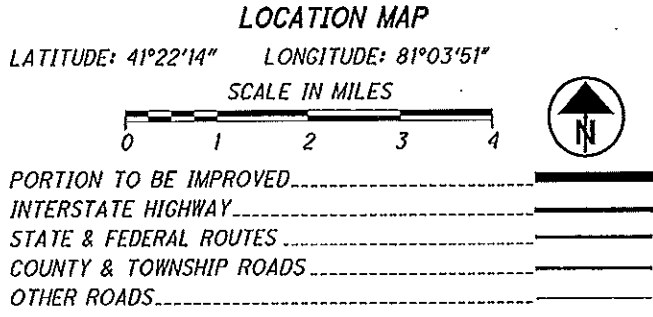
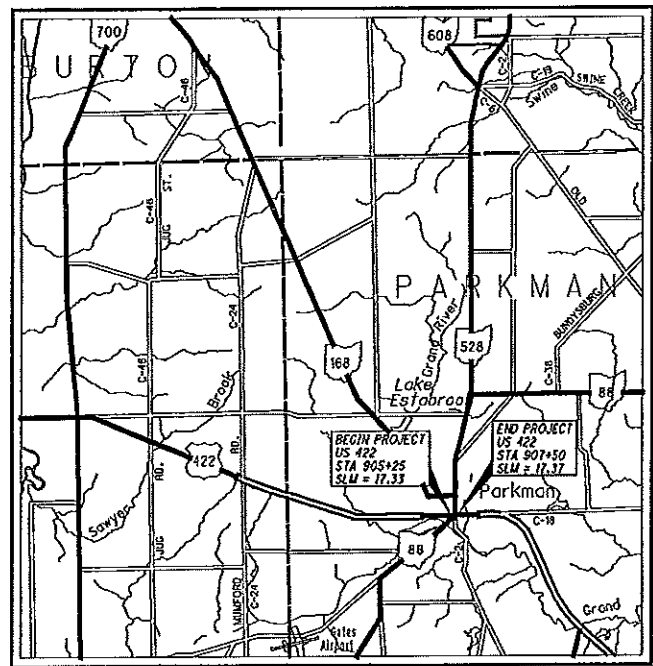


GEA - US 422-17.35 Intersection
180093 PID - 78343
Dist 12 2/1/2018

Contract Proposal Available @
www.contracts.dot.state.oh.us/home



DESIGN DESIGNATION	422(W)	422(E)	88/528(N)	88(S)
CURRENT ADT (2018)	8070	10230	7200	2960
DESIGN YEAR ADT (2038)	9020	12320	8230	3210
DESIGN HOURLY VOLUME (2038)	1020	1360	840	340
DIRECTIONAL DISTRIBUTION	67%	68%	60%	53%
TRUCKS (24 HOUR B&C)	9%	9%	11%	11%
DESIGN SPEED	40	40	40	40
LEGAL SPEED	35	35	40	40
DESIGN FUNCTIONAL CLASSIFICATION:				
RURAL PRINCIPAL ARTERIAL (U.S. 422)				
RURAL MINOR ARTERIAL (S.R. 88/ S.R. 528 - NORTH OF US 422)				
RURAL MAJOR COLLECTOR (S.R. 88 - SOUTH OF US 422)				

NHS PROJECT..... YES
DESIGN EXCEPTIONS..... NONE

UNDERGROUND UTILITIES
CONTACT BOTH SERVICES TWO WORKING DAYS BEFORE YOU DIG.

OHIO Utilities Protection SERVICE
Call Before You Dig
1-800-362-2764
(Non-members must be called directly)

OIL & GAS PRODUCERS UNDERGROUND PROTECTION SERVICE
1-800-925-0988

ENGINEERS SEAL:

STEVEN J. SCHEID, JR.
E-63357
REGISTERED PROFESSIONAL ENGINEER

SIGNED: *Steven J. Scheid, Jr.*, P.E., P.S.
DATE: 9/21/17

STANDARD CONSTRUCTION DRAWINGS										SUPPLEMENTAL SPECIFICATIONS
BP-3.1	7/18/14	RM-7.1	7/18/14	TC-22.10	10/18/13					800-2016 10/20/17
BP-4.1	7/19/13			TC-41.20	10/18/13					809 7/21/17
BP-5.1	7/19/13	HL-30.11	7/21/17	TC-42.20	10/18/13					821 4/20/12
BP-7.1	7/18/14	HL-30.21	1/17/14	TC-52.10	10/18/13					832 1/17/14
		HL-30.22	1/17/14	TC-52.20	7/21/17					875 1/17/14
CB-1.1	1/15/16			TC-65.11	7/21/17					921 4/20/12
CB-2.2	1/15/16	MT-95.31	7/21/17	TC-71.10	1/20/17					
		MT-95.32	7/21/17	TC-81.21	7/15/16					
MH-1.2	1/15/16	MT-97.10	7/18/14	TC-83.20	7/21/17					
		MT-97.12	1/20/17	TC-85.10	7/21/17					
DM-1.1	7/21/17	MT-99.20	7/21/17	TC-85.20	1/15/16					
DM-1.2	1/18/13	MT-101.90	7/21/17							
DM-4.3	1/15/16	MT-105.10	7/19/13							
DM-4.4	1/15/16	MT-110.10	7/19/13							
RM-1.1	7/18/14	TC-21.20	7/21/17							

PLAN PREPARED BY:
Mead & Hunt
4700 LAKEHURST OH, STE 110
COLUMBUS, OH 43016
(614) 792-5900 PHONE

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
GEA-422-17.35
PARKMAN TOWNSHIP
GEAUGA COUNTY

INDEX OF SHEETS:	
TITLE SHEET	1
TYPICAL SECTIONS	2
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INTERSECTION DETAIL	26
DRIVE AND SIDEWALK DETAIL	27
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TRAFFIC SIGNALS	32-46
RIGHT OF WAY PLAN	47-53

PROJECT DESCRIPTION
IMPROVE INTERSECTION, ENHANCE SAFETY AND REDUCE CONGESTION ON US-422 AT THE INTERSECTION WITH SR-88/SR-528 IN PARKMAN TOWNSHIP

PROJECT EARTH DISTURBED AREA: 0.35 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA: 0.55 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA: N/A; NOI NOT REQUIRED

2016 SPECIFICATIONS
THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

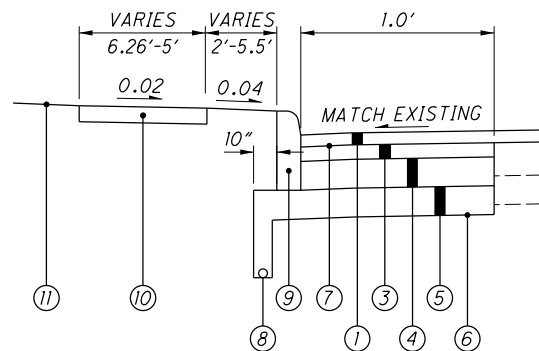
I HEREBY APPROVED THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

APPROVED *M. S. K.*
DATE 10-23-17 DISTRICT DEPUTY DIRECTOR

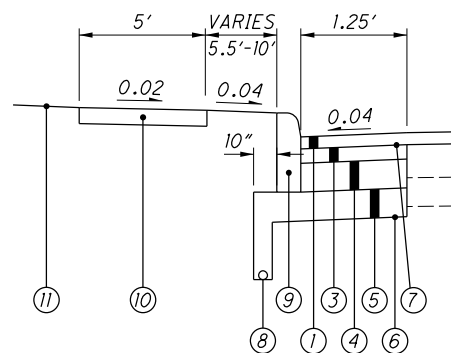
APPROVED *James Whaley*
DATE 11-14-17 DIRECTOR, DEPARTMENT OF TRANSPORTATION

FEDERAL PROJECT NO.	E060735
PID NO.	78343
CONSTRUCTION PROJECT NO.	.
RAILROAD INVOLVEMENT	NONE
GEA-422-17.35	
153	

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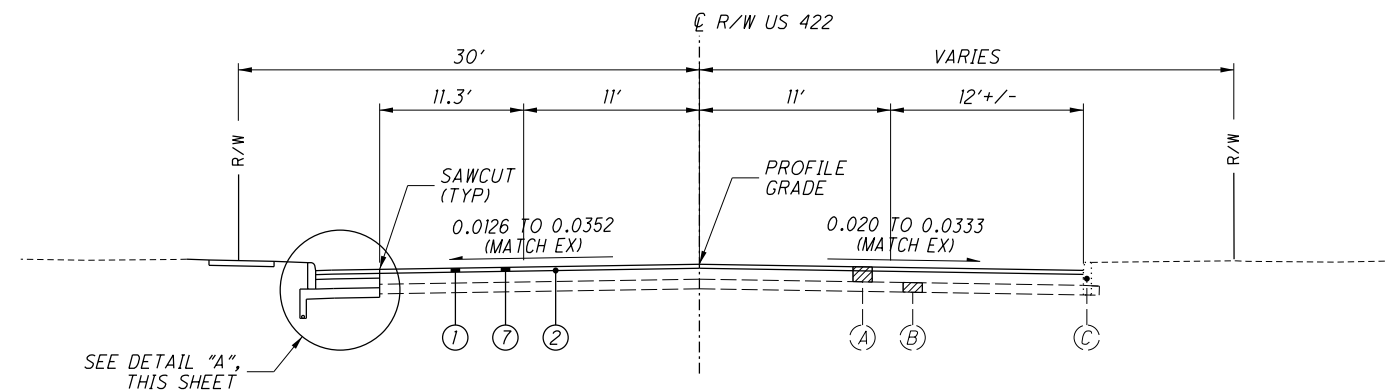
DETAIL "A"
NOT TO SCALE



DETAIL "B"
NOT TO SCALE

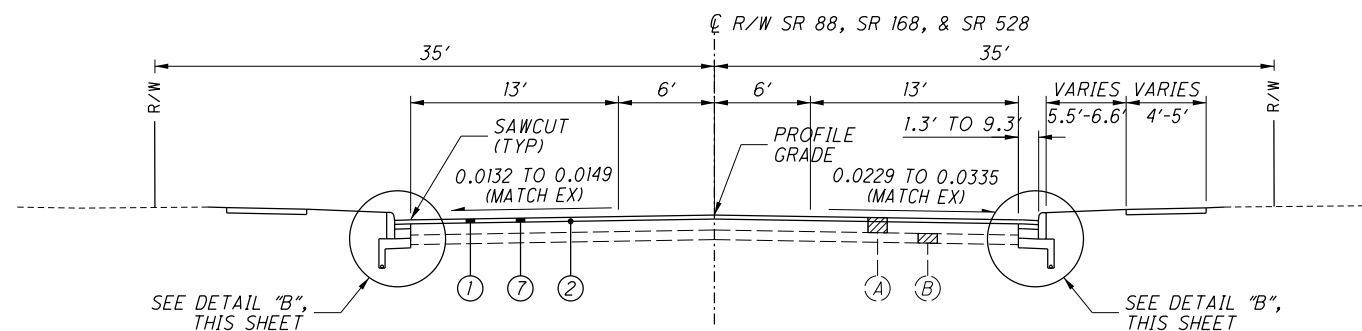
LEGEND

- ① ITEM 442 - 1½" ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A, (448), AS PER PLAN, PG 76-22M
- ② ITEM 407 - NON-TRACKING TACK COAT
- ③ ITEM 441 - 1¾" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448)
- ④ ITEM 301 - 9" ASPHALT CONCRETE BASE, PG64-22 (2 LIFTS)
- ⑤ ITEM 304 - 6" AGGREGATE BASE
- ⑥ ITEM 204 - SUBGRADE COMPACTION
- ⑦ ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE, 1½"
- ⑧ ITEM 605 - 4" BASE PIPE UNDERDRAINS
- ⑨ ITEM 609 - CURB, TYPE 6
- ⑩ ITEM 608 - 4" CONCRETE WALK
- ⑪ ITEM 659 - SEEDING AND MULCHING
- (A) EX ASPHALT CONCRETE
- (B) EX CONCRETE BASE
- (C) EX CURB
- (D) EX BRICK PAVERS



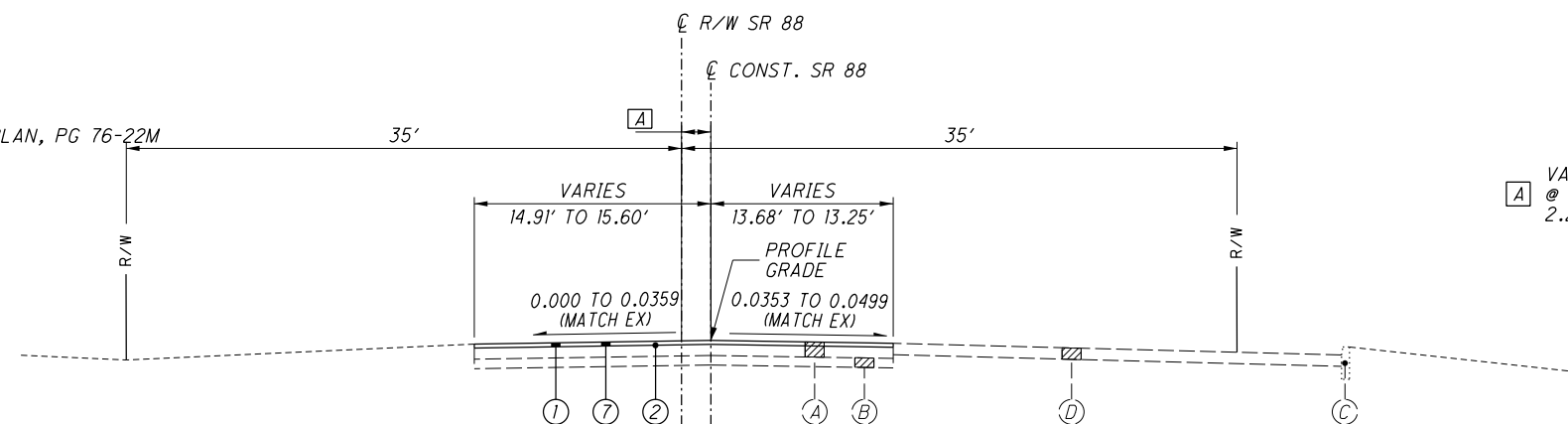
WIDENING & RESURFACING SECTION - US 422 INTERSECTION RETURNS

STA 905+25.00 TO STA 905+76.81 LT
STA 905+25.00 TO STA 906+15.33 RT
STA 907+47.65 TO STA 907+50.00 LT
STA 906+93.73 TO STA 907+50.00 RT
FOR STA 905+76.81 TO STA 907+47.65 LT, SEE INTERSECTION DETAIL, SHEET 26
FOR STA 906+15.33 TO STA 906+93.73 RT, SEE INTERSECTION DETAIL, SHEET 26



WIDENING & RESURFACING SECTION - SR 88, SR 168, & SR 528 INTERSECTION RETURNS

STA 24+67.29 TO STA 25+50.00 LT
24+74.25 TO STA 25+50.00 RT
FOR STA 23+85.80 TO STA 24+67.29 LT, SEE INTERSECTION DETAIL, SHEET 26
FOR STA 23+85.80 TO STA 24+74.25 RT, SEE INTERSECTION DETAIL, SHEET 26



WIDENING & RESURFACING SECTION - SR 88 INTERSECTION RETURNS

STA 1+00.00 TO STA 1+17.22 RT
STA 1+00.00 TO STA 1+23.82 LT
FOR STA 1+17.22 TO STA 1+46.19, SEE INTERSECTION DETAIL, SHEET 26
FOR STA 1+23.82 TO STA 1+48.82, SEE INTERSECTION DETAIL, SHEET 26

(A) VARIES FROM 1.84'
@ STA 1+00.00 TO
2.28' @ STA 1+23.82

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UTILITIES

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

BRAINARD GAS CORP.
ATTN: TIM REILLY
(ORWELL NATURAL GAS COMPANY)
8470 STATION ST.,
MENTOR, OHIO 44060
440-701-5115
TREILLY@EGAS.NET

GEAUGA COUNTY WATER RESOURCES
ATTN: GERARD MORGAN
470 CENTER ST., BLDG 3
CHARDON, OH 44024
440-279-1970
GERRY@GCCDWR.ORG

ODOT- DISTRICT 12
ATTN: TONY TOTH, PE
5500 TRANSPORTATION BLVD.
GARFIELD HEIGHTS, OHIO 44125
216-584-2220
ANTHONY.TOTH@DOT.STATE.OH.US

WINDSTREAM OHIO
ATTN: GEOFF HAMM
560 TERNES AVENUE
ELYRIA, OHIO 44305
440-329-4245
GEOFFREY.P.HAMM@WINDSTREAM.COM

OHIO EDISON
ATTN: DILLARD SMITH
1717 ASHLAND ROAD
MANSFIELD OH, 44905
419-521-6257

UTILITIES

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.

ROUNDING

THE ROUNDING AT SLOPE BREAKPOINTS SHOWN ON THE TYPICAL SECTIONS APPLIES TO ALL CROSS-SECTIONS EVEN THOUGH OTHERWISE SHOWN.

EXISTING PLANS

EXISTING PLANS ENTITLED GEA-88-2.07/GEA-528-1.32 (1961) AND WARREN-BURTON ROAD (SH 325 SECTION F) (1939) MAY BE INSPECTED IN THE ODOT DISTRICT 12 OFFICE IN GARFIELD HEIGHTS, OHIO.

CLEARING AND GRUBBING

REMOVAL WITHIN THE CONSTRUCTION LIMITS UNDER THE LUMP SUM BID FOR ITEM 201, CLEARING AND GRUBBING. THE FOLLOWING IS AN APPROXIMATE ESTIMATE OF THE NUMBER OF TREES AND STUMPS TO BE REMOVED.

SIZES	NO. TREES	NO. STUMPS	TOTAL
18"	1	0	1

SURVEYING PARAMETERS

PRIMARY PROJECT CONTROL MONUMENTS GOVERN ALL POSITION-ING ON ODOT PROJECTS. SEE TABLE BELOW. CONTAINING PROJECT CONTROL INFORMATION.

USE THE FOLLOWING PROJECT CONTROL, VERTICAL POSITIONING, AND HORIZONTAL POSITIONING PARAMETERS FOR ALL SURVEYING:

PROJECT CONTROL

POSITIONING METHOD: ODOT VRS
MONUMENT TYPE: TYPE B

VERTICAL POSITIONING

ORTHOMETRIC HEIGHT DATUM: NAVD88
GEOID: GEOID12A

HORIZONTAL POSITIONING

REFERENCE FRAME: NAD83 (2011)
ELLIPSOID: GRS80
MAP PROJECTION: LAMBERT CONFORMAL CONIC 2 PARALLEL
COORDINATE SYSTEM: OHIO STATE PLANE NORTH ZONE
COMBINED SCALE FACTOR: 0.9999062400
ORIGIN OF COORDINATE
SYSTEM: 0,0

USE THE POSITIONING METHODS AND MONUMENT TYPE USED IN THE ORIGINAL SURVEY TO RESTORE ALL MONUMENTS RELATED TO PRIMARY PROJECT CONTROL THAT ARE DAMAGED OR DESTROYED BY CONSTRUCTION ACTIVITIES. RESTORE THE DAMAGED OR DESTROYED MONUMENTS IN ACCORDANCE WITH CMS 623.

UNITS ARE IN U.S. SURVEY FEET. USE THE FOLLOWING CONVERSION FACTOR: 1 METER = 3.280833333 U.S. SURVEY FEET.

ITEM SPECIAL - FILL AND PLUG EXISTING CONDUIT

THIS ITEM SHALL CONSIST OF THE CONSTRUCTION OF BULK-HEADS IN AN EXISTING 12" IN DIAMETER CONDUIT AND FILLING THE AREA THUS SEALED OFF WITH ITEM 613, SAND OR OTHER MATERIAL APPROVED BY THE ENGINEER.

BULKHEADS SHALL BE LOCATED AT THE LIMITS OF THE AREA TO BE FILLED AS INDICATED ON THE PLANS. THE BULKHEADS SHALL CONSIST OF BRICK OR CONCRETE MASONRY WITH A MINIMUM THICKNESS OF 12 INCHES.

THE FILL MATERIAL SHALL BE PUMPED INTO PLACE, OR PLACED BY OTHER MEANS APPROVED BY THE ENGINEER, SO THAT, AFTER SETTLEMENT, AT LEAST 90 PERCENT OF THE CROSS-SECTIONAL AREA OF THE CONDUIT, FOR ITS ENTIRE LENGTH, SHALL BE FILLED. THE LENGTH OF FILLED AND PLUGGED CONDUIT TO BE PAID FOR SHALL BE THE ACTUAL NUMBER OF FEET (MEASURED ALONG THE CENTERLINE OF EACH CONDUIT FROM OUTER FACE TO OUTER FACE OF BULKHEADS) FILLED AND PLUGGED AS DESCRIBED ABOVE.

IN LIEU OF FILLING AND PLUGGING THE EXISTING CONDUIT, THE PIPE MAY BE CRUSHED AND BACK-FILLED IN ACCORDANCE WITH THE PROVISIONS OF 203, OR IT MAY BE REMOVED. THE LENGTH, MEASURED AS PROVIDED ABOVE, SHALL BE PAID FOR AT THE CONTRACT PRICE PER FOOT FOR, ITEM SPECIAL, FILL AND PLUG EXISTING CONDUIT.

CROSSINGS AND CONNECTIONS TO EXISTING PIPES AND UTILITIES

WHERE PLANS PROVIDE FOR A PROPOSED CONDUIT TO BE CONNECTED TO, OR CROSS OVER OR UNDER AN EXISTING SEWER OR UNDERGROUND UTILITY, THE CONTRACTOR SHALL LOCATE THE EXISTING PIPES OR UTILITIES BOTH AS TO LINE AND GRADE BEFORE STARTING TO LAY THE PROPOSED CONDUIT.

IF IT IS DETERMINED THAT THE ELEVATION OF THE EXISTING CONDUIT, OR EXISTING APPURTENANCE TO BE CONNECTED, DIFFERS FROM THE PLAN ELEVATION OR RESULTS IN A CHANGE IN THE PLAN CONDUIT SLOPE, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WILL BE AFFECTED BY THE VARIANCE IN THE EXISTING ELEVATIONS.

IF IT IS DETERMINED THAT THE PROPOSED CONDUIT WILL INTERSECT AN EXISTING SEWER OR UNDERGROUND UTILITY IF CONSTRUCTED AS SHOWN ON THE PLAN, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WOULD BE AFFECTED BY THE INTERFERENCE WITH AN EXISTING FACILITY.

PAYMENT FOR ALL THE OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 611 CONDUIT ITEM.

CONSTRUCTION NOISE

ACTIVITIES AND LAND USE ADJACENT TO THIS PROJECT MAY BE AFFECTED BY CONSTRUCTION NOISE. IN ORDER TO MINIMIZE ANY ADVERSE CONSTRUCTION NOISE IMPACTS, DO NOT OPERATE POWER-OPERATED CONSTRUCTION-TYPE DEVICES BETWEEN THE HOURS OF 7:00PM AND 7:00AM. IN ADDITION, DO NOT OPERATE AT ANY TIME ANY DEVICE IN SUCH A MANNER THAT THE NOISE CREATED SUBSTANTIALLY EXCEEDS THE NOISE CUSTOMARILY AND NECESSARILY ATTENDANT TO THE REASON-ABLE AND EFFICIENT PERFORMANCE OF SUCH EQUIPMENT.

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.

ITEM SPECIAL - DRILLED WATER WELL ABANDONED

SEE SCD RM-7.1 FOR THE DETAILS OF THIS ITEM.

REVIEW OF DRAINAGE FACILITIES

BEFORE ANY WORK IS STARTED ON THE PROJECT AND AGAIN BEFORE FINAL ACCEPTANCE BY THE STATE, REPRESENTATIVES OF THE STATE AND THE CONTRACTOR, ALONG WITH LOCAL REPRESENTATIVES, SHALL MAKE AN INSPECTION OF ALL EXISTING SEWERS WHICH ARE TO REMAIN IN SERVICE AND WHICH MAY BE AFFECTED BY THE WORK. THE CONDITION OF THE EXISTING CONDUITS AND THEIR APPURTENANCE SHALL BE DETERMINED FROM FIELD OBSERVATIONS. RECORDS OF THE INSPECTION SHALL BE KEPT IN WRITING BY THE STATE.

ALL NEW CONDUITS, INLETS, CATCH BASINS, AND MANHOLES CONSTRUCTED AS A PART OF THE PROJECT SHALL BE FREE OF ALL FOREIGN MATTER AND IN A CLEAN CONDITION BEFORE THE PROJECT WILL BE ACCEPTED BY THE STATE.

ALL EXISTING SEWERS INSPECTED INITIALLY BY THE ABOVE MENTIONED PARTIES SHALL BE MAINTAINED AND LEFT IN A CONDITION REASONABLY COMPARABLE TO THAT DETERMINED BY THE ORIGINAL INSPECTION. ANY CHANGE IN THE CONDITION RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE CORRECTED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER.

PAYMENT FOR ALL OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 611 CONDUIT ITEMS.

ITEM 619, FIELD OFFICE, TYPE B, AS PER PLAN

A TYPE B FIELD OFFICE IS REQUIRED FOR THIS PROJECT.

THE FOLLOWING REVISIONS TO EQUIPMENT SUPPLIED WITH THE TYPE B FIELD OFFICE, AS SPECIFIED IN TABLE 619.02-1, FIELD OFFICE, SHALL APPLY:

1. THE COPIER SUPPLIED MUST MEET THE REQUIREMENTS OF COPIER SUPPLIED WITH THE TYPE C FIELD OFFICE.
2. THE BROADBAND INTERNET CONNECTION MUST MEET A MINIMUM DOWNLOAD SPEED OF 10MB PER SECOND AND A MINIMUM UPLOAD SPEED OF 5MB PER SECOND.

CONTRACTOR SHALL FURNISH AND SET UP A WI-FI ROUTER MEETING THE REQUIREMENTS OF IEEE 802.11AC FOR THE EXCLUSIVE USE OF THE DEPARTMENT.

ALL OTHER FIELD OFFICE ITEMS SUPPLIED SHALL MEET THE REQUIREMENTS OF A TYPE B, FIELD OFFICE.

ITEM 619, FIELD OFFICE, TYPE B, AS PER PLAN 6 MNTHS

CONTROL POINT TABLE

CONTROL POINT	DESCRIPTION	NORTHING (GROUND)	EASTING (GROUND)	ELEVATION	STA	OFFSET	NORTHING (GRID)	EASTING (GRID)
TBM1 (SV1151)	CHISLED SQUARE ON THE SOUTHWEST CORNER OF A TRAFFIC BOX ON THE NORTH SIDE OF US 422 SOUTH OF THE SIGN FOR *JDS POST HOUSE*	624,087.53	2,363,082.14	1088.26	909+41.63	26.62' LT		
TBM2 (SV921)	CHISLED SQUARE ON THE NORTHEAST CORNER OF A TRAFFIC BOX ON THE SOUTH SIDE OF US 422 EAST OF DRIVE FOR RESIDENCE # 16171	624,011.43	2,362,459.43	1086.37	903+16.88	24.11' RT		
CP1	3/4" IRON PIN STAMPED "PRIMARY PROJECT CONTROL"	624,093.45	2,363,099.38		909+59.04	31.99' LT	624,034.93	2,362,877.81
CP2	3/4" IRON PIN STAMPED "AZIMUTH MARK"	624,008.06	2,362,525.91		903+82.91	29.64' RT	623,949.55	2,362,304.40

CALCULATED
ANM
CHECKED
SJS

GENERAL NOTES

GEA - 422 - 17.35

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53

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UNRECORDED STORM WATER DRAINAGE

FURNISH A CONTINUANCE FOR ALL UNRECORDED STORM WATER DRAINAGE, SUCH AS ROOF DRAINS, FOOTER DRAINS, OR YARD DRAINS, DISTURBED BY THE WORK. FURNISH EITHER AN OPEN CONTINUANCE OR AN UNOBSTRUCTED CONTINUANCE BY CONNECTING A CONDUIT THROUGH THE CURB OR INTO A DRAINAGE STRUCTURE. THE LOCATION, TYPE, SIZE AND GRADE OF THE NEEDED CONDUIT TO REPLACE OR EXTEND AN EXISTING DRAIN WILL BE DETERMINED BY THE ENGINEER. ALL SUCH CONTINUANCE REQUIRES A RIGHT OF WAY USE PERMIT.

THE FOLLOWING CONDUIT TYPES MAY BE USED: 707.33, 707.41 NON-PERFORATED, 707.42, 707.43, 707.45, 707.46, 707.47, 707.51, 707.52 SDR35.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER FOR THE WORK NOTED ABOVE:

611, 12" CONDUIT, TYPE B, FOR DRAINAGE CONNECTION
50 FT.

611, 12" CONDUIT, TYPE C, FOR DRAINAGE CONNECTION
50 FT.

611, 6" CONDUIT, TYPE E, FOR DRAINAGE CONNECTION
50 FT.

611, 6" CONDUIT, TYPE F, FOR DRAINAGE CONNECTION
50 FT.

SEEDING AND MULCHING

THE FOLLOWING QUANTITIES ARE PROVIDED TO PROMOTE GROWTH AND CARE OF PERMANENT SEEDED AREAS:

659, SOIL ANALYSIS TEST 2 EACH

659, TOPSOIL 92 CU. YD.

659, SEEDING AND MULCHING 825 SQ. YD
.659, REPAIR SEEDING AND MULCHING 42 SQ. YD

659, INTER-SEEDING 42 SQ. YD.

659, COMMERCIAL FERTILIZER 0.12 TON

659, LIME 0.17 ACRES

659, WATER 5 M. GAL.

SEEDING AND MULCHING SHALL BE APPLIED TO ALL AREAS OF EXPOSED SOIL BETWEEN THE RIGHT-OF-WAY LINES, AND WITHIN THE CONSTRUCTION LIMITS FOR AREAS OUTSIDE THE RIGHT-OF-WAY LINES COVERED BY WORK AGREEMENT OR SLOPE EASEMENT. QUANTITY CALCULATIONS FOR SEEDING AND MULCHING ARE BASED ON THESE LIMITS.

ITEM 202, REMOVAL MISC.: WOOD RAMP AND STEPS

THIS ITEM CONSISTS OF REMOVING A SYSTEM OF WOOD RAMPS, LANDINGS, AND RAILING AND DISPOSING OF THEM ACCORDING TO CMS 202.02. BACKFILL ANY RESULTING CAVITIES AND REGRADE PER CMS 202.02.

THIS ITEM SHALL BE PAID AS A LUMP SUM ITEM. WORK DESCRIBED IN THIS NOTE, INCLUDING THE REMOVAL, DISPOSAL AND BACKFILLING SHALL BE INCLUDED IN THE LUMP SUM COST OF ITEM 202, REMOVAL MISC.: WOOD RAMP AND STEPS.

PROFILE AND ALIGNMENT

PLACE THE PROPOSED PAVEMENT TO FOLLOW THE ALIGNMENT AND PROFILE OF THE EXISTING PAVEMENT. PLACE THE PROPOSED ASPHALT CONCRETE OVERLAY WITH A UNIFORM THICKNESS OF 1.5 INCHES.

PART-WIDTH CONSTRUCTION

BECAUSE OF THE NECESSITY TO BUILD THIS PROJECT UNDER TRAFFIC AND TO CONSTRUCT THE FULL PAVEMENT WIDTH IN STAGES, EXERCISE CARE TO PREVENT THE CONSTRUCTION OF A BUTT JOINT IN THE BASE COURSES. LAP LONGITUDINAL JOINTS AS SHOWN ON STANDARD CONSTRUCTION DRAWING BP-3.1.

PAVEMENT RESTORATION FOR PIPE INSTALLATIONS AND/OR REMOVALS

THE FOLLOWING QUANTITY HAS BEEN PROVIDED FOR PAVEMENT RESTORATION FOLLOWING INSTALLATION AND/OR REMOVAL OF PIPES.

ITEM 301 ASPHALT CONCRETE BASE, PG64-22 10 CU. YDS.

THE ABOVE QUANTITY IS BASED ON A 301 THICKNESS OF 9 INCHES AND A PAVEMENT RESTORATION WIDTH THAT INCLUDES THE TRENCH WIDTH PLUS TWO FEET ON EACH SIDE OF THE TRENCH.

PROVIDE ANY MATERIALS USED OUTSIDE THE LIMITS STATED ABOVE AT NO ADDITIONAL COST.

PAVEMENT RESTORATION FOR DRAINAGE STRUCTURE INSTALLATIONS AND REMOVALS

THE FOLLOWING QUANTITY IS PROVIDED FOR PAVEMENT RESTORATION FOLLOWING INSTALLATION OF ITEM 604 DRAINAGE STRUCTURES.

ITEM 301 ASPHALT CONCRETE BASE, PG64-22 5 CU. YDS.

THE ABOVE QUANTITY IS BASED ON A 301 THICKNESS OF 9 INCHES AND A WIDTH OF TWO FEET AROUND THE PERIMETER OF THE DRAINAGE STRUCTURE.

PROVIDE ANY MATERIALS USED OUTSIDE THE LIMITS STATED ABOVE AT NO ADDITIONAL COST.

PROJECTS WITHIN SOURCE WATER PROTECTION AREA

THE PROJECT IS LOCATED WITHIN THE BP OIL-SITE #6266 (PWS ID #2864412) AND JD'S POST HOUSE RESTAURANT (PWS ID #2841512) DRINKING WATER SOURCE PROTECTION AREAS. IN ORDER TO MINIMIZE THE POTENTIAL FOR A RELEASE IN THESE SENSITIVE AREAS, ALL PROJECT RELATED FUELING AND/OR MAINTENANCE ACTIVITIES SHALL BE ENVIRONMENTALLY RESPONSIBLE MANNER. THE CONTRACTOR SHALL UTILIZE PROPER CONTAINMENT AND DIKING IN REFUELING AREAS, AND SHALL NOT STORE AND IDLE EQUIPMENT, FUELS AND ANY TOXIC/HAZARDOUS MATERIALS AND CHEMICALS SHALL NOT BE STORED NEAR ANY DRAINAGE WAYS, DITCHES OR STREAMS. A SPILL KIT IS TO BE MAINTAINED ON-SITE THROUGHOUT CONSTRUCTION ACTIVITIES. SPILLS OF FUELS, OILS, CHEMICALS OR OTHER MATERIALS WHICH COULD POSE A THREAT TO GROUND-WATER SHALL BE CLEANED UP IMMEDIATELY BY THE CONTRACTOR. IF THE SPILL IS A REPORTABLE AMOUNT, THE CONTRACTOR SHOULD CONTRACT PARKMAN TOWNSHIP FIRE AND RESCUE 440-548-2515.

ITEM 638, 10" STEEL PIPE ENCASEMENT, OPEN CUT, AS PER PLAN

THE CONTRACTOR SHALL FURNISH AND INSTALL SEGMENTED STEEL CASING, SPACERS, AND END CAPS AROUND THE EXISTING UTILITY LINES WHERE SHOWN ON THE PLANS OR AS ORDERED BY THE ENGINEER. CONFORM TO ITEM 638 EXCEPT AS MODIFIED BY THIS NOTE.

THE SPLIT CASING SEGMENTS SHALL BE CUT FROM STEEL CASING PIPE CONFORMING TO CMS 748.06. STEEL PLATE FOR CASING FLANGES SHALL CONFORM TO ASTM A36. WELDING OF FLANGES TO THE PIPE SEGMENTS SHALL BE IN ACCORDANCE WITH CMS 513.21 AND 711.02. ALTERNATE PRODUCTS SHALL BE APPROVED BY THE ENGINEER.

THE EXISTING UTILITY SHALL REMAIN IN SERVICE DURING THE CASING INSTALLATION. SECTIONS SHALL BE INSTALLED SO THAT BOTH THE NEWLY PLACED LENGTHS OF CASING AND THE EXISTING UTILITY REMAIN FULLY SUPPORTED EITHER ON THE NEWLY PLACED COMPACTED BEDDING OR THE EXISTING BEDDING, RESPECTIVELY. ONLY AS MUCH LENGTH OF UTILITY SHALL BE EXPOSED AS NECESSARY TO INSTALL THE BOTTOM SEGMENT OF THE SUBSEQUENT CASING SECTIONS. EXTREME CARE SHALL BE TAKEN TO PREVENT DAMAGE TO THE EXISTING UTILITY. ANY DAMAGE CAUSED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.

CASING SEGMENTS SHALL BE HANDLED WITH EQUIPMENT DESIGNED TO PREVENT DAMAGE TO THE COATING. CASING SEGMENTS SHALL BE HOISTED BY MEANS OF A WIDE BELT SLING. CHAINS, CABLES, TONGS OR OTHER EQUIPMENT LIKELY TO DAMAGE THE COATING WILL NOT BE PERMITTED, NOR WILL DRAGGING OR SKIDDING THE CASING.

WELDING OF THE TRANSVERSE AND LONGITUDINAL JOINT BETWEEN THE CASING HALVES SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF AWWA STANDARD C206, "FIELD WELDING OF STEEL WATER PIPE" AND SHALL BE PERFORMED BY A CERTIFIED WELDER.

BEFORE BACKFILLING, THE ENTIRE SURFACE OF THE ASSEMBLED CASING SHALL BE EXAMINED BY THE INSPECTOR. DAMAGE TO THE COATING SHALL BE REPAIRED. BACKFILL SHALL BE CAREFULLY PLACED AND COMPACTED BY HAND TO AVOID DAMAGE TO THE PIPE COATING. MOVEMENT OF CONSTRUCTION EQUIPMENT AND ALL OTHER VEHICLES AND LOADS OVER AND ADJACENT TO THE PIPE SHALL BE DONE AT THE CONTRACTOR'S RISK. ANY CASING WHICH IS DAMAGED THROUGH ANY CAUSE SHALL BE REPLACED BY THE CONTRACTOR AS DIRECTED BY THE ENGINEER AT NO ADDITIONAL COST TO THE DEPARTMENT.

ALL WORK AND MATERIALS DESCRIBED IN THIS NOTE, INCLUDING THE EXCAVATION, PLACING THE SPLIT CASING, WELDING, AND BACKFILL SHALL BE INCLUDED IN THE PER FOOT COST OF ITEM 638, 10" STEEL PIPE ENCASEMENT, OPEN CUT, AS PER PLAN

ITEM 608, WALKWAY, MISC.: 10" CONCRETE WALK

CONSTRUCT A CONCRETE WALK AS DESCRIBED IN CMS 608. THE WALK SHALL HAVE A 10" THICKNESS.

ITEM 608, CURB RAMP, AS PER PLAN

CONSTRUCT A CURB RAMP AS DESCRIBED IN CMS 608 AND SCD BP-7.1 EXCEPT THE CURB RAMP SHALL HAVE A 10" THICKNESS.

ITEM 611, MANHOLE NO. 3, AS PER PLAN

THIS ITEM CONSISTS OF CONSTRUCTING A "DOG-HOUSE" STYLE MANHOLE PER CMS 611 AND MH-1.2, AS MODIFIED WITHIN THIS NOTE. MANHOLES ARE BEING CONSTRUCTED AROUND EXISTING WYE(S) AND/OR VALVE(S) OF THE EXISTING SANITARY VACUUM SEWER SYSTEM TO PROVIDE FUTURE MAINTENANCE ACCESS TO SAID FEATURES. THE VACUUM SEWER LINE(S) ARE TO REMAIN IN SERVICE AT ALL TIMES. THE PLAN STATION, OFFSET, AND ELEVATION OF THE BOTTOM OF THE MANHOLE SHOULD BE CONSIDERED APPROXIMATE. IF A PRECAST MANHOLE IS USED, THE CONTRACTOR SHALL VERIFY THE BOTTOM ELEVATION AND PIPE ALIGNMENTS BEFORE ORDERING THE MANHOLE. THE DEPARTMENT IS NOT RESPONSIBLE FOR DEVIATIONS.

CAREFULLY EXCAVATE THE LIMITS OF THE PROPOSED MANHOLE. CAREFULLY EXPOSE THE VACUUM SEWER. PROVIDE TEMPORARY SUPPORT OF VACUUM SEWER LINE. REMOVE THE TOP HALF OF THE EXISTING CASING PIPE, IF ANY, WITHIN THE INTERIOR LIMITS OF THE MANHOLE. ALTERNATIVELY, THE ENTIRE CASING PIPE WITHIN THE INTERIOR LIMITS OF THE MANHOLE MAY BE REMOVED. CONSTRUCT A CAST IN PLACE OR A PRECAST BOTTOM SLAB FOR THE MANHOLE. THE TOP OF THE SLAB SHALL BE A MINIMUM OF 12" BELOW THE BOTTOM OF THE SEWER.

MANHOLE(S) AROUND A VALVE SHALL BE ORIENTED SUCH THAT THE VALVE IS LOCATED NEAR THE SIDE OF THE MANHOLE. THE STEPS OF THE MANHOLE SHALL BE LOCATED ON THE OPPOSITE SIDE OF THE MANHOLE. SECURE THE VALVE RISER TO THE SIDE OF THE MANHOLE IN A MANNER ACCEPTABLE TO THE ENGINEER. MANHOLE(S) AROUND A WYE SHALL BE ORIENTED SUCH THAT THE WYE IS GENERALLY IN THE CENTER OF THE MANHOLE.

INSIDE THE MANHOLE, PLACE SAND (CMS 703.06) IN 6" LIFTS TO PROVIDE A MINIMUM OF 12" OF COVER OVER THE VACUUM SEWER LINE. THE SAND SHALL COMPLETELY COVER THE VALVE. COMPACT THE SAND USING A METHOD APPROVED BY THE ENGINEER.

ALL WORK AND MATERIALS DESCRIBED IN THIS NOTE, INCLUDING THE EXCAVATION, REMOVAL OF THE CASING PIPE, THE CONSTRUCTION OF MANHOLE, BACKFILL, AND PLACING THE SAND SHALL BE INCLUDED IN THE PER EACH COST OF ITEM 611, MANHOLE NO. 3, AS PER PLAN.

ITEM SPECIAL, PARKING BLOCK REMOVED

THIS ITEM CONSISTS OF REMOVING A CONCRETE PARKING BLOCK INCLUDING ANY ANCHORAGE SYSTEM AND DISPOSING OF THEM ACCORDING TO CMS 202.02.

THIS ITEM SHALL BE MEASURED PER EACH PARKING BLOCK. WORK DESCRIBED IN THIS NOTE, INCLUDING THE REMOVAL AND DISPOSAL OF THE PARKING BLOCK AND ANCHOR(S) SHALL BE INCLUDED IN THE PER EACH COST OF ITEM SPECIAL, PARKING BLOCK REMOVED.

ITEM 202, REMOVAL MISC.: WOOD BORDER

THIS ITEM CONSISTS OF REMOVING A WOOD BORDER INCLUDING ANY ANCHORAGE SYSTEM AND DISPOSING OF THEM ACCORDING TO CMS 202.02. WHEN A PORTION OF THE BORDER IS TO REMAIN, CUT A NEAT JOINT AT THE REMOVAL LIMIT. IF DIRECTED BY THE ENGINEER, ANCHOR THE BORDER TO REMAIN NEAR THE JOINT IN A MANNER SIMILAR TO THE REMOVED ANCHORS. A REMOVED ANCHOR IN GOOD CONDITION MAY BE REUSED.

THIS ITEM SHALL BE MEASURED PER FOOT OF WOOD BORDER REMOVED. WORK DESCRIBED IN THIS NOTE, INCLUDING THE REMOVAL AND DISPOSAL OF THE WOOD BORDER AND ANCHOR(S) AND ANCHORING THE REMAINING BORDER SHALL BE INCLUDED IN THE PER FOOT COST OF ITEM 202, REMOVAL MISC.: WOOD BORDER

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ITEM SPECIAL - MISCELLANEOUS METAL

EXISTING CASTINGS MAY PROVE TO BE UNSUITABLE FOR REUSE, AS DETERMINED BY THE ENGINEER. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE THE CASTINGS OF THE REQUIRED TYPE, SIZE AND STRENGTH (HEAVY OR LIGHT DUTY) FOR THE PARTICULAR STRUCTURE IN QUESTION. ALL MATERIAL SHALL MEET ITEM 611 OF THE SPECIFICATIONS AND SHALL HAVE THE PRIOR APPROVAL OF THE ENGINEER.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER.

SPECIAL, MISCELLANEOUS METAL 5000 POUNDS

THE CONTRACTOR IS CAUTIONED TO USE EXTREME CARE IN THE REMOVAL, STORAGE AND REPLACEMENT OF ALL EXISTING CASTINGS. CASTINGS DAMAGED BY THE NEGLIGENCE OF THE CONTRACTOR, AS DETERMINED BY THE ENGINEER, SHALL BE REPLACED WITH THE PROPER NEW CASTINGS AT THE EXPENSE OF THE CONTRACTOR.

ITEM 442 ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE A, (448), AS PER PLAN, PG 76-22M

THE COARSE VIRGIN AGGREGATE AND AT LEAST 50% OF FINE VIRGIN AGGREGATE FOR THIS ITEM SHALL BE LIMITED TO AIR COOLED BLAST FURNACE SLAG (ACBFS) OR TRAP ROCK FROM ONTARIO.

TABLE 442.02-2 APPLIES EXCEPT NO. 4 SIEVE REQUIREMENTS ARE 52 TO 60 TOTAL PERCENT PASSING. FOR THE NO. 4 SIEVE DO NOT EXCEED 63 IN PRODUCTION.

ASPHALT CONCRETE SURFACE COURSE SEALING REQUIREMENTS

IN ADDITION TO THE GUTTER SEALING REQUIREMENTS SPECIFIED IN SCD BP-3.1 AND C&MS 401.15, AFTER COMPLETION OF THE SURFACE COURSE, THE CONTRACTOR SHALL USE A CERTIFIED 702.01 PG BINDER TO SEAL THE FOLLOWING LOCATIONS:

- ALL CASTINGS INCLUDING BUT NOT LIMITED TO MONUMENTS, MANHOLES, WATER VALVES, CATCH BASINS, CURB INLETS.
- BUTT JOINTS AND FEATHER JOINTS INCLUDING BRIDGE APPROACHES.
- FORWARD JOINT FOR DRIVEWAY ASPHALT AND TRAILING JOINT WHEN BUTTING TO EXISTING ASPHALT DRIVE.
- PERIMETER OF ALL PAVEMENT REPAIRS OR OTHER ASPHALT INLAYS WHEN PAVEMENT REPAIRS/INLAYS ARE NOT OVERLAID WITH AN ASPHALT CONCRETE SURFACE COURSE.
- 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 2-3 INCHES.

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

ITEM 202 - BUILDING DEMOLISHED, AS PER PLAN, PARCEL 5-WD, 2 STORY BRICK, BASEMENT

CAREFULLY REMOVE STONE BLOCK BEARING THE NAME "CROMWELL" FROM THE FACADE OF BUILDING IDENTIFIED FOR DEMOLITION AT 16208 MAIN MARKET STREET (PARCEL 5.) CAREFULLY CHISEL SURROUNDING MORTAR AND BRICK OFF THE OUTSIDE EDGES OF THE BLOCK. TRANSPORT THE STONE BLOCK TO 16295 MAIN MARKET STREET (PARKMAN TOWNSHIP COMMUNITY HOUSE.) CONTACT JON FEGUSON, PARKMAN TOWNSHIP TRUSTEE, AT 330-360-0869 TO MAKE ARRANGEMENTS FOR DELIVERY A MINIMUM OF 7 DAYS IN ADVANCE.

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ITEM 614, MAINTAINING TRAFFIC

THROUGH TRAFFIC SHALL BE MAINTAINED AT ALL TIMES BY USE OF THE EXISTING PAVEMENT AND/OR THE COMPLETED PAVEMENT.

LENGTH AND DURATION OF LANE CLOSURES AND RESTRICTIONS SHALL BE AT THE APPROVAL OF THE ENGINEER AND AS DESCRIBED BELOW IN THE WORK ZONE RESTRICTIONS NOTE. 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.

THE CONTRACTOR SHALL MAINTAIN SAFE AND SATISFACTORY ACCESS TO ABUTTING PROPERTY AT ALL TIMES. ACCESS WILL BE MAINTAINED TO PARKMAN TOWNSHIP PARK THROUGHOUT CONSTRUCTION.

THE CONTRACTOR SHALL FURNISH AND MAINTAIN ALL NECESSARY SAFEGUARDS, SUCH AS DRUMS, REPLACEMENT DRUMS, FLAGGERS AND SUCH OTHER TRAFFIC CONTROL DEVICES AS PROVIDED IN ITEM 614, MAINTAINING TRAFFIC, SO AS TO AVOID DAMAGE AND/ OR INJURY TO VEHICLES AND PERSONS USING THE ROADWAY DURING CONSTRUCTION.

EXISTING TRAFFIC CONTROL DEVICES (SIGNS AND/OR TRAFFIC SIGNALS), LOCATED WITHIN THE WORK AREA, WHICH ARE RE-QUIRED FOR INTERIM OR PERMANENT TRAFFIC CONTROL, SHALL BE RELOCATED TO POINTS APPROVED BY THE ENGINEER. APPROPRIATE TRAFFIC CONTROL DEVICES SHALL BE MAINTAINED, IN COMPLIANCE WITH THE MANUAL AT ALL TIMES. THE COST OF RELOCATION SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 614 - MAINTAINING TRAFFIC.

THE CONTRACTOR SHALL REMOVE OR COVER ALL CONFLICTING PAVEMENT MARKINGS, PER 614.11 G, VISIBLE TO THE TRAVELING PUBLIC PRIOR TO PLACING WORK ZONE PAVEMENT MARKINGS.

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH C&MS 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.

WORK ZONE RESTRICTIONS

IF LANE CLOSURES AND RESTRICTIONS ARE REQUIRED TO COMPLETE THE WORK, THE CONTRACTOR WILL BE PERMITTED TO ONLY WORK IN ONE QUADRANT OF THE INTERSECTION AT A TIME.

LANE CLOSURES AND RESTRICTIONS WILL NOT BE PERMITTED FROM 6 AM TO 8 AM AND FROM 3 PM TO 5 PM, MONDAY THROUGH SUNDAY. LANE CLOSURES ARE ONLY PERMITTED WHEN THE CONTRACTOR IS ACTIVELY WORKING.

DUE TO THE ADJACENT RESIDENCES, THE CONTRACTOR WILL NOT BE PERMITTED TO WORK BETWEEN THE HOURS OF 8 PM AND 7AM.

SHOULD THE CONTRACTOR FAIL TO MEET ANY OF THESE REQUIREMENTS, THE CONTRACTOR SHALL BE ASSESSED A DISINCENTIVE IN THE AMOUNT OF \$50 FOR EACH MINUTE THE ABOVE DESCRIBED LANE CLOSURE/WORK RESTRICTIONS ARE VIOLATED.

NOTIFICATION OF WORK ZONE LANE RESTRICTIONS

THE CONTRACTOR SHALL NOTIFY THE ENGINEER AT LEAST FOURTEEN (14) DAYS PRIOR TO IMPLEMENTING ANY WORK ZONE RESTRICTION THAT WILL REDUCE THE WIDTH OF ANY LANE ON WHICH TRAFFIC WILL BE MAINTAINED.

THE CONTRACTOR WILL NOTIFY THE LOCAL PUBLIC SERVICES, SCHOOL DISTRICT, EMERGENCY SERVICES AND COMMUNITY A MINIMUM OF FOURTEEN (14) DAYS IN ADVANCE OF PROJECT CONSTRUCTION. INCLUDED IN THE NOTIFICATION WILL BE THE PROJECTED DATES OF ANY LANE RESTRICTIONS, ROADWAY CLOSURES AND DETOUR ROUTES.

TRENCH FOR WIDENING

TRENCH EXCAVATION FOR BASE WIDENING SHALL BE ONLY ON ONE SIDE OF THE PAVEMENT AT A TIME. THE OPEN TRENCH SHALL BE ADEQUATELY MAINTAINED AND PROTECTED WITH DRUMS OR BARRICADES AT ALL TIMES. PLACEMENT OF PROPOSED SUBBASE AND BASE MATERIAL SHALL FOLLOW AS CLOSELY AS POSSIBLE BEHIND EXCAVATION OPERATIONS. THE LENGTH OF WIDENING TRENCH WHICH IS OPEN AT ANY ONE TIME SHALL BE HELD TO A MINIMUM AND SHALL AT ALL TIMES BE SUBJECT TO APPROVAL OF THE ENGINEER.

OVERNIGHT TRENCH CLOSING

THE BASE WIDENING SHALL BE COMPLETED TO A DEPTH OF NO MORE THAN 3 INCHES BELOW THE EXISTING PAVEMENT BY THE END OF EACH WORK DAY. NO TRENCH SHALL BE LEFT OPEN OVERNIGHT EXCEPT FOR A SHORT LENGTH (25 FEET OR LESS) OF A WORK SECTION AT THE END OF THE TRENCH. IN CASE WORK MUST BE SUSPENDED BECAUSE OF INCLEMENT WEATHER OR OTHER REASONS, THE TRENCH FOR THE UNCOMPLETED BASE WIDENING SHALL BE BACKFILLED AT THE DIRECTION OF THE ENGINEER.

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 NEW YEARS MEMORIAL DAY	FOURTH OF JULY LABOR DAY THANKSGIVING
DAY OF HOLIDAY OR EVENT	TIME ALL LANES MUST BE OPEN TO TRAFFIC	
SUNDAY	12:00N FRIDAY THROUGH 6:00 AM MONDAY	
MONDAY	12:00N FRIDAY THROUGH 6:00 AM TUESDAY	
TUESDAY	12:00N MONDAY THROUGH 6:00 AM WEDNESDAY	
WEDNESDAY	12:00N TUESDAY THROUGH 6:00 AM THURSDAY	
THURSDAY	12:00N WEDNESDAY THROUGH 6:00 AM FRIDAY	
THURSDAY (THANKSGIVING ONLY)	6:00 AM WEDNESDAY THROUGH 6:00 AM MONDAY	
FRIDAY	12:00N THURSDAY THROUGH 6:00 AM MONDAY	
SATURDAY	12:00N FRIDAY THROUGH 6:00 AM MONDAY	

SHOULD THE CONTRACTOR FAIL TO MEET ANY OF THESE REQUIREMENTS, THE CONTRACTOR SHALL BE ASSESSED A DISINCENTIVE IN THE AMOUNT OF \$50 FOR EACH MINUTE THE ABOVE DESCRIBED LANE CLOSURE RESTRICTIONS ARE VIOLATED.

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 PER-MITTED AT PROJECT COST. LEOS SHOULD NOT BE USED WHERE THE OMUTCD INTENDS THAT FLAGGERS BE USED.

IN ADDITION TO THE REQUIREMENTS OF C&MS 614 AND THE OMUTCD, 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 C&MS 614 AND THE OMUTCD, 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 AS APPROVED BY THE ENGINEER:

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 IN ADVANCE OF AND ON THE SAME SIDE AS THE LANE RESTRICTION OR AT THE POINT OF ROAD CLOSURE, AND TO MANUALLY CONTROL TRAFFIC MOVEMENTS THROUGH SIGNALIZED INTERSECTIONS IN WORK ZONES.

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 PLACE-MENT, AND WILL RESOLVE ANY ISSUES THAT MAY ARISE BETWEEN THE TWO PARTIES.

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

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 RE-TURNED TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT.

LEOS (WITH PATROL CAR) REQUIRED BY THE TRAFFIC MAINT-ENANCE 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 60 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, PORTABLE CHANGEABLE MESSAGE SIGNS, AS PER PLAN

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND REMOVE, WHEN NO LONGER NEEDED, A CHANGEABLE MESSAGE SIGN. THE SIGN SHALL BE OF A TYPE SHOWN ON A LIST OF APPROVED PCMS UNITS AVAILABLE ON THE (OFFICE OF MATERIALS MANAGEMENT WEB PAGE). THE LIST CONTAINS CLASS A AND B UNITS WITH MINIMUM LEGIBILITY DISTANCES OF 800 FEET AND 650 FEET, RESPECTIVELY.

EACH SIGN SHALL BE TRAILER-MOUNTED AND EQUIPPED WITH A FUNCTIONAL DIMMING MECHANISM, TO DIM THE SIGN DURING DARKNESS, AND A TAMPER AND VANDAL PROOF ENCLOSURE. EACH SIGN SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATION INSTRUCTIONS TO ENABLE ON-SITE PERSONNEL TO OPERATE AND TROUBLESHOOT THE UNIT. THE SIGN SHALL ALSO BE CAPABLE OF BEING POWERED BY AN ELECTRICAL SERVICE DROP FROM A LOCAL UTILITY COMPANY. THE PCMS SHALL BE DELINEATED IN ACCORDANCE WITH C&MS 614.03.

PLACEMENT, OPERATION, MAINTENANCE AND ALL ACTIVATION OF THE SIGNS BY THE CONTRACTOR SHALL BE AS DIRECTED BY THE ENGINEER. THE PCMS SHALL BE LOCATED IN A HIGHLY VISIBLE POSITION YET PROTECTED FROM TRAFFIC. THE CONTRACTOR SHALL, AT THE DIRECTION OF THE ENGINEER, RELOCATE THE PCMS TO IMPROVE VISIBILITY OR ACCOMMODATE CHANGED CONDITIONS. WHEN NOT IN USE, THE PCMS SHALL BE TURNED OFF. ADDITIONALLY, WHEN NOT IN USE FOR EXTENDED PERIODS OF TIME, THE PCMS SHALL BE TURNED AWAY FROM ALL TRAFFIC.

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ITEM 614, PORTABLE CHANGEABLE MESSAGE SIGNS, AS PER PLAN (CONT.)

SHALL NOT BE LOST AS A RESULT OF POWER FAILURES TO THE ON-BOARD COMPUTER. THE SIGN LEGEND SHALL BE THE ENGINEER SHALL BE PROVIDED ACCESS TO EACH SIGN UNIT AND SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATION INSTRUCTIONS TO ENABLE ODOT PERSONNEL TO OPERATE AND TROUBLESHOOT THE UNIT, AND TO REVISE SIGN MESSAGES, IF NECESSARY.

ALL MESSAGES TO BE DISPLAYED ON THE SIGN WILL BE PROVIDED BY THE ENGINEER. A LIST OF ALL REQUIRED PRE-PROGRAMMED MESSAGES WILL BE GIVEN TO THE CONTRACTOR AT THE PROJECT PRE-CONSTRUCTION CONFERENCE. THE SIGN SHALL HAVE THE CAPABILITY TO STORE UP TO 99 MESSAGES. MESSAGE MEMORY OR PRE-PROGRAMMED DISPLAYS CAPABLE OF BEING CHANGED IN THE FIELD. THREE-LINE PRESENTATION FORMATS WITH UP TO SIX MESSAGE PHASES SHALL BE SUPPORTED. PCMS FORMAT SHALL PERMIT THE COMPLETE MESSAGE FOR EACH PHASE TO BE READ AT LEAST TWICE.

THE PCMS SHALL CONTAIN AN ACCURATE CLOCK AND PROGRAMMING LOGIC WHICH WILL ALLOW THE SIGN TO BE ACTIVATED, DEACTIVATED OR MESSAGES CHANGED AUTOMATICALLY AT DIFFERENT TIMES OF THE DAY FOR DIFFERENT DAYS OF THE WEEK.

THE PCMS UNIT SHALL BE MAINTAINED IN GOOD WORKING ORDER BY THE CONTRACTOR IN ACCORDANCE WITH THE PROVISIONS OF C&MS 614.07. THE CONTRACTOR SHALL, PRIOR TO ACTIVATING THE UNIT, MAKE ARRANGEMENTS, WITH AN AUTHORIZED SERVICE AGENT FOR THE PCMS, TO ASSURE PROMPT SERVICE IN THE EVENT OF FAILURE. ANY FAILURE SHALL NOT RESULT IN THE SIGN BEING OUT OF SERVICE FOR MORE THAN 12 HOURS, INCLUDING WEEKENDS. FAILURE TO COMPLY MAY RESULT IN AN ORDER TO STOP WORK AND OPEN ALL TRAFFIC LANES AND/OR IN THE DEPARTMENT TAKING APPROPRIATE ACTION TO SAFELY CONTROL TRAFFIC. THE ENTIRE COST TO CONTROL TRAFFIC, ACCRUED BY THE DEPARTMENT DUE TO THE CONTRACTOR'S NONCOMPLIANCE, WILL BE DEDUCTED FROM MONEYS DUE, OR TO BECOME DUE THE CONTRACTOR ON HIS CONTRACT.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR 24-HOUR-PER-DAY OPERATION AND MAINTENANCE OF THESE SIGNS ON THE PROJECT FOR THE DURATION OF THE PHASES WHEN THE PLAN REQUIRES THEIR USE.

PAYMENT FOR THE ABOVE DESCRIBED ITEM SHALL BE AT THE CONTRACT UNIT PRICE. PAYMENT SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, FUELS, LUBRICATING OILS, SOFTWARE, HARDWARE AND INCIDENTALS TO PERFORM THE ABOVE DESCRIBED WORK.

ITEM 614, PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN 14 SIGN MONTH

ASSUMING 2 PCMS SIGNS FOR 7 MONTHS

WORK-SITE TRAFFIC SUPERVISOR

SUBJECT TO APPROVAL OF THE ENGINEER, THE CONTRACTOR SHALL EMPLOY AND IDENTIFY (SOMEONE OTHER THAN THE SUPERINTENDENT) A CERTIFIED WORK-SITE TRAFFIC SUPERVISOR (WTS) BEFORE STARTING WORK IN THE FIELD. THE WTS SHALL BE CERTIFIED FROM ONE OF THE FOLLOWING ORGANIZATIONS:

1. AMERICAN TRAFFIC SAFETY SERVICE ASSOCIATION (ATSSA), PHONE NUMBER 1-800-272-8772, CERTIFIED TRAFFIC CONTROL SUPERVISOR (TCS).
2. NATIONAL HIGHWAY INSTITUTE, DESIGN AND OPERATION OF WORK ZONE TRAFFIC CONTROL, PHONE NUMBER 1-703-235-0500.
3. THE OHIO CONTRACTORS ASSOCIATION, TRAFFIC CONTROL SUPERVISOR (OCA/TCS) WORK ZONE CLASS, ONLY IF TAKEN AFTER MAY 5, 2004, PHONE NUMBER 1-800-229-1388.
4. OHIO LABORERS TRAINING, TRAFFIC CONTROL SUPERVISORS CLASS, PHONE NUMBER 1-740-599-7915.

A COPY OF EACH WTSS CERTIFICATION AND 24-HOUR CONTACT INFORMATION SHALL BE PROVIDED TO THE ENGINEER AT THE PRE-CONSTRUCTION CONFERENCE. IF THE DESIGNATED WTS WILL NOT BE AVAILABLE FULL TIME (24/7), THE CONTRACTOR MAY DESIGNATE AN ALTERNATE WTS TO BE AVAILABLE WHEN THE PRIMARY IS OFF DUTY. EACH WTS SHALL HAVE A WTS CERTIFICATION CONTAINING THE DATE OF ISSUE AND SHALL BE FROM ANY OF THE APPROVED ORGANIZATIONS. AT THE TIME OF THE PRE-CONSTRUCTION, THE WTS CERTIFICATION DATE OF ISSUE SHALL BE WITHIN 5 YEARS PRIOR TO THE ORIGINAL COMPLETION DATE OF THE PROJECT.

THE WTS POSITION HAS THE RESPONSIBILITY OF MONITORING TRAFFIC CONTROL DEFICIENCIES FOR THE ENTIRE WORK ZONE. THE DUTIES OF THE WTS ARE AS FOLLOWS:

1. BE AVAILABLE ON A 24-HOUR PER DAY BASIS, AND BE ABLE TO BE ON SITE FOR ALL EMERGENCY TRAFFIC CONTROL NEEDS WITHIN ONE HOUR OF NOTIFICATION BY POLICE OR PROJECT STAFF AND BE PREPARED TO EFFECT CORRECTIVE MEASURES IMMEDIATELY ON EXISTING WORK ZONE TRAFFIC CONTROL DEVICES.
2. ATTEND PRE-CONSTRUCTION MEETING AND ALL PROJECT MEETINGS WHERE TRAFFIC CONTROL MANAGEMENT IS DISCUSSED.
3. BE AVAILABLE FOR MEETINGS OR DISCUSSIONS WITH THE ENGINEER UPON REQUEST OR WITHIN 36 HOURS.
4. COORDINATE A TRAFFIC INCIDENT MANAGEMENT MEETING EACH YEAR BEFORE CONSTRUCTION WORK BEGINS WITH ODOT AND THE SAFETY FORCES THAT WILL RESPOND TO INCIDENTS ON THE PROJECT.

ITEMS TO BE DISCUSSED WILL BE THE:

- A. TRAFFIC INCIDENT MANAGEMENT PLAN (TIMP);
- B. EMERGENCY RESPONSE AND NOTIFICATION;
- C. PROJECT WORK/PHASING CONCERNS (E.G., RAMP CLOSURES); AND
- D. RESPONDERS CONCERNS.

5. BE AWARE OF, AND COORDINATE IF NECESSARY, ALL TRAFFIC CONTROL OPERATIONS, INCLUDING THOSE OF SUBCONTRACTORS AND SUPPLIERS.

WORK-SITE TRAFFIC SUPERVISOR (CONT.)

6. COORDINATE PROJECT ACTIVITIES WITH ALL LAW ENFORCEMENT OFFICERS (LEOS). A WTS SHALL ALSO BE THE MAIN CONTACT PERSON WITH THE LEOS WHILE THEY ARE ON THE PROJECT.

7. COORDINATE MEETINGS WITH ODOT PERSONNEL, LEOS AND OTHER APPLICABLE ENTITIES BEFORE EACH PLAN PHASE SWITCH TO DISCUSS WORK ZONE TRAFFIC CONTROL.

8. ENSURE COMPLIANCE WITH THE CONTRACT DOCUMENTS FOR SIGNS, BARRICADES, TEMPORARY CONCRETE BARRIER, PAVEMENT MARKINGS, PORTABLE MESSAGE SIGNS, AND OTHER TRAFFIC CONTROL DEVICES ON A DAILY BASIS; AND FACILITATE ANY CORRECTIVE ACTION NECESSARY.

9. NOTIFY THE CONTRACTOR OF THE NEED FOR CLEANING AND MAINTENANCE OF ALL TRAFFIC CONTROL DEVICES, INCLUDING THE COVERING AND REMOVAL OF INAPPLICABLE SIGNS.

10. INSPECT, EVALUATE, PROPOSE NECESSARY MODIFICATIONS TO, AND DOCUMENT THE EFFECTIVENESS OF, THE TRAFFIC CONTROL DEVICES AND/OR TRAFFIC OPERATIONS ON A DAILY BASIS (7 DAYS A WEEK). IN ADDITION, A WEEKLY NIGHT INSPECTION OF THE WORK ZONE SETUP FOR DAYTIME WORK OPERATIONS; AND ONE DAYTIME INSPECTION PER WEEK FOR NIGHTTIME PROJECTS. THIS SHALL INCLUDE (BUT NOT BE LIMITED TO) DOCUMENTATION ON THE FOLLOWING PROJECT EVENTS:

- A. INITIAL TRAFFIC CONTROL SETUP (DAY AND NIGHT REVIEW).
- B. DAILY TRAFFIC CONTROL SETUP AND REMOVAL.
- C. WHEN CONSTRUCTION STAGING CAUSES A CHANGE IN THE TRAFFIC CONTROL SETUP.
- D. CRASH OCCURRENCES WITHIN THE CONSTRUCTION AREA.
- E. REMOVAL OF TRAFFIC CONTROL DEVICES AT THE END OF A PHASE OR PROJECT.
- F. ALL OTHER EMERGENCY TRAFFIC CONTROL NEEDS.

11. COMPLETE THE DEPARTMENT APPROVED LONG TERM INSPECTION FORM (CA-D-8) AFTER EACH INSPECTION AS REQUIRED IN # 10 AND SUBMIT IT TO THE ENGINEER THE FOLLOWING WORK DAY. THESE REPORTS SHALL INCLUDE A CHECKLIST OF ALL TRAFFIC CONTROL MAINTENANCE ITEMS TO BE REVIEWED. A COPY OF THE FORM WILL BE PROVIDED AT THE PRE-CONSTRUCTION MEETING. ANY DEFICIENCIES OBSERVED SHALL BE NOTED, ALONG WITH RECOMMENDED CORRECTIVE ACTIONS AND THE DATES BY WHICH SUCH CORRECTIONS WERE, OR WILL BE, COMPLETED. A COPY OF THIS DOCUMENT CAN BE FOUND IN THE CURRENT REVISION OF THE DEPARTMENT OF TRANSPORTATION CONSTRUCTION INSPECTION FORMS MANUAL.

12. VERIFY THAT ALL FLAGGING OPERATIONS ARE BEING CONDUCTED PER THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

13. HAVE COPIES OF THE ODOT TEMPORARY TRAFFIC CONTROL MANUAL AND APPLICABLE STANDARDS AND SPECIFICATIONS INCLUDED IN THE CONTRACT DOCUMENTS AVAILABLE AT ALL TIMES ON THE PROJECT.

14. IDENTIFY AND CONTACT ALL POSSIBLE RESPONSE PERSONNEL; PRE-PLAN AND KEEP AN UPDATED ROSTER WITH PHONE NUMBERS:

WORK-SITE TRAFFIC SUPERVISOR (CONT.)

- A. FEDERAL, STATE, AND LOCAL TRANSPORTATION AGENCIES (TRAFFIC MANAGEMENT CENTER);
- B. REGIONAL, COUNTY OR LOCAL 911 DISPATCH; AND
- C. TOWING AND RECOVERY PROVIDERS.

15. COMPLY WITH THE PROVISIONS OF OMUTCD CHAPTER 6I, CONTROL OF TRAFFIC THROUGH TRAFFIC INCIDENT MANAGEMENT AREAS.

16. PROPOSE A RESPONSE/ACTION PLAN TO:

- A. ESTABLISH ALTERNATE ROUTE PLANS PER THE PROVIDED ODOT PLAYBOOK;
- B. REMOVE TRAFFIC DEMAND FROM IMPACTED ROADWAY(S);
- C. DIVERT TRAFFIC TO ROUTES THAT CAN ACCOMMODATE DEMANDS;
- D. DETOUR TRAFFIC AWAY FROM SENSITIVE AREAS (SUCH AS SCHOOLS, HOSPITALS, ETC.);
- E. DISCUSS METHODS OF DETERMINING A STAGING AREA FOR RESPONDERS WITHIN OR NEAR THE CONSTRUCTION ZONE; AND

- F. DISCUSS METHODS OF DEVELOPING INGRESS AND EGRESS SITES WITHIN THE CONSTRUCTION ZONE.

THE RESPONSE/ACTION PLAN SHALL BE SUBMITTED TO ODOT FOR ACCEPTANCE BEFORE THE CONTRACTOR'S FIRST DAY OF WORK.

17. PERFORM, AT A MINIMUM, THE FOLLOWING FUNCTIONS IN INCIDENT DETECTION AND VERIFICATION:

- A. CALL 911/ NOTIFY TRAFFIC MANAGEMENT CENTER AND PROVIDE THE FOLLOWING:
 - I. LOCATION INCLUDING MILEPOST NUMBER AND DIRECTION OF TRAVEL.
 - II. NUMBER AND TYPE OF VEHICLES INVOLVED.
 - III. ESTIMATED EXTENT OF DAMAGE OR INJURY.
 - IV. ESTIMATED NUMBER OF PATIENTS INVOLVED.
 - V. ANY POTENTIAL HAZARDOUS CONDITIONS.
- VI. THE PLACARD NUMBER ON ANY HAZARDOUS MATERIALS PLACARD FROM A SAFE DISTANCE.

- B. INITIATE TRAFFIC MANAGEMENT / PROVIDE TRAFFIC CONTROL.
- C. ASSIST MOTORIST WITH DISABLED VEHICLES.
- D. RECOMMEND ROADWAY REPAIR NEEDS.
- E. PROVIDE REPAIR RESOURCES.

18. ATTEND POST-INCIDENT DEBRIEFINGS IF REQUIRED.

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WORK-SITE TRAFFIC SUPERVISOR (CONT.)

THE DEPARTMENT WILL DEDUCT THE PRORATED DAILY AMOUNT OF THE UNIT PRICE BID FOR THE WTS FOR ANY DAY ON WHICH THE CONTRACTOR FAILS TO PERFORM THE DUTIES SET FORTH ABOVE. SHOULD THE CONTRACTOR'S FAILURE TO PERFORM ANY OF THE DUTIES DESCRIBED ABOVE RESULT IN A MAINTENANCE OF TRAFFIC SAFETY ISSUE, THE DEPARTMENT WILL DEDUCT THE PRORATED DAILY AMOUNT FOR ITEM 614 MAINTENANCE OF TRAFFIC FROM THE CONTRACTOR'S NEXT SCHEDULED ESTIMATE.

IF THREE OR MORE FAILURES TO PERFORM THE DUTIES SET FORTH ABOVE OCCUR, THE WTS SHALL BE IMMEDIATELY REMOVED FROM THE WORK IN ACCORDANCE WITH C&MS 108.05.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED FOR THE WORK-SITE TRAFFIC SUPERVISOR:

ITEM 614 WORK-SITE TRAFFIC SUPERVISOR 7 MONTHS

NOTIFICATION OF TRAFFIC RESTRICTIONS

THROUGHOUT THE DURATION OF THE PROJECT, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER IN WRITING OF ALL TRAFFIC RESTRICTIONS AND UPCOMING MAINTENANCE OF TRAFFIC CHANGES. THE CONTRACTOR SHALL ENSURE THE WRITTEN NOTIFICATION IS SUBMITTED IN A TIMELY MANNER TO ALLOW THE PROJECT ENGINEER TO MEET THE REQUIRED TIME FRAMES SET FORTH IN THE TABLE BELOW TO INFORM THE OFFICE OF COMMUNICATIONS. THIS NOTIFICATION SHALL BE RECEIVED BY THE PROJECT ENGINEER PRIOR TO THE PHYSICAL SETUP OF ANY APPLICABLE SIGNS OR MESSAGE BOARDS.

INFORMATION SHOULD INCLUDE, BUT IS NOT LIMITED TO, ALL AND SHALL LIST THE SPECIFIC LOCATION, TYPE OF WORK, ROAD STATUS, DATE AND TIME OF RESTRICTION, DURATION OF RESTRICTION, NUMBER OF LANES MAINTAINED, NUMBER OF LANES CLOSED, DETOUR ROUTES, IF APPLICABLE, AND ANY OTHER INFORMATION REQUESTED BY THE PROJECT ENGINEER.

NOTICE TO OFFICE OF COMMUNICATIONS TIME TABLE		
ITEM	DURATION OF CLOSURE	NOTICE DUE TO OFFICE OF COMMUNICATIONS
RAMP &	>= 2 WEEKS	21 CALENDAR DAYS PRIOR TO CLOSURE
ROAD	> 12 HOURS & < 2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE
CLOSURES	< 12 HOURS	4 BUSINESS DAYS PRIOR TO CLOSURE

LANE	>= 2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE
CLOSURES &	< 2 WEEKS	2 BUSINESS DAYS PRIOR TO CLOSURE

RESTRICTIONS

START OF CONSTRUCTION &	14 CALENDAR DAYS
TRAFFIC PATTERN CHANGES	PRIOR TO IMPLEMENTATION

ANY UNFORESEEN CONDITIONS NOT SPECIFIED IN THE PLANS REQUIRING TRAFFIC RESTRICTIONS SHALL ALSO BE REPORTED TO THE PROJECT ENGINEER USING THE NOTICE TO OFFICE OF COMMUNICATIONS TIME TABLE.

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SHEET NUM.												PART.		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.	CALCULATED ANM	CHECKED SJS
4	6	7	8	12	13	16	28	37	49	CALCS		02/SAF/OT	01/ERD/OT								
							26					26		630	03100	26	FT	TRAFFIC CONTROL			
							20					20		630	79500	20	EACH	SIGN SUPPORT ASSEMBLY, POLE MOUNTED			
							12					12		630	85100	12	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION			
							5					5		630	86002	5	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL			
							96					96		644	00500	96	FT	STOP LINE			
							423					423		644	00600	423	FT	CROSSWALK LINE			
							6					6		644	01300	6	EACH	LANE ARROW			
							0.06					0.06		646	10010	0.06	MILE	EDGE LINE, 6"			
							0.04					0.04		646	10110	0.04	MILE	LANE LINE, 6"			
							0.04					0.04		646	10200	0.04	MILE	CENTER LINE			
							109					109		646	10300	109	FT	CHANNELIZING LINE, 8"			
																		TRAFFIC SIGNALS			
								40				40		611	00400	40	FT	4" CONDUIT, TYPE E			
								75				75		625	25400	75	FT	CONDUIT, 2", 725.04			
								7				7		625	25600	7	FT	CONDUIT, 4", 725.04			
								254				254		625	25900	254	FT	CONDUIT, JACKED OR DRILLED ,4"			
								82				82		625	29000	82	FT	TRENCH			
								1				1		625	30700	1	EACH	PULL BOX, 725.08, 18"			
								3				3		625	30706	3	EACH	PULL BOX, 725.08, 24"			
								1				1		625	30710	1	EACH	PULL BOX, 725.08, 32"			
								8				8		625	32000	8	EACH	GROUND ROD			
								336				336		625	36000	336	FT	PLASTIC CAUTION TAPE			
								4				4		630	09102	4	EACH	SURFACE PREPARATION, NEW SUPPORT SECTION	34-35		
								4				4		630	09106	4	EACH	COATING, EPOXY INTERMEDIATE COAT, SUPPORT SECTION	34-35		
								4				4		630	09108	4	EACH	COATING, URETHANE TOP COAT, SUPPORT SECTION	34-35		
								4				4		630	09120	4	EACH	COATING, ORGANIC ZINC PRIME COAT, SUPPORT SECTION	34-35		
								6				6		632	05007	6	EACH	VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN, BLACK	32		
								2				2		632	05087	2	EACH	VEHICULAR SIGNAL HEAD, (LED), 5-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN, BLACK	32		
								8				8		632	20731	8	EACH	PEDESTRIAN SIGNAL HEAD (LED), TYPE D2, COUNTDOWN, AS PER PLAN	35		
								8				8		632	25000	8	EACH	COVERING OF VEHICULAR SIGNAL HEAD	33		
								8				8		632	25010	8	EACH	COVERING OF PEDESTRIAN SIGNAL HEAD			
								4				4		632	26000	4	EACH	PEDESTRIAN PUSHBUTTON			
								704				704		632	40200	704	FT	SIGNAL CABLE, 2 CONDUCTOR, NO. 14 AWG			
								870				870		632	40500	870	FT	SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG			
								933				933		632	40700	933	FT	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG			
								4				4		632	64010	4	EACH	SIGNAL SUPPORT FOUNDATION			
								3				3		632	64020	3	EACH	PEDESTAL FOUNDATION			
								52				52		632	68300	52	FT	POWER CABLE, 3 CONDUCTOR, NO. 6 AWG			
								90				90		632	69800	90	FT	SERVICE CABLE, 3 CONDUCTOR, NO. 6 AWG			
								1				1		632	70000	1	EACH	POWER SERVICE			
								4				4		632	80602	4	EACH	SIGNAL SUPPORT, TYPE TC-81.21, DESIGN 12			
								3				3		632	90000	3	EACH	PEDESTAL, 11', TRANSFORMER BASE			
								1				1		632	90100	1	EACH	REMOVAL OF TRAFFIC SIGNAL INSTALLATION			
								1				1		633	01651	1	EACH	CONTROLLER UNIT, TYPE 2070E WITH 2070-IC CPU AND ASC/3 SOFTWARE, AS PER PLAN	32		
								1				1		633	65520	1	EACH	CABINET, TYPE 332			
								1				1		633	67100	1	EACH	CABINET FOUNDATION			
								1				1		633	67200	1	EACH	CONTROLLER WORK PAD			
								1				1		633	75001	1	EACH	UNINTERRUPTIBLE POWER SUPPLY (UPS), 1000 WATT, AS PER PLAN	33		
								2				2		809	69000	2	EACH	ADVANCE RADAR DETECTION	33		
								3				3		809	69100	3	EACH	STOP-BAR RADAR DETECTION	33		
																		BUILDING DEMOLITION			
				LS								LS		202	56001	LS		BUILDING DEMOLISHED, AS PER PLAN PARCEL 5-WD, 2-STORY BRICK, BASEMENT	5		
																		MAINTENANCE OF TRAFFIC			
	60											60		614	11110	60	HOURL	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE			
			7									7		614	11500	7	MNTH	WORKSITE TRAFFIC SUPERVISOR	7 - 8		
		14										14		614	18601	14	SNMT	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN	6 - 7		

GENERAL SUMMARY

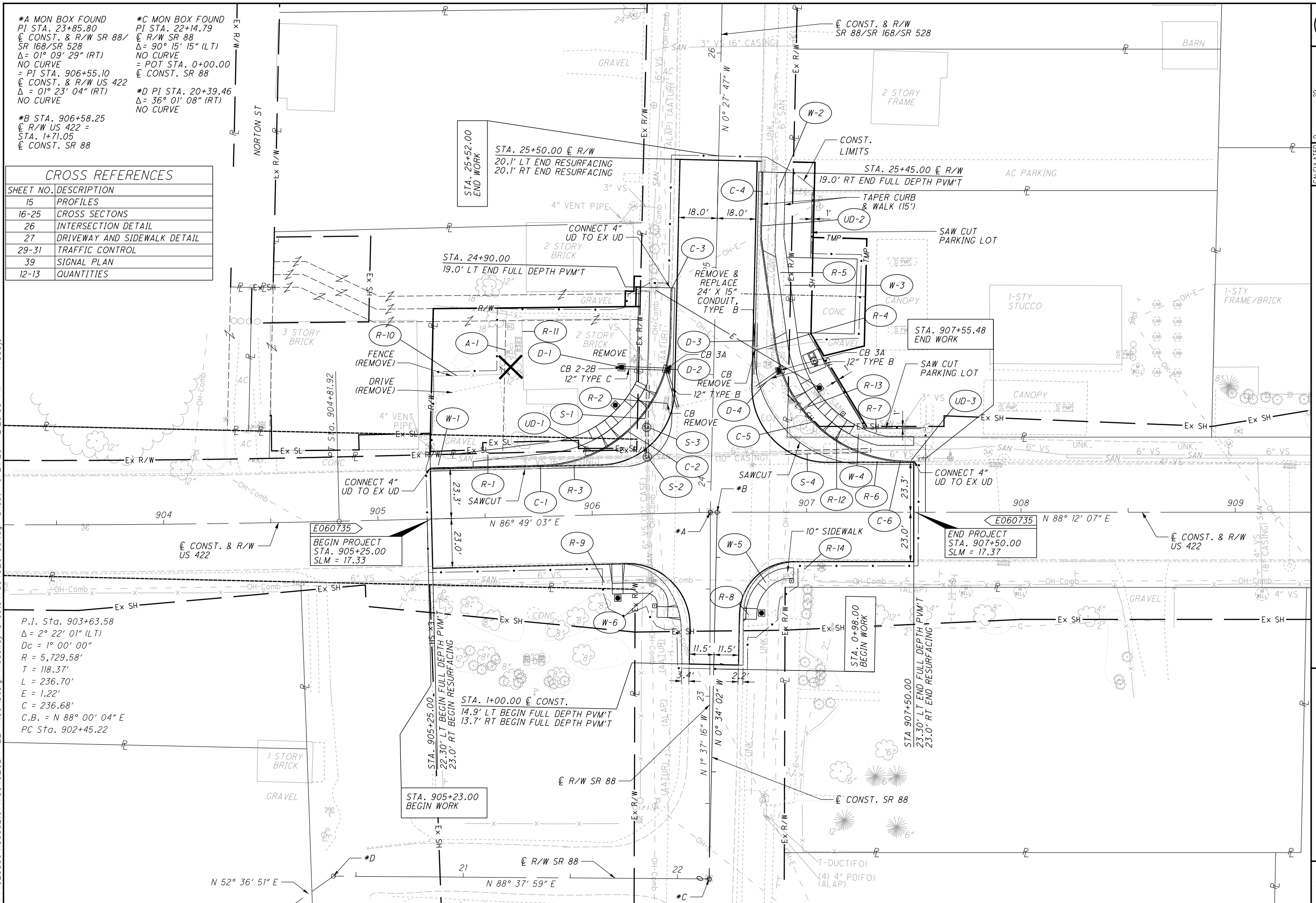
GEA - 422 - 17.35

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SHEET NO.	REFERENCE NO.	LOCATION	STATION			SIDE	202	202	202	202	202	202	202	202	SPECIAL	SPECIAL	SPECIAL	204	452	608	608	608	608	608	609	CALCULATED ANN CHECKED SUS	ROADWAY SUBSUMMARY	GEA - 422-17.35	12 53	
							WALK REMOVED	CURB REMOVED	PIPE REMOVED, 24" AND UNDER	CATCH BASIN REMOVED	FENCE REMOVED	PAVEMENT REMOVED	BUILDING DEMOLISHED, AS PER PLAN PARCEL 5-WD, 2-STORY BRICK, BASEMENT	REMOVAL MISC.:WOOD RAMP AND STEPS	REMOVAL MISC.:WOOD BORDER	PARKING BLOCK REMOVED	DRILLED WATER WELL ABANDONED	FILL AND PLUG EXISTING CONDUIT	SUBGRADE COMPACTION	8" NON-REINFORCED CONCRETE PAVEMENT, CLASS OCI	4" CONCRETE WALK	8" CONCRETE WALK	CURB RAMP	CURB RAMP, AS PER PLAN	WALKWAY, MISC.: 10" CONCRETE WALK					CURB, TYPE 6
							SF	FT	FT	EACH	FT	SY	LS		FT	EACH	EACH	FT	SY	SY	SF	SF	SF	SF	SF					SF
				TO																										
14	R-1		905+25.00		24+88.27	LT/LT	1045																							
14	R-2		24+34.56		24+35.95	LT											5													
14	R-3		905+67.34		24+90.00	LT/LT		140																						
14	R-4		24+50.35		24+74.35	RT			24	1																				
14	R-5		25+45.00		907+50.00	RT/LT	804																							
14	R-6		25+45.00		907+50.00	RT/LT		187																						
14	R-7		907+05.85		907+52.13	LT									6															
14	R-8		1+22.37		1+27.50	RT		5																						
14	R-9		906+03.94		906+22.35	RT					42																			
14	R-10		905+27.49		905+59.05	LT					32																			
14	R-11		905+70.85		906+18.58	LT						LS																		
14	R-12		907+08.11		907+50.00	LT								42																
14	R-13		24+30.83		24+45.59	RT								27																
14	R-14		906+94.05		906+99.10	RT							LS																	
14	A-1		905+64.22			LT										1														
14	C-1		905+25.00		906+07.10	LT																						85		
14	C-2		24+19.96		24+33.81	LT																						20		
14	C-3		24+40.79		24+90.00	LT																						50		
14	C-4		25+45.00		24+40.59	RT																						108		
14	C-5		24+34.15		24+25.38	RT																						13		
14	C-6		907+14.00		907+50.00	LT																						39		
14	W-1		905+25.00		24+88.25	LT/LT														665										
14	W-2		25+45.00		25+05.48	RT														163										
14	W-3		25+05.48		24+70.48	RT																178								
14	W-4		24+70.48		907+50.00	RT/LT														279										
14	W-5		1+38.21		1+45.88	RT																				83				
14	W-6		1+26.50		1+37.12	LT														121										
27	CR-2		906+10.52			LT																109								
27	CR-4		906+28.98			LT																97								
27	CR-6		906+96.40			LT																109								
27	CR-8		907+10.70			LT																109								
27	CR-10		906+70.49			RT																			89					
27	CR-12		906+39.35			RT																								
27	CR-14		906+11.00			RT																56								
																						79								
27	DR-1		24+67.48		25+08.48	RT					329							140	140											
TOTALS CARRIED TO GENERAL SUMMARY							1849	339	24	2	74	329	LS	LS	69	6	1	5	140	140	1228	178	559	89	83	315				

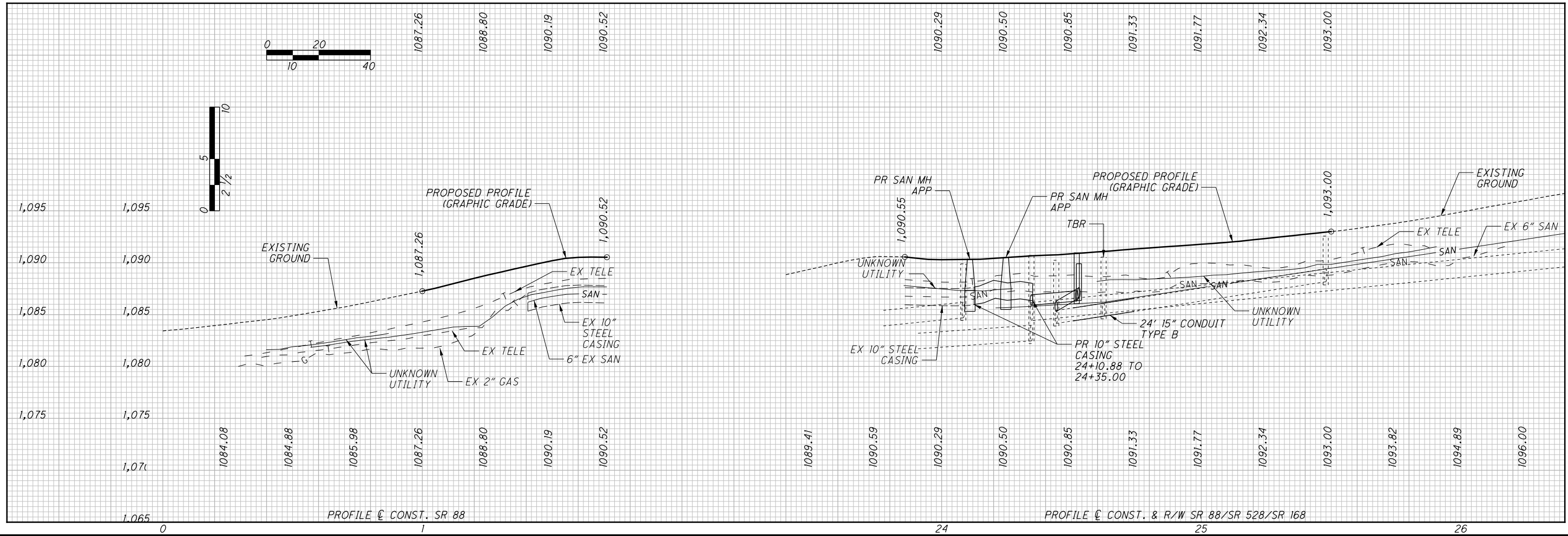
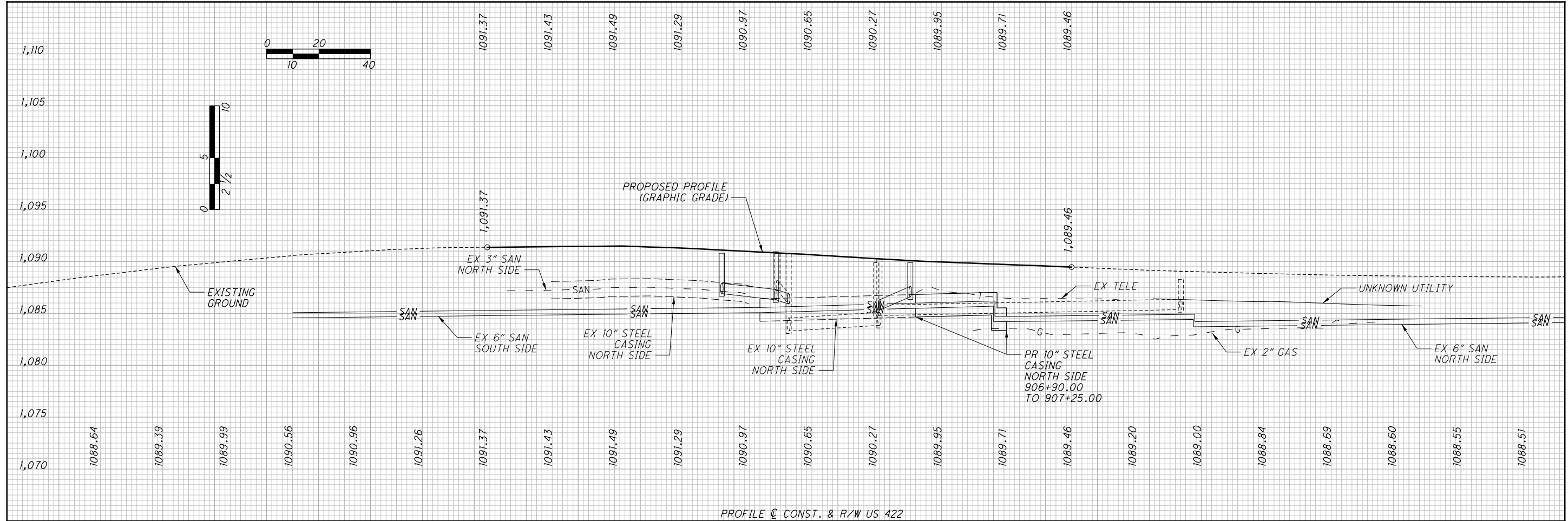
*B STA. 906+58.25
 @ R/W US 422 =
 STA. 1+71.05
 @ CONST. SR 88

SHEET NO.	DESCRIPTION
15	PROFILES
16-25	CROSS SECTIONS
26	INTERSECTION DETAIL
27	DRIVEWAY AND SIDEWALK DETAIL
29-31	TRAFFIC CONTROL
39	SIGNAL PLAN
12-13	QUANTITIES



GEA-422-17.35

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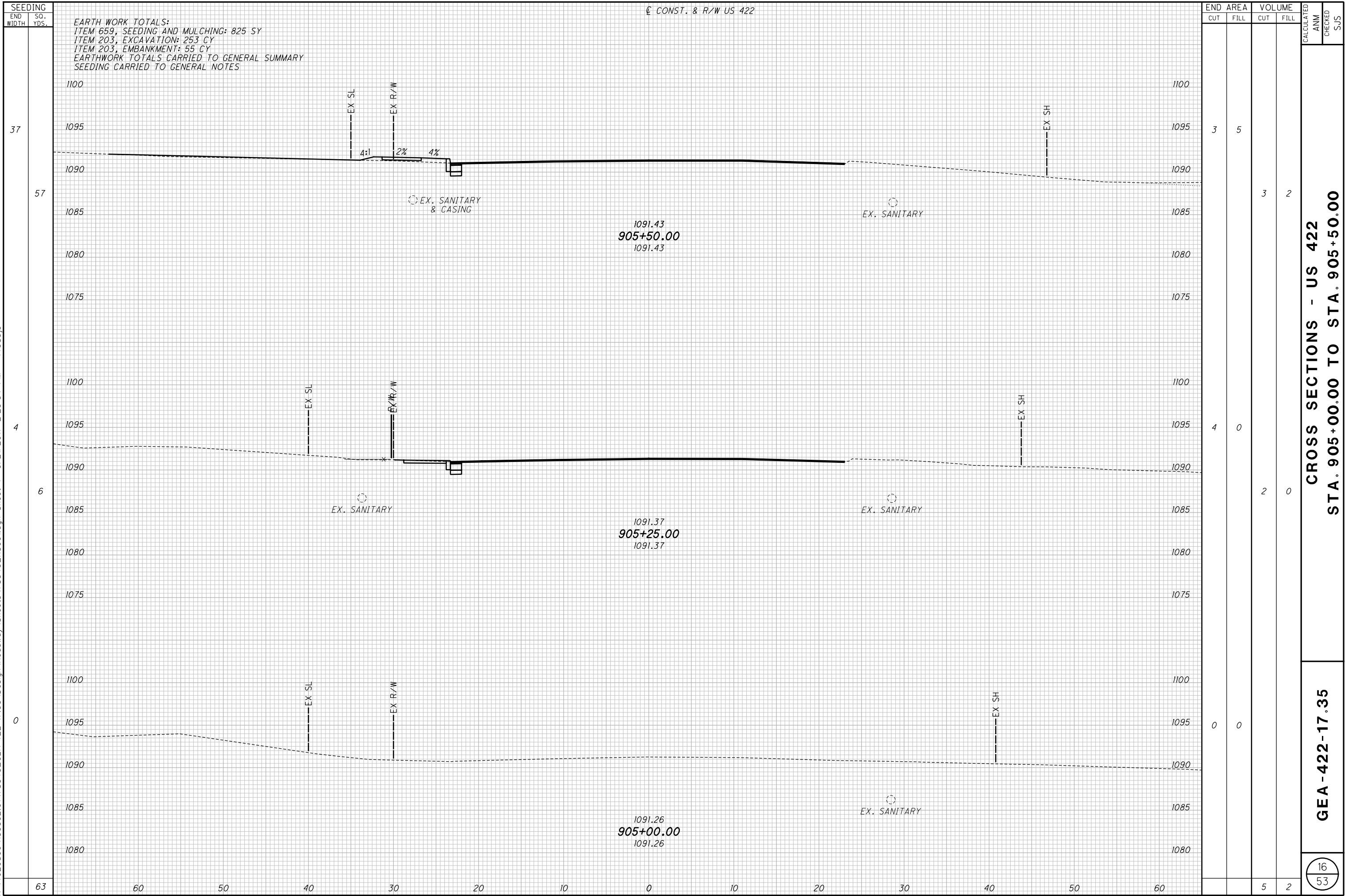
PROFILE

GEA-422-17.35

15
53

CALCULATED
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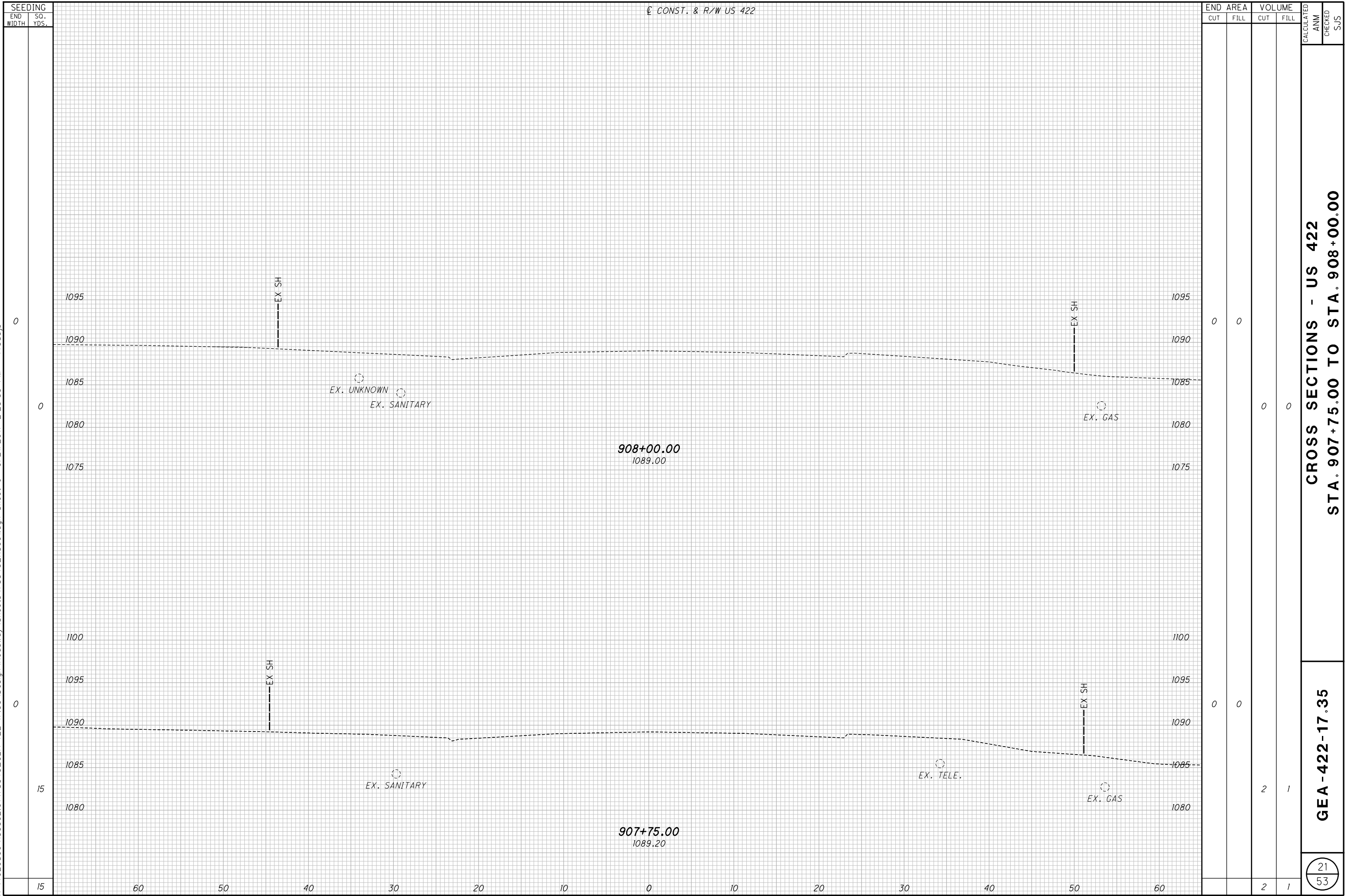
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CROSS SECTIONS - US 422
STA. 906+25.00 TO STA. 906+50.00

SEEDING		CONST. & R/W US 422														END		AREA		VOLUME		CALCULATED		CHECKED	
END	SO.															CUT	FILL	CUT	FILL	ANM	SUS				
WIDTH	YDS.																								
0	7															17	0	11	0	CROSS SECTIONS - US 422 STA. 906+75.00 TO STA. 907+00.00					
5	7															6	0	3	0	GEA - 422-17.35					
14		60	50	40	30	20	10	0	10	20	30	40	50	60	14	0	19	53							

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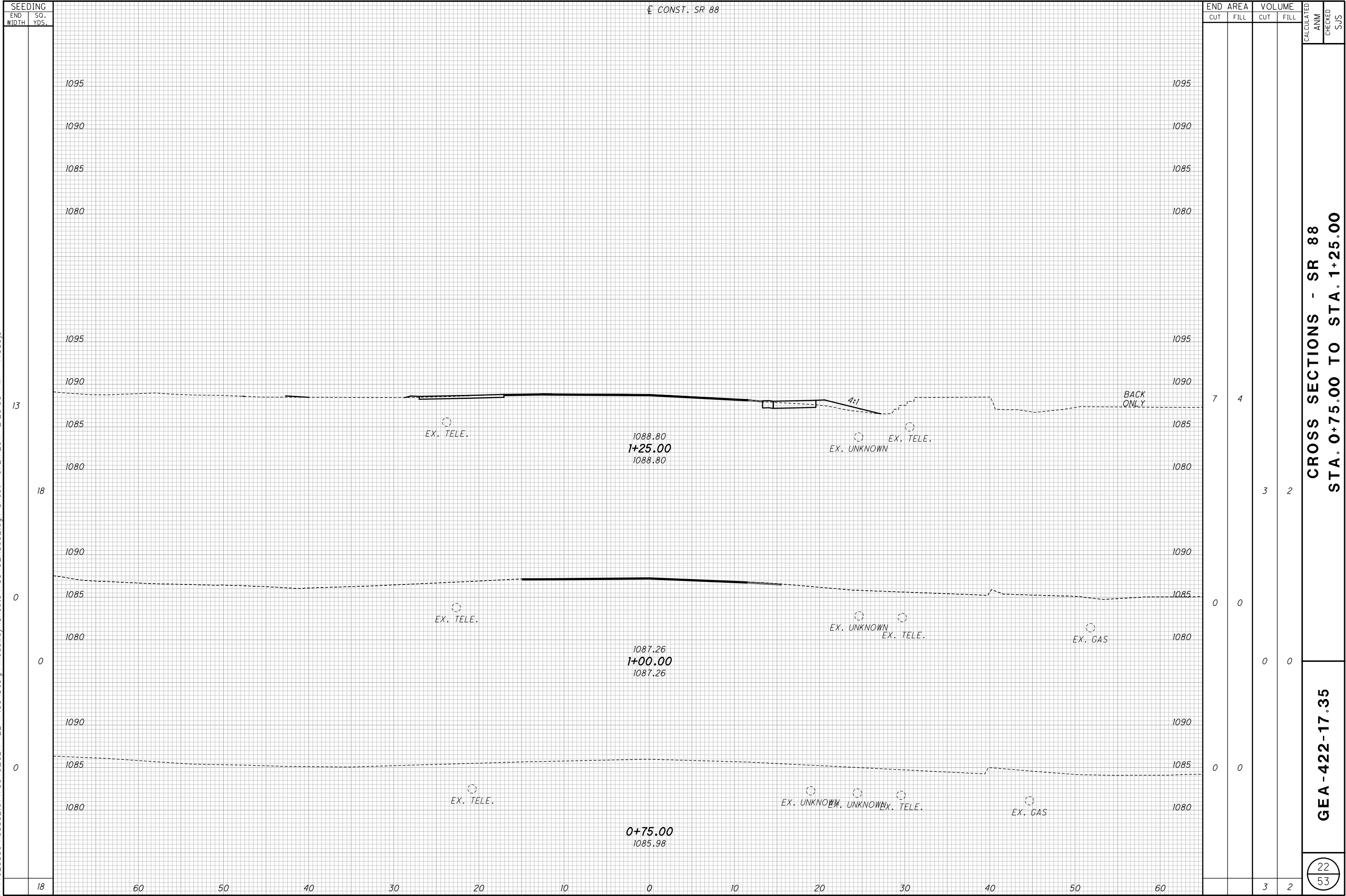
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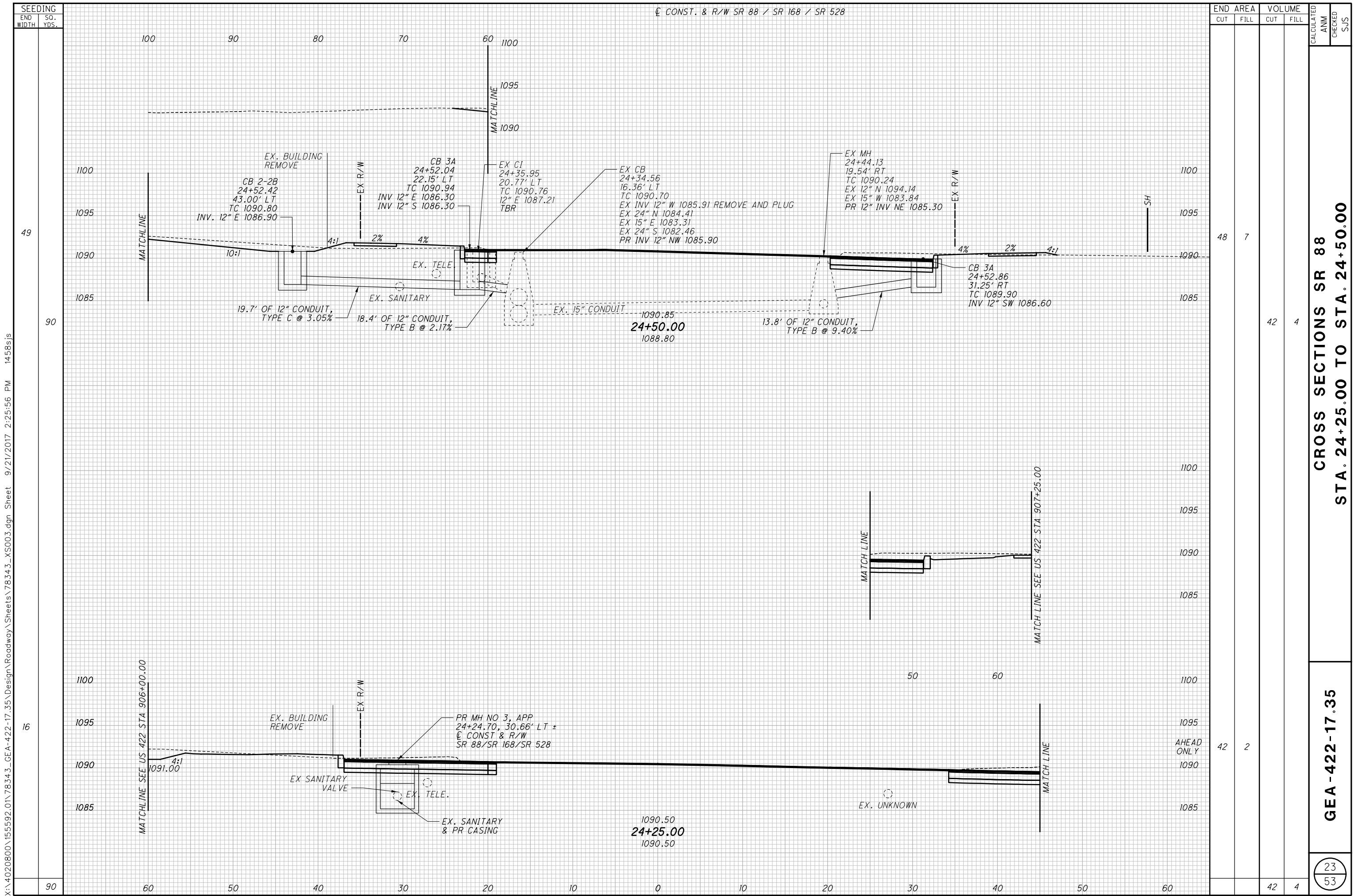
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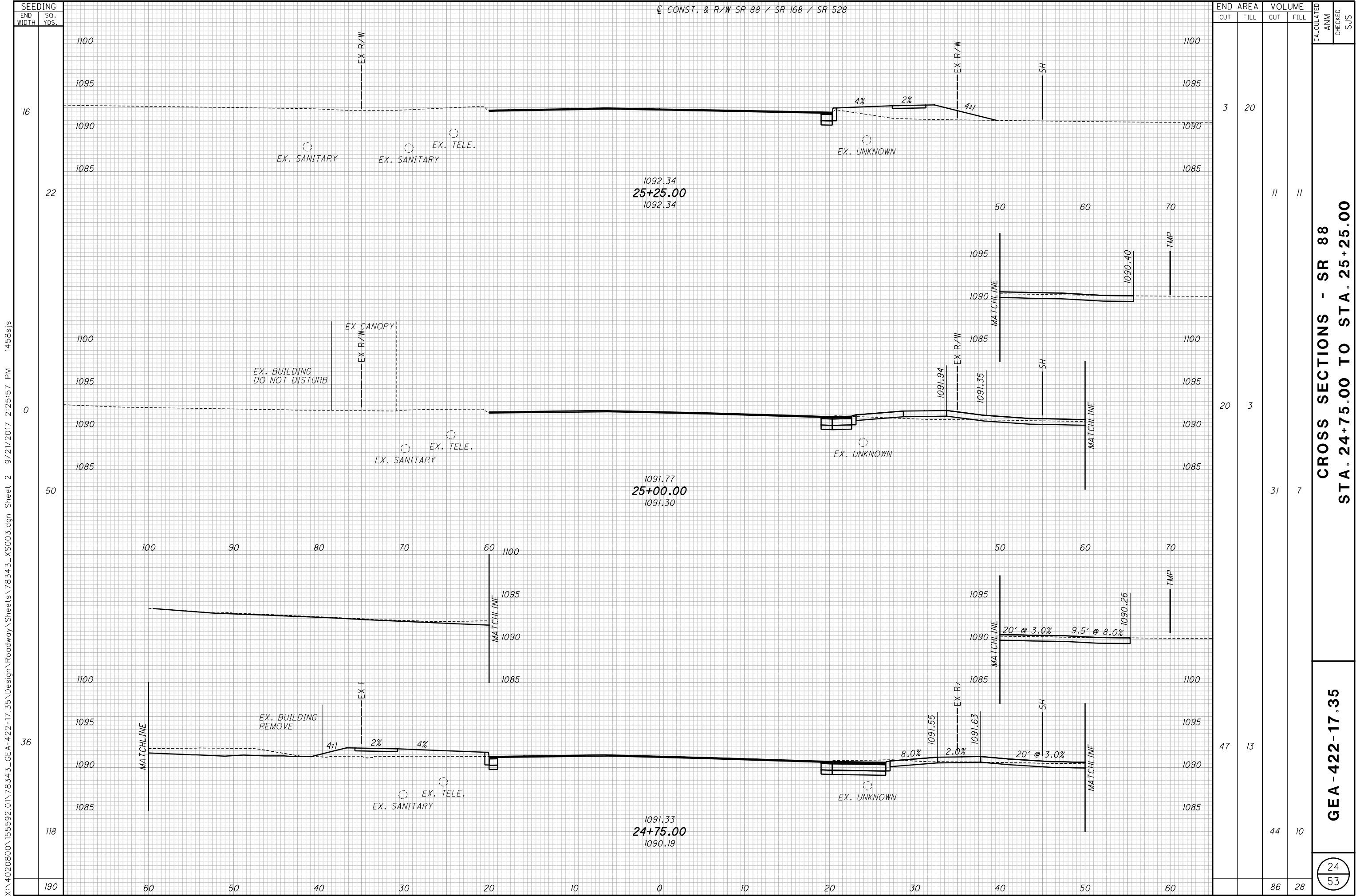
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*A PI STA. 906+55.10
@ CONST. & R/W US 422
= STA. 23+85.80
@ CONST. & R/W
SR 88/SR 168/SR 528

*B POT STA. 1+71.05
@ CONST. SR 88
= STA. 906+58.25
@ CONST. & R/W US 422

NOTE: CURB RADII AND ELEVATIONS ARE
SHOWN AT FLOW LINE OF CURB.

@ CONST. & R/W
SR 88/SR 168/SR 528

Sta. 905+76.81, 85.3' Lt.
Sta. 24+67.29, 82.25' Lt.
 $\Delta = 87^\circ 16' 50''$
 $R = 62.00'$
 $L = 94.45'$

Sta. 907+47.65, 86.32' Lt.
Sta. 24+74.25, 90.51' Rt.
 $\Delta = 81^\circ 44' 55''$
 $R = 63.00'$
 $L = 89.89'$

Sta. 906+15.33, 52' Rt.
Sta. 1+17.22, 40.5' Lt.
 $\Delta = 92^\circ 36' 55''$
 $R = 29.00'$
 $L = 46.88'$

Sta. 1+23.82, 36.5' Rt.
Sta. 906+93.73, 48' Rt.
 $\Delta = 88^\circ 46' 09''$
 $R = 25.00'$
 $L = 38.73'$

20

10

5

0

5

HORIZONTAL
SCALE IN FEET

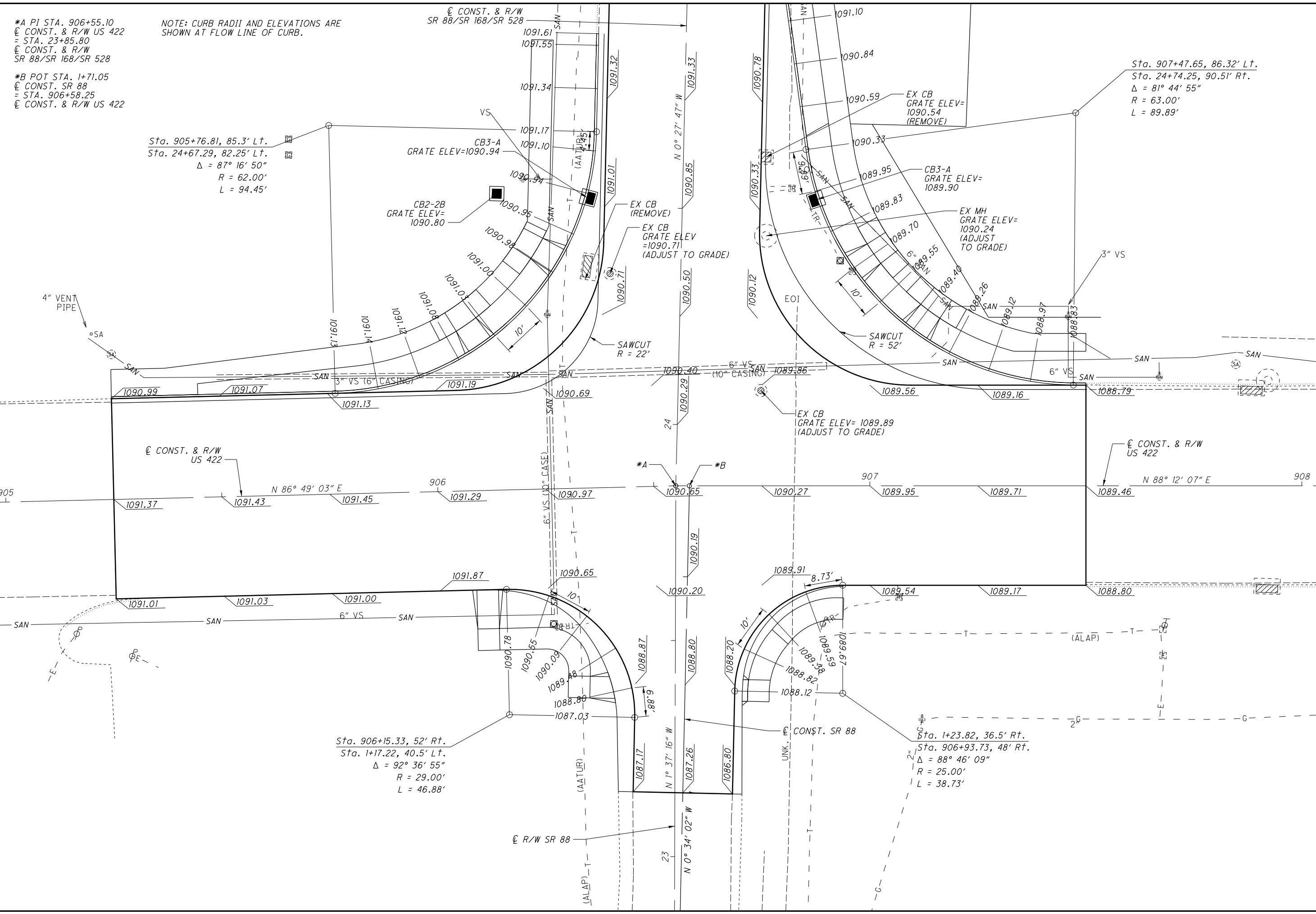
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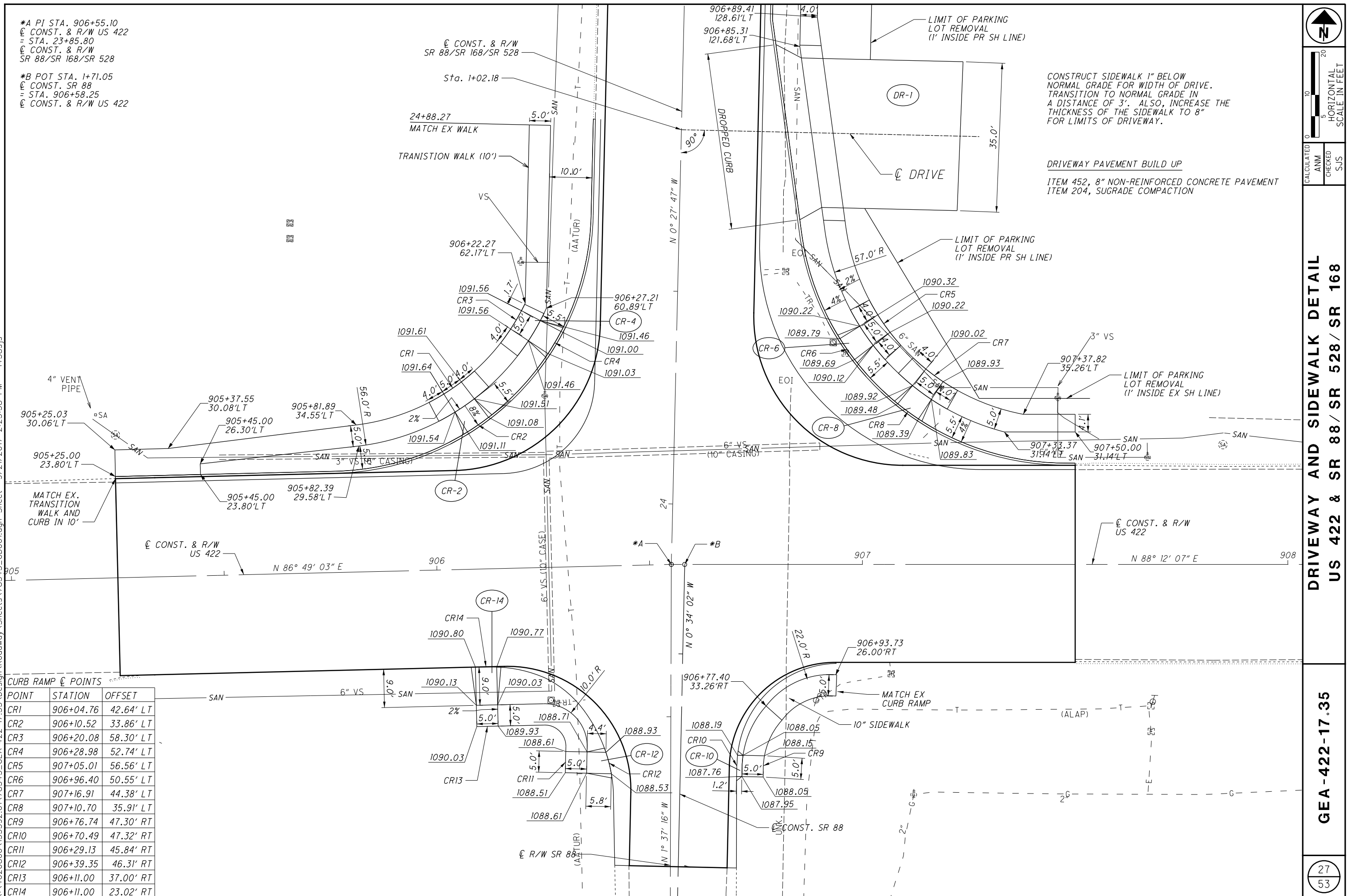
INTERSECTION DETAIL
US 422 & SR 88 / SR 528 / SR 168

GEA-422-17.35

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*B POT STA. 1+71.05
 @ CONST. SR 88
 = STA. 906+58.25
 @ CONST. & R/W US 422



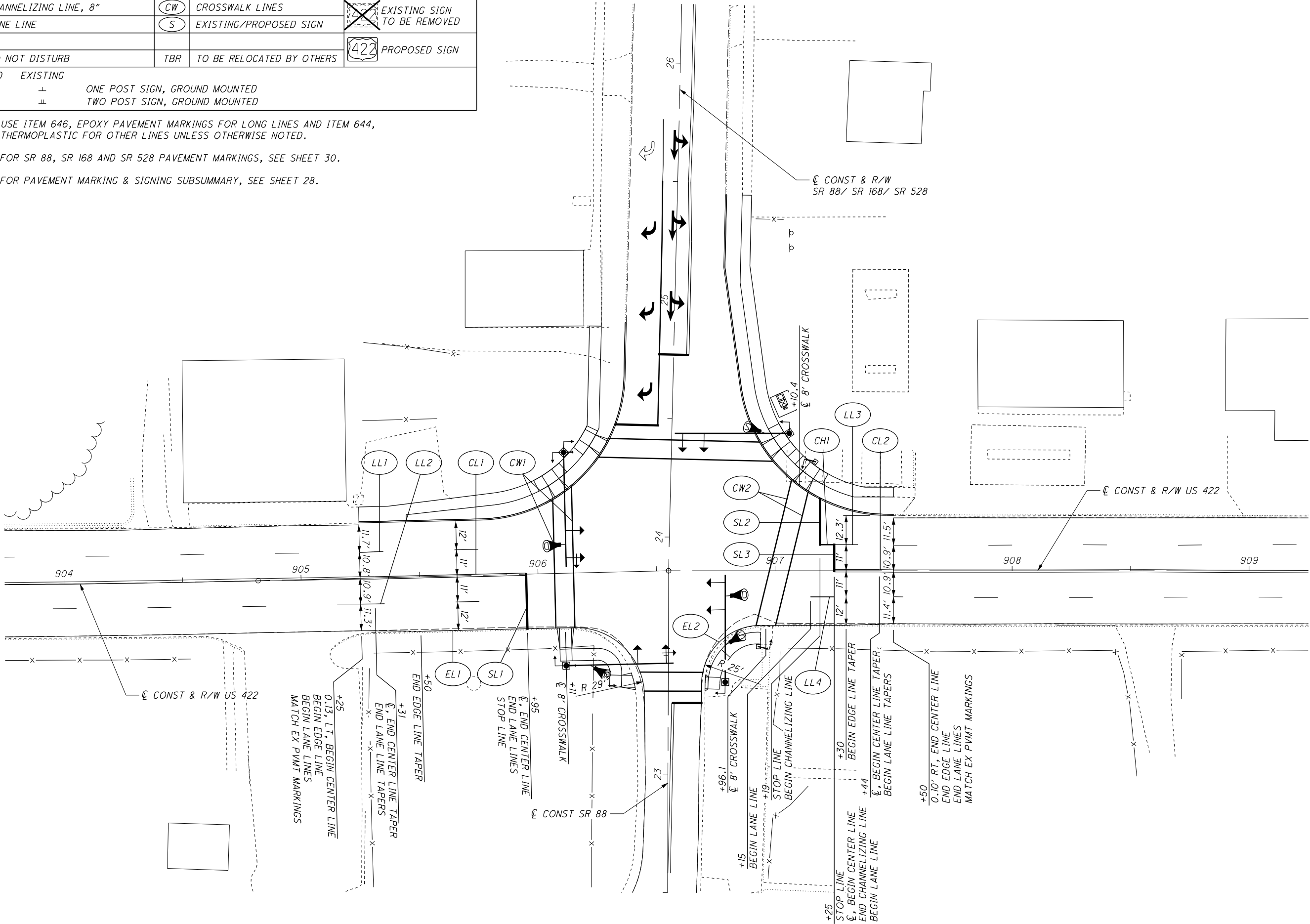
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LEGEND			
<div>EL</div>	EDGE LINE, WHITE, 6"	<div>SL</div>	STOP LINE
<div>CL</div>	CENTER LINE	<div>A</div>	LANE ARROW
<div>CH</div>	CHANNELIZING LINE, 8"	<div>CW</div>	CROSSWALK LINES
<div>LL</div>	LANE LINE	<div>S</div>	EXISTING/PROPOSED SIGN
			<div>422</div> EXISTING SIGN
			<div>X</div> EXISTING SIGN TO BE REMOVED
			<div>422</div> PROPOSED SIGN
DND	DO NOT DISTURB	TBR	TO BE RELOCATED BY OTHERS
PROPOSED	EXISTING		
<div>⊥</div>	<div>⊥</div>	ONE POST SIGN, GROUND MOUNTED	
<div>⊥⊥</div>	<div>⊥⊥</div>	TWO POST SIGN, GROUND MOUNTED	

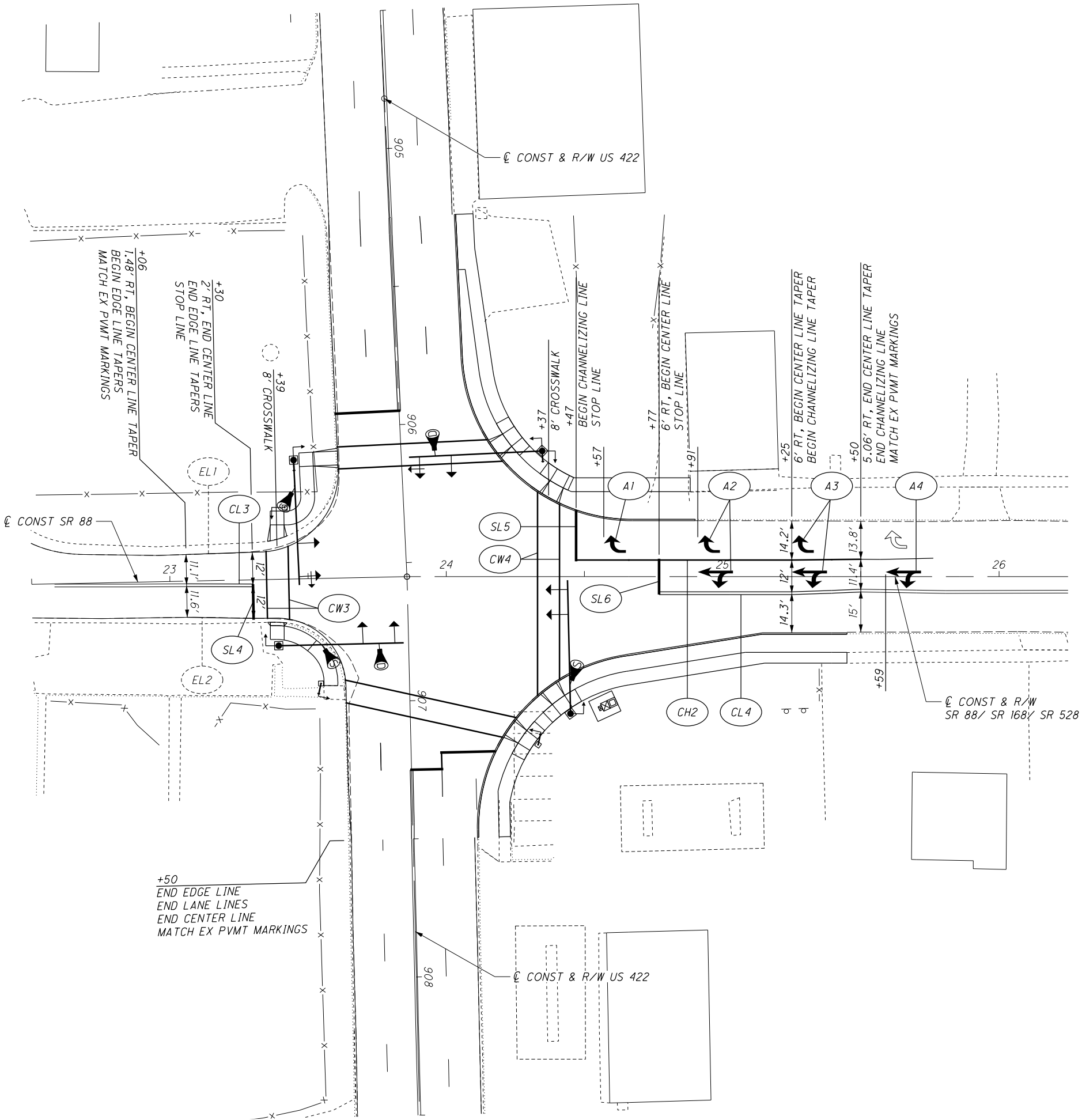
NOTES: USE ITEM 646, EPOXY PAVEMENT MARKINGS FOR LONG LINES AND ITEM 644, THERMOPLASTIC FOR OTHER LINES UNLESS OTHERWISE NOTED.

FOR SR 88, SR 168 AND SR 528 PAVEMENT MARKINGS, SEE SHEET 30.

FOR PAVEMENT MARKING & SIGNING SUBSUMMARY, SEE SHEET 28.



NOTES: FOR US 422 PAVEMENT MARKINGS, SEE SHEET 29.



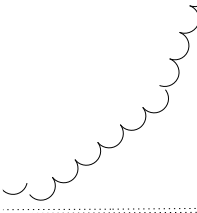
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HORIZONTAL
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PAVEMENT MARKING PLAN
SR 88, SR 168 AND SR 528

FOR LEGEND, SEE SHEET 29



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POWER SUPPLY FOR TRAFFIC SIGNALS

ELECTRIC POWER SHALL BE OBTAINED FROM OHIO EDISON POLE NO. 43AJ4A AT THE LOCATION INDICATED ON THE PLANS. POWER SUPPLIED SHALL BE 120 VOLTS.

SIGNAL ACTIVATION

PRIOR TO ACTIVATING THE NEW TRAFFIC SIGNAL TO STOP AND GO MODE AND/OR REMOVING THE EXISTING TRAFFIC SIGNAL FROM SERVICE, ALL ITEMS IN THE PROPOSED SIGNAL PLAN SHALL BE FULLY COMPLETED, (I.E., VEHICLE DETECTION, PEDESTRIAN SIGNAL HEADS, ETC). IF THERE ARE CONSTRUCTABILITY ISSUES (I.E., ROADWAY WIDENING, ETC.) THAT PREVENT THE SIGNAL FROM BEING COMPLETED PRIOR TO ACTIVATION, IT SHALL BE BROUGHT TO THE ATTENTION OF THE PROJECT ENGINEER AND DISTRICT TRAFFIC ENGINEER. THE DISTRICT TRAFFIC ENGINEER WILL THEN REVIEW, APPROVE OR REJECT PROPOSALS TO AC-TIVATE THE TRAFFIC SIGNAL PRIOR TO COMPLETION.

THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER AND DISTRICT TRAFFIC ENGINEER AT LEAST 10 WORKING DAYS PRIOR TO SCHEDULING THE FINAL INSPECTION OF THE SIGNAL INSTALLATION. FINAL INSPECTION IS NOT CONSIDERED COMPLETE UNTIL DESIGNATED DISTRICT TRAFFIC PERSONNEL INSPECT THE TRAFFIC SIGNAL AND ISSUE WRITTEN APPROVAL. IF ISSUES ARE FOUND DURING THE FINAL INSPECTION THAT EFFECT THE SAFETY OF THE TRAVELING PUBLIC AND/OR THE EFFICIENCY OF THE INTERSECTION, THE SIGNAL SHALL NOT BE ACTIVATED ON THE PROPOSED DATE. ANY PUNCH LIST ITEMS THAT ARE FOUND SHALL BE CORRECTED AND REINSPECTED BY DISTRICT TRAFFIC PERSONNEL PRIOR TO FINAL ACCEPTANCE. ODOT FORCES SHALL ONLY ASSUME DAY TO DAY MAINTENANCE OF THE TRAFFIC SIGNAL AFTER FINAL WRITTEN ACCEPTANCE HAS BEEN ISSUED.

632 REMOVAL OF TRAFFIC SIGNAL INSTALLATION

TRAFFIC SIGNAL INSTALLATIONS, INCLUDING SIGNAL HEADS, CABLE, MESSENGER WIRE, STRAIN POLES, CABINET, CONTROLLER, 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 ODOT, DISTRICT 12 IN ACCORDANCE WITH THE LISTING GIVEN HEREIN.

ITEMS TO BE STORED

- 1) CABINET
- 2) CONTROLLER
- 3) UPS
- 4) SIGNAL HEADS
- 5) PEDESTRIAN SIGNAL HEADS

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.

WORK INSPECTION

THE CONTRACTOR SHALL PROVIDE THE PROJECT ENGINEER AND DISTRICT TRAFFIC ENGINEER WITH 72 HOUR NOTICE OF ANY SIGNAL WORK TO BE PERFORMED AT THE INTERSECTION SITE SO THAT INSPECTION SERVICES CAN BE SUPPLIED.

DETECTION MAINTENANCE

IF VEHICLE DETECTION BECOMES UNEXPECTEDLY DISABLED, REQUIRES MODIFICATION, OR IS SCHEDULED TO BE TEMPORARILY REMOVED DURING THE CONSTRUCTION PROJECT, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE PROJECT ENGINEER AND DISTRICT TRAFFIC ENGINEER.

DETECTION MAINTENANCE (CONT.)

IF THE LOSS OF VEHICLE DETECTION IS KNOWN PRIOR TO THE START OF CONSTRUCTION, IT SHALL BE DISCUSSED AT THE PRECONSTRUCTION MEETING. AT SUCH TIME, THE DISTRICT TRAFFIC ENGINEER SHALL ADVISE THE PROJECT ENGINEER AND CONTRACTOR ON THE APPROPRIATE ACTION TO RECTIFY ANY LOSS OF VEHICLE DETECTION. THIS MAY INCLUDE PLACING THE TRAFFIC SIGNAL ON MINIMUM OR MAXIMUM RECALL, MODIFYING THE MINIMUM GREEN TIMES, AND REMOVING THE MALFUNCTIONING DETECTION FROM SERVICE. WHERE NON-INTRUSIVE DETECTION (I.E. VIDEO, RADAR) ALREADY EXISTS, THE CONTRACTOR SHALL INSURE THAT DETECTION IS OPERATING AND MAINTAINED BY RECONFIGURING THE DETECTION UNITS ACCORDINGLY DURING ALL CONSTRUCTION PHASES. THIS IS TO AVOID THE SIGNAL FROM MAXING OUT THE EFFECTED SIGNAL PHASE AND CREATING UNNECESSARY DELAYS.

LOCATIONS WHERE NON-INTRUSIVE DETECTION IS PROPOSED AND THE EXISTING VEHICLE DETECTION IS TO BE ABANDONED, THE NON-INTRUSIVE VEHICLE DETECTION SHALL BE INSTALLED, CONFIGURED AND MADE FULLY FUNCTIONAL PRIOR TO THE EXISTING DETECTION BEING DISABLED. THE CONTRACTOR SHALL CONTINUE TO MAINTAIN AND MODIFY THE DETECTION UNTIL FINAL ACCEPTANCE OF THE TRAFFIC SIGNAL. THIS IS TO ENSURE VEHICLE DETECTION REMAINS FULLY FUNCTIONAL THROUGHOUT CONSTRUCTION.

632 VEHICULAR SIGNAL HEAD, (LED), (BY TYPE), POLYCARBONATE, AS PER PLAN, BLACK

IN ADDITION TO THE REQUIREMENTS OF C&MS 632 AND 732, THE FOLLOWING REQUIREMENTS SHALL APPLY:

- 1. SIGNAL HEADS AND VISORS SHALL BE CONSTRUCTED OF BLACK POLYCARBONATE PLASTIC WITH VISORS AS SPECIFIED AND MEET ITE SPECIFICATIONS.
- 2. PROPER EXTERIOR COLORS SHALL BE OBTAINED BY USE OF COLORED PLASTIC MATERIAL RATHER THAN PAINTING.
- 3. ALL UPPER SIGNAL SUPPORT HARDWARE AND PIPING UP TO AND INCLUDING THE WIRE INLET FITTING SHALL BE FERROUS METAL.
- 4. THE ENTRANCE FITTING SHALL BE OF THE TRI-STUD DESIGN WITH SERRATED RINGS IN ORDER TO ACHIEVE POSITIVE LOCKING.
- 5. ALL SIGNAL HEADS SHALL BE RIGIDLY MOUNTED TO THE MAST ARM WITH THE YELLOW MODULE LOCATED IN FRONT OF THE MAST ARM.
- 6. ALUMINUM BACKPLATES SHALL BE IN ACCORDANCE WITH THE C&MS AND INCLUDE A FLUORESCENT YELLOW REFLECTIVE BORDER.
- 7. THE LIGHT EMITTING DIODE (LED) MODULES SHALL MEET THE REQUIREMENTS OF C&MS 732.04-C. THE CONTRACTOR SHALL PROVIDE ODOT, IN WRITING, WITH THE LED MANUFACTURER NAME, SERIAL NUMBER, PART NUMBER, DESCRIPTION OF LAMP, AND DATE OF MANUFACTURE FOR ALL LED UNITS THAT ARE TO BE USED IN THE SIGNAL HEAD PRIOR TO INSTALLATION, FOR ACCEPTANCE AND WARRANTY PURPOSES.
- 8. SIGNAL HEADS SHALL HAVE A MINIMUM WALL THICKNESS OF 0.117 INCHES.

9. SIGNAL HEADS SHALL INCLUDE CUTAWAY TYPE VISORS UNLESS OTHERWISE SPECIFIED IN THE PLANS.

632 VEHICULAR SIGNAL HEAD, (LED), (BY TYPE), POLYCARBONATE, AS PER PLAN, BLACK (CONT.)

10. APPLY A BEAD OF SILICONE TO THE SIGNAL HEAD, WASHER, AND ENTRANCE ADAPTER SERRATIONS TO PREVENT WATER INTRUSION. ALSO, FILL THE SPACE BETWEEN CONCENTRIC SERRATION RINGS ON THE TOP OF THE SIGNAL HEAD TO COMPLETELY EXCLUDE WATER FROM THE SPACE BETWEEN THE CONCENTRIC RINGS.

PAYMENT FOR ITEM 632 VEHICULAR SIGNAL HEAD, LED, BLACK, (BY TYPE), WITH BACKPLATE, AS PER PLAN SHALL BE MADE FOR COMPLETE SIGNAL HEAD FURNISHED AND INSTALLED, INCLUDING ALL LABOR, EQUIPMENT, MATERIALS, AND NEW ATTACHMENT HARDWARE.

GUARANTEE

THE CONTRACTOR SHALL GUARANTEE THAT THE TRAFFIC CON-TROL SYSTEM INSTALLED AS PART OF THIS CONTRACT SHALL OPERATE SATISFACTORILY FOR A PERIOD OF 90 DAYS FOLLOW-ING 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. EQUIPMENT, MATERIAL AND LABOR COSTS INCURRED IN CORRECTING AN UNSATISFACTORY OPERATION SHALL BE BORNE BY THE CONTRACTOR.

THE GUARANTEE SHALL COVER THE FOLLOWING ITEMS OF THE TRAFFIC CONTROL SYSTEM: CONTROLLERS AND ASSOCIATED EQUIPMENT, DETECTOR UNITS, INTERCONNECTION ITEMS AND MASTER CONTROL EQUIPMENT.

CUSTOMARY MANUFACTURER’S GUARANTEES FOR THE FOREGOING ITEMS SHALL BE TURNED OVER TO THE STATE OR THE MAIN-TAINING AGENCY 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.

UNDERDRAINS FOR PULLBOXES

REFERENCE TRAFFIC SCD HL-30.11 FOR DETAILS ABOUT DRAINING PULLBOXES. UNDERDRAINS FOR PULLBOXES SHALL BE USED AS DIRECTED BY THE ENGINEER AND SHALL BE PROVIDED WHERE THE LENGTH REQUIRED FOR A SATISFACTORY OUTLET DOES NOT EXCEED 20 FEET. THE FOLLOWING ESTIMATED QUANTITY IS CARRIED TO THE GENERAL SUMMARY FOR THIS PURPOSE:

ITEM 611 4” CONDUIT, TYPE E 40 FT.

632 SIGNAL SUPPORT FOUNDATION

PRIOR TO ORDERING THE SIGNAL SUPPORTS, THE CONTRACTOR SHALL CONTACT OUPS TO HAVE ALL THE UTILITIES LOCATED IN THE FIELD THEN MEET WITH THE PROJECT ENGINEER TO LOCATE THE PROPOSED SUPPORT LOCATION TO INSURE THERE ARE NO CONFLICTS WITH UTILITIES. IF THERE ARE ISSUES, PROJECT ENGINEER SHALL PROVIDE GUIDANCE AS TO THE RELOCATION OF THE SUPPORT POLES.

PAYMENT WILL BE AT THE CONTRACT UNIT PRICE AND WILL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS, TOOLS, EQUIPMENT AND OTHER INCIDENTALS NECESSARY FOR EACH SUPPORT FURNISHED, IN PLACE, COMPLETE AND ACCEPTED.

633 CONTROLLER UNIT, TYPE 2070E WITH 2070-IC CPU AND ASC/3 SOFTWARE, AS PER PLAN

THE CONTROLLER UNIT SHALL BE EQUIPMENT MANUFACTURED IN CONFORMANCE TO THE CALIFORNIA DEPARTMENT OF TRANSPOR-TATION (CALTRANS) SPECIFICATIONS TITLES “TRANSPORTATION ELECTRICAL EQUIPMENT SPECIFICATIONS (TEES).” THE CONTROL-LER UNIT AND SOFTWARE VERSIONS SHALL BE COMPLIANT WITH THE TRAFFIC AUTHORIZED PRODUCTS (TAP) LIST.

THE CONTROLLER UNIT SHALL INCLUDE THE FOLLOWING:

- 1. UNIT CHASSIS
- 2. 2070-IC CPU MODULE (LINUX)
- 3. 2070-2A FIELD I/O MODULE
- 4. 2070-3B FRONT PANEL
- 5. 2070-4A POWER SUPPLY
- 6. 2070-7A SERIAL COMMUNICATION MODULE

THE CONTRACTOR SHALL NOT REASSIGN THE CABINET DETECTOR INPUTS IN ORDER TO REDUCE THE NUMBER OF 2-CHANNEL DETECTOR UNITS SUPPLIED, BUT SHALL USE THE STANDARD CALTRANS INPUT FILE DESIGNATIONS.

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GROUNDING AND BONDING

THE REQUIREMENTS OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS (CMS) AND THE TC SERIES OF STANDARD CONSTRUCTION DRAWINGS ARE MODIFIED AS FOLLOWS:

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. IF MULTIPLE CONDUIT RUNS BEGIN AND END AT THE SAME POINTS, ONLY ONE EQUIPMENT GROUNDING CONDUCTOR IS REQUIRED.

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. 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.

4. GROUND ROD.

A. A ¾ 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:

GROUNDING AND BONDING (CONT.)

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 SPLICE.

B. THE SERVICE NEUTRAL (AC-) SHALL ONLY BE CONNECTED TO GROUND AT THE PRIMARY POWER SERVICE DISCONNECT SWITCH.

I. 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 CURRENT PATH SYSTEM ARE INCIDENTAL TO THE CONDUCTORS INSTALLED BY CONTRACT.

809 ADVANCE RADAR DETECTION

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING AND INSTALLING A WAVETRONIX SMARTSENSOR ADVANCE DETECTION UNIT (MODEL SS-200E). THE DETECTION UNIT SHALL INCLUDE THE FOLLOWING:

- POWER SHALL BE PROVIDED FROM THE TRAFFIC CABINET.
- ALL REQUIRED INPUT CARDS SHALL BE INCLUDED IN THE TRAFFIC CABINET AND SHALL BE COMPATIBLE WITH CALTRANS, NEMA TS1 AND NEMA TS2 DETECTOR RACKS. THE CARDS SHALL PROVIDE TRUE PRESENCE DETECTOR CALLS OR CONTACT CLOSURE TO THE TRAFFIC CONTROLLER.
- THE UNIT SHALL BE MOUNTED DIRECTLY TO A POLE OR MAST ARM, AS RECOMMENDED BY THE MANUFACTURER. CABLE(S) SHALL BE PROVIDED AS REQUIRED AND RECOMMENDED BY THE MANUFACTURER.
- SURGE PROTECTION DEVICES, AS RECOMMENDED BY THE MANUFACTURER SHALL BE INCLUDED BOTH AT THE POLE WHERE THE UNIT IS LOCATED TO PROTECT THE UNIT AND IN THE TRAFFIC CABINET TO PROTECT THE CABINET ELECTRONICS.
- THE MANUFACTURER'S REPRESENTATIVE SHALL BE ON SITE DURING INSTALLATION AND TESTING AND SHALL PROVIDE ONSITE TRAINING ON THE SETUP, OPERATION AND MAINTENANCE OF THE UNIT.
- A SERIAL TO ETHERNET COMMUNICATIONS MODULE AND ETHERNET CABLE (MINIMUM 7 FEET).

809 ADVANCE RADAR DETECTION (CONT.)

- THE POWER SUPPLY AND COMMUNICATION MODULES SHALL BE SECURED TO A SINGLE PANEL THAT CAN BE MOUNTED INTERIOR TO THE TRAFFIC CABINET. THE PANEL SHALL INCLUDE MODULAR-PLUG STYLE CONNECTIONS FOR UP TO FOUR (4) SENSOR CABLES. ADDITIONAL SENSORS MAY BE HARD-WIRED TO THE COMMUNICATION MODULES, AS NECESSARY.

PAYMENT FOR ITEM 809 ADVANCE RADAR DETECTION SHALL BE MADE AT THE CONTRACT UNIT PRICE FOR EACH UNIT, COMPLETE AND IN PLACE INCLUDING ALL REQUIRED CABINET HARDWARE, MOUNTING BRACKETS, CABLES, CONDUIT, CONNECTIONS TESTED AND ACCEPTED, AND ANY OTHER NECESSARY HARDWARE TO ESTABLISH A FULLY FUNCTIONAL DETECTION SYSTEM.

809 STOP-BAR RADAR DETECTION

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING AND INSTALLING A WAVETRONIX SMARTSENSOR MATRIX DETECTION UNIT. THE DETECTION UNIT SHALL INCLUDE THE FOLLOWING:

- POWER SHALL BE PROVIDED FROM THE TRAFFIC CABINET.
- ALL REQUIRED INPUT CARDS SHALL BE INCLUDED IN THE TRAFFIC CABINET AND SHALL BE COMPATIBLE WITH CALTRANS, NEMA TS1 AND NEMA TS2 DETECTOR RACKS. THE CARDS SHALL PROVIDE TRUE PRESENCE DETECTOR CALLS OR CONTACT CLOSURE TO THE TRAFFIC CONTROLLER.
- THE UNIT SHALL BE MOUNTED DIRECTLY TO A POLE OR MAST ARM, AS RECOMMENDED BY THE MANUFACTURER. CABLE(S) SHALL BE PROVIDED AS REQUIRED AND RECOMMENDED BY THE MANUFACTURER.
- SURGE PROTECTION DEVICES, AS RECOMMENDED BY THE MANUFACTURER SHALL BE INCLUDED BOTH AT THE POLE WHERE THE UNIT IS LOCATED TO PROTECT THE UNIT AND IN THE TRAFFIC CABINET TO PROTECT THE CABINET ELECTRONICS.
- THE MANUFACTURER'S REPRESENTATIVE SHALL BE ON SITE DURING INSTALLATION AND TESTING AND SHALL PROVIDE ONSITE TRAINING ON THE SETUP, OPERATION AND MAINTENANCE OF THE UNIT.
- A SERIAL TO ETHERNET COMMUNICATIONS MODULE AND ETHERNET CABLE (MINIMUM 7 FEET).
- THE POWER SUPPLY AND COMMUNICATION MODULES SHALL BE SECURED TO A SINGLE PANEL THAT CAN BE MOUNTED INTERIOR TO THE TRAFFIC CABINET. THE PANEL SHALL INCLUDE MODULAR-PLUG STYLE CONNECTIONS FOR UP TO FOUR (4) SENSOR CABLES. ADDITIONAL SENSORS MAY BE HARD-WIRED TO THE COMMUNICATION MODULES, AS NECESSARY.

PAYMENT FOR ITEM 809 STOP-BAR RADAR DETECTION SHALL BE MADE AT THE CONTRACT UNIT PRICE FOR EACH UNIT, COMPLETE AND IN PLACE INCLUDING ALL REQUIRED CABINET HARDWARE, MOUNTING BRACKETS, CABLES, CONDUIT AND CONNECTIONS TESTED AND ACCEPTED.

633 UNINTERPRETABLE POWER SUPPLY (UPS), 1000 WATT, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF C&MS 633 AND 733, POLE ATTACHMENT HARDWARE WILL BE INCLUDED FOR POLE-MOUNTED CABINETS, AND A CABINET RISER (8 INCH MINIMUM) AND ANCHOR BOLTS WILL BE PROVIDED FOR BASE-MOUNTED CABINETS. BEFORE PERFORMING THE WORK, THE CONTRACTOR, THE DISTRICT TRAFFIC ENGINEER AND THE PROJECT ENGINEER WILL PERFORM A SITE INSPECTION TO ESTABLISH THE LOCATION OF THE UPS CABINET AND FOUNDATION.

THE UPS CABINET SHALL INCLUDE A GENERATOR POWER PANEL WITH A HEAVY DUTY POWER RELAY VERSUS THE LINE VOLTAGE GENERATOR SWITCH. THE GENERATOR INLET SHALL BE A RECESSED PANEL WITH A DOOR THAT IS FLUSH WITH THE EXTERNAL SIDE OF THE UPS CABINET. IT SHALL INCLUDE A RECESSED PLUG, AUTOMATIC TRANSFER SWITCH AND A DOOR THAT SECURELY CLOSSES OVER THE POWER CORD.

THE UPS OUTPUT NOTIFICATIONS FOR ON BATTERY, BATTERY 2-HOUR TIMER, AND LOW BATTERY SHALL BE WIRED INTO THE TRAFFIC SIGNAL CABINET BACK PANEL TO PROVIDE SPECIAL STATUS ALARMS FOR EACH OUTPUT INTO THE SIGNAL CONTROLLER.

THIS ITEM SHALL INCLUDE A RED LED STATUS INDICATOR LAMP TO ALLOW MAINTENANCE PERSONNEL AND LAW ENFORCEMENT TO QUICKLY ASSESS WHETHER A TRAFFIC SIGNAL CABINET IS BEING POWERED BY A UPS. THE LED HOUSING SHALL BE NEMA 4X, IP65 OR IP66, RATED FOR OUTDOOR USE AND BE TAMPER/SHATTER RESISTANT. IT SHALL BE A DOMED ENCLOSURE CONTAINING A RED LENS WITH LED THAT IS VISIBLE FROM 100 FOOT MINIMUM. THE ENCLOSURE AND LED MODULE SHOULD BE PLACED AND CENTERED ON THE TOP SURFACE OF THE UPS CABINET AND SEALED FROM WATER INTRUSION. IT SHOULD BE WIRED USING MINIMUM 20GA STRANDED, INSULATED HOOKUP WIRE TO THE STATUS RELAY OUTPUTS OF THE UPS. THE WIRES SHALL BE TERMINATED BY LUGS AT THE DISPLAY END AND PERMANENTLY LABELED "BACKUP POWER STATUS DISPLAY," WITH WIRE POLARITY INDICATED. THE RED LED SHALL ONLY ILLUMINATE TO INDICATE THE CABINET IS OPERATING UNDER UPS BACKUP POWER (THE "BACKUP" OPERATING CONDITION). THIS ITEM INCLUDES PROGRAMMING THE UPS STATUS RELAY OUTPUTS TO PRODUCE THE LAMP STATUS DISPLAYS. THESE STATUS DISPLAYS WILL BE SOLID 100% DUTY CYCLE (NOT FLASHING) DISPLAYS. THE OPERATING VOLTAGE OF THE LED LAMP SHALL BE 120V AC UNLESS OTHERWISE INDICATED.

632 COVERING OF VEHICULAR SIGNAL HEAD

COVER VEHICULAR SIGNAL HEADS IF ERECTED AT INTERSECTIONS WHERE TRAFFIC IS MAINTAINED BEFORE ENERGIZING THE SIGNALS. USE A STURDY OPAQUE COVERING MATERIAL SPECIFICALLY MADE FOR USE WITH TRAFFIC SIGNALS, AND ENSURE THAT THE COLOR OF THE COVER IS DIFFERENT THAN THE SIGNAL HEAD, TAN OR BEIGE, SO THAT IT IS CLEAR TO DRIVERS THE HEADS ARE COVERED, NOT DARK. USE A METHOD OF COVERING TO COVER ATTACHMENT AND MATERIALS, INCLUDING BACK-PLATES, AS APPROVED BY THE ENGINEER. COVERS ARE TO BE FREE OF TEXT, PICTURES, OR ANY TYPE OF ADVERTISING. MAINTAIN COVERS, AND REMOVE THEM WHEN DIRECTED BY THE ENGINEER.

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SIGNAL POLES

DUE TO THE POSSIBILITY OF CONFLICT WITH EXISTING OR PROPOSED UNDERGROUND OBSTRUCTIONS (INCLUDING THE POSSIBILITY OF UNRECORDED OBSTRUCTIONS) WHICH COULD AFFECT THE LOCATION OF THE FOUNDATIONS FOR THESE ITEMS, AND CONSEQUENTLY, THE DESIGN OF VARIOUS POLES AND/OR ARMS, DO NOT PLACE FINAL ORDERS FOR THESE ITEMS UNTIL THE FOUNDATIONS HAVE BEEN INSTALLED, AND WRITTEN NOTICE TO PROCEED WITH THE ORDERS FOR THESE ITEMS HAS BEEN RECEIVED FROM THE ENGINEER.

PROTECTIVE COATING OF SIGNAL SUPPORTS

GENERAL

SIGNAL SUPPORTS CAN BE SEPARATED INTO MAJOR SECTIONS SUCH AS VERTICAL POLES AND MAST ARMS. FOR THE IMPLEMENTATION OF THIS WORK ITEM, SUPPORT SECTION SHALL REFER TO BOTH THE VERTICLE POLE AND THE MAST ARM RATHER THAN THE INDIVIDUAL COMPONENTS. UNIT OF MEASUREMENT AND PAYMENT SHALL BE PER SUPPORT SECTION.

THE PROTECTIVE COATING OF SIGNAL SUPPORT SECTIONS SHALL BE A FOUR PART PROCESS FOR WEATHERED GALVANIZED METAL AND A THREE PART PROCESS FOR NEW AND WEATHERED PAINTED METAL TO INCLUDE SURFACE PREPARATION FOLLOWED BY A THREE COAT PAINT SYSTEM FOR WEATHERED GALVANIZED METAL AND A TWO COAT PAINT SYSTEM FOR NEW AND WEATHERED PAINTED METAL. THE THREE COAT SYSTEM SHALL CONSIST OF AN ORGANIC ZINC PRIME COAT, EPOXY INTERMEDIATE COAT, AND A URETHANE FINISH COAT, WITH EACH COAT BEING A DIFFERENT COLOR. THE TWO COAT SYSTEM SHALL CONSIST OF AN EPOXY INTERMEDIATE COAT AND A URETHANE FINISH COAT WITH EACH COAT BEING A DIFFERENT COLOR. THE PURPOSE OF THIS COATING IS TO PROVIDE PROTECTION FOR NEW (UNWEATHERED), OLDER (WEATHERED) GALVANIZED, AND PAINTED STEEL SUPPORT SECTIONS FROM CORROSIVE ELEMENTS IN THE ATMOSPHERE. COATING AND SURFACE PREPARATION OF NEW GALVANIZED SUPPORT SECTIONS SHOULD BE DONE BY THE MANUFACTURER.

IN THE FIELD, THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO COMPLY WITH POLLUTION LAWS, RULES, OR REGULATIONS OF FEDERAL, STATE, OR LOCAL AGENCIES. THE COATING MATERIALS SUPPLIED FOR THE WORK CAN BE HAZARDOUS TO THE HEALTH OF THE APPLICATOR IF NOT APPLIED AS PER MANUFACTURER'S INSTRUCTION. THE CONTRACTOR SHALL FOLLOW THE DATA SHEET AND THE LABEL ON THE PAINT CONTAINERS. THESE PRECAUTIONS SHALL INCLUDE THE USE OF RESPIRATORS AND EYE AND SKIN PROTECTION AS SPECIFIED. THE CONTRACTOR SHALL ALSO INSURE THAT HIS PAINTING OPERATIONS AND LOCATIONS WILL NOT ENDANGER OR ADVERSELY AFFECT THE PUBLIC IN GENERAL.

IN THE FIELD, PROPOSED CLEANING AND COATING OPERATIONS SHALL BE PERFORMED ONLY WHEN THE AMBIENT TEMPERATURE IS 50 DEGREES F (10 DEGREES C) OR ABOVE. PAINT SHALL NOT BE APPLIED DURING RAIN, FOG OR MIST, OR WHEN THE STEEL SURFACE TEMPERATURE IS LESS THAN 5 DEGREES F (3 DEGREES C) ABOVE THE DEW POINT. PAINT SHALL NOT BE APPLIED TO WET OR DAMP SURFACES OR ON FROSTED OR ICE-COATED SURFACES. PAINT SHALL NOT BE APPLIED WHEN THE RELATIVE HUMIDITY IS GREATER THAN 85%. ALL STEEL SURFACES OF TRUSSES AND END FRAMES, INCLUDING THE WELDED AREAS, BALLAST ENCLOSURE MOUNTING BRACKET, AND BASE PLATES ARE TO BE CLEANED AND COATED. BEFORE EACH COATING IS APPLIED, IT SHALL BE MIXED WITH AN APPROVED POWER MECHANICAL MIXER TO A UNIFORM CONSISTENCY WHICH SHALL BE MAINTAINED DURING ITS APPLICATION. EACH COAT SHALL BE APPLIED IN A WORKMANLIKE MANNER AS A CONTINUOUS FILM OF UNIFORM THICKNESS WHICH IS FREE OF HOLIDAYS, PORES,

GENERAL (CONT.)

RUNS, OR SAGS. PROTECTIVE COATING OF SUPPORTS IN THE FIELD SHALL BE APPLIED BY BRUSH OR ROLLER ONLY. SPRAYING IS NOT AN ACCEPTABLE METHOD OF FIELD COATING. THINNING OF PAINT IS STRICTLY PROHIBITED. PAINT THAT IS NOT CAPABLE OF BEING APPLIED AS SPECIFIED SHALL NOT BE USED. THE COATING SHALL PENETRATE ALL JOINTS AND CONNECTIONS. THE ENGINEER SHALL BE NOTIFIED 24 HOURS PRIOR TO ANY CLEANING OR COATING OPERATIONS SO THAT INSPECTION SERVICES CAN BE PROVIDED. TO PROVIDE ASSURANCE THAT NO THINNING OF THE PROTECTIVE COATING MATERIAL IS BEING DONE, PERIODIC CHECKS BY A STATE INSPECTOR WILL BE MADE OF THE MATERIAL. THESE CHECKS WILL BE MADE UTILIZING A VISCOSITY TEST CUP PROCEDURE AS PROVIDED BY THE MANUFACTURER OF THE MATERIAL. THE FREQUENCY OF THESE CHECKS WILL BE DETERMINED BY THE ENGINEER BASED UPON FIELD EVALUATION AND JOB PERFORMANCE. IF THE VISCOSITY CHECK REVEALS THAT THE MATERIAL HAS BEEN THINNED, IMMEDIATE REJECTION OF THE MATERIAL SHALL BE MADE. THIS REJECTION SHALL REQUIRE THE CONTRACTOR TO IMMEDIATELY STOP USING THE MATERIAL AND PROVIDE NEW MATERIAL OF THE PROPER SPECIFICATION PER PLAN. IN ADDITION, THE COATING OF THE SIGN SUPPORT WITH THE NON-APPROVED MATERIAL SHALL BE CONSIDERED UNACCEPTABLE. THEREFORE, THE SUPPORT SHALL BE STRIPPED AND RE-COATED WITH APPROVED MATERIAL (UNTHINNED MATERIAL).

3 TO 4 VISCOSITY CHECKS INDICATING A PERPETUAL QUALITY CONTROL PROBLEM (THINNED MATERIAL) SHALL BE CONSIDERED SUFFICIENT JUSTIFICATION TO TERMINATE THE CONTRACT.

THE COST FOR THE VISCOSITY TEST KIT SHALL BE BORNE BY THE CONTRACTOR AND CONSIDERED INCIDENTAL TO THE ITEM SPECIALS PER COAT. THE TEST KIT SHALL CONTAIN ITEMS SUCH AS INSTRUCTIONS, VISCOSITY CUP, STANDARD COMPARISON RATES, CARRYING CASE, CLEANING EQUIPMENT, STOPWATCH, ETC. THE KIT SHALL BE GIVEN TO THE STATE INSPECTOR FOR USE DURING THE PERFORMANCE OF THE WORK.

COATING SYSTEM

THE COATING SYSTEM SHALL BE A THREE COAT PAINT SYSTEM OR A TWO COAT SYSTEM CONFORMING TO CMS 708.02. SUPPLY ALL COATS FROM THE SAME MANUFACTURER. UNLESS OTHERWISE SPECIFIED BY ALTERNATE BID, THE URETHANE FINISH COAT COLOR SHALL BE BLACK (FEDERAL COLOR NO. 27040). THE COATING MATERIALS USED SHALL BE SUPPLIED BY ONE OF THE FOLLOWING MANUFACTURERS, OR AN APPROVED EQUAL:

CARBOLINE LAKE CHARLES, LOUISIANA	ICI PAINTS HURON, OHIO
INTERNATIONAL PAINT LOUISVILLE, KENTUCKY	PPG LITTLE ROCK, ARKANSAS

SHERWIN-WILLIAMS COMPANY
COLUMBUS, OHIO

ALTERNATE COATING SYSTEM

AS AN ALTERNATE TO A THREE PART/TWO PART SYSTEM, A POWDER COATING SYSTEM CONFORMING TO THE FOLLOWING SPECIFICATIONS IS AN ACCEPTABLE METHOD OF COATING NEW SIGNAL SUPPORTS.

ALL MAJOR SUPPORT SECTIONS ARE TO BE COATED WITH A URETHANE OR TRIGLYSIDYLE ISOCYANURATE (TGIC) POLYESTER POWDER TO A MINIMUM FILM THICKNESS OF 2.0 MILS (0.002"). PRIOR TO APPLICATION, THE SURFACES TO BE POWDER COATED SHALL BE MECHANICALLY ETCHED BY BRUSH BLASTING (REF. SSPC-SP7) AND THE ZINC COATED SUBSTRATE PREHEATED TO

ALTERNATE COATING SYSTEM (CONT.)

450 DEGREES FAHRENHEIT FOR A MINIMUM OF ONE HOUR IN A GAS FIRED CONVECTION OVEN. ELECTROSTATICALLY APPLIED AND CURED IN A GAS FIRED CONVECTION OVEN BY HEATING THE ZINC COATED SUBSTRATE TO A MINIMUM OF 350 DEGREES F AND A MAXIMUM OF 450 DEGREES F. THE THERMOSETTING POWDER RESIN SHALL PROVIDE BOTH INTERCOAT AS WELL AS SUBSTRATE FUSION ADHESION THAT MEETS 5A OR 5B OF CLASSIFICATIONS OF ASTM D3359.

SURFACE PREPARATION, NEW SUPPORT SECTIONS

NEW, UNWEATHERED GALVANIZED SUPPORT SECTIONS SHOULD HAVE THEIR SURFACE PREPARATION AS WELL AS THEIR PROTECTIVE COATING DONE AT THE MANUFACTURER OF THE SUPPORT SECTIONS UNDER CONTROLLED CONDITION.

THE SUPPORT SECTIONS SHALL BE PREPARED FOR COATING BY SSPC-SPI (SOLVENT CLEANING) (DO NOT USE ALKALINE CLEANERS) FOLLOWED BY SSPC-SP7 (100% BRUSH OFF BLAST CLEANING). BEFORE THE PREPARED SURFACE DEGRADES FROM THE PRESCRIBED STANDARDS, THE INTERMEDIATE COAT SHALL BE APPLIED. IN EVERY CASE, THE SURFACE SHALL BE COATED WITH THE EPOXY INTERMEDIATE COAT ON THE SAME DAY OF SURFACE PREPARATION. CAREFUL HANDLING AND STORAGE WILL BE REQUIRED TO PREVENT ANY SCRAPING, MARRING, OR OTHER DAMAGE TO THE PREPARED SURFACE.

PAYMENT SHALL INCLUDE ALL LABOR, EQUIPMENT, HANDLING, TRANSPORTATION COSTS AND MATERIALS NECESSARY TO ACCOMPLISH THIS ITEM OF WORK PER MAJOR SUPPORT SECTION.

BASIS OF PAYMENT WILL BE AS FOLLOWS:
ITEM 630 - SURFACE PREPARATION, NEW SUPPORT SECTIONS AT CONTRACT BID PRICE PER EACH MAJOR SUPPORT SECTION.

COATING, ORGANIC ZINC PRIME COAT, SUPPORT SECTIONS

THIS ITEM SHALL CONSIST OF THE APPLICATION OF ONE (1) COAT OF AN ORGANIC ZINC PRIMER TO SUPPORT SECTIONS. THE TOTAL DRY FILM THICKNESS OF THIS COAT SHALL BE BETWEEN 1.5 TO 2.0 MILS (38 TO 51 MICROMETERS). IF MORE THAN ONE PASS IS NECESSARY TO OBTAIN THE REQUIRED THICKNESS THAT COST SHALL BE BORNE BY THE CONTRACTOR. THE COLOR OF THIS COAT SHALL BE NOTICEABLY DIFFERENT FROM THE BASE MATERIAL AND OTHER PROPOSED COATS. THIS COAT SHALL IN ALL CASES BE APPLIED OVER SURFACES THAT WERE PREPARED EARLIER THAT SAME DAY. THE THINNING OF THE MATERIAL IS STRICTLY PROHIBITED. MATERIAL THAT IS NOT CAPABLE OF BEING APPLIED AS SPECIFIED SHALL NOT BE USED.

WHEN THE AVERAGE DRY FILM THICKNESS OF THIS COAT OVER THE ENTIRE SUPPORT SECTION IS LESS THAN THE SPECIFIED 1.5 TO 2.0 MILS (38 TO 51 MICROMETERS) BUT IS AT LEAST 1.25 MILS (32 MICROMETERS), THE CONTRACT BID PRICE FOR THIS ITEM SHALL BE REDUCED IN DIRECT PROPORTION TO THE PERCENT DEFICIENCY OF COATING UP TO 16-2/3%. IF THE DEFICIENCY OF COATING IS MORE THAN THAT 16-2/3% [I.E., THE AVERAGE DRY FILM THICKNESS IS LESS THAN 1.25 MILS (32 MICROMETERS)] THE WORK FOR THIS ITEM SHALL BE CONSIDERED UNSATISFACTORY AND SHALL BE RE-COATED AT THE FULL EXPENSE OF THE CONTRACTOR, INCLUDING ALL LABOR, EQUIPMENT AND MATERIALS. PAYMENT SHALL INCLUDE ALL LABOR, EQUIPMENT, HANDLING COSTS AND MATERIALS NECESSARY TO ACCOMPLISH THIS ITEM OF WORK. THIS PRIME COAT SHALL BE MANUFACTURED BY THE SAME COMPANY SUPPLYING THE INTERMEDIATE AND TOP COATS. A PROPERLY CALIBRATED DRY FILM THICKNESS INSTRUMENT WILL BE USED TO CHECK THE COATING.

BASIS OF PAYMENT WILL BE AS FOLLOWS:
ITEM 630 - COATING, ORGANIC ZINC PRIME COAT, SUPPORT SECTIONS AT CONTRACT BID PRICE PER EACH MAJOR SUPPORT SECTION.

COATING, EPOXY INTERMEDIATE COAT, SUPPORT SECTIONS

THIS ITEM SHALL CONSIST OF THE APPLICATION OF ONE (1) COAT OF EPOXY TO SUPPORT SECTIONS. THE TOTAL DRY FILM THICKNESS OF THIS COAT SHALL NOT BE LESS THAN SIX (6.0) MILS (152 MICROMETERS). IF MORE THAN ONE PASS IS NECESSARY TO OBTAIN THE REQUIRED THICKNESS THAT COST SHALL BE BORNE BY THE CONTRACTOR. THINNING OF THE MATERIAL IS STRICTLY PROHIBITED. MATERIAL THAT IS NOT CAPABLE OF BEING APPLIED AS SPECIFIED SHALL NOT BE USED.

WHEN THE AVERAGE DRY FILM THICKNESS OF THIS COAT OVER THE ENTIRE SUPPORT SECTION IS LESS THAN THE SPECIFIED 6.0 MILS (152 MICROMETERS), BUT IS AT LEAST 5.0 MILS (127 MICROMETERS), THE CONTRACT PRICE FOR THIS ITEM SHALL BE REDUCED IN DIRECT PROPORTION TO THE PERCENT DEFICIENCY OF COATING UP TO 16-2/3%. IF THE DEFICIENCY OF COATING IS MORE THAN 16-2/3%, [I.E. THE AVERAGE DRY FILM THICKNESS IS LESS THAN 5.0 MILS (127 MICROMETERS)], THE WORK FOR THIS ITEM SHALL BE CONSIDERED UNSATISFACTORY AND SHALL BE RE-COATED AT THE FULL EXPENSE OF THE CONTRACTOR, INCLUDING ALL LABOR, EQUIPMENT AND MATERIALS.

AT LEAST 24 HOURS BUT NO MORE THAN THREE (3) DAYS SHALL ELAPSE AFTER THE APPLICATION OF THE ORGANIC ZINC PRIME COAT AND BEFORE THE APPLICATION OF THE EPOXY INTERMEDIATE COAT. SURFACES SHALL IN ALL CASES BE CLEAN BEFORE THE INTERMEDIATE COAT IS APPLIED.

FOR NEW SUPPORT SECTIONS, THIS INTERMEDIATE COAT SHOULD BE DONE AT THE MANUFACTURER OF THE SUPPORT SECTIONS. THE CONTRACTOR SHALL CERTIFY THE MATERIALS USED ARE APPROVED BY THE STATE, THE PROPER COATING METHODOLOGY WAS FOLLOWED, AND EACH COAT WAS APPLIED WITH THE PROPER DRY FILM THICKNESS. THESE CERTIFICATIONS SHOULD BE PROVIDED TO THE PROJECT ENGINEER IN WRITING. CAREFUL HANDLING AND STORAGE WILL BE REQUIRED TO PREVENT ANY SCRAPING, MARRING OR OTHER SURFACE DAMAGE TO THE INTERMEDIATE COAT.

PAYMENT SHALL INCLUDE ALL LABOR, EQUIPMENT, HANDLING COST AND MATERIAL NECESSARY TO ACCOMPLISH THIS ITEM OF WORK. THIS INTERMEDIATE COAT SHALL BE MANUFACTURED BY THE SAME COMPANY SUPPLYING THE PRIME AND TOP COATS. A PROPERLY CALIBRATED DRY FILM THICKNESS INSTRUMENT WILL BE USED TO CHECK THE COATING.

BASIS OF PAYMENT WILL BE AS FOLLOWS:
ITEM 630 - COATING, EPOXY INTERMEDIATE COAT, SUPPORT SECTIONS AT CONTRACT BID PRICE PER EACH MAJOR SUPPORT SECTION.

COATING, URETHANE FINISH COAT, SUPPORT SECTIONS

THIS ITEM SHALL CONSIST OF THE APPLICATION OF ONE (1) COAT OF URETHANE TO SUPPORT SECTIONS. THE TOTAL DRY FILM THICKNESS OF THIS COAT SHALL NOT BE LESS THAN 1.5 MILS (38 MICROMETERS). IF MORE THAN ONE PASS IS NECESSARY TO OBTAIN THE REQUIRED THICKNESS THAT COST SHALL BE BORNE BY THE CONTRACTOR. THINNING OF THE MATERIAL IS STRICTLY PROHIBITED. MATERIAL THAT IS NOT CAPABLE OF BEING APPLIED AS SPECIFIED SHALL NOT BE USED.

WHEN THE AVERAGE DRY FILM THICKNESS OF THIS COAT OVER THE ENTIRE SUPPORT SECTION IS LESS THAN THE SPECIFIED 1.5 MILS (38 MICROMETERS) BUT IS AT LEAST 1.0 MIL (25 MICROMETERS), THE CONTRACT PRICE FOR THIS ITEM SHALL BE

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COATING, URETHANE FINISH COAT, SUPPORT SECTIONS (CONT.)

REDUCED IN DIRECT PROPORTION TO THE PERCENT DEFICIENCY OF COATING UP TO 33-1/3%. IF THE DEFICIENCY OF COATING IS MORE THAN 33-1/3%, [I.E. THE AVERAGE DRY FILM THICKNESS IS LESS THAN 1.0 MIL (25 MICROMETERS)], THE WORK FOR THIS ITEM SHALL BE CONSIDERED UNSATISFACTORY AND SHALL BE RE-COATED AT THE FULL EXPENSE OF THE CONTRACTOR, INCLUDING ALL LABOR, EQUIPMENT AND MATERIAL.

AT LEAST 24 HOURS BUT NO MORE THAN THREE (3) DAYS SHALL ELAPSE AFTER THE APPLICATION OF THE EPOXY INTERMEDIATE COAT AND BEFORE THE APPLICATION OF THE URETHANE FINISH COAT. SURFACES SHALL IN ALL CASES BE CLEAN BEFORE THE FINISH COAT IS APPLIED.

FOR NEW SUPPORT SECTIONS, THIS FINISH COAT SHOULD BE DONE BY THE MANUFACTURER OF THE SUPPORT SECTIONS. THE CONTRACTOR SHALL CERTIFY THE MATERIALS USED ARE APPROVED BY THE STATE, THE PROPER COATING METHODOLOGY WAS FOLLOWED, AND EACH COAT WAS APPLIED WITH THE PROPER DRY FILM THICKNESS. THESE CERTIFICATIONS SHOULD BE PROVIDED TO THE PROJECT ENGINEER IN WRITING. CAREFUL HANDLING AND STORAGE WILL BE REQUIRED TO PREVENT ANY SCRAPING, MARRING OR OTHER SURFACE DAMAGE TO THE FINISH COAT.

PAYMENT SHALL INCLUDE ALL LABOR, EQUIPMENT, HANDLING COST AND MATERIALS NECESSARY TO ACCOMPLISH THIS ITEM OF WORK. THIS FINISH COAT SHALL BE MANUFACTURED BY THE SAME COMPANY SUPPLYING THE PRIME AND INTERMEDIATE COATS. A PROPERLY CALIBRATED, DRY FILM THICKNESS INSTRUMENT WILL BE USED TO CHECK THE COATING.

BASIS OF PAYMENT WILL BE AS FOLLOWS:
ITEM 630 - COATING, URETHANE FINISH COAT, SUPPORT SECTIONS AT CONTRACT BID PRICE PER EACH MAJOR SUPPORT SECTION.

LOCATIONS

THE FOLLOWING SUMMARY OF MAJOR SUPPORT SECTIONS TO HAVE A PROTECTIVE COATING APPLIED IS NOTED BELOW:

POLE NO.	LOCATION	SECTIONS
SP-1	US 422 AT SR 88/ SR 168 & SR 528	1 SUPPORT SECTION
SP-2	US 422 AT SR 88/ SR 168 & SR 528	1 SUPPORT SECTION
SP-3	US 422 AT SR 88/ SR 168 & SR 528	1 SUPPORT SECTION
SP-4	US 422 AT SR 88/ SR 168 & SR 528	1 SUPPORT SECTION

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN PROVIDED TO PERFORM THIS WORK:

ITEM 630, SURFACE PREPARATION, NEW SUPPORT SECTION	4 EACH
ITEM 630, COATING, EPOXY INTERMEDIATE COAT, SUPPORT SECTION	4 EACH
ITEM 630, COATING, URETHANE TOP COAT, SUPPORT SECTION	4 EACH
ITEM 630, COATING, ORGANIC ZINC PRIME COAT, SUPPORT SECTION	4 EACH

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

IN ADDITION TO THE REQUIREMENTS OF C&MS 632 AND 732 THE FOLLOWING SHALL APPLY:

1.SIGNAL HEADS AND VISORS SHALL BE CONSTRUCTED OF BLACK POLYCARBONATE PLASTIC AND MEET ITE SPECIFICATIONS.

2.PROPER EXTERIOR COLORS SHALL BE OBTAINED BY USE OF COLORED PLASTIC MATERIAL RATHER THAN PAINTING.

3.PIPE, SPACERS AND FITTINGS CONSTRUCTED OF POLYCARBONATE PLASTIC MAY BE USED IN LIEU OF GALVANIZED STEEL OR ALUMINUM.

4.THE PEDESTRIAN SIGNAL HEAD SHALL BE OF THE LED COUNTDOWN TYPE.

5.NEW ATTACHMENT HARDWARE AND FITTINGS SHALL BE USED

6.THE LIGHT EMITTING DIODE (LED) MODULES SHALL MEET THE REQUIREMENTS OF C&MS 732.04-C. THE CONTRACTOR SHALL PROVIDE ODOT, IN WRITING, WITH THE LED MANUFACTURER NAME, SERIAL NUMBER, PART NUMBER, DESCRIPTION OF LAMP, AND DATE OF MANUFACTURE FOR ALL LED UNITS THAT ARE TO BE USED IN THE SIGNAL HEAD PRIOR TO INSTALLATION, FOR ACCEPTANCE AND WARRANTY PURPOSES. PAYMENT FOR ITEM 632 PEDESTRIAN SIGNAL HEAD (LED), (COUNTDOWN), TYPE D2, AS PER PLAN SHALL BE MADE FOR THE NUMBER OF COMPLETE SIGNAL HEAD FURNISHED AND INSTALLED, INCLUDING ALL LABOR, EQUIPMENT, MATERIALS AND NEW ATTACHMENT HARDWARE.

MAINTENANCE OF TRAFFIC SIGNAL INSTALLATION

THE CONTRACTOR SHALL BE RESPONSBLE FOR MAINTAINING TRAFFIC SIGNAL INSTALLATIONS WITHIN THE PROJECT UNDER THE FOLLOWING CONDITIONS:

- EXISTING SIGNAL 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 ACCEPTED.
- NEW OR REUSED SIGNAL INSTALLATIONS OR DEVICES, INSTALLED BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSBLE 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 MIS-ALIGNED 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

MAINTENANCE OF TRAFFIC SIGNAL INSTALLATION (CONT.)

THE STATE FOR POLICE SERVICES AND MAINTENANCE SERVICES 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 8 HOURS AND SHALL NOT INCLUDE THE HOURS OF 6:00 AM TO 6:00 PM. 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 STATE POLICE, HIRED BY THE CONTRACTOR.

- US 422, SR 88, SR168 AND SR 528

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:

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

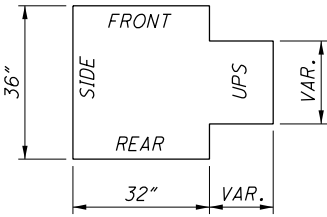
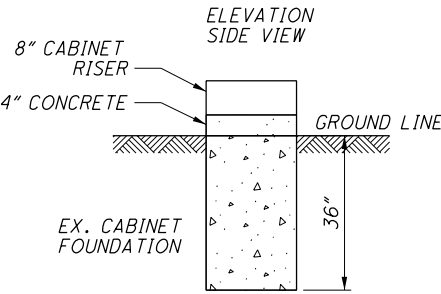
A COPY OF THESE RECORDS SHALL BE PROVIDED TO THE ENGINEER WITHIN THREE (3) WORKING DAYS FOLLOWING COMPLETION OF EACH REPAIR.

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

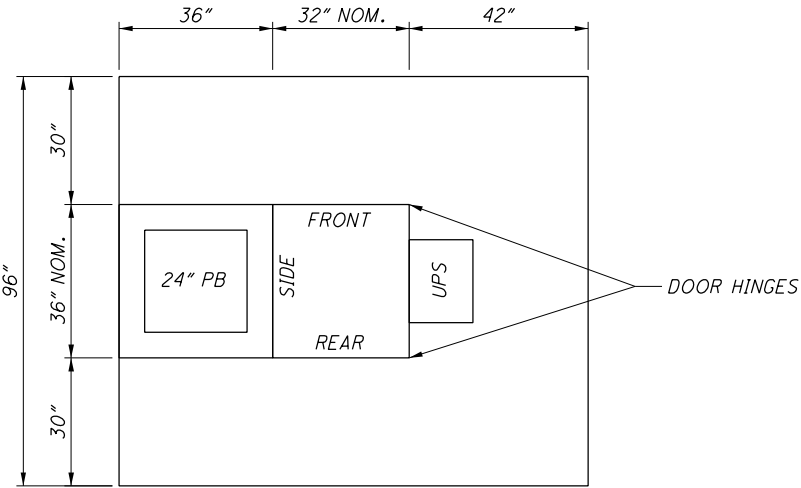
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MODEL 332 CABINET DETAIL (TYP.)

UPS FOUNDATION DETAIL



UPS WORK PAD DETAIL



PLAN VIEW

NOTES:

- 1) THE SIZE OF THE UPS FOUNDATION MAY VARY BASED ON THE CABINET SIZE PROVIDED.
- 2) UPS FOUNDATION ELEVATION SHOULD MATCH CABINET FOUNDATION ELEVATION.
- 3) THE UPS CABINET SHALL BE MOUNTED FLUSH UP AGAINST THE SIGNAL CABINET AND SEALED.
- 4) CONDUIT AND WIRING FROM THE SIGNAL CABINET TO THE UPS SHALL BE INSTALLED THROUGH THE CABINET RISER.

SEPARATE BID ITEMS:

633 CABINET FOUNDATION, AS PER PLAN
633 UNINTERRUPTIBLE POWER SUPPLY (UPS)
633 CONTROLLER UNIT, TYPE 2070E, WITH CABINET, TYPE 332, AS PER PLAN



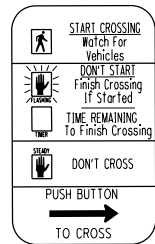
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LEGEND

	PROP	EXIST
TRAFFIC SIGNAL, 3 UNIT HEAD, 12"		
TRAFFIC SIGNAL, 4 OR 5 UNIT HEAD, 12"		
SIGNAL SUPPORT POLE		
PEDESTRIAN SIGNAL		
PEDESTRIAN PUSH BUTTON		
PEDESTAL SUPPORT		
CONTROLLER CABINET AND WORK PAD (332)		
TRAFFIC PULL BOX		
DILEMMA ZONE RADAR DETECTION UNIT		
STOP BAR RADAR DETECTION UNIT		
DETECTION ZONE		

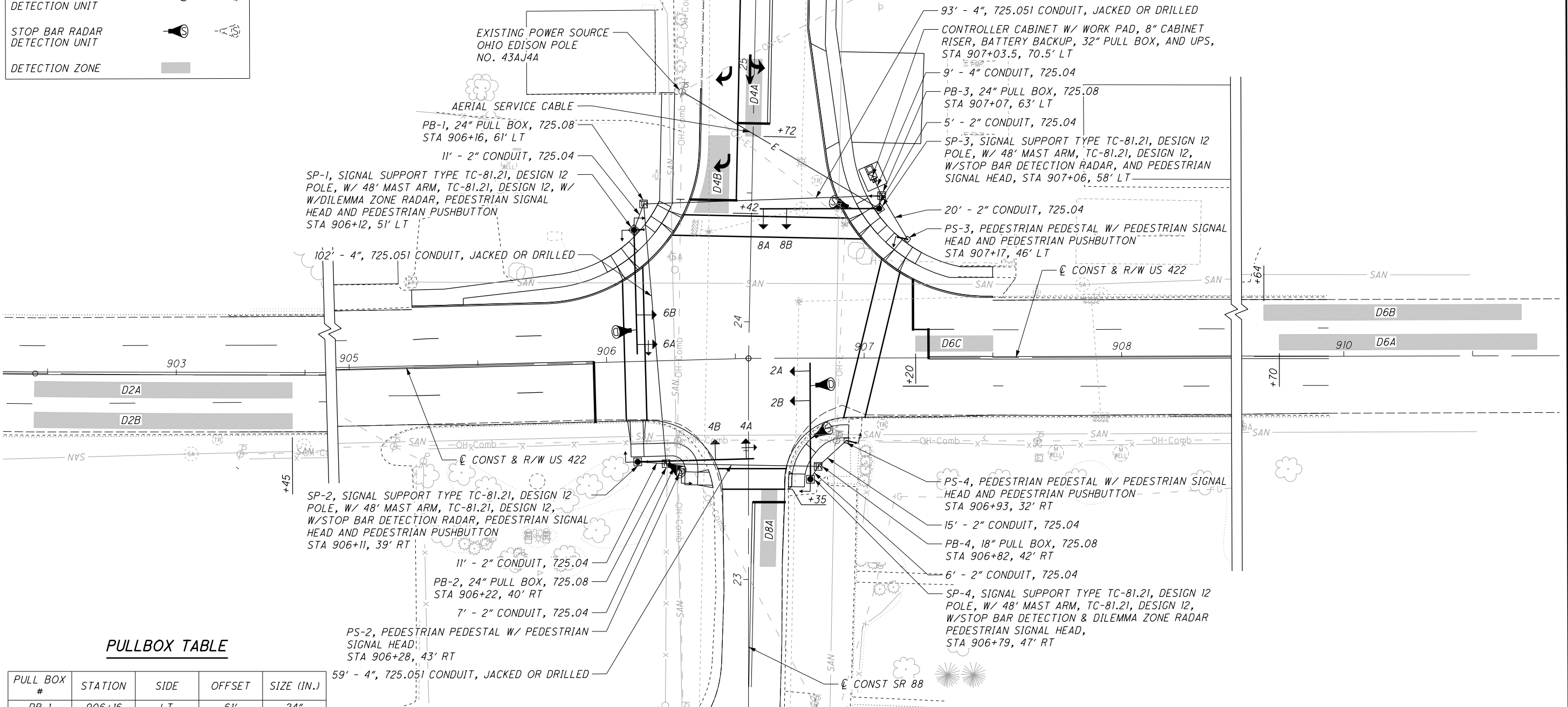
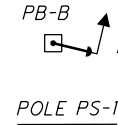
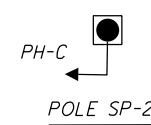
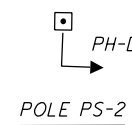
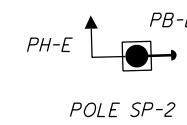
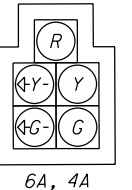
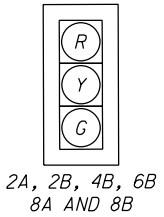
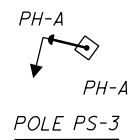
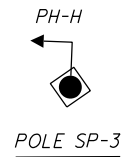
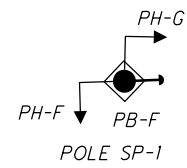
PEDESTRIAN SIGNS



PEDESTRIAN HEADS (LED, COUNTDOWN, TYPE D2)

R10-3E-9
2 - LEFT ARROWS
2 - RIGHT ARROWS

SIGNAL HEADS



PULLBOX TABLE

PULL BOX #	STATION	SIDE	OFFSET	SIZE (IN.)
PB-1	906+16	LT	61'	24"
PB-2	906+22	RT	40'	24"
PB-3	907+07	LT	63'	24"
PB-4	906+82	RT	42'	18"



CALCULATED 0
EGD 10
CHECKED 40
DLW 10
HORIZONTAL SCALE IN FEET

TRAFFIC SIGNAL PLAN
US 422, SR 88, SR 168 AND SR 528

GEA-422-17.35

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SIGNAL TIMING CHART, AM PEAK

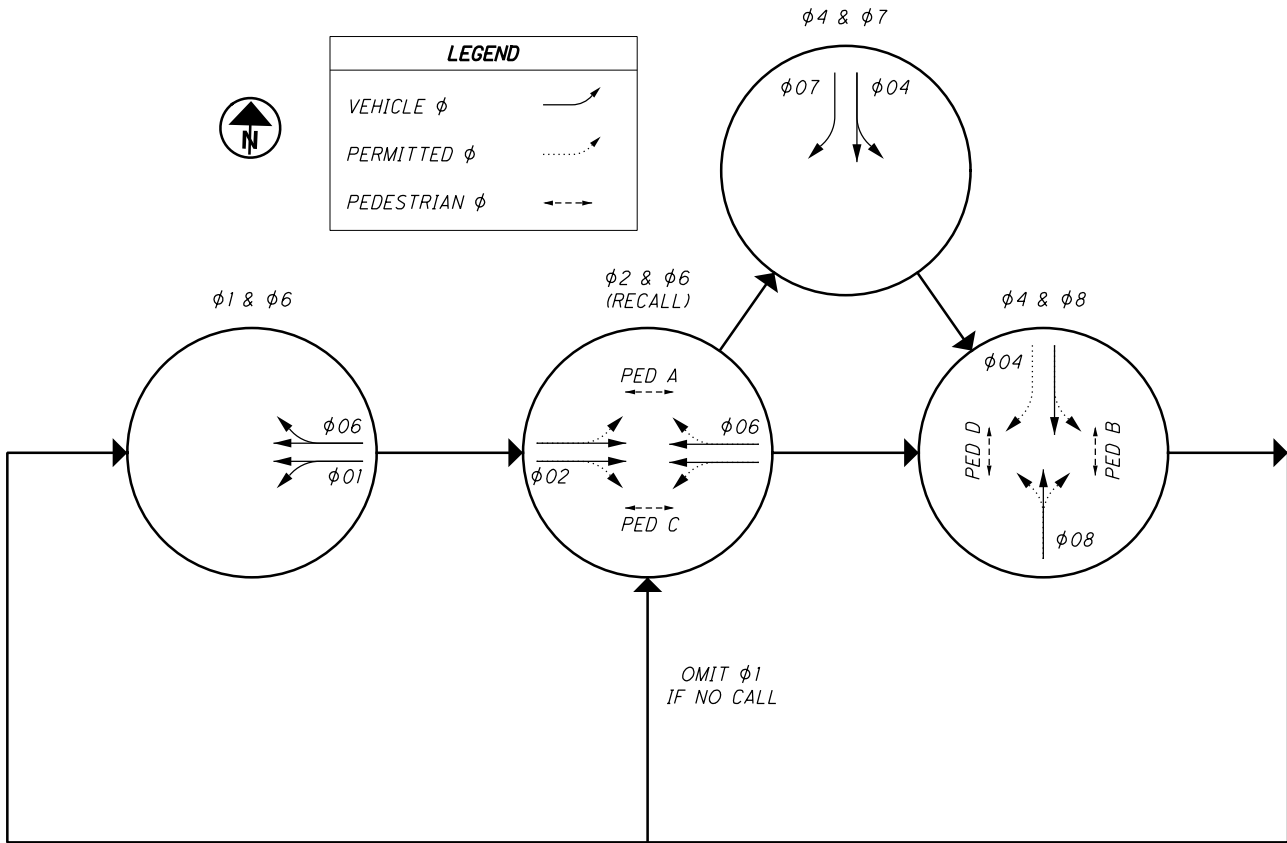
INTERSECTION: US 422, SR 88, SR 168, & SR 528									
MAINTAINING AGENCY: ODOT D12									
START UP START IN: YELLOW/RED FLASH TIME FOR FLASH OR ALL RED: 5 sec FIRST PHASE(S): Phase 6 COLOR DISPLAYED: GREEN		DUAL ENTRY: YES			PHASES: PH 2 & PH 6				
		REST IN RED:		RING 1		RING 2		-	
		OVERLAP				A	B	C	D
		PHASES				-	-	-	-
INTERVAL OR FEATURE		CONTROLLER MOVEMENT NO.							
INTERSECTION MOVEMENT (PHASE)		1	2	3	4	5	6	7	8
DIRECTION		WB	EB	-	SB	-	WB	-	NB
MINIMUM GREEN (INITIAL) (SEC.)		7	26	-	18	-	26	7	18
ADDED INITIAL *(SEC./ACTUATION)		-	-	-	-	-	-	-	-
MAXIMUM INITIAL (SEC.)		-	-	-	-	-	-	-	-
PASSAGE TIME (PRESET GAP) (SEC.)		-	2	-	-	-	2	-	-
TIME BEFORE REDUCTION *(SEC.)		-	-	-	-	-	-	-	-
MINIMUM GAP *(SEC.)		-	-	-	-	-	-	-	-
TIME TO REDUCE *(SEC.)		-	-	-	-	-	-	-	-
MAXIMUM GREEN I (SEC.)		12	35	-	35	-	35	12	35
MAXIMUM GREEN II (SEC.)		-	-	-	-	-	-	-	-
YELLOW CHANGE (SEC.)		3	4.5	-	4.5	-	4.5	-	4.5
ALL RED CLEARANCE (SEC.)		1	2	-	2.5	-	2	-	2.5
WALK (SEC.)		-	9	-	12	-	9	-	12
PEDESTRIAN CLEARANCE (SEC.)		-	17	-	15	-	17	-	15
RECALL	MAXIMUM (ON/OFF)	OFF	ON	-	OFF	-	ON	-	OFF
	MINIMUM (ON/OFF)	OFF	OFF	-	OFF	-	OFF	-	OFF
	PEDESTRIAN (ON/OFF)	OFF	ON	-	OFF	-	ON	-	OFF
MEMORY (ON/OFF)		OFF	OFF	-	OFF	-	OFF	-	OFF

* VOLUME DENSITY CONTROLS
AM PEAK HOURS ARE FROM 6:00 TO 8:00

NOTES:

- ALL MOVEMENTS SHALL BE ACTUATED. THE PRIMARY THRU MOVEMENT SHOULD HAVE MIN RECALL ACTIVE TO REST IN GREEN.
- FOR PROTECTED/PERMISSIVE PHASES, IMPLEMENT CALL OMITS TO AVOID YELLOW BALL TRAP.
- COUNTDOWN PEDESTRIAN SIGNALS SHALL GO TO ZERO ON YELLOW PER OMUTCD FIGURE 4E-2.
- RADAR DETECTION UNITS FOR DILEMMA ZONE DETECTION SHALL PLACE A CONSTANT CALL TO THE CONTROLLER WHEN VEHICLES TRAVEL TIMES TO THE STOP BAR ARE BETWEEN 2.5 AND 6 SECONDS. SPEED TRIGGER SHALL BE SET FOR VEHICLES TRAVELING 35 MPH AND GREATER.
- ALL DETECTOR DELAYS SHALL BE PLACED IN THE CONTROLLER.

PHASING DIAGRAM, AM PEAK



RADAR DETECTION CHART

DETECTION ZONE	MOVEMENT	PULSE OR PRESENCE	ASSOCIATED PHASE	DELAY IN CONTROLLER (SEC)	DELAY INHIBIT PHASE	PURPOSE	DETECTION ZONE LENGTH (FT)
D2A	EB THRU/LT	PULSE	2	-	-	DILEMMA ZONE	100
D2B	EB THRU/RT	PULSE	2	-	-	DILEMMA ZONE	100
D4A	SB THRU/LT	PRESENCE	4	-	-	CALL/EXTEND PHASE 4	30
D4B	SB RT	PRESENCE	4	10	-	CALL/EXTEND PHASE 4	30
D6A	WB THRU/LT	PULSE	6	-	-	DILEMMA ZONE	100
D6B	WB THRU/RT	PULSE	6	-	-	DILEMMA ZONE	100
D6C	WB THRU/LT	PRESENCE	4	-	-	CALL/EXTEND PHASE 6	30
D8A	NB THRU/LT/RT	PRESENCE	8	-	-	CALL/EXTEND PHASE 8	30

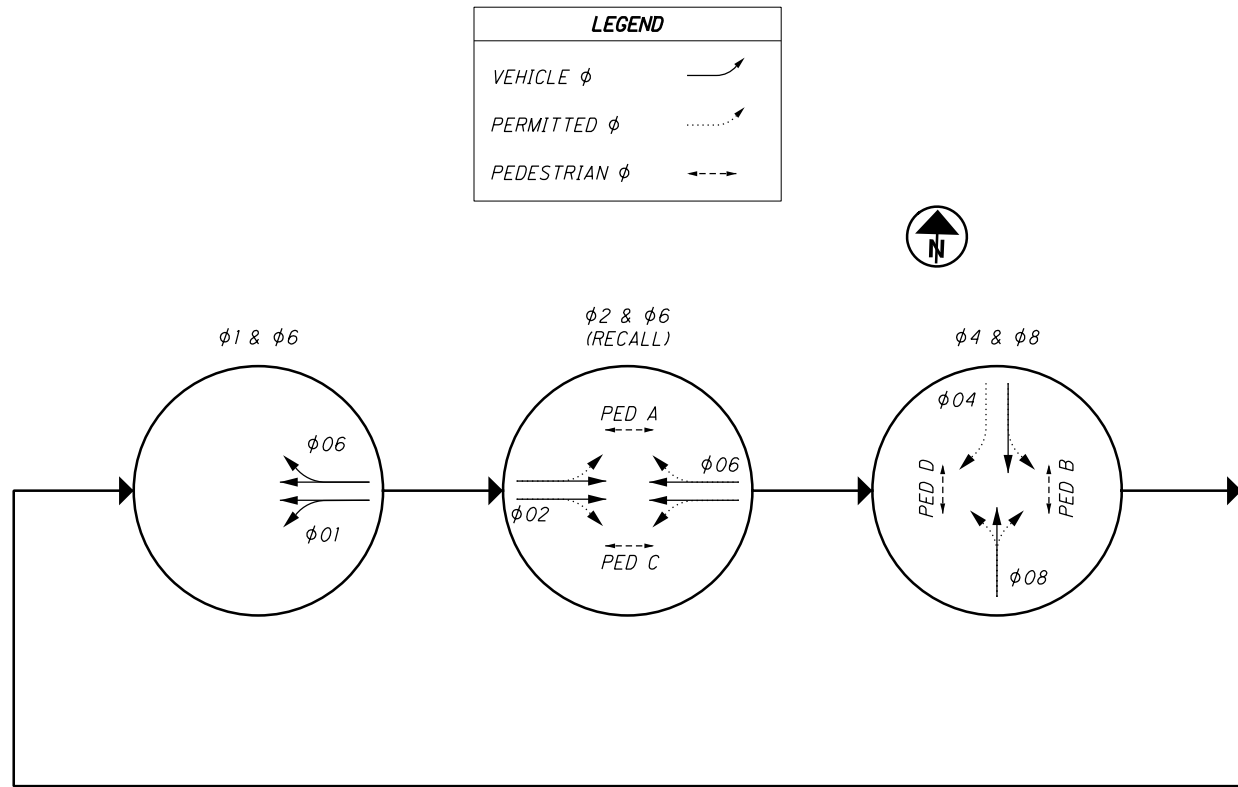
NOTE: DILEMMA ZONE SPEED THRESHOLD >35 MPH
RADAR DETECTION UNIT PLACEMENT SHALL BE PER THE MANUFACTURERS RECOMMENDATIONS.

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SIGNAL TIMING CHART, OFF PEAK

INTERSECTION: US 422, SR 88, SR 168, & SR 528									
MAINTAINING AGENCY: ODOT D12									
<u>START UP</u> START IN: YELLOW/RED FLASH TIME FOR FLASH OR ALL RED: 5 sec FIRST PHASE(S): Phase 6 COLOR DISPLAYED: GREEN		DUAL ENTRY:		YES	PHASES:		PH 2 & PH 6		
		REST IN RED:		RING 1		-	RING 2		-
		OVERLAP				A	B	C	D
		PHASES				-	-	-	-
INTERVAL OR FEATURE		CONTROLLER MOVEMENT NO.							
INTERSECTION MOVEMENT (PHASE)		1	2	3	4	5	6	7	8
DIRECTION		WB	EB	-	SB	-	WB	-	NB
MINIMUM GREEN (INITIAL) (SEC.)		7	26	-	18	-	26	-	18
ADDED INITIAL *(SEC./ACTUATION)		-	-	-	-	-	-	-	-
MAXIMUM INITIAL (SEC.)		-	-	-	-	-	-	-	-
PASSAGE TIME (PRESET GAP) (SEC.)		-	2	-	-	-	2	-	-
TIME BEFORE REDUCTION *(SEC.)		-	-	-	-	-	-	-	-
MINIMUM GAP *(SEC.)		-	-	-	-	-	-	-	-
TIME TO REDUCE *(SEC.)		-	-	-	-	-	-	-	-
MAXIMUM GREEN I (SEC.)		12	50	-	50	-	50	-	50
MAXIMUM GREEN II (SEC.)		-	-	-	-	-	-	-	-
YELLOW CHANGE (SEC.)		3	4.5	-	4.5	-	4.5	-	4.5
ALL RED CLEARANCE (SEC.)		1	2	-	2.5	-	2	-	2.5
WALK (SEC.)		-	9	-	12	-	9	-	12
PEDESTRIAN CLEARANCE (SEC.)		-	17	-	15	-	17	-	15
RECALL	MAXIMUM (ON/OFF)	-	OFF	-	OFF	-	OFF	-	OFF
	MINIMUM (ON/OFF)	-	ON	-	OFF	-	ON	-	OFF
	PEDESTRIAN (ON/OFF)	-	ON	-	OFF	-	ON	-	OFF
MEMORY (ON/OFF)		-	OFF	-	OFF	-	OFF	-	OFF

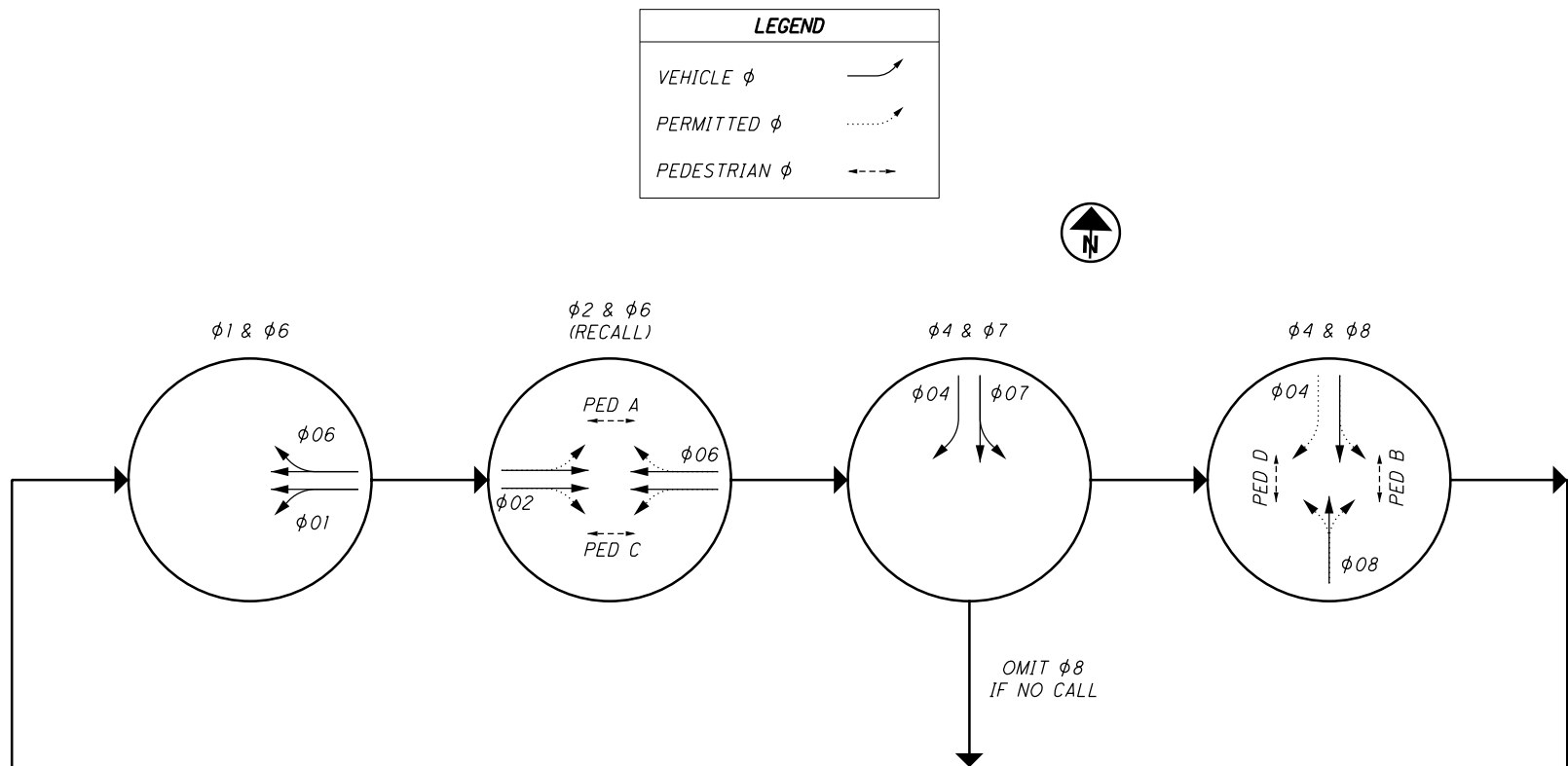
PHASING DIAGRAM, OFF PEAK



SIGNAL TIMING CHART, PM PEAK

INTERSECTION: US 422, SR 88, SR 168, & SR 528											
MAINTAINING AGENCY: ODOT D12											
<u>START UP</u> START IN: YELLOW/RED FLASH TIME FOR FLASH OR ALL RED: 5 sec FIRST PHASE(S): Phase 6 COLOR DISPLAYED: GREEN			DUAL ENTRY:		YES	PHASES:		PH 2 & PH 6			
			REST IN RED:		RING 1			-	RING 2		-
			OVERLAP				A	B	C	D	
			PHASES				-	-	-	-	
INTERVAL OR FEATURE			CONTROLLER MOVEMENT NO.								
INTERSECTION MOVEMENT (PHASE)			1	2	3	4	5	6	7	8	
DIRECTION			-	EB	-	SB	-	WB	SB LT	NB	
MINIMUM GREEN (INITIAL) (SEC.)			7	26	-	18	-	26	7	18	
ADDED INITIAL *(SEC./ACTUATION)			-	-	-	-	-	-	-	-	
MAXIMUM INITIAL (SEC.)			-	-	-	-	-	-	-	-	
PASSAGE TIME (PRESET GAP) (SEC.)			-	2	-	-	-	2	-	-	
TIME BEFORE REDUCTION *(SEC.)			-	-	-	-	-	-	-	-	
MINIMUM GAP *(SEC.)			-	-	-	-	-	-	-	-	
TIME TO REDUCE *(SEC.)			-	-	-	-	-	-	-	-	
MAXIMUM GREEN I (SEC.)			12	35	-	35	-	35	12	35	
MAXIMUM GREEN II (SEC.)			-	-	-	-	-	-	-	-	
YELLOW CHANGE (SEC.)			3	4.5	-	4.5	-	4.5	4.5	4.5	
ALL RED CLEARANCE (SEC.)			1	2	-	2.5	-	2	2.5	2.5	
WALK (SEC.)			-	9	-	12	-	9	-	12	
PEDESTRIAN CLEARANCE (SEC.)			-	17	-	15	-	17	-	15	
RECALL	MAXIMUM (ON/OFF)	OFF	ON	-	OFF	-	ON	OFF	OFF		
	MINIMUM (ON/OFF)	OFF	OFF	-	OFF	-	OFF	OFF	OFF		
	PEDESTRIAN (ON/OFF)	OFF	ON	-	OFF	-	ON	OFF	OFF		
MEMORY (ON/OFF)		OFF	OFF	-	OFF	-	OFF	OFF	OFF		

PHASING DIAGRAM, PM PEAK



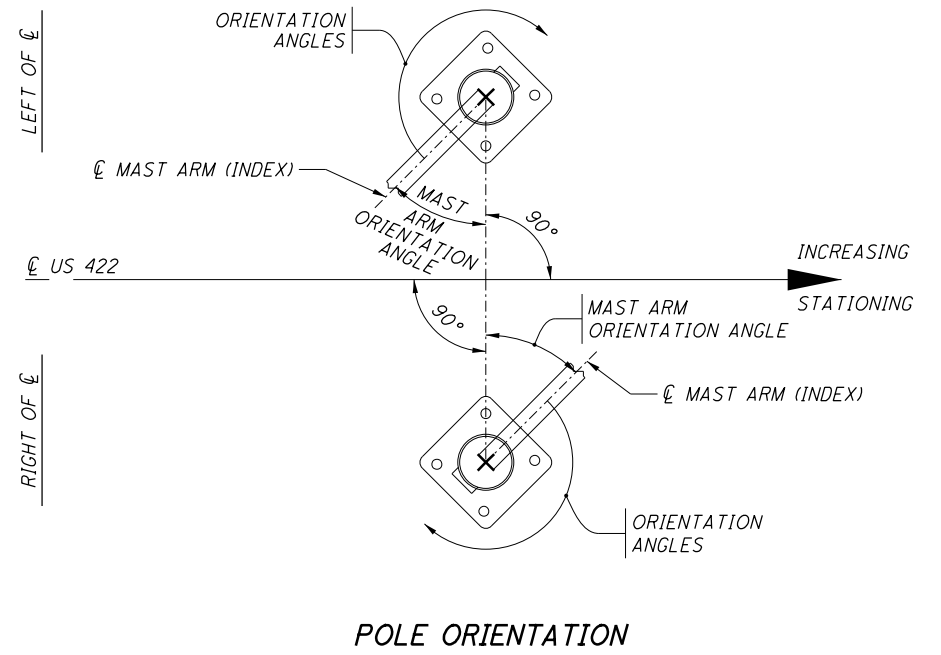
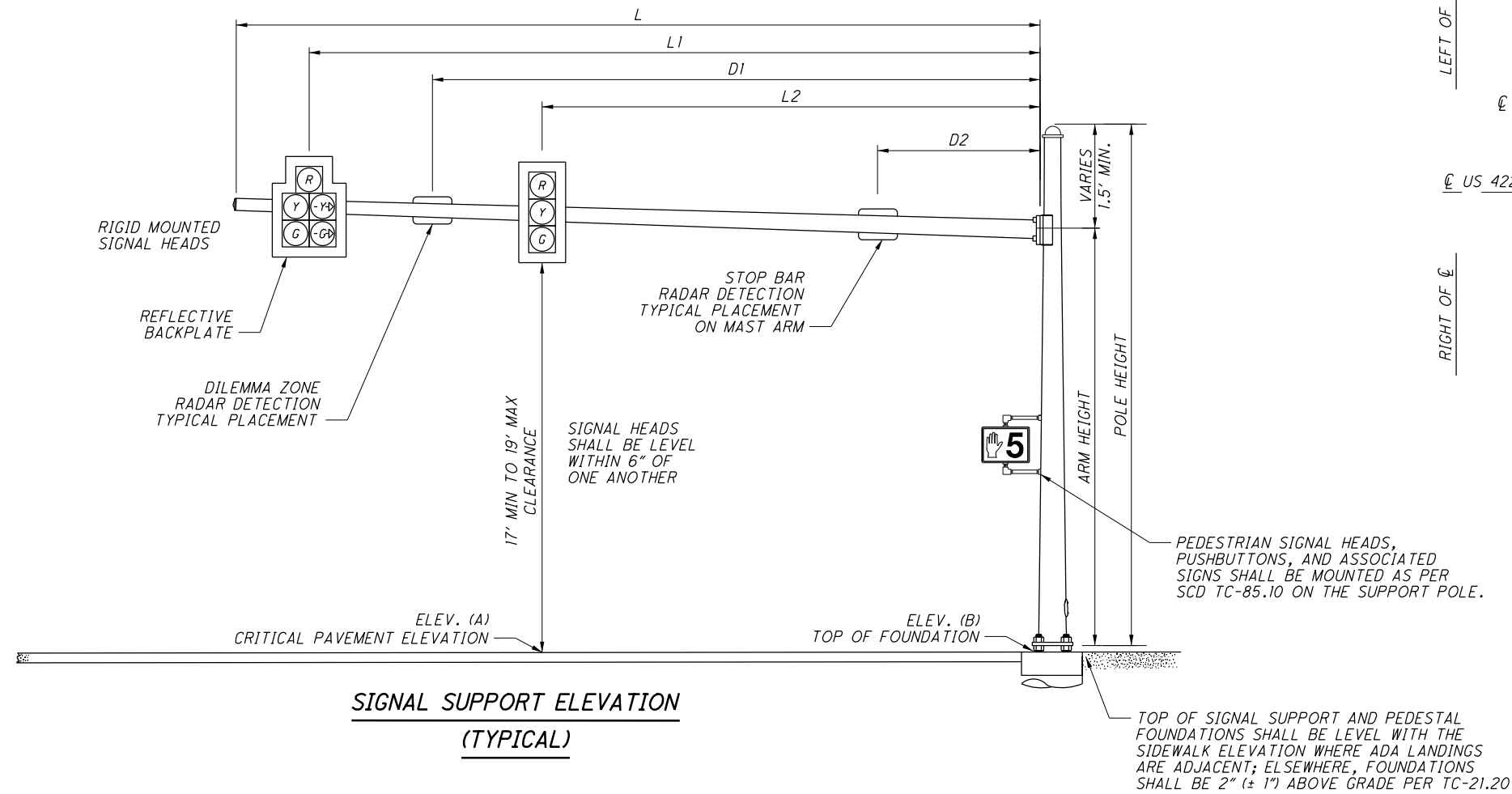
CALCULATED
EGD
CHECKED
DLW

TRAFFIC SIGNAL PLAN DETAILS
US 422, SR 88, SR 168 AND SR 528

GEA-422-17.35

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MAST ARM TABLE

SUPPORT NO.	STATION	OFFSET	ELEVATION		SIGNAL SUPPORT DETAILS											ORIENTATION ANGLES FROM MAST ARM									
			A	B	DESIGN TYPE	DESIGN NO.	POLE HEIGHT	ARM HEIGHT	L	L1	L2	L3	D1	D2	X	MAST ARM A ANGLE	MAST ARM B ANGLE	PEDESTRIAN SIGNAL	PEDESTRIAN BUTTON	POWER SERVICE	CONTROLLER	BRACKET ARM	HANDHOLE	CABLE ENTRANCE 12" FROM TOP	
SP-1	906+12	51' LT	1091.66	1091.83	TC-81.21	12	22.5	18	48	45	33	-	39	-	-	0	-	90/183	270	-	-	-	180	31	
SP-2	906+11	39' RT	1089.77	1089.94	TC-81.21	12	22.5	18.5	45	42	30	-	-	10'	-	90	-	180	0	-	-	-	180	-	
SP-3	907+06	58' LT	1090.33	1090.5	TC-81.21	12	22.5	19	48	56	36	-	-	10'	-	90	-	3	-	31	-	-	180	-	
SP-4	906+79	47' RT	1087.86	1088.03	TC-81.21	12	22.5	21	45	42	31	-	36	16'	-	0	-	271	-	-	-	-	180	-	
PS-2	906+28	47.5' RT					11											270	-						
PS-3	907+17	46' LT					11											67	90						
PS-4	906+93	32' RT					11											104	104					-	

CALCULATED
EGD
CHECKED
DLW

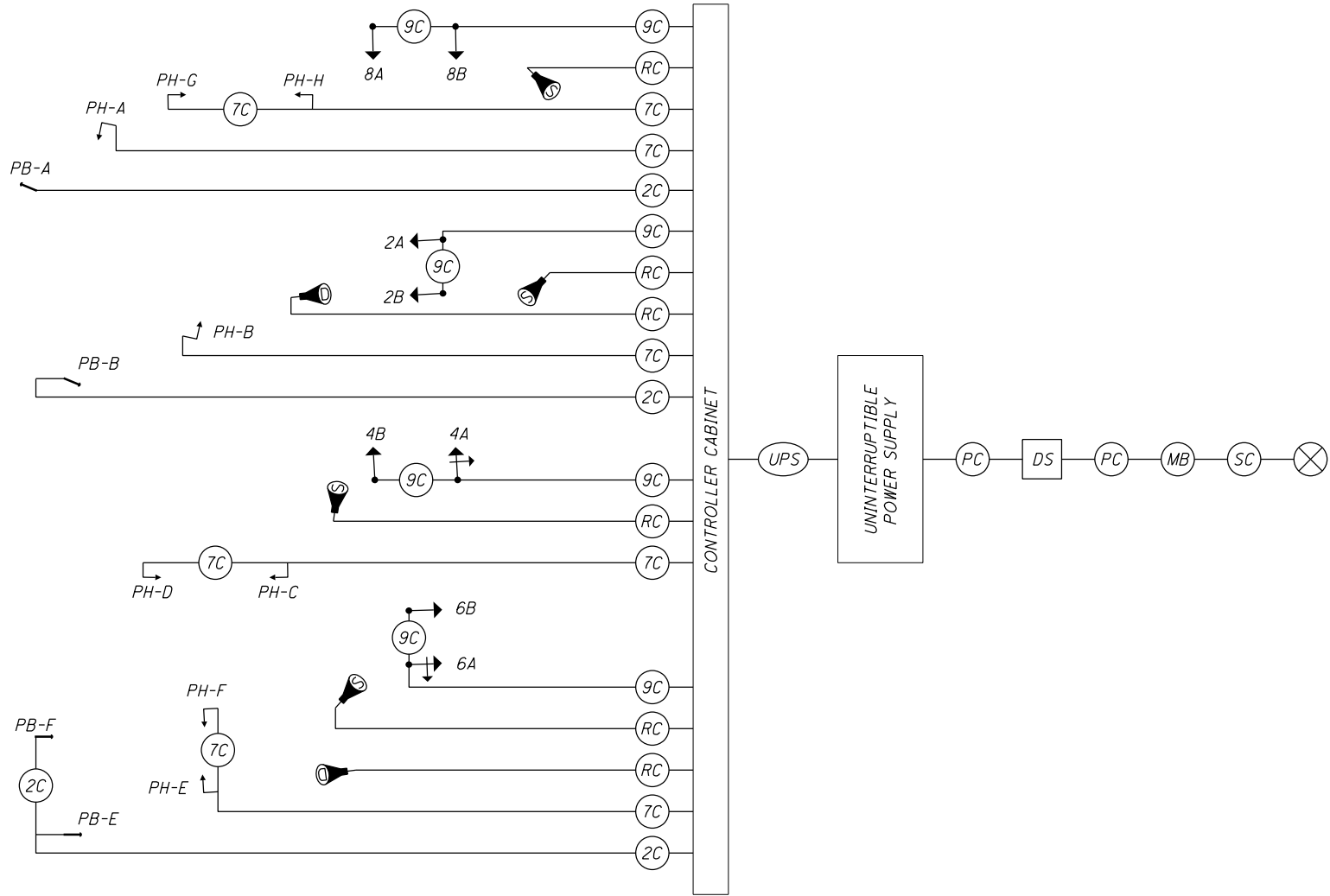
TRAFFIC SIGNAL PLAN DETAILS
US 422, SR 88, SR 168 AND SR 528

GEA - 422-17.35

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WIRING DIAGRAM (TYPICAL)



FIELD WIRING HOOK-UP CHART

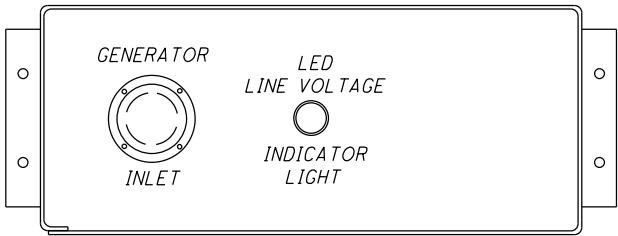
SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH	PEDESTRIAN MOVEMENTS			
2A,2B (EB)	R	2 R	R	PED A	W	PH 8/PED/LS 8P G	OUT
	Y	2 Y			DW	PH 8/PED/LS 8P R	
	G	2 G		PED B	W	PH 8/PED/LS 8P G	OUT
		DW	PH 8/PED/LS 8P R				
4A SB TH/L T	R	4 R	R	PED C	W	PH 2/PED/LS 2P G	OUT
	Y	4 Y			DW	PH 2/PED/LS 2P R	
	G	4 G		PED D	W	PH 2/PED/LS 2P G	OUT
	<--Y---	7 Y			DW	PH 2/PED/LS 2P R	
	<--G---	7 G					
4B (SB RT)	R	4 R	R	PED E	W	PH 4/PED/LS 4P G	OUT
	Y	4 Y			DW	PH 4/PED/LS 4P R	
	G	4 G		PED F	W	PH 4/PED/LS 4P G	OUT
		DW	PH 4/PED/LS 4P R				
6A WB TH/L T	R	6 R	R	PED G	W	PH 6/PED/LS 6P G	OUT
	Y	6 Y			DW	PH 6/PED/LS 6P R	
	G	6 G		PED H	W	PH 6/PED/LS 6P G	OUT
	<--Y---	1 Y			DW	PH 6/PED/LS 6P R	
	<--G---	1 G					
6B (WB)	R	6 R	R				
	Y	6 Y					
	G	6 G					
8A/8B (NB)	R	8 R	R				
	Y	8 Y					
	G	8 G					
LS = LOAD SWITCH							

LEGEND

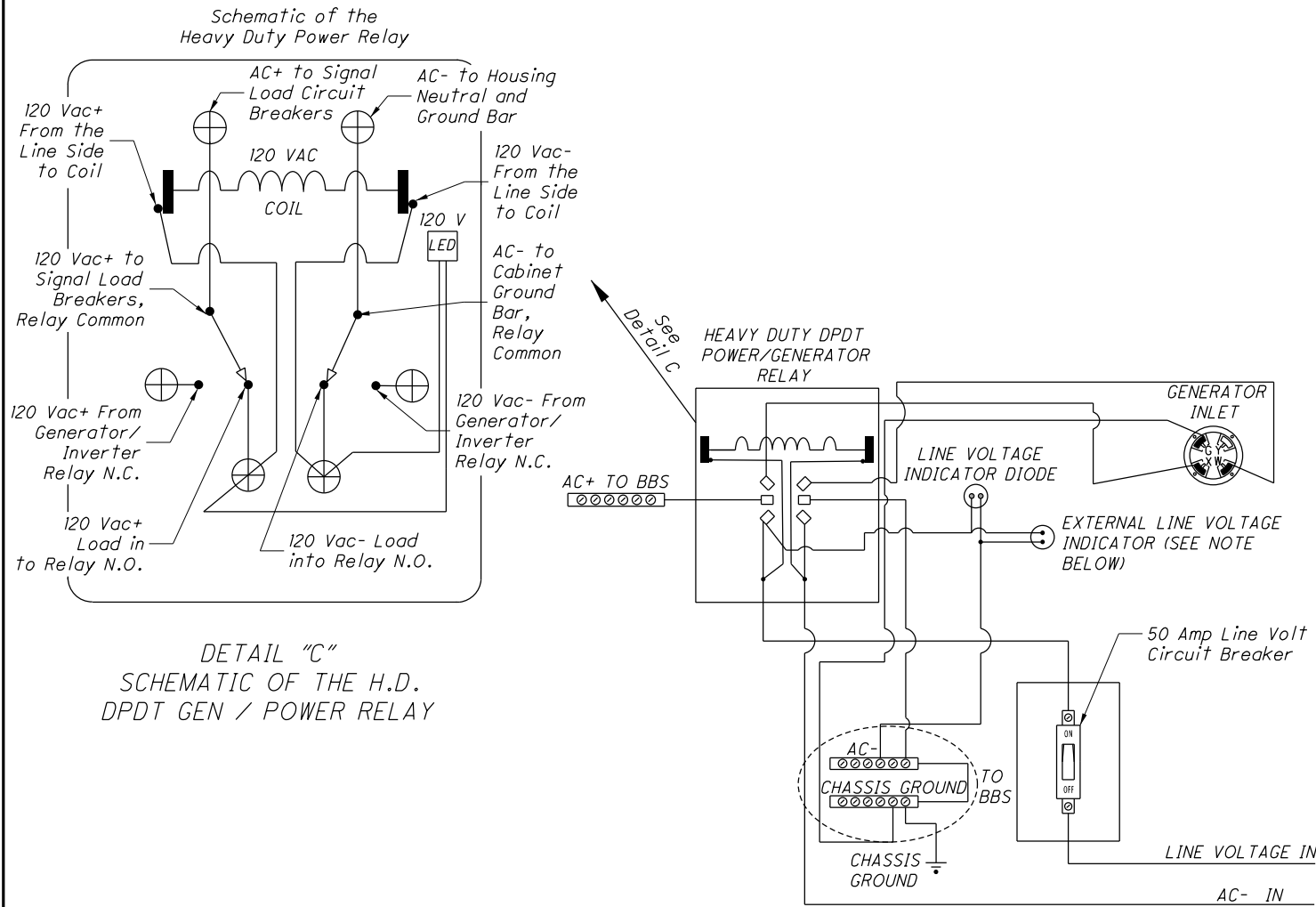
	5 SECTION VEHICULAR SIGNAL HEAD, 1-WAY		SIGNAL CABLE, 2 CONDUCTOR, NO. 14 AWG		POWER CABLE, 2 CONDUCTOR, NO. 8 AWG
	3 SECTION VEHICULAR SIGNAL HEAD, 1-WAY		SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG		SIGNAL SUPPORT POLE NO. ...
	PEDESTRIAN SIGNAL HEAD		SIGNAL CABLE, 9 CONDUCTOR, NO. 14 AWG		METER BASE
	PEDESTRIAN PUSH BUTTON		RADAR DETECTION CABLE		SIGNAL DISCONNECT SWITCH
	DILEMMA ZONE RADAR DETECTION UNIT		POWER SOURCE		UNINTERRUPTIBLE POWER SUPPLY CABLE
	STOP BAR RADAR DETECTION UNIT		SERVICE CABLE, 3 CONDUCTOR, NO. 8 AWG		

MATERIAL SPECIFICATIONS FOR BBS GENERATOR POWER PANEL EQUIPMENT

- GENERATOR INLET - The inlet shall be 30 amp, 125/250V, locking, four (4) wire grounding and meet the NEMA configuration number L14-30-P 30A 125/250V specification. The inlet shall be a Hubbell catalog #2715.
- LINE VOLTAGE GENERATOR SWITCH - The switch shall be 30 amp, 125/250V AC, two (2) pole, three (3) position (On, Off, On). The switch shall be a Hubbell catalog #1388.
- LINE VOLTAGE INDICATOR LIGHT - The indicator light shall be 125V AC light emitting diode with a red lens.
- LINE VOLTAGE CIRCUIT BREAKER - The circuit breaker shall be single pole single throw and a minimum of 30 amps. The amperage shall be increased to accomodate greater loads, if necessary. The gauge of the power cable shall be of proper size per N.E.C.
- EXTERNAL LINE VOLTAGE INDICATOR LIGHT - The indicator light shall be a 1" waterproof NEMA 4X or IP66 LED lamp with a green lens.



FRONT VIEW OF GENERATOR POWER PANEL

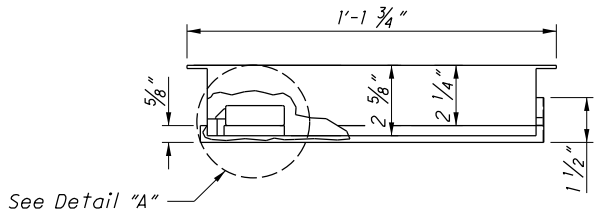


DETAIL "C"
SCHEMATIC OF THE H.D.
DPDT GEN / POWER RELAY

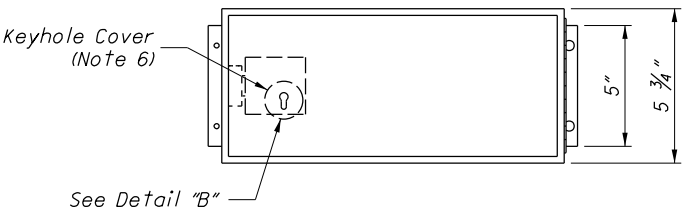
ELECTRICAL HOOKUP DETAIL FOR THE BBS GENERATOR POWER PANEL

NOTE: EXTERNAL LINE VOLTAGE INDICATOR LIGHT required when called for in the plans.
EXTERNAL LINE VOLTAGE INDICATOR LIGHT shall be located on the enclosure exterior for visibility from the adjacent roadway when all cabinet, and generator panel doors are closed.

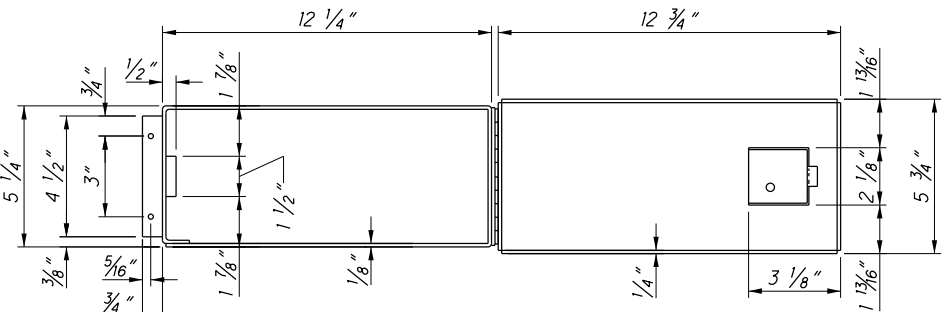
GENERATOR POWER PANEL ENCLOSURE



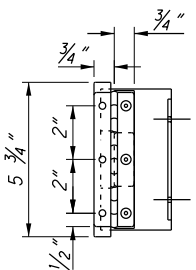
TOP VIEW



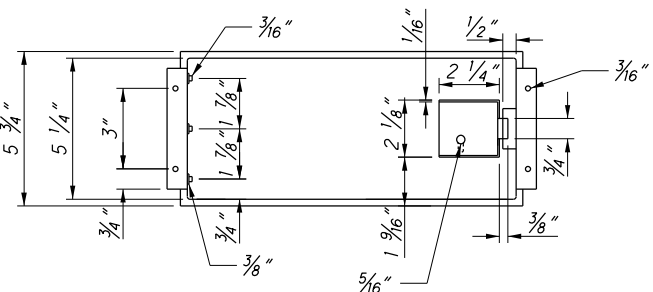
FRONT VIEW CLOSED DOOR



FRONT VIEW OPEN DOOR



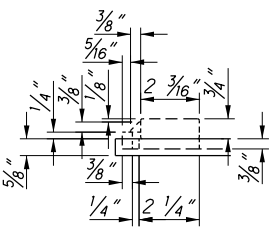
RIGHT SIDE VIEW
CLOSED DOOR



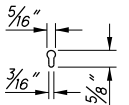
BACK VIEW CLOSED DOOR

NOTES:

1. The enclosure shall be constructed of 1/8" thick aluminum.
2. The lock shall be the standard police door type, keyed with the standard flasher door skeleton key.
3. The door shall be sealed with a foam rubber gasket to prevent moisture from entering the enclosure.
4. The enclosure shall be mounted onto the outside of the controller cabinet with non-accessible bolts and sealed with a high quality silicon caulk at all surfaces touching the cabinet.
5. The hinge shall be of stainless steel or equivalent corrosive-resistant material.
6. Keyhole shall be covered with a movable circular aluminum or brass cover with top pivot pin.



DETAIL "A"



DETAIL "B"

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SEPAC AND ASC/3 INPUT FILE INFORMATION FOR THE 332 CABINET

UPPER INPUT FILE (FILE=I)

C U P P E R E L	PHASE	1	2	2	2	3	4	4	4	1	SPARE	MANUAL CONTROL ADV.	2	6	FLASH
	DEFAULT FUNCTION	EXT-CALL	EXT-CALL	EXT-CALL	EXT-CALL	EXT-CALL	EXT-CALL	EXT-CALL	EXT-CALL	EXT-CALL	SPARE		PED	PED	SENSE
	SEPAC DETECTOR NO.	VEH 1	VEH 3	VEH 5	VEH 7	VEH 9	VEH 11	VEH 13	VEH 15	VEH 17			PED 2	PED 6	
	ASC/3 DETECTOR NO.	VEH 1	VEH 2	VEH 3	VEH 4	VEH 5	VEH 6	VEH 7	VEH 8	VEH 9			PED 2	PED 6	
	C1 PIN NUMBER	56	39	63	47	58	41	65	49	60		80	67	68	81
FIELD TERMINALS		1-D,E	2-D,E	3-D,E	4-D,E	5-D,E	6-D,E	7-D,E	8-D,E	9-D,E	10-D,E	11-D,E	12-D,E	13-D,E	14-D,E
SLOT NUMBER		1	2	3	4	5	6	7	8	9	10	11	12	13	14
C L O W E R E L	PHASE	1	2	2	2	3	4	4	4	3	SPARE	ADV.	4	8	STOP
	DEFAULT FUNCTION	EXT-CALL	EXT-CALL	EXT-CALL	EXT-CALL	EXT-CALL	EXT-CALL	EXT-CALL	EXT-CALL	EXT-CALL	SPARE	ENABLE	PED	PED	TIME
	SEPAC DETECTOR NO.	VEH 1	VEH 4	VEH 6	VEH 7	VEH 9	VEH 12	VEH 14	VEH 15	VEH 18			PED 4	PED 8	
	ASC/3 DETECTOR NO.	VEH 1	VEH 10	VEH 11	VEH 4	VEH 5	VEH 14	VEH 15	VEH 8	VEH 13			PED 4	PED 8	
	C1 PIN NUMBER	56	43	76	47	58	45	78	49	62		53	69	70	82
FIELD TERMINALS		1-J,K	2-J,K	3-J,K	4-J,K	5-J,K	6-J,K	7-J,K	8-J,K	9-J,K	10-J,K	11-J,K	12-J,K	13-J,K	14-J,K

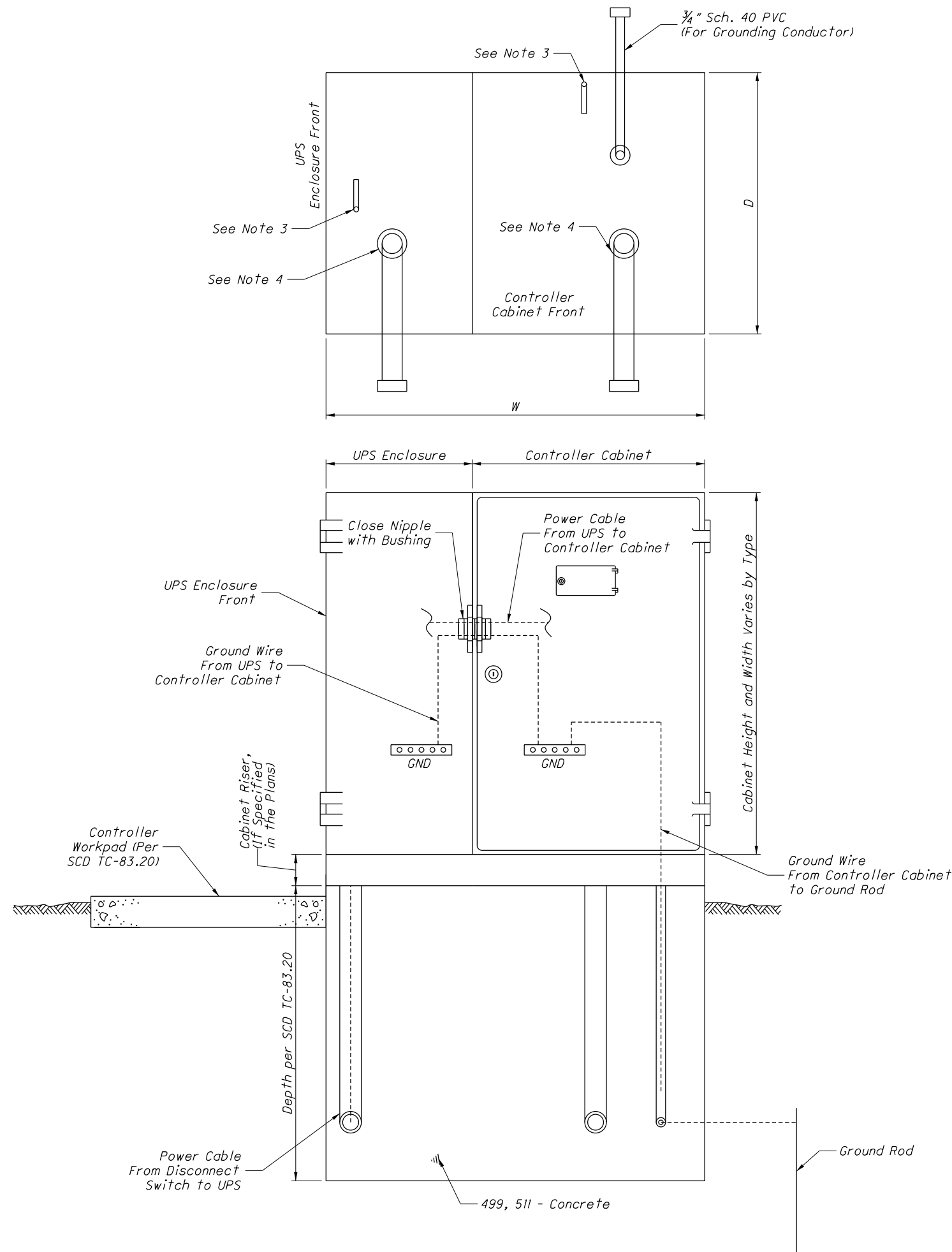
LOWER INPUT FILE (FILE=J)

C U P P E R E L	PHASE	5	6	6	6	7	8	8	8	5	SPARE	SPARE	EV - A	EV - B	RR - 1
	DEFAULT FUNCTION	EXT-CALL	EXT-CALL	EXT-CALL	EXT-CALL	EXT-CALL	EXT-CALL	EXT-CALL	EXT-CALL	EXT-CALL	SPARE	SPARE			
	SEPAC DETECTOR NO.	VEH 19	VEH 21	VEH 23	VEH 25	VEH 29	VEH 31	VEH 33	VEH 35	VEH 37					
	ASC/3 DETECTOR NO.	VEH 17	VEH 18	VEH 19	VEH 20	VEH 21	VEH 22	VEH 23	VEH 24	VEH 25					
	C1 PIN NUMBER	55	40	64	48	57	42	66	50	59		54	71	72	51
FIELD TERMINALS		1-D,E	2-D,E	3-D,E	4-D,E	5-D,E	6-D,E	7-D,E	8-D,E	9-D,E	10-D,E	11-D,E	12-D,E	13-D,E	14-D,E
SLOT NUMBER		1	2	3	4	5	6	7	8	9	10	11	12	13	14
C L O W E R E L	PHASE	5	6	6	6	7	8	8	8	7	SPARE	SPARE	EV - C	EV - D	RR - 2
	DEFAULT FUNCTION	EXT-CALL	EXT-CALL	EXT-CALL	EXT-CALL	EXT-CALL	EXT-CALL	EXT-CALL	EXT-CALL	EXT-CALL	SPARE	SPARE			
	SEPAC DETECTOR NO.	VEH 19	VEH 22	VEH 24	VEH 25	VEH 29	VEH 32	VEH 34	VEH 35	VEH 38					
	ASC/3 DETECTOR NO.	VEH 17	VEH 26	VEH 27	VEH 20	VEH 21	VEH 30	VEH 31	VEH 24	VEH 29					
	C1 PIN NUMBER	55	44	77	48	57	46	79	50	61		75	73	74	52
FIELD TERMINALS		1-J,K	2-J,K	3-J,K	4-J,K	5-J,K	6-J,K	7-J,K	8-J,K	9-J,K	10-J,K	11-J,K	12-J,K	13-J,K	14-J,K

SEPAC AND ASC/3 INPUT FILE INFORMATION FOR THE 336 CABINET

C U P P E R E L	PHASE	1	2	3	4	5	6	7	8	RR - 1	EV - A	EV - B	2	6	FLASH
	DEFAULT FUNCTION	EXT-CALL	EXT-CALL	EXT-CALL	EXT-CALL	EXT-CALL	EXT-CALL	EXT-CALL	EXT-CALL	RR - 1	EV - A	EV - B	PED	PED	SENSE
	SEPAC DETECTOR NO.	VEH 1	VEH 3	VEH 9	VEH 11	VEH 19	VEH 21	VEH 29	VEH 31				PED 2	PED 6	
	ASC/3 DETECTOR NO.	VEH 1	VEH 2	VEH 5	VEH 6	VEH 17	VEH 18	VEH 21	VEH 22				PED 2	PED 6	
	C1 PIN NUMBER	56	39	58	41	55	40	57	42	51	71	72	67	68	81
FIELD TERMINALS		1-D,E	2-D,E	3-D,E	4-D,E	5-D,E	6-D,E	7-D,E	8-D,E	9-D,E	10-D,E	11-D,E	12-D,E	13-D,E	14-D,E
SLOT NUMBER		1	2	3	4	5	6	7	8	9	10	11	12	13	14
C L O W E R E L	PHASE	2	2	4	4	6	6	8	8	RR - 2	EV - C	EV - D	4	8	STOP
	DEFAULT FUNCTION	EXT-CALL	EXT-CALL	EXT-CALL	EXT-CALL	EXT-CALL	EXT-CALL	EXT-CALL	EXT-CALL	RR - 2	EV - C	EV - D	PED	PED	TIME
	SEPAC DETECTOR NO.	VEH 7	VEH 4	VEH 15	VEH 12	VEH 25	VEH 22	VEH 35	VEH 32				PED 4	PED 8	
	ASC/3 DETECTOR NO.	VEH 4	VEH 10	VEH 8	VEH 14	VEH 20	VEH 26	VEH 24	VEH 30				PED 4	PED 8	
	C1 PIN NUMBER	47	43	49	45	48	44	50	46	52	73	74	69	70	82
FIELD TERMINALS		1-J,K	2-J,K	3-J,K	4-J,K	5-J,K	6-J,K	7-J,K	8-J,K	9-J,K	10-J,K	11-J,K	12-J,K	13-J,K	14-J,K

THIS DRAWING REPLACES PIS 203324 DATED 10-18-2013.

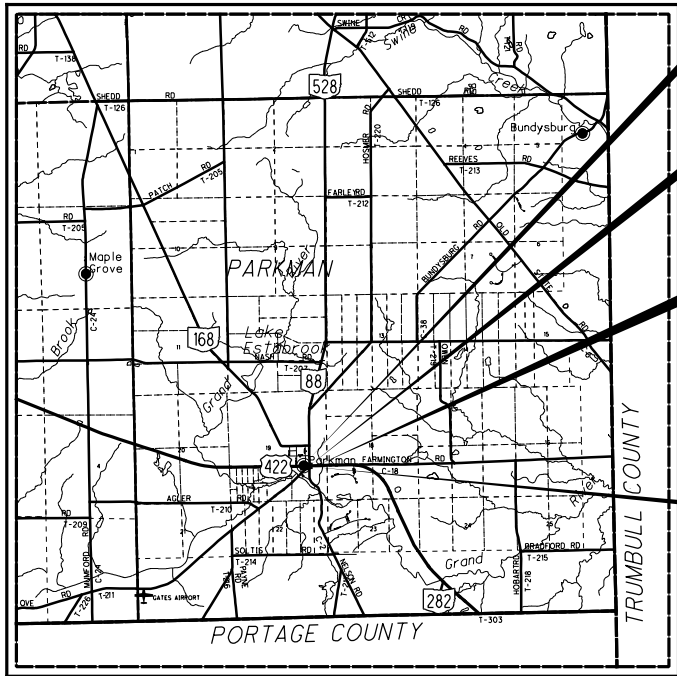


NOTES:

1. The Uninterruptible Power Supply (UPS) enclosure shall be mounted flush up against the traffic signal cabinet and sealed with silicone. The Contractor shall be responsible for providing the necessary power cable between the UPS unit and signal cabinet.
2. The UPS should be placed on the opposite side of the pull box on a 332/336 cabinet (per Standard Construction Drawing (SCD) TC-83.20). The UPS placement for a NEMA cabinet varies, placement should provide adequate access with respect to slope, guardrail spacing, etc.
3. The size, number, and location of anchor bolts shall be in accordance with the manufacturer's recommendations.
4. The size, number, and orientation of conduit ells shall be as shown in the plan, except that a 3/4" schedule 40 PVC shall be installed in each foundation.
5. 1/2" preformed joint filler as per CMS 705.03 shall be used between foundations and adjacent paved areas.
6. See SCD TC-83.20 for further details.

TYPE	W (IN.)	D (IN.)	FOUNDATION CONCRETE (CU. YD.)
TS-1	60	24	1.23
TS-2	70	36	2.16
2070/170	50	36	1.54

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LOCATION MAP

LATITUDE: 41 °22'14" LONGITUDE: 81 °03'51"

UTILITY OWNERS	
BRAINARD GAS CORP. ATTN: TIM REILLY (ORWELL NATURAL GAS COMPANY) 8470 STATION ST. MENTOR, OHIO 44060 440-701-5115 TREILLY@EGAS.NET	OHIO EDISON 470 EAST HIGHLAND RD MACEDONIA OH, 44056 ATTN: BRIAN POUND 330-342-1220 NPOUND@FIRSTENERGYCORP.COM
ODOT- DISTRICT 12 TRAFFIC 5500 TRANSPORTATION BLVD. GARFIELD HEIGHTS, OHIO 44125 ATTN: TONY TOTH, P.E. DISTRICT TRAFFIC ENGINEER 216-584-2220 ANTHONY.TOTH@DOT.OHIO.GOV	GEAUGA COUNTY WATER RESOURCES ATTN: GERARD MORGAN 470 CENTER ST., BLDG 3 CHARDON, OH 44024 440-279-1981 GERRYRM@GCDWR.ORG
WINDSTREAM OHIO ATTN: GEOFF HAMM 560 TERNES AVENUE ELYRIA, OHIO 44305 440-329-4245 GEOFFREY.P.HAMM@WINDSTREAM.COM	

CONVENTIONAL SYMBOLS

County Line	Edge of Shoulder (Ex)
Township Line	Edge of Shoulder (Pr)
Section Line	Ditch / Creek (Ex)
Corporation Line	Ditch / Creek (Pr)
Fence Line (Ex)	Tree Line (Ex)
Center Line	Ownership Hook Symbol
Right of Way (Ex)	Property Line Symbol
Right of Way (Pr)	Break Line Symbol
Standard Highway Ease.(Ex)	Tree (Pr)
Standard Highway Ease.(Pr)	Tree (Ex)
Temporary Right of Way	Shrub (Ex)
Channel Ease. (Pr)	Tree (Remove)
Slope Ease. (Ex)	Shrub (Remove)
Railroad	Evergreen (Ex)
Guardrail (Ex)	Evergreen (Remove)
Construction Limits	Wetland (Pr)
Edge of Pavement (Ex)	Grass (Pr)
Edge of Pavement (Pr)	Aerial Target
	Post (Ex)
	Mailbox (Ex)
	Mailbox (Pr)
	Light (Ex)
	Telephone Marker (Ex)
	TEL
	Fire Hydrant (Ex)
	Water Meter (Ex)
	Water Valve (Ex)
	Utility Valve Unknown (Ex)
	Telephone Pole (Ex)
	Power Pole (Ex)
	Light Pole (Ex)

RIGHT OF WAY LEGEND SHEET

GEA-422-17.35

GEAUGA COUNTY

SEC. 19 PARKMAN TOWNSHIP

UNINCORPORATED PARKMAN VILLAGE

T. 6 N., R. 6 W., CWR

INDEX OF SHEETS:

LEGEND SHEET	1
CENTERLINE PLAT	2-3
PROPERTY MAP	4
SUMMARY OF ADDITIONAL R/W	5
R/W TOPOGRAPHIC SHEET	6
R/W BOUNDARY SHEET	7

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

I, Steven J. Scheid, Jr., P. S. have conducted a survey of the existing conditions for the Ohio Department of Transportation on July 2016. The results of that survey are contained herein. The horizontal coordinates expressed herein are based on the Ohio State Plane Coordinates System North Zone on NAD 83 (2011) datum. The Project Coordinates (US Survey Feet) are relative to State Plane Grid Coordinates (US Survey Feet) by a Project Adjustment Factor of 0.9999062400. As a part of this project I have reestablished the locations of the existing property lines and the existing centerline of Right of Way for property takes contained herein. As a part of this project I have established the proposed property lines, calculated the Gross Take, present roadway occupied (PRO), Net Take and Net Residue; as well as prepared the legal descriptions necessary to acquire the parcels as shown herein. As a part of this work I have set right of way monuments at the property corners, property line intersection, points along the right of way and/or angle points on the right of way, Section Corners and other points as shown herein. All of my work contained herein was conducted in accordance with Ohio Administrative Code 4733-37 commonly known as "Minimum Standards for Boundary Surveys in the State of Ohio" unless noted. The words I and my as used herein are to mean either myself or someone working under my direct supervision.

Steven J. Scheid Jr. P.S.
Steven J. Scheid, Jr., Professional Land Surveyor 8294

Date: 11/14/16

PROJECT DESCRIPTION

IMPROVE INTERSECTION, ENHANCE SAFETY AND REDUCE CONGESTION ON US 422 AT THE INTERSECTION WITH SR 88/SR 528 IN PARKMAN TOWNSHIP. THE EXISTING AND PROPOSED RIGHT OF WAY SHALL BE REFERENCED TO THE CENTERLINE OF R/W OF US 422 (MAIN MARKET RD) AND THE CENTERLINE OF RIGHT OF WAY OF SR 88/SR 168/SR 528 (MAIN ST).

PLANS PREPARED BY:

FIRM NAME : MEAD & HUNT

R/W DESIGNER: ALEX MONDA

R/W REVIEWER: STEVEN J. SCHEID JR., P.S.

FIELD REVIEWER: ANM / SJS

PRELIMINARY FIELD REVIEW DATE: 7/28/16

TRACINGS FIELD REVIEW DATE: 11/10/16

OWNERSHIP UPDATED BY: ANM

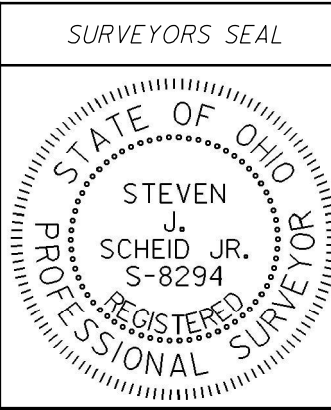
DATE COMPLETED: 11/8/16

PLAN COMPLETION DATE: 11/14/16

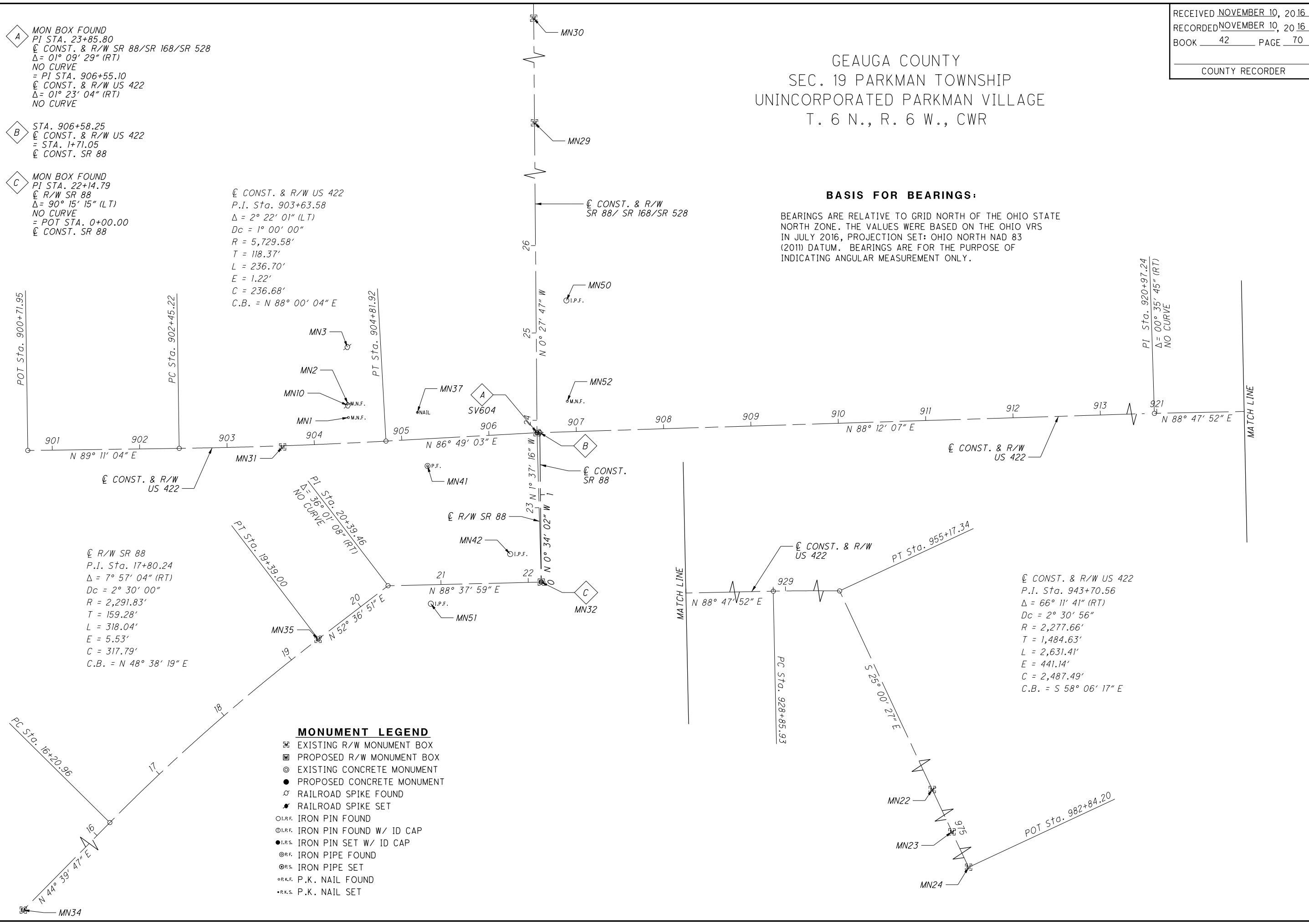
TYPES OF TITLE LEGEND:
WD = WARRANTY DEED
SH = STANDARD HIGHWAY EASEMENT
T = TEMPORARY EASEMENT
SL = SLOPE EASEMENT

STRUCTURE KEY

	RESIDENTIAL
	COMMERCIAL
	OUT-BUILDING



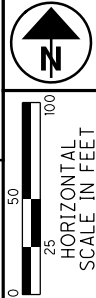
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GEAUGA COUNTY
SEC. 19 PARKMAN TOWNSHIP
UNINCORPORATED PARKMAN VILLAGE
T. 6 N., R. 6 W., CWR

RECEIVED NOVEMBER 10, 2016
RECORDED NOVEMBER 10, 2016
BOOK 42 PAGE 71
COUNTY RECORDER



PID NO.
78343

R/W DESIGNER
ANM
R/W REVIEWER
SJS

CENTERLINE PLAT

GEA-422-17.35

2 / 2
3 / 7
49
53

NOTE: THE EXISTING R/W WIDTH AND LOCATION WERE DETERMINED USING PLAT OF PARKMAN VILLAGE DV 33, PG 169 (1843) GEA-88-2.07/GEA-528-1.32 (1962) GEA-422-17.13-19.43/WARREN-BURTON RD SH 325 SEC F (PT) (1939) GEA-422-17.35/GEA-168-0.00/SH 35 SEC W (PT)/SH 325 SEC F (PT) (1938) GEA/POR-422-18.31/0.00 (2006) GEA-88-1.60/SH 326 SEC A (PT) (1947)

NOTE: SEE CONSTRUCTION PLAN GENERAL NOTES FOR PROJECT CONTROL AND BENCHMARKS.

SETTING OF ALL MONUMENTS SHALL BE PERFORMED BY A SURVEYOR REGISTERED IN THE STATE OF OHIO. THE MONUMENT ASSEMBLIES AND REFERENCE MONUMENTS WILL BE INSTALLED BY THE CONTRACTOR AT THE TIME OF CONSTRUCTION. THE IRON PIN AND CAP (WHEN REQUIRED) ARE TO BE INSTALLED BY THE CONTRACTOR'S SURVEYOR.

CHANGES OR ALTERATIONS TO THE LOCATION OF ANY MONUMENTS SHOWN IN THIS TABLE, REQUIRE PRIOR APPROVAL FROM THE DISTRICT REAL ESTATE ADMINISTRATOR OF THE OHIO DEPARTMENT OF TRANSPORTATION. IN THE EVENT THAT CHANGES OR ALTERATIONS ARE APPROVED, A REVISED CENTERLINE PLAT WITH THE NEW LOCATIONS SHALL BE RECORDED IN THE APPLICABLE COUNTY RECORDS AND THE OHIO DEPARTMENT OF TRANSPORTATION. SPECIFICATIONS FOR MONUMENT ASSEMBLIES, REFERENCE MONUMENTS AND RIGHT OF WAY MONUMENTS ARE SHOWN ON STANDARD CONSTRUCTION DRAWING RM-1.1.

MONUMENT TABLE								
☒ of R/W US 422		PROJECT COORDINATES SEE SURVEY CERTIFICATION		ITEM 623			R/W MON. EXPECTED TO BE DISTURBED	
				MONUMENTS TO BE SET DURING CONSTRUCTION	MON BOX ADJUSTED TO GRADE	MON. ASSY.		
STATION	OFFSET	NORTH (Y)	EAST (X)	MON. ASSY.	REF. MON.	MON. ASSY.	R/W MON.	DESCRIPTION
906+55.10	0.00' RT	624051.93	2362796.59			I		MON BOX (SV 604)
906+90.86	34.90' LT	624087.94	2362831.24				I	MAG NAIL FND
☒ of R/W SR 88/SR 168/SR 528								
24+70.00	45.00' RT	624136.50	2362840.91				I	MAG NAIL SET
24+80.96	35.00' LT	624146.81	2362760.82				I	MAG NAIL SET
24+80.89	37.00' LT	624146.73	2362758.82				I	MAG NAIL SET
24+90.00	37.00' LT	624155.83	2362758.75				I	MAG NAIL SET
24+90.00	35.00' LT	624155.85	2362760.75				I	MAG NAIL SET
TOTAL CARRIED TO GENERAL SUMMARY SHEET						I	6	

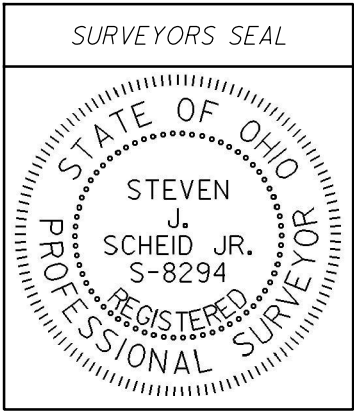
ADDITIONAL MONUMENT FOUND					
☒ CONST. & R/W US 422					
NAME	STA	OFFSET	NORTHING	EASTING	DESCRIPTION
MN31	P.I. 903+63.58	1.22' RT	624035.75	2362505.45	MON BOX
MN1	904+40.43	29.16' LT	624069.29	2362580.84	MAG NAIL
MN10	904+40.35	43.06' LT	624083.17	2362580.09	RR SPK
MN2	904+40.55	45.11' LT	624085.23	2362580.19	MAG NAIL
MN3	904+43.08	109.80' LT	624149.97	2362579.53	RR SPK
MN41	905+27.95	30.99' RT	624013.93	2362671.35	IPIPE
MN37	905+19.78	30.84' LT	624075.22	2362659.76	MAG NAIL
SV604	906+55.10	0.00' RT	624051.93	2362796.59	MON BOX
MN52	906+90.86	34.90' LT	624087.94	2362831.24	MAG NAIL
MN22	965+00.24	0.00' RT	621908.66	2367553.96	MON BOX
MN23	975+00.21	0.12' RT	621002.39	2367976.58	MON BOX
MN24	982+84.20	0.00' RT	620291.95	2368308.11	MON BOX
☒ R/W SR 88/SR528					
MN34	12+09.88	0.00' RT	623313.44	2362018.85	MON BOX
MN35	19+38.59	0.05' RT	623815.53	2362546.03	MON BOX
MN51	20+87.87	21.69' RT	623856.28	2362675.06	IPIIN
MN32	22+14.79	0.00' RT	623880.99	2362801.43	MON BOX
MN42	21+80.02	32.95' LT	623913.10	2362765.89	IPIIN
SV604	23+85.80	0.00' RT	624051.93	2362796.59	MON BOX
☒ CONST. & R/W SR 88/SR 528					
MN52	24+21.52	34.94' RT	624087.94	2362831.24	MAG NAIL
MN50	25+36.82	34.81' RT	624203.23	2362830.18	IPIIN
MN29	29+48.07	0.00' RT	624614.18	2362792.05	MON BOX
MN30	34+99.78	0.10' LT	625165.88	2362787.49	MON BOX

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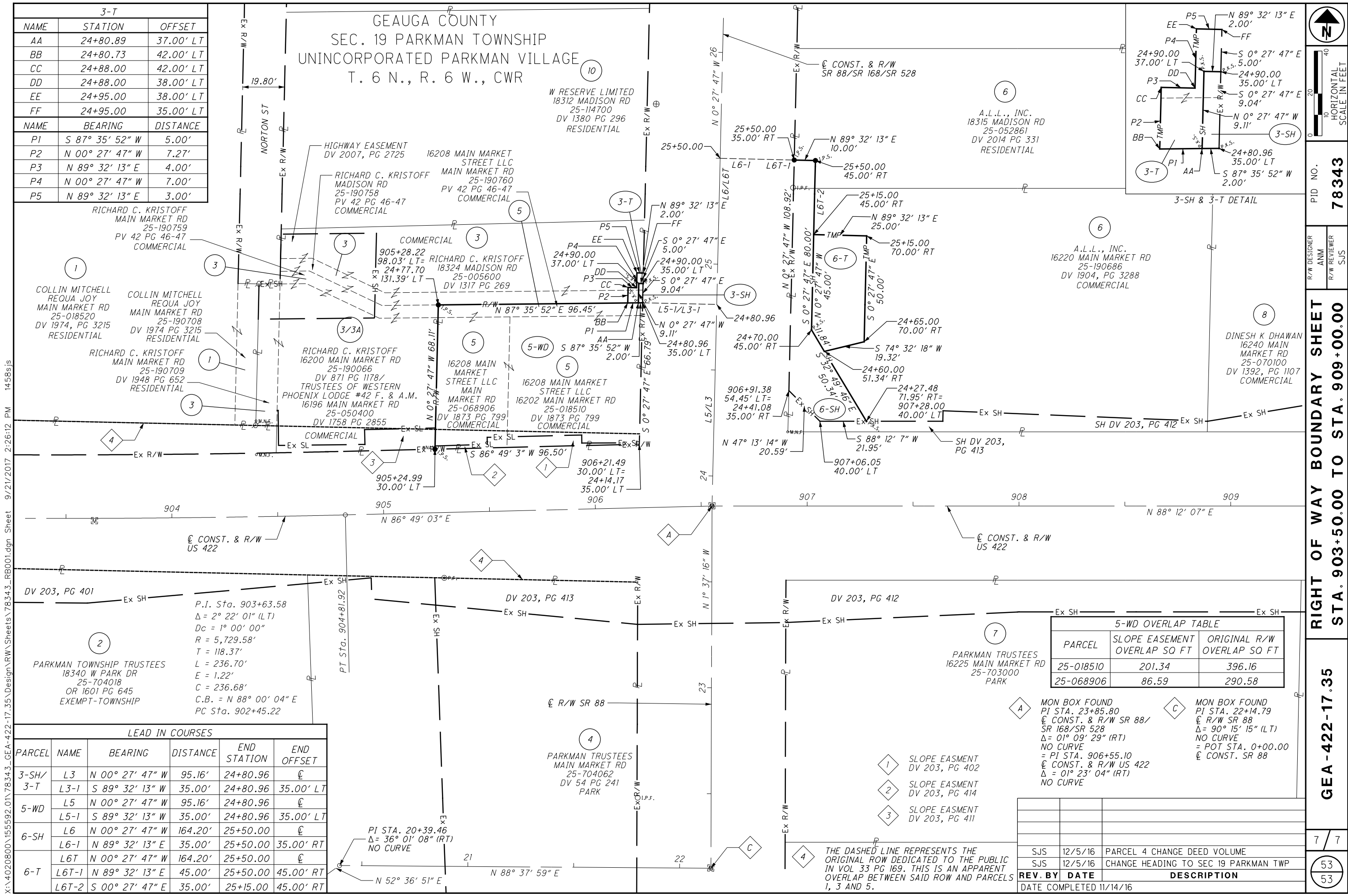
Steven J. Scheid, Jr., P.S.

Steven J. Scheid, Jr., Professional Land Surveyor 8294

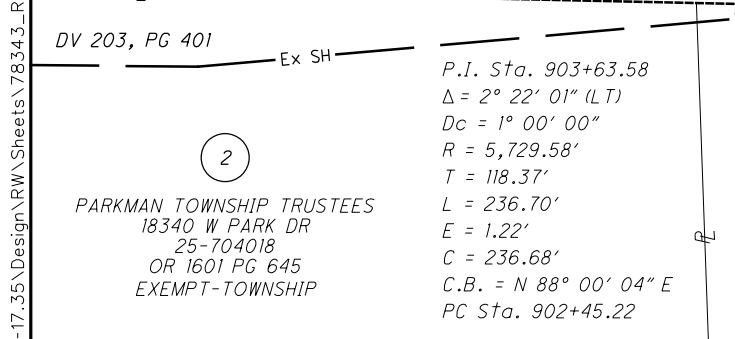
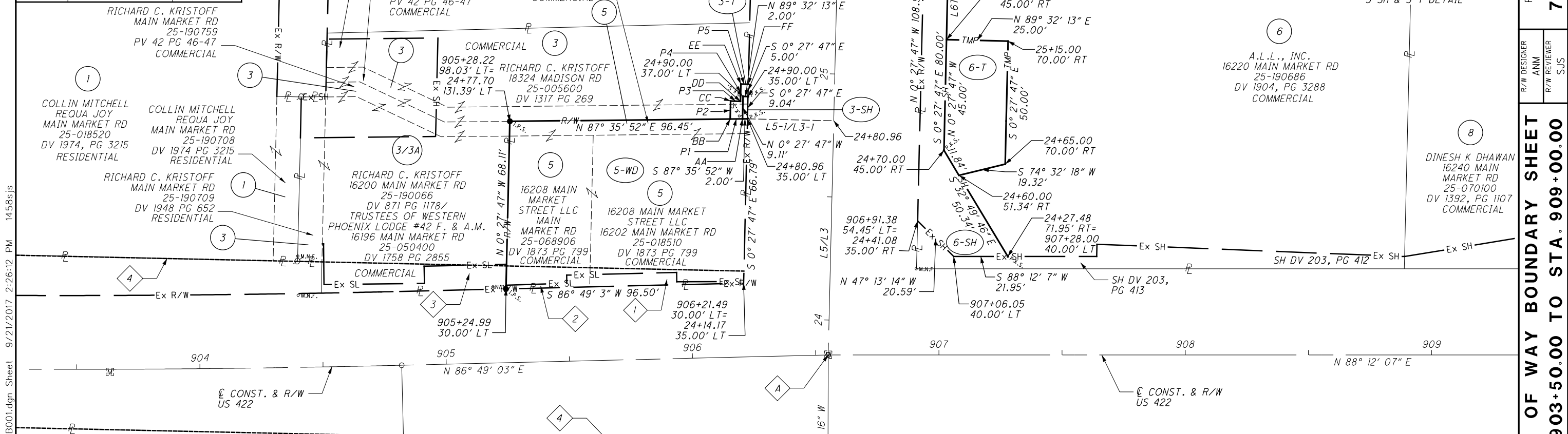
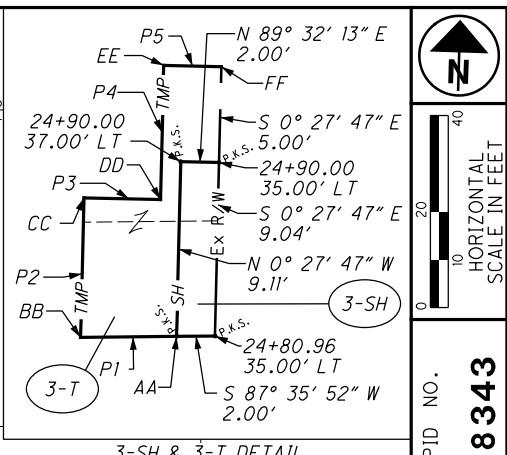
Date: 11/9/16



DATE COMPLETED 11/14/16



3-T		
NAME	STATION	OFFSET
AA	24+80.89	37.00' LT
BB	24+80.73	42.00' LT
CC	24+88.00	42.00' LT
DD	24+88.00	38.00' LT
EE	24+95.00	38.00' LT
FF	24+95.00	35.00' LT
NAME	BEARING	DISTANCE
P1	S 87° 35' 52" W	5.00'
P2	N 00° 27' 47" W	7.27'
P3	N 89° 32' 13" E	4.00'
P4	N 00° 27' 47" W	7.00'
P5	N 89° 32' 13" E	3.00'



LEAD IN COURSES					
PARCEL	NAME	BEARING	DISTANCE	END STATION	END OFFSET
3-SH/ 3-T	L3	N 00° 27' 47" W	95.16'	24+80.96	⊥
	L3-1	S 89° 32' 13" W	35.00'	24+80.96	35.00' LT
5-WD	L5	N 00° 27' 47" W	95.16'	24+80.96	⊥
	L5-1	S 89° 32' 13" W	35.00'	24+80.96	35.00' LT
6-SH	L6	N 00° 27' 47" W	164.20'	25+50.00	⊥
	L6-1	N 89° 32' 13" E	35.00'	25+50.00	35.00' RT
6-T	L6T	N 00° 27' 47" W	164.20'	25+50.00	⊥
	L6T-1	N 89° 32' 13" E	45.00'	25+50.00	45.00' RT
	L6T-2	S 00° 27' 47" E	35.00'	25+15.00	45.00' RT

5-WD OVERLAP TABLE		
PARCEL	SLOPE EASEMENT OVERLAP SQ FT	ORIGINAL R/W OVERLAP SQ FT
25-018510	201.34	396.16
25-068906	86.59	290.58

A MON BOX FOUND
PI STA. 23+85.80
⊥ CONST. & R/W SR 88/
SR 168/SR 528
Δ = 01° 09' 29" (RT)
NO CURVE
= PI STA. 906+55.10
⊥ CONST. & R/W US 422
Δ = 01° 23' 04" (RT)
NO CURVE

C MON BOX FOUND
PI STA. 22+14.79
⊥ R/W SR 88
Δ = 90° 15' 15" (LT)
NO CURVE
= POT STA. 0+00.00
⊥ CONST. SR 88

REV. BY	DATE	DESCRIPTION
SJS	12/5/16	PARCEL 4 CHANGE DEED VOLUME
SJS	12/5/16	CHANGE HEADING TO SEC 19 PARKMAN TWP
DATE COMPLETED 11/14/16		

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