLE RD.	60+10	34' RT.	729.54	728.00	90'	90'	180°/270°	180°/270°
3	3	22	38	20.5	25	35	NOBLE RD.	60+00	40' LT.	728.41	727.76	0'	180°	0°	0°
4	1	19	25	17.5	16	24	NOBLE RD.	60+48	46' LT.	729.81	732.54	90'	90'	270°	270°

PEDESTAL DATA

PEDESTAL NO.	LOCATION	STATION	OFFSET	INDEX LINE ANGLE	ANGLE FROM INDEX LINE	
					PUSH BUTTON	PEDESTRIAN SIGNALS
1	NOBLE RD.	60+71	29' LT.	90°	90°/180°	TOP MOUNTED
2	NOBLE RD.	50+90	29' LT.	90°	270°	TOP MOUNTED
3	NOBLE RD.	61+66	24' LT.	270°	180°	TOP MOUNTED

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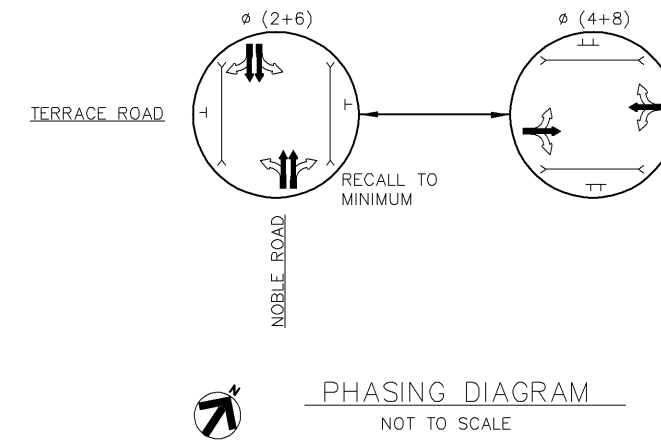
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CALCULATED
JWG
CHECKED
MAH

SIGNALIZATION DETAILS
NOBLE ROAD / TERRACE ROAD

CUY-SUPERIOR RD/NOBLE RD

SIGNAL DISPLAY CHART											
PHASE	SIGNAL NUMBER										DESCRIPTION OF INTERVAL
	1	2	3	4	5	6	7	8	P1	P2	
ø (2+6)	G	G	R	R	G	G	R	R	DW	W	GREEN + WALK
	G	G	R	R	G	G	R	R	DW	FDW	GREEN + PED CLEAR
	Y	Y	R	R	Y	Y	R	R	DW	DW	YELLOW CLEAR
	R	R	R	R	R	R	R	R	DW	DW	RED CLEAR
ø (4+8)	R	R	G	G	R	R	G	G	W	DW	GREEN + WALK
	R	R	G	G	R	R	G	G	FDW	DW	GREEN + PED CLEAR
	R	R	Y	Y	R	R	Y	Y	DW	DW	YELLOW CLEAR
	R	R	R	R	R	R	R	R	DW	DW	RED CLEAR
FLASH	Y	Y	R	R	Y	Y	R	R	BLANK	BLANK	FLASH














VEHICLE LOOP DETECTOR CHART						
LOOP IDENTIFICATION	LOCATION	SIZE	TYPE	DELAY (SEC.)	DELAY INHIBITED BY	DESCRIPTION
L-1	TERRACE ROAD, STA. 74+24	6' x 30'	PRESENCE	10.0	ø 8	NB CALL
L-2	TERRACE ROAD, STA. 75+11	6' x 30'	PRESENCE	10.0	ø 4	SB CALL

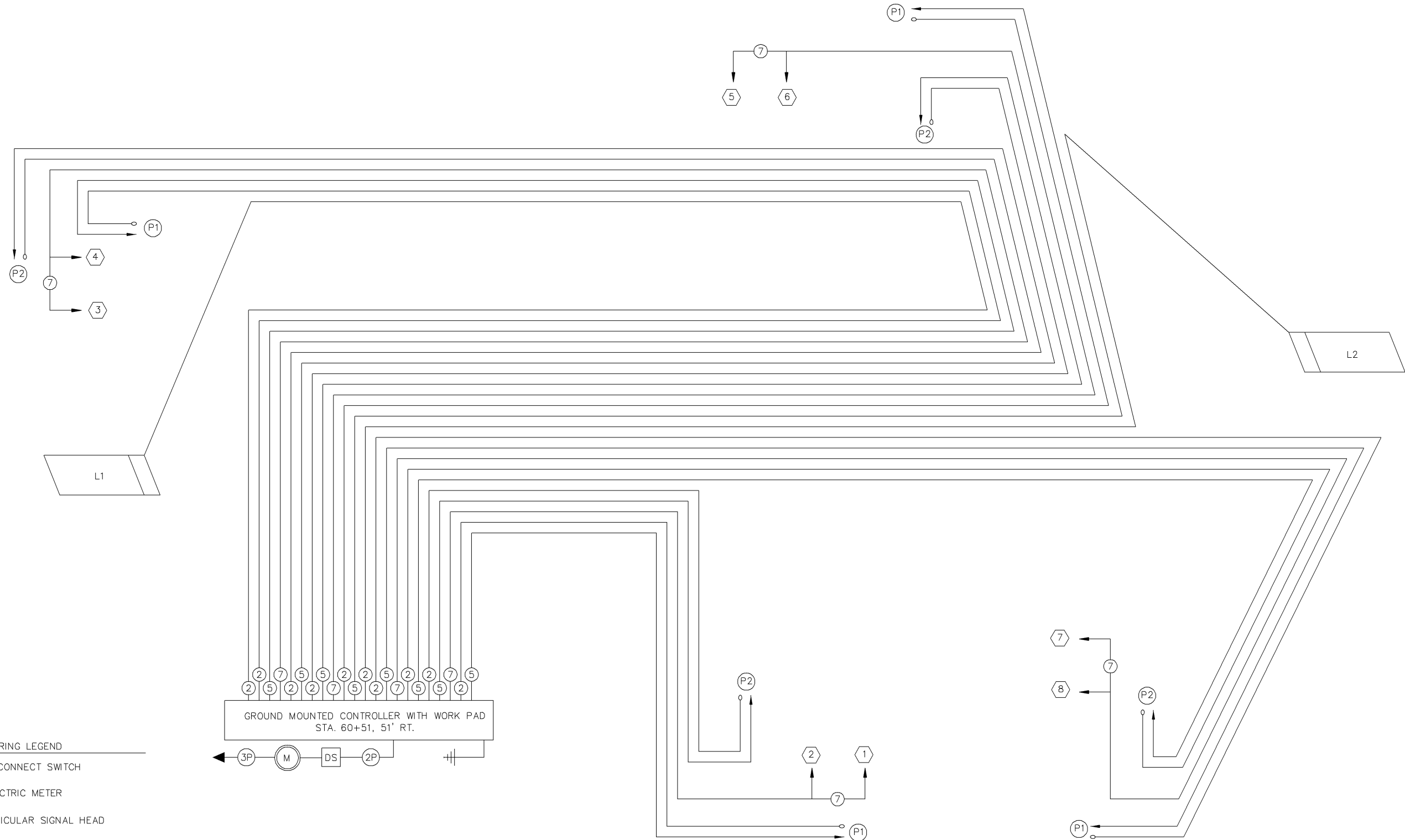
PROPOSED TRAFFIC SIGNAL CONTROL TIMING CHART INTERSECTION: NOBLE RD/TERRACE RD MAINTAINING AGENCY : CITY OF EAST CLEVELAND															
START UP START IN: Y/R FLASH ●; ALL RED ○ TIME FOR FLASH OR ALL RED 5 FIRST PHASE(S) ø (2+6) COLOR DISPLAYED: GREEN					DUAL ENTRY ● REST IN RED: RING 1 ○ : RING 2 ○										
OVERLAP					A	B	C	D							
PHASES															
INTERVAL OF FEATURE					CONTROLLER MOVEMENT NO.										
INTERSECTION MOVEMENT					1	2	3	4	5	6	7	8			
MINIMUM GREEN TIME (SEC.)						20.0		10.0		20.0		10.0			
PASSAGE TIME (SEC.)								3.0				3.0			
MAXIMUM GREEN TIME (SEC.)						50.0		30.0		50.0		30.0			
YELLOW CHANGE (SEC.)						3.0		3.0		3.0		3.0			
ALL RED CLEARANCE (SEC.)						2.0		2.0		2.0		2.0			
WALK (MIN.) (SEC.)						7.0		7.0		7.0		7.0			
PEDESTRIAN CLEARANCE (SEC.)						12.0		16.0		12.0		16.0			
RECALL					MAXIMUM (ON/OFF)										
					MINIMUM (ON/OFF)						ON			ON	
					PEDESTRIAN (ON/OFF)										

* FREE OPERATION TIMING

Drawing File: N:\2011\2011148\00\Traffic\Sheets\2011148_00_CD010.dwg
 Layout: CD003
 Date: 03/20/2013
 Time: 15:27
 Technician: ddombrosky

Twist: -1.57079633

- WIRING LEGEND**
-  DISCONNECT SWITCH
 -  ELECTRIC METER
 -  VEHICULAR SIGNAL HEAD
 -  VEHICULAR SIGNAL HEAD W/ TURN ARROW
 -  PEDESTRIAN SIGNAL AND PUSHBUTTON
 -  GROUND ROD
 -  2/C #14 AWG. (LEAD-IN CABLE)
 -  5/C #14 AWG.
 -  7/C #14 AWG.
 -  2/C #14 AWG. (POWER)
 -  3/C #14 AWG. (POWER)



WIRING DIAGRAM
 NOT TO SCALE



CALCULATED
JWG

CHECKED
MAH

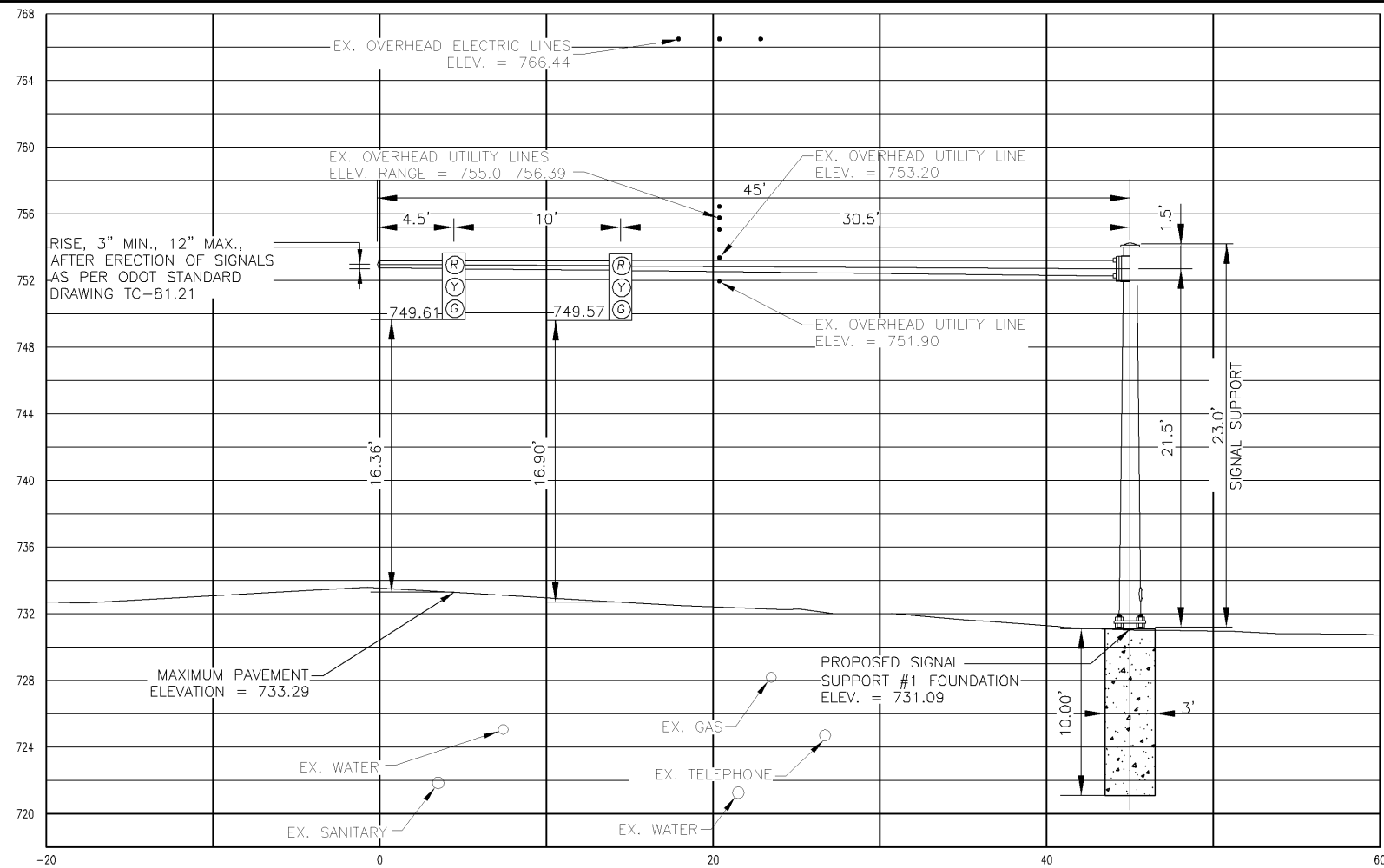
SIGNALIZATION DETAILS
 NOBLE ROAD / TERRACE ROAD

CUY-SUPERIOR RD/NOBLE RD

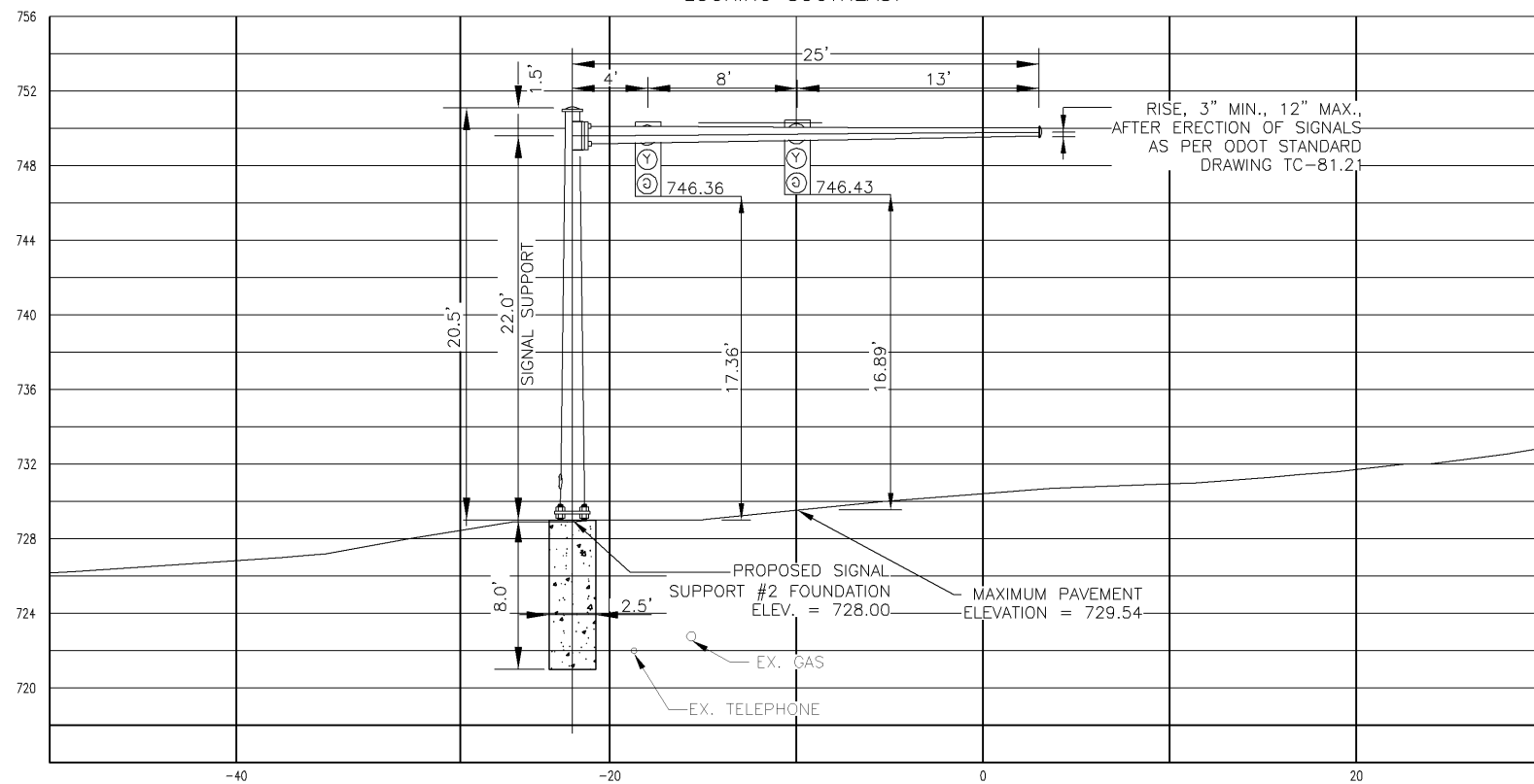
55

Drawing File: N:\2011\2011148\00\Traffic\Sheets\2011148.00_CD011.dwg
 Layout: CD013
 Date: 12/13/2013
 Time: 15:23:00
 Technician: ddombrosky

Twist: -1.57079633



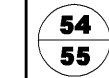
SIGNAL SUPPORT #1 TYPE 81.21, DESIGN 11
 STA. 60+58, 45' RT., NOBLE ROAD
 LOOKING SOUTHEAST



SIGNAL SUPPORT #2 TYPE 81.21, DESIGN 11
 STA. 60+10, 34' RT., NOBLE ROAD
 LOOKING NORTHEAST FROM TERRACE ROAD

SIGNAL ELEVATION VIEW
 NOBLE ROAD / TERRACE ROAD INTERSECTION

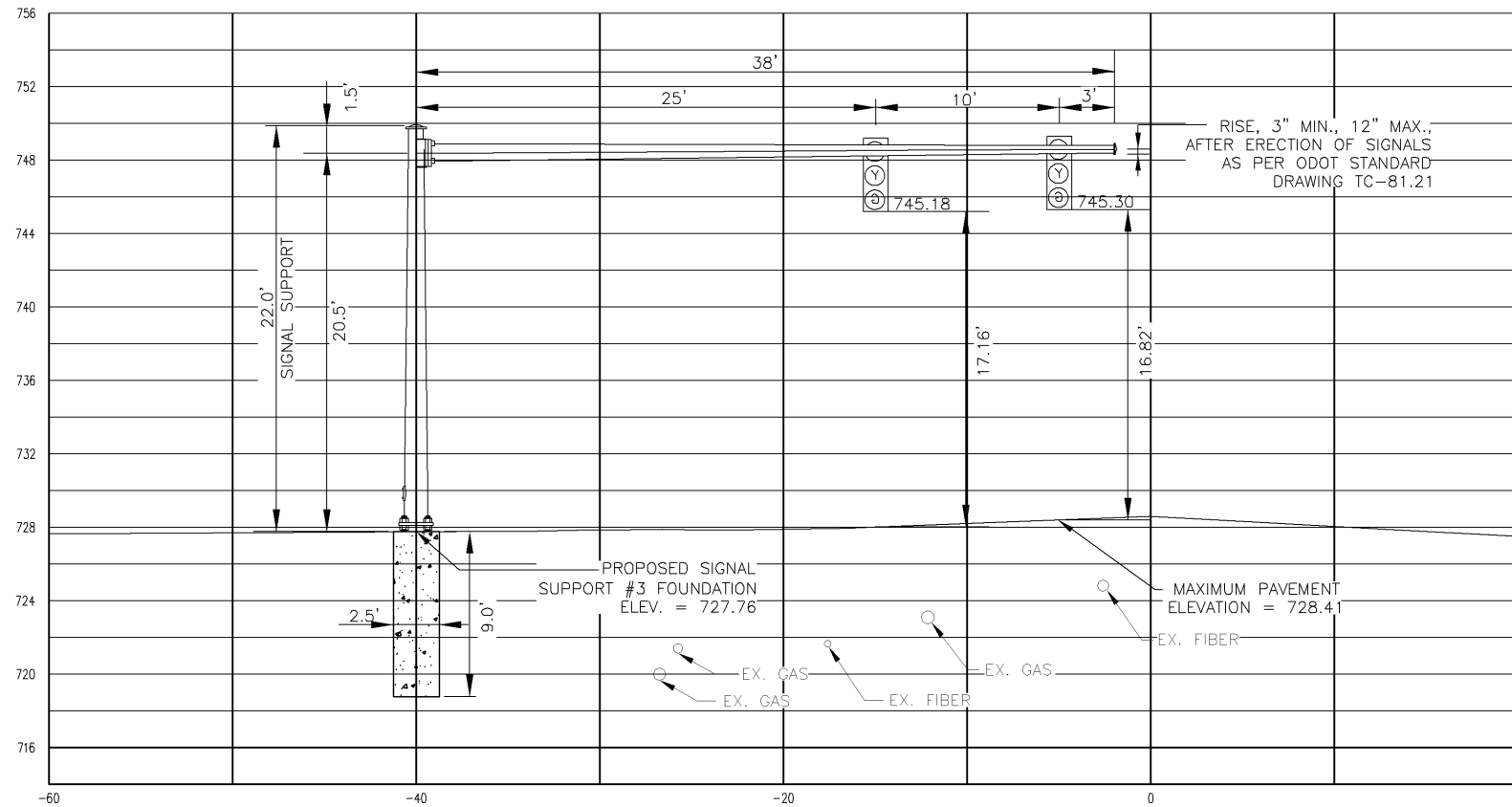
CUY-SUPERIOR RD/NOBLE RD



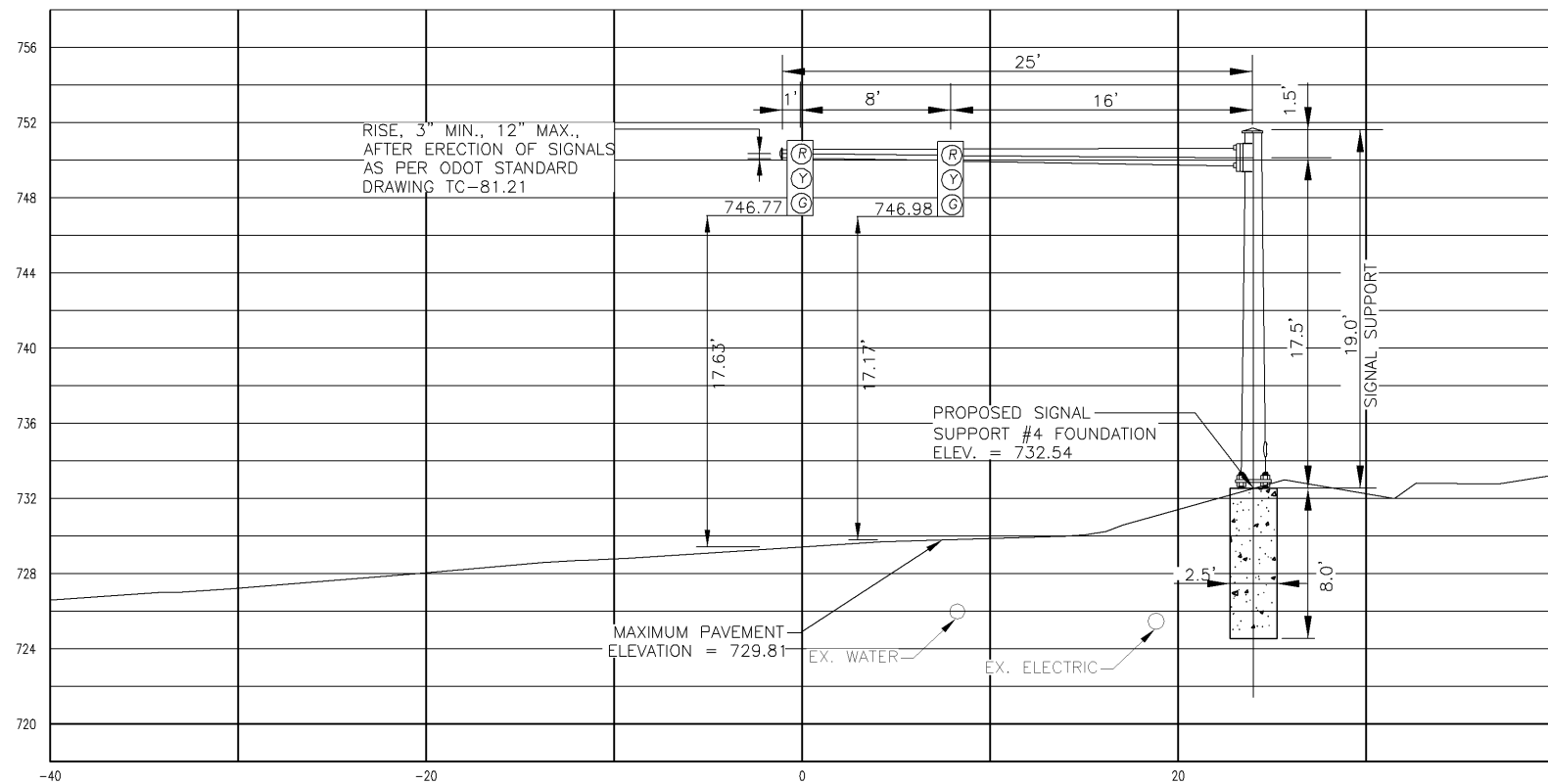
CALCULATED
 JWJ
 CHECKED
 MAH
 HORIZONTAL SCALE IN FEET
 0 5 10

Drawing File: N:\2011\2011148\00\Traffic\Sheets\2011148_00_CD011.dwg
 Layout: CD014
 Date: 12/13/2013
 Time: 10:23 AM
 Technician: ddombrosky

Twist: -1.57079633



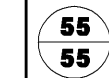
SIGNAL SUPPORT #3 TYPE 81.21, DESIGN 3
 STA. 60+00, 40' LT., NOBLE ROAD
 LOOKING SOUTHEAST



SIGNAL SUPPORT #4 TYPE 81.21, DESIGN 1
 STA. 60+48, 46' LT., NOBLE ROAD
 LOOKING NORTHEAST FROM TERRACE ROAD

SIGNAL ELEVATION VIEW
 NOBLE ROAD / TERRACE ROAD INTERSECTION

CUY-SUPERIOR RD/NOBLE RD



CALCULATED
 JWG
 CHECKED
 MAH
 HORIZONTAL SCALE IN FEET