

STATE OF OHIO

DEPARTMENT OF TRANSPORTATION

D12-TSG-FY2013

CUY-422-0.27 (ONTARIO-HURON)

CUY-42-16.35 (W. 25TH-CLARK)

CUY-43-11.13 (MILES-LEE)

CUY-17-10.78 (BROOKPARK-STATE)

CITY OF CLEVELAND
/ CUYAHOGA COUNTY

PROJECT EARTH DISTURBED AREA:

ESTIMATED CONTRACTOR EARTH DISTURBED AREA:

NOTICE OF INTENT EARTH DISTURBED AREA:

N/A (MAINTENANCE PROJECT)

N/A (MAINTENANCE PROJECT)

N/A (MAINTENANCE PROJECT)

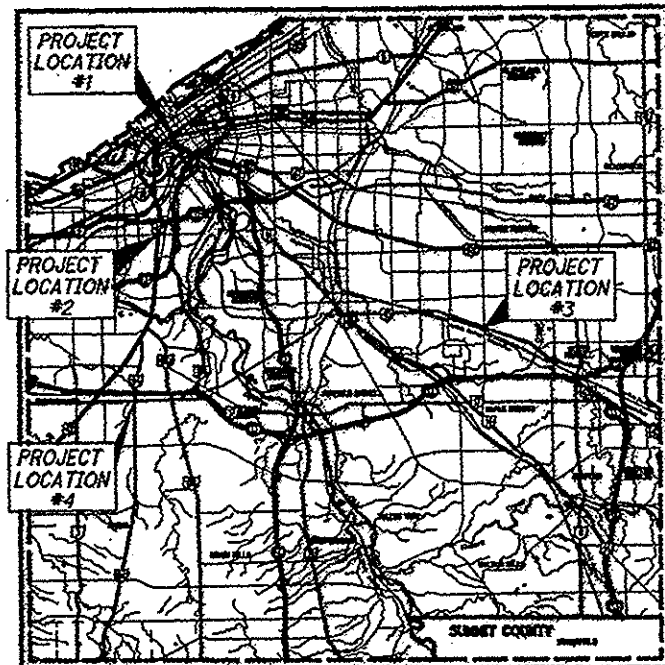
PROJECT DESCRIPTION

UPGRADING THE SIGNALS AND PROVIDING NEW CURB RAMPS
AT THE FOLLOWING LOCATIONS IN THE CITY OF CLEVELAND:
1) US 422 (ONTARIO STREET) & HURON STREET
2) US 42 (W. 25TH STREET) & CLARK AVENUE
3) SR 43 (MILES AVENUE) & LEE ROAD
4) SR 17 (BROOKPARK RD) & SR 94 (STATE ROAD)

2010 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.

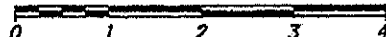
I HEREBY APPROVE THESE PLANS AND DECLARE THAT
THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE
THE CLOSING TO TRAFFIC OF THE HIGHWAY AND THAT
PROVISIONS FOR THE MAINTENANCE AND SAFETY OF
TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND
ESTIMATES.



LOCATION MAP

- 1) LATITUDE: 41°29'47" LONGITUDE: 81°41'29"
2) LATITUDE: 41°28'14" LONGITUDE: 81°41'58"
3) LATITUDE: 41°26'28" LONGITUDE: 81°33'54"
4) LATITUDE: 41°25'08" LONGITUDE: 81°42'37"

SCALE IN MILES



PORTION TO BE IMPROVED: _____
INTERSTATE HIGHWAY: _____
STATE & FEDERAL ROUTES: _____
COUNTY & TOWNSHIP ROADS: _____
OTHER ROADS: _____

DESIGN DESIGNATION

CURRENT ADT (20) _____ N/A
DESIGN YEAR ADT (20) _____ N/A
DESIGN HOURLY VOLUME (20) _____ N/A
DIRECTIONAL DISTRIBUTION _____ N/A
TRUCKS (24 HOUR B&C) _____ N/A
DESIGN SPEED _____ N/A
LEGAL SPEED _____ N/A
DESIGN FUNCTIONAL CLASSIFICATION:
URBAN ARTERIAL
NHS PROJECT _____

DESIGN EXCEPTIONS

NONE

UNDERGROUND UTILITIES

CONTACT BOTH SERVICES
CALL TWO WORKING DAYS
BEFORE YOU DIG

CALL
1-800-362-2764
(TOLL FREE)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY
OIL & GAS PRODUCERS PROTECTIVE
SERVICE CALL: 1-800-825-0988

PLAN PREPARED BY:



4150 Belden Village Dr.
Suite 104
Canton, OH 44718
Contact: Debbie Weaver
330-491-9000 ext. 230
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LJB, INC.
6151 WILSON MILLS ROAD
SUITE 220
CLEVELAND, OH 44133
PH: (440) 683-4504
FAX: (440) 683-4505

INDEX OF SHEETS:

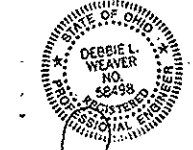
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ENGINEERS SEAL:



SIGNED: _____
DATE: 12/21/12

ENGINEERS SEAL:



SIGNED: _____
DATE: 12/21/12

STANDARD CONSTRUCTION DRAWINGS

MT-35.10	4/20/01	TC-16.21	4/15/11	HL-30.11	10/16/09				
MT-85.31	7/17/09	TC-21.10	1/19/07	HL-30.22	4/17/09				
MT-97.10	10/15/10	TC-21.20	4/15/11						
MT-97.12	10/15/10	TC-41.20	1/19/07						
MT-105.10	1/16/09	TC-42.10	1/19/07						
		TC-42.20	1/21/11						
		TC-52.10	1/19/07						
		TC-52.20	1/19/07						
		TC-71.10	1/21/11						
		TC-81.21	1/21/11						
		TC-82.10	1/21/11						
		TC-83.10	1/19/07						
		TC-83.20	4/20/12						
		TC-84.20	1/21/11						
		TC-85.10	10/16/09						
		TC-85.20	8/15/11						

SUPPLEMENTAL
SPECIFICATIONS

800 1/18/13
832 5/5/09

SPECIAL
PROVISIONS

APPROVED

DATE 12-27-12 DISTRICT DEPUTY DIRECTOR

APPROVED

DATE 1-18-13 DIRECTOR, DEPARTMENT OF
TRANSPORTATION

FEDERAL PROJECT NO.

E120528

PID NO.

88276

CONSTRUCTION PROJECT NO.

NONE

RAILROAD INVOLVEMENT

D12-TSG-FY2013

34

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ITEM 614 - MAINTAINING TRAFFIC

THE CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGNING AND MAINTAINING SAFE AND EFFECTIVE TRAFFIC CONTROL 24 HOURS A DAY FOR THE DURATION OF THIS PROJECT. ALL TRAFFIC CONTROL DEVICES SHALL BE FURNISHED, ERECTED, MAINTAINED, AND REMOVED BY THE CONTRACTOR.

THE CONTRACTOR SHALL DEVISE A MAINTENANCE OF TRAFFIC SCHEME WHICH SHALL BE STAMPED BY A PROFESSIONAL ENGINEER, AND PRESENT IT TO THE ENGINEER FOR APPROVAL. THE MAINTENANCE OF TRAFFIC SCHEME SHALL PRESENT, IN GENERAL, THE METHOD FOR CONDUCTING THE REQUIRED WORK IN A SAFE AND EFFICIENT MANNER.

THE PLANS SHALL INCLUDE THE FOLLOWING COMPONENTS:

THE PLAN VIEW AT AN APPROPRIATE SCALE TO SHOW:
WORK AREA
BEGIN/END STATIONING OF TAPERS, TEMPORARY MARKINGS,ETC.
TEMPORARY PAVEMENT
LOCATIONS OF SIGNS (EXISTING OVERHEAD SIGNS AND ALL PROPOSED, COVERED, OR MODIFIED SIGNS)
LOCATIONS OF TYPICAL SECTIONS
REFERENCES TO APPLICABLE STANDARD DRAWINGS
TYPICAL SECTIONS SHOWING:
LANE WIDTHS, PAVEMENT MARKINGS, DRUMS, PCB, ETC.
LIMITING STATIONS
WORK AREA AND DROP-OFFS
SIGN DETAILS FOR PROPOSED SIGNS AND OVERLAYS/
MODIFICATIONS

THE MAINTENANCE OF TRAFFIC SCHEME SHALL BE IN CONFORMANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, LATEST REVISION, THE REFERENCED STANDARD CONSTRUCTION DRAWINGS INCLUDING DESIGNER NOTES, THE CONSTRUCTION AND MATERIAL SPECIFICATIONS (CMS), POLICY NO. 516-003(P) TRAFFIC MANAGEMENT IN WORK ZONES INTERSTATE AND OTHER FREEWAYS, ODOT LOCATION AND DESIGN MANUAL, VOLUME 1, AND ALL REQUIREMENTS DETAILED IN THESE PLANS.

THIS SUBMITTAL SHALL CONSIST OF THREE (3) COPIES OF THE PLANS FOR REVIEW AND DISTRIBUTION. NO WORK SHALL BEGIN AT THE LOCATION UNTIL THE MAINTENANCE OF TRAFFIC PLANS HAVE BEEN APPROVED BY THE CITY AND/OR THE OHIO DEPARTMENT OF TRANSPORTATION.

THE PROGRESS SCHEDULE WILL BE REQUIRED TO APPROVE THE MAINTENANCE OF TRAFFIC PLANS. THIS SCHEDULE OF OPERATIONS SHALL DETAIL THE CONTRACTOR'S WORK ACTIVITIES AND HIS METHODS OF MAINTAINING TRAFFIC DURING THESE ACTIVITIES. MAINTENANCE OF TRAFFIC PLANS SHALL BE PREPARED AND SUBMITTED TO THE DISTRICT FOR APPROVAL. THESE PLANS SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER. THE DISTRICT SHALL HAVE 14 CALENDAR DAYS TO REVIEW AND COMMENT ON THESE PLANS. THE CONTRACTOR SHALL NOT BEGIN ANY WORK REQUIRING TRAFFIC CONTROL UNTIL THE ENGINEER HAS GIVEN APPROVAL OF THE CONTRACTOR'S SEQUENCE OF OPERATIONS AND MAINTENANCE OF TRAFFIC PLANS.

THE MAINTENANCE OF TRAFFIC SCHEME SHALL TAKE INTO CONSIDERATION SNOW AND ICE OPERATIONS FROM DECEMBER 1 THROUGH MARCH 31. LANE SHIFTS, RESTRICTIONS, AND CLOSURES MAY NOT BE APPROVED IF THEY ADVERSELY AFFECT SNOW REMOVAL OPERATIONS.

IF IN THE OPINION OF THE ENGINEER, THE CONTRACTOR FAILS TO COMPLY WITH THESE REQUIREMENTS AND THE PROVISIONS OF THE APPROVED MAINTENANCE OF TRAFFIC PLAN, THE ENGINEER SHALL SUSPEND WORK UNTIL ALL REQUIREMENTS ARE MET. ANY COST OR DELAYS INCURRED AS A RESULT OF THE FAILURE SHALL BE THE FULL RESPONSIBILITY OF THE CONTRACTOR.

PAYMENT FOR ALL THE ITEMS REQUIRED TO MAINTAIN TRAFFIC IN ACCORDANCE WITH THESE REQUIREMENTS SHALL BE INCLUDED IN THE LUMP SUM PRICE FOR ITEM 614 - MAINTAINING TRAFFIC.

MAINTENANCE OF TRAFFIC SIGNAL INSTALLATION

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE EXISTING AND THEN PROPOSED TRAFFIC SIGNAL INSTALLATIONS WITHIN THE PROJECT UNDER THE FOLLOWING CONDITIONS:

1. THE CONTRACTOR SHALL BE RESPONSIBLE TO MAINTAIN THE EXISTING TRAFFIC SIGNAL INSTALLATION FOR THE ENTIRE INTERSECTION FROM THE TIME THE CONTRACTORS OPERATIONS FIRST DISTURB THE INSTALLATION UNTIL THE NEW INSTALLATION HAS BEEN APPROVED, ACCEPTED AND FUNCTIONING.

THE CONTRACTOR SHALL CORRECT AS QUICKLY AS POSSIBLE ALL OUTAGES OR MALFUNCTIONS. HE SHALL PROVIDE THE MAINTAINING AGENCY AND THE ENGINEER SUCH ADDRESSES AND PHONE NUMBERS WHERE HIS MAINTENANCE FORCES CAN BE CONTACTED. THE CONTRACTOR SHALL PROVIDE ONE OR MORE PERSONS TO RECEIVE ALL CALLS AND DISPATCH THE NECESSARY MAINTENANCE FORCES TO CORRECT OUTAGES. SUCH A PERSON OR PERSONS MAY BE USED TO PERFORM OTHER DUTIES AS LONG AS PROMPT ATTENTION IS GIVEN TO THESE CALLS AND A PERSON IS READILY AVAILABLE CONTINUOUSLY 24 HOURS A DAY, 7 DAYS A WEEK. ALL LAMP OUTAGES, CABLE OUTAGES, ELECTRICAL FAILURES, EQUIPMENT MALFUNCTIONS AND MISALIGNED SIGNAL HEADS SHALL BE CORRECTED TO THE SATISFACTION OF THE ENGINEER WITH THE SIGNAL BACK TO SERVICE WITHIN 4 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 WORSE 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 THE INTERSECTION WITHIN HIS RESPONSIBILITY, WITHIN PERIODS AS SPECIFIED ABOVE, THE ENGINEER MAY INVOKE THE PROVISIONS OF SECTION 105.15. FURTHERMORE, ANY SUBSEQUENT BILLINGS TO THE STATE OR THE CITY OF CLEVELAND FOR POLICE SERVICES AND MAINTENANCE SERVICES BY CITY FORCES SHALL BE DEDUCTED FROM MONIES DUE OR TO BECOME DUE THE CONTRACTOR IN ACCORDANCE WITH PROVISIONS OF SECTION 105.15.

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

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO ANY TRAFFIC SIGNAL COMPONENTS REQUIRED TO BE HANDLED DURING THE RELOCATION OF POLES AND REVISIONS TO THE SIGNAL SYSTEM.

WHEN A TRAFFIC SIGNAL MUST BE TAKEN OUT OF SERVICE BY THE CONTRACTOR, DUE TO CONSTRUCTION PROCEDURES, THIS OUTAGE SHALL NOT EXCEED 4 HOURS AND SHALL NOT INCLUDE THE HOURS OF 7:00 AM TO 7:00 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.

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 AND GENERAL NOTE ON THE NEXT SHEET.

THE CONTRACTOR SHALL MAINTAIN COMPLETE RECORDS OF MALFUNCTIONS INCLUDING:

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

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

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

ITEM 614 - MOT (SEQUENCE OF CONSTRUCTION)

THE MAINTENANCE OF TRAFFIC SEQUENCE FOR THE CONSTRUCTION OF THE PROPOSED SIGNAL UPGRADES, SIGNING AND PAVEMENT MARKINGS WILL BE COMPLETED IN THE FOLLOWING PHASES:

PHASE 1
INSTALL THE PROPOSED SIGNALS AND SIGNAL CONDUCTORS AS SHOWN IN THE PLANS AT EACH INTERSECTION. THE EXISTING SIGNALS SHALL REMAIN OPERATIONAL UNTIL THE PROPOSED SIGNALS ARE ACCEPTED. ADDITIONALLY THE EXISTING CONTROLLER, CABINET AND EQUIPMENT SHALL BE REMOVED AND REPLACED WITH THE NEW CABINET, CONTROLLER AND APPURTENANCES. A MINIMUM OF TWO-LANES (1 FOR W. 25TH ST. AND CLARK AVENUE) OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES WITH THE USE OF FLAGGERS AS PER STANDARD CONSTRUCTION DRAWING MT-97.10 AND LEO'S.

PHASE 2
INSTALL THE PROPOSED PAVEMENT MARKINGS AND SIGNS AS SHOWN IN THE PLANS. A MINIMUM OF TWO-LANE (ONE FOR W. 25TH ST. AND CLARK AVENUE) OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES WITH THE USE OF FLAGGERS AS PER STANDARD CONSTRUCTION DRAWING MT-97.12.

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 IN THIS NOTE WILL NOT GENERALLY BE PERMITTED AT PROJECT COST UNLESS PRIOR APPROVAL HAS BEEN OBTAINED FROM THE ENGINEER. LEOS SHOULD NOT BE USED WHERE THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (OMUTCD) INTENDS THAT FLAGGERS BE USED.

IN ADDITION TO THE REQUIREMENTS OF CMS 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 CONTROLLING TRAFFIC FOR THE FOLLOWING TASKS:

DURING A TRAFFIC SIGNAL INSTALLATION 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).

LEOS SHOULD NOT FORGO THEIR TRAFFIC CONTROL RESPONSIBILITIES TO APPREHEND MOTORISTS FOR ROUTINE TRAFFIC VIOLATIONS. HOWEVER, IF A MOTORISTS 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 AND COMMUNICATING THE INTENTIONS OF THE PLANS WITH RESPECT TO DUTIES OF THE LEOS. THE ENGINEER SHALL HAVE FINAL CONTROL OVER THE LEOS' DUTIES AND PLACEMENT, AND WILL RESOLVE ANY ISSUES THAT MAY ARISE BETWEEN THE TWO PARTIES. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH A LIST OF THE APPROPRIATE LAW ENFORCEMENT AGENCY(S), INCLUDING ADDRESS AND TELEPHONE NUMBER.

THE LEO SHOULD REPORT IN TO THE CONTRACTOR PRIOR TO THE START OF THE SHIFT TO RECEIVE INSTRUCTIONS REGARDING SPECIFIC WORK ASSIGNMENTS DURING THE SHIFT. THE LEO IS EXPECTED TO STAY AT THE PROJECT SITE FOR THE ENTIRE DURATION OF THE SHIFT. SHOULD IT BE NECESSARY TO LEAVE THE PROJECT SITE, THE LEO SHOULD NOTIFY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE THE LEO WITH A TWO-WAY COMMUNICATION DEVICE WHICH SHALL BE RETURNED TO THE CONTRACTOR AT THE END OF THE SHIFT.

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

ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR 100 HOURS

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

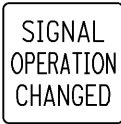
ANY ADDITIONAL COSTS (ADMINISTRATIVE OR OTHERWISE) INCURRED BY THE CONTRACTOR TO OBTAIN THE SERVICES OF AN LEO ARE INCLUDED WITH THE BID UNIT PRICE FOR ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR.

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SIGNAL OPERATION CHANGED SIGNS

FURNISH AND INSTALL W3-H10 SIGNS (30" X 30"), SHOWN BELOW, ON THE TRAFFIC SIGNAL MAST ARMS APPROXIMATELY THREE (3) FEET FROM THE POLE OR ON THE VERTICAL POLE ADJACENT TO THE MAST ARMS, AS DIRECTED BY THE ENGINEER, CONCURRENT WITH THE ACTUATION OF ANY NEW SIGNAL OPERATION WHICH ALTERS THE SEQUENCE OF THE SIGNAL DISPLAYS FROM THE EXISTING SEQUENCE. DISPLAY THE SIGNS FOR A MINIMUM OF THIRTY (30) DAYS, BUT NOT MORE THAN FORTY-FIVE (45) DAYS. AFTER THAT TIME, REMOVE THE W3-H10 SIGNS, WHICH SHALL BECOME PROPERTY OF THE CONTRACTOR.

THE DEPARTMENT WILL CONSIDER THE COST OF THIS WORK AS INCIDENTAL TO, AND INCLUDED IN THE COST OF THE CONTROLLER PAY ITEM. THE DEPARTMENT WILL NOT MAKE ADDITIONAL COMPENSATION FOR THIS WORK.



W3-H10-30

ITEM 630 - SIGNING, MISC.: SIGN ADJUSTMENT

THE CONTRACTOR SHALL ADJUST EXISTING STREET NAME SIGNS OR ANY OTHER EXISTING SIGNS ON THE MAST ARM TO FIT WITHIN THE LOCATIONS OF THE PROPOSED SIGNAL HEADS. THE CONTRACTOR SHALL BE RESPONSIBLE TO MAINTAIN THE EXISTING CONDITION OF THE EXISTING SIGN.

PAYMENT FOR ITEM 630 - SIGNING, MISC.: SIGN ADJUSTMENT, WILL BE MADE AT THE CONTRACT UNIT PRICE PER EACH.

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

TRAFFIC SIGNAL INSTALLATIONS, INCLUDING SIGNAL HEADS, CABLE, CABINET, CONTROLLER, 2 MAST ARMS, 2 STRAIN POLES, MESSENGER WIRE, ETC., SHALL BE REMOVED IN ACCORDANCE WITH CMS 632.26 AND AS INDICATED ON THE PLANS. REMOVED ITEMS SHALL BE STORED ON THE PROJECT FOR SALVAGE BY THE CITY OF CLEVELAND IN ACCORDANCE WITH THE LISTING GIVEN HEREIN.

ITEMS TO BE STORED:

ONTARIO ST. & HURON RD.: SIGNAL HEADS, 2 MAST ARMS, CONTROLLER UNIT

W. 25TH ST. & CLARK AVE.: SIGNAL HEADS, 2 STRAIN POLES, CONTROLLER UNIT, MESSENGER WIRE, 2 BRACKET ARMS AND LUMINAIRES

MILES AVE. & LEE RD.: SIGNAL HEADS, CONTROLLER UNIT

BROOKPARD RD. & STATE RD.: SIGNALS HEADS, CONTROLLER UNIT

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.

THE EXISTING POLICE CAMERA ON THE NE CORNER SIGNAL POLE AT ONTARIO ST. & HURON RD. SHALL BE REMOVED FROM THE EXISTING SIGNAL POLE AND REMOUNTED AT THE SAME ELEVATION ON THE PROPOSED SIGNAL POLE ON THE SAME CORNER. COST FOR THIS WORK IS INCLUDED UNDER ITEM 632 - REMOVAL OF TRAFFIC SIGNAL INSTALLATION.

ALL UNDERGROUND CABLE TO THE EXISTING VEHICULAR SIGNAL HEADS SHALL BE REMOVED FOR DISPOSAL. EXISTING UNDERGROUND CONDUITS SHALL REMAIN IN PLACE.

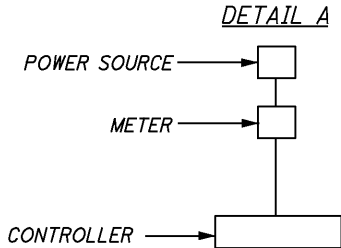
ITEM 632 - POWER SERVICE, AS PER PLAN

POWER SERVICE SHALL BE AS PER CMS ITEM 632 AND SCD TC-83.10 WITH THE FOLLOWING EXCEPTIONS:

1. THE METER BASE MOUNTING HEIGHT SHALL BE NO MORE THAN 5 FEET HIGH TO THE CENTER OF THE METER BASE FROM THE GROUND.
2. THE CONTRACTOR SHALL SUPPLY THE NECESSARY METER BASES.
3. ALL POWER SERVICES SHALL BE METERED. THE METER SHALL HAVE A LEVER OPERATED BYPASS.
4. THE EXISTING LOCATION OF EACH CONTROLLER'S POWER SOURCE SHALL BE USED AGAIN UNLESS DIRECTED OTHERWISE BY THE POWER COMPANY.

NO DISCONNECT SWITCHES SHALL BE PROVIDED

THE CONTRACTOR SHALL CONTACT THE METER SECTION OF THE POWER COMPANY FOR INFORMATION REGARDING THE METER BASE INSTALLATION PRIOR TO ORDERING POLES. THE CONTRACTOR WILL BE RESPONSIBLE FOR REQUESTING AND SCHEDULING ANY INSPECTIONS THE POWER COMPANY MAY REQUIRE FOR THE POWER SERVICE HOOK UP. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT THE POWER COMPANY FOR THE ELECTRICAL SERVICE CONNECTION. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR SPLICE POWER CABLE INTO THE POWER COMPANY'S CIRCUITS. THE VOLTAGE SUPPLIED SHALL BE NOMINALLY 120 VOLTS. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY NECESSARY PERMITS AND THE PAYING OF ALL FEES. THE CONTRACTOR SHALL PAY ALL POWER CHARGES UNTIL THE SIGNAL IS ACCEPTED BY THE MAINTAINING AGENCY.



PAYMENT WILL INCLUDE ALL NECESSARY LABOR, MISCELLANEOUS HARDWARE AND EQUIPMENT REQUIRED FOR COMPLETING THIS ITEM OF WORK AS OUTLINED ABOVE. BASIS OF PAYMENT WILL BE AT THE UNIT PRICE PER EACH.

ITEM 632 - LOOP DETECTOR UNITS, BY TYPE, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF CMS ITEM 632 AND CMS 732.07 OR 732.08, LOOP DETECTOR UNITS SHALL HAVE THE FOLLOWING REQUIREMENTS OR FEATURES:

1. THE OUTPUT DEVICE SHALL BE A RELAY, AND ALL CONTACTS SHALL BE IN THE WIRING HARNESS.
2. THE UNIT SHALL BE SELF TUNING.
3. THE UNIT'S ELECTRICAL CONNECTION PLUGS OR WIRING HARNESS SHALL ALLOW READY REPLACEMENT WITH A SINGLE CHANNEL AMPLIFIER AS DESCRIBED IN CMS 732.07.
4. EACH UNIT SHALL BE LABELED TO CORRESPOND TO ITS PHASE AND DIRECTION.
5. DELAY INHIBIT SHALL BE CONNECTED ON ALL DETECTOR HARNESSES FOR THEIR RESPECTIVE PHASE GREENS.

ITEM 632 - SIGNAL SUPPORT FOUNDATION, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF CMS 632.14, THE CONTRACTOR IS RESPONSIBLE TO CONTACT OUPS AND VERIFY ANY UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION OF THE SIGNAL SUPPORT FOUNDATION AT THE LOCATION SHOWN ON THE PLANS. REFER TO SHEET 2 FOR POT HOLING NOTE.

PAYMENT FOR ITEM 632 - SIGNAL SUPPORT FOUNDATION, AS PER PLAN, WILL BE MADE AT THE CONTRACT UNIT PRICE PER EACH.

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

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

SIGNAL SECTIONS:

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

MOUNTING HARDWARE:

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

BACKPLATES ARE NOT TO BE INSTALLED AT THE INTERSECTION OF SR 17 (BROOKPARK RD) & SR 94 (STATE RD).

THE DEPARTMENT WILL MEASURE "VEHICULAR SIGNAL HEAD, (LED), YELLOW, BY TYPE, (WITH BACKPLATE), AS PER PLAN" BY THE NUMBER OF COMPLETE UNITS FURNISHED AND INSTALLED, AND WILL INCLUDE ALL SUPPORT AND MOUNTING HARDWARE, DISCONNECT HANGERS, CLOSURE CAPS, DIMMERS, AND LAMPS AS SPECIFIED.

ITEM 632 - SIGNALIZATION, MISC.: EXTERIOR CABINET PAINTING

POWDER COATING - COLOR: DARK BRONZE

SURFACE PREPARATION - THE EXTERIOR STEEL SURFACE SHALL BE BLAST CLEANED TO STEEL STRUCTURES PAINTING COUNCIL SURFACE PREPARATION SPECIFICATION No. 6 (SSPC-SP6) REQUIREMENTS UTILIZING CAST STEEL ABRASIVES CONFORMING TO THE SOCIETY OF AUTOMOTIVE ENGINEERS (SAE) RECOMMENDED PRACTICE J827. THE BLAST METHOD USED IS A RECIRCULATING, CLOSED CYCLE CENTRIFUGAL WHEEL SYSTEM WITH ABRASIVE CONFORMING TO SAE SHOT NUMBER S280.

INTERIOR COATING - INTERIOR SURFACES (POLE SHAFTS ONLY) AT THE BASE END FOR A LENGTH OF APPROXIMATELY 2.0' SHALL BE MECHANICALLY CLEANED AND COATED WITH A ZINC RICH EPOXY POWDER. THE COATING SHALL BE ELECTROSTATICALLY APPLIED AND CURED IN A GAS FIRED CONVECTION OVEN BY HEATING THE STEEL SUBSTRATE TO A MINIMUM OF 350 DEGREES FAHRENHEIT AND A MAXIMUM OF 400 DEGREES FAHRENHEIT.

EXTERIOR COATING - ALL EXTERIOR SURFACES SHALL BE COATED WITH A URETHANE OR TRIGLYCIDYL ISOCYANURATE (TGIC) POLYESTER POWDER TO A MINIMUM FILM THICKNESS OF 2.0 MILS (0.002"). THE COATING SHALL BE ELECTROSTATICALLY APPLIED AND CURED IN A GAS FIRED CONVECTION OVEN BY HEATING THE STEEL SUBSTRATE TO A MINIMUM OF 350° F AND A MAXIMUM OF 400° F. THE THERMOSETTING POWDER RESIN SHALL PROVIDE BOTH INTERCOAT AS WELL AS SUBSTRATE FUSION ADHESION THAT MEETS 5A OR 5B CLASSIFICATIONS OF ASTM D3359.

COMBINATION COATING GALVANIZED-POWDER TOP COAT COLOR: DARK BRONZE

SURFACE PREPARATION - PRIOR TO BEING INCORPORATED INTO AN ASSEMBLED PRODUCT, STEEL PLATES ¾ INCHES OR MORE IN THICKNESS SHALL BE BLAST CLEANED WHEN REQUIRED TO REMOVE ROLLED-IN MILL SCALE, IMPURITIES AND NON-METALLIC FOREIGN MATERIALS. AFTER ASSEMBLY ALL WELD FLUX SHALL BE MECHANICALLY REMOVED. THE IRON OR STEEL PRODUCT SHALL BE DEGREASED BY IMMERSION IN AN AGITATED 4.5%-6% CONCENTRATED CAUSTIC SOLUTION ELEVATED TO A TEMPERATURE RANGING FROM 150° TO 190°F. IT SHALL THEN BE PICKLED BY IMMERSION IN A HEATED SULFURIC ACID SOLUTION OF 6%-13% CONCENTRATION, WITH A CONTROLLED TEMPERATURE BETWEEN 150° AND 190°F. IT SHALL NEXT BE RINSED CLEAN FROM ANY RESIDUAL EFFECTS OF THE CAUSTIC OR ACID SOLUTIONS BY IMMERSION IN A CIRCULATING FRESH WATER BATH. FINAL PREPARATION SHALL BE ACCOMPLISHED BY IMMERSION IN CONCENTRATED ZINC AMMONIUM CHLORIDE FLUX SOLUTION HEATED TO 130°F. THE SOLUTION'S ACIDITY CONTENT SHALL BE MAINTAINED BETWEEN 4.5-5.0 PH. THE ASSEMBLY SHALL BE AIR DRIED TO REMOVE ANY MOISTURE REMAINING IN THE FLUX COAT AND/OR TRAPPED WITHIN THE PRODUCT.

ZINC COATING - THE PRODUCT SHALL BE HOT-DIP GALVANIZED TO THE REQUIREMENTS OF EITHER ASTM A123 (FABRICATED PRODUCTS) OR ASTM A153 (HARDWARE ITEMS) BY IMMERSION IN A MOLTEN BATH OF PRIME WESTERN GRADE ZINC MAINTAINED BETWEEN 810° F AND 850° F. THE ENTIRE PRODUCT SHALL BE TOTALLY IMMERSED WITH NO PART OF IT PROTRUDING OUT OF THE ZINC (NO DOUBLE DIPPING). THIS IS TO LIMIT A RISK OF TRAPPED CONTAMINATES CONTAINING CHLORIDES AND REDUCE THE RISK OF BARE SPOTS (BARE SPOTS CAN OCCUR WHEN FLUX ON THE STEEL SURFACE IS BURNED AWAY BY HEAT OF THE FIRST DIP). MAXIMUM ALUMINUM CONTENT OF THE BATH SHALL BE 0.01% FLUX ASH SHALL BE SKIMMED FROM THE BATH SURFACE PRIOR TO IMMERSION AND EXTRACTION OF THE PRODUCT TO ASSURE A DEBRIS FREEZING COATING.

EXTERIOR COATING - ALL GALVANIZED EXTERIOR SURFACES SHALL BE COATED WITH A URETHANE OR TRIGLYCIDYL ISOCYANURATE (TGIC) POLYESTER POWDER TO A MINIMUM FILM THICKNESS OF 2.0 MILS (0.002"). PRIOR TO APPLICATION, THE SURFACES TO BE POWERED COATED SHALL BE MECHANICALLY ETCHED BY BRUSH BLASTING (REF. SSPC-SP7) AND THE ZINC COATED SUBSTRATE PREHEATED TO 450 DEGREES FOR A MINIMUM OF ONE HOUR IN A GAS FIRED CONVECTION OVEN. THE COATING SHALL BE ELECTROSTATICALLY APPLIED AND CURED IN A GAS FIRE CONVECTION OVEN BY HEATING THE ZINC COATED SUBSTRATE TO A MINIMUM OF 350° F AND A MAXIMUM OF 400° F. THE THERMOSETTING POWDER RESIN SHALL PROVIDE BOTH INTERCOAT AS WELL AS SUBSTRATE FUSION ADHESION THAT MEETS 5A OR 5B CLASSIFICATION OF ASTM D3359.

ALL COSTS RESULTING FROM THE ABOVE REQUIREMENTS SHALL BE CONSIDERED TO BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 632 - SIGNALIZATION, MISC.: EXTERIOR CABINET PAINTING.

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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 IT WILL BE BENEFICIAL TO REFER TO THE MAJOR SECTIONS OF THE SIGNAL SUPPORTS RATHER THAN THE WHOLE SUPPORT. MORE SPECIFIC INSTRUCTIONS AND FLEXIBILITY CAN BE GIVEN BASED UPON THE UNIT OF MEASURE AND PAYMENT PER MAJOR 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 ORGANIC ZINC PRIME COAT, EPOXY INTERMEDIATE COAT AND 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 PAIN 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 DEGREE 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 SURFACED. 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, 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 PAIN SYSTEM OR A TWO COAT SYSTEM CONFORMING IN TO CMS 708.02. SUPPLY ALL COATS FROM THE SAME MANUFACTURER, UNLESS OTHERWISE SPECIFIED BY ALTERNATE BID, THE URETHANE FINISH COAT COLOR SHALL BE DARK BRONZE. THE COATING MATERIALS USED SHALL BE SUPPLIED BY ONE OF THE FOLLOWING MANUFACTURERS OR AN APPROVED EQUAL:

AMERON 210 NORTH BERRY SI. BREA. CA 92622	ICI DEVOE PAINTS 5480 CLOVERLEAF PKWY VALLEY VIEW, OH 44125
PORTER PAINT 400 SOUTH 13 TH ST. LOUISVILLE, KY 40201	POLY-CARB 33095 BAINBRIDGE RD SOLON, OH 44139
SHERWIN-WILLIAMS COMPANY 671 BETA DR. MAYFIELD VILLAGE, OH 44143	

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 COATING 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 450 DEGREES FAHRENHEIT FOR A MINIMUM OF ONE HOUR IN A GAS FIRED CONVECTION OVEN. THE COATING SHALL BE ELECTROSTATICALLY APPLIED AND CUED IN A GAS FIRED CONVECTION OVEN BY HEATING HE ZINC COATED SUBSTRATE TO A MINIMUM OF 350 DEGREES F AND A MAXIM OF 450 DEGREES . 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, EXISTING SUPPORT SECTIONS

EXISTING, WEATHERED GALVANIZED SUPPORT SECTIONS SHOULD HAVE THEIR SURFACE PREPARATION AS WELL AS THEIR PROTECTIVE COATING DONE UNDER CONDITIONS OF TEMPERATURE AND HUMIDITY WITHIN THE SAME RANGE SPECIFIED BY THE MANUFACTURER OF THE ORGANIC ZINC PRIME COAT MATERIAL TO BE USED IMMEDIATELY AFTER THIS CLEANING OPERATION. THE SUPPORT SECTIONS SHALL BE PREPARED FOR COATING BY SSPC-SP1 (SOLVENT CLEANING) FOLLOWED BY SSPC-SP7 (100% BRUSH OFF BLAST CLEANING). BEFORE THE PREPARED SURFACE DEGRADES FROM THE PRESCRIBED STANDARDS, THE PRIME COAT SHALL BE APPLIED. IN EVERY CASE, THE SURFACE SHALL BE COATED WITH ORGANIC ZINC PIRME COAT ON THE SAME DAY AS THE SURFACE PREPARATION. CAREFUL HANDLING AND STORAGE WILL BE REQUIRED TO PREVENT ANY SCRAPING, MARRING, OR OTHER DAMAGE TO THE PREPARED SURFACE.

EXISTING WEATHERED PAINTED SUPPORT SECTIONS SHALL HAVE THEIR SURFACE PREPARATION AS WELL AS THEIR PROTECTIVE COATING PERFORMED UNDER CONDITIONS OF TEMPERATURE AND HUMIDITY WITHIN THE SAME RANGE AS SPECIFIED BY THE MANUFACTURER OF THE EPOXY INTERMEDIATE COAT MATERIAL TO BE USED IMMEDIATELY AFTER THIS CLEANING OPERATION. THE SUPPORT SECTIONS SHALL BE PREPARED FOR COATING BY LIGHTLY HAND SANDING ALL SUPPORT SECTIONS REMOVING ANY FLAKY, CHIPPING PAINT AND ETCHING THE SURFACE, FOLLOWED BY SSPC-SP1 (SOLVENT CLEANING) TO REMOVE ANY JUST OR DIRT FROM THE SANDING PROCESS. BEFORE THE PREPARED SURFACE DEGRADES FROM THE PRESCRIBED STANDARDS, THE PRIME COAT SHALL BE APPLIED. IN EVERY CASE, THE SURFACE SHALL BE COATED WITH THE EPOXY INTERMEDIATE COAT ON THE SAME DAY AS THE SURFACE PREPARATION.

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, EXISTING SUPPORT SECTIONS AT CONTRACT BID PRICE PER EACH MAJOR SUPPORT SECTION.

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-SP1 (SOLVENT CLEANING). (DO NOT USE ALKALINE CLEANERS) FOLLOWED BY SSPC-SP7 (100% BRUSH OFF BLAST CLEANING). BEFORE THE PREPARED SURFACE DEGRADES FORM 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, HANDING COSTS AND MATERIALS NECESSARY TO ACCOMPLISH THIS ITEM OF WORK. THIS PRIME COAL 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.

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

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

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

POLE NO.	LOCATION	SECTIONS
P1-1	ONTARIO/HURON	1 VERTICAL POLE, 1 ARM
P1-2	ONTARIO/HURON	1 VERTICAL POLE, 1 ARM
SIGN SUPPORT	ONTARIO STREET	1 VERTICAL POLE, 1 ARM
P2-1	W.25TH/CLARK	1 VERTICAL POLE, 1 ARM
P2-2	W.25TH/CLARK	1 VERTICAL POLE, 1 ARM
P2-3	W.25TH/CLARK	1 VERTICAL POLE, 1 ARM
P2-4	W.25TH/CLARK	1 VERTICAL POLE, 1 ARM
P3-1	LEE/MILES	1 VERTICAL POLE, 1 ARM
P3-1	LEE/MILES	1 VERTICAL POLE, 1 ARM
P3-1	LEE/MILES	1 VERTICAL POLE, 1 ARM
P3-1	LEE/MILES	1 VERTICAL POLE, 1 ARM

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

ITEM 630 - SURFACE PREPARATION, EXISTING SUPPORT SECTION	8 EACH
ITEM 630 - SURFACE PREPARATION, NEW SUPPORT SECTION	14 EACH
ITEM 630 - COATING, EPOXY INTERMEDIATE COAT, SUPPORT SECTION	22 EACH
ITEM 630 - COATING, URETHANE TOP COAT, SUPPORT SECTION	22 EACH

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BROOKPARK ROAD AND STATE ROAD

UTILITIES

THE LOCATIONS OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS EXISTING PLANS. THE LOCATIONS SHOWN ARE INTENDED ONLY AS A GUIDE AND CANNOT BE GUARANTEED ACCURATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE OHIO UTILITIES PROTECTION SERVICE (OUPS) AT LEAST 48 HOURS PRIOR TO EXCAVATION (800-362-2764). THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO ANY EXISTING UTILITY.

ITEM 625 - 2" CONDUIT, 725.04, AS PER PLAN

IN ADDITION TO ITEM 625.12, CONDUIT WITH ACCESSORIES SHALL PROVIDE A RACEWAY BETWEEN THE PROPOSED PULLBOX AND THE EXISTING STRAIN POLE. THE CONTRACTOR SHALL BEND THE CONDUIT 90 DEGREES FROM THE FACE OF THE EXISTING POLE FOUNDATION. A PULLING ELBOW IS PROPOSED FOR THE 90 DEGREE TURN AT THE TOP OF THE EXISTING POLE FOUNDATION TO ENABLE CONDUIT TO BE PLACED HORIZONTAL UNDER THE BASE PLATE OF THE EXISTING POLE. THE CONDUIT SHALL ALLOW WIRING TO BE INSTALLED BETWEEN THE PROPOSED PULLBOX AND THE EXISTING POLE IN A MANNER THAT DOES NOT ALLOW MOISTURE INTO THE CONDUIT. THE CONDUIT ABOVE GROUND SHALL BE SECURED TO THE EXISTING FOUNDATION USING CLAMPS TO PREVENT TAMPERING/VANDALISM. THE SUM OF ALL ANGLES SHALL NOT EXCEED 180 DEGREES.

PAYEMENT WILL BE MADE AT THE CONTRACT UNITY PRICE BID PER LINEAL FT OF ITEM 625, 2" CONDUIT, 725.04, AS PER PLAN.

ITEM 632 - CONDUIT RISER, 2" DIAMETER, AS PER PLAN

IN ADDITION TO ITEM 632.20, THE RACEWAY SHALL BE INSTALLED TO ENTER THE BOTTOM OF THE PROPOSED CABINET. ACCESS TO THE EXISTING HANDHOLE AND THE EXISTING LB CONDUIT SHALL REMAIN AFTER INSTALLATION OF THE PROPOSED CONDUIT RISER. CLAMPS ARE TO BE USED INSTEAD OF BANDING. THE CONDUIT COLOR SHALL BE A DARK BROWN TO MATCH THE EXISTING STRAIN POLES. THIS ITEM SHALL INCLUDE THE WEATHERHEAD AT THE TOP OF THE POLE AND THE U-JOINT CONNECTION INTO THE CABINET TO FORM A WEATHER RESISTANT SYSTEM. THE PROPOSED LOOP LEAD-IN CABLE SHALL BE INSTALLED IN THE 2" RISER.

PAYMENT WILL BE MADE AT THE CONTRACT UNIT PRICE BID PER EACH OF ITEM 632 CONDUIT RISER, 2½" DIAMETER, AS PER PLAN.

ITEM 633 - CONTROLLER UNIT, TYPE TS2/A2, WITH CABINET, AS PER PLAN (STATE ROAD)

IN ADDITION TO THE REQUIREMENTS OF ITEM 633 CONTROLLER UNIT, TYPE TS2/A2, WITH CABINET, TYPE TS2, AS PER PLAN, THIS ITEM SHALL INCLUDE THE LATEST EAGLE/SIEMENS TRAFFIC SIGNAL CONTROLLER, INCLUDING HARDWARE AND FIRMWARE NEEDED TO OPERATE IN THE EXISTING CLOSED-LOOP SYSTEM. THE CABINET SHALL BE TS2, TYPE 1 WITH THE APPROPRIATE BIUS AND MMUS AS SPECIFIED BY NEMA.

THE EXISTING CONDUIT RACEWAY ENTERING THE BOTTOM OF THE EXISTING CABINET SHALL BE REUSED AS A RACEWAY FOR THE PROPOSED SIGNAL CABLE. THE NEW CONNECTION OF THE EXISTING CONDUIT RISER TO THE NEW CABINET IS TO BE WATERTIGHT AND WILL HOUSE THE PROPOSED LOOP LEAD-IN CABLE.

AS PART OF THIS ITEM, THE CONTRACTOR SHALL ALSO RECONNECT THE EXISTING TWISTED PAIR INTERCONNECT CABLE TO A PANEL PROVIDED BY THE CONTRACTOR AND RECONNECT THE SIGNAL TO THE EXISTING CLOSED LOOP SYSTEM. THIS SHALL INCLUDE VERIFYING COMMUNICATIONS AND ANY ADDITIONAL HARDWARE NECESSARY TO MAKE THE SYSTEM OPERATIONAL AT THIS INTERSECTION.

PAYMENT WILL BE MADE AT THE CONTRACT UNIT PRICE BID PER EACH OF ITEM 633 CONTROLLER UNIT, TYPE TS2/A2, WITH CABINET, TYPE TS2, AS PER PLAN (STATE RD).

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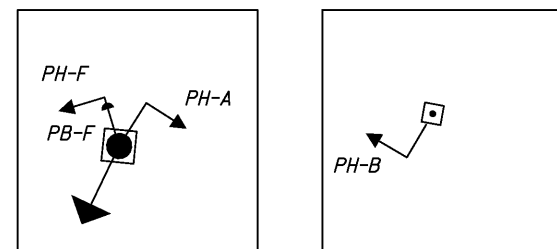
TRAFFIC SIGNAL SUBSUMMARY

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SHEET NO.	LOCATION	LENGTH	632										633						638							
			POWER CABLE, 2 CONDUCTOR NO. 6 AWG	SERVICE CABLE, 2 CONDUCTOR, NO. 6 AWG	POWER SERVICE, AS PER PLAN	SIGNAL SUPPORT, TYPE TC-81.21, DESIGN 4	SIGNAL SUPPORT, TYPE TC-81.21, DESIGN 12	SIGNAL SUPPORT, TYPE TC-81.21, DESIGN 14	PEDESTAL, 8'	PEDESTAL, 11'	REMOVAL OF TRAFFIC SIGNAL INSTALLATION FOR STORAGE, AS PER PLAN	SIGNALIZATION, MISC.: EXTERIOR CABINET PAINTING	SIGNALIZATION, MISC.: POT HOLING	CONTROLLER UNIT, TYPE TS2/42, WITH CABINET, TYPE TS2, AS PER PLAN	CABINET RISER	CABINET FOUNDATION	CONTROLLER WORK PAD	UNINTERRUPTIBLE POWER SUPPLY (UPS), 1000 WATT, AS PER PLAN, WITHOUT ENCLOSURE	VALVE BOX ADJUSTED TO GRADE							
			FT	FT	EACH	EACH	EACH	EACH	EACH	EACH	EACH	LUMP	LUMP	EACH	EACH	EACH	EACH	EACH	EACH							
12	ONTARIO STREET @ HURON ROAD																									
12	PI-2	40					1					1														
12	PED1-2	4						1																		
12	PB1-6	138																								
12	PED1-3	9								1																
12	PB1-7	146																								
12	PI-1	4						1				1														
12	PB1-2	24																								
12	PB1-5	80																								
12	PB1-4	26																								
12	PED1-1	8							1																	
12	PB1-3	80																								
12	PB1-1	6																								
12	CONTROLLER-1		100	200	1						1	1		1	1	1	1	1								
14	W. 25TH STREET @ CLARK AVENUE																		2							
14	EX. LIGHT POLE-1	4																								
14	PB2-3	56																								
14	P2-3	13				1						1														
14	PB2-4	63																								
14	P2-4	6				1						1														
14	EX. LIGHT POLE-2	16																								
14	PB2-5	78																								
14	P2-2	6				1						1														
14	PB2-2	51																								
14	P2-1	24				1						1														
14	EX. UTILITY POLE-1	9																								
14	PB2-1	5																								
14	CONTROLLER-1		100	200	1						1	1		1	1	1		1								
15	MILES AVENUE @ LEE ROAD																									
15	P3-3	16																								
15	PED3-1	13																								
15	PB3-4	84																								
15	P3-2	18																								
15	PB3-3	105																								
15	P3-4	13																								
15	PB3-5	91																								
15	PB3-2	9																								
15	P3-1	8																								
15	PB3-1	9																								
15	CONTROLLER-1															1		1								
TOTALS CARRIED TO GENERAL SUMMARY			200	400	2	4	1	1	2	1	2	LUMP	LUMP	2	2	3	1	3	2							

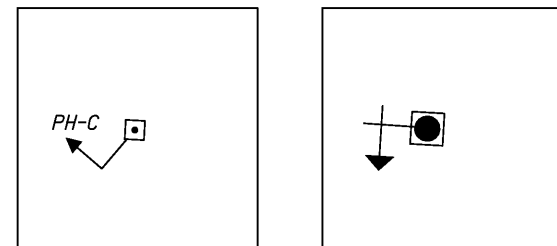
TRAFFIC SIGNAL SUBSUMMARY			CALCULATED	JAW	CHECKED	DLW
D12-TSG-FY2013						

FIELD HOOKUP CHART



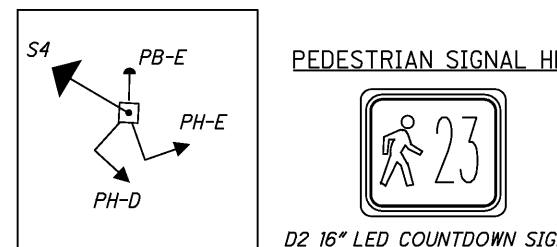
P1-

PED1-1



PED1-2

P1-2



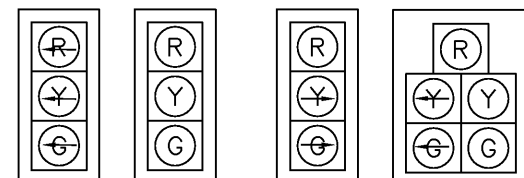
PED1-3

PEDESTRIAN SIGNAL HEAD



D2 16" LED COUNTDOWN SIGNAL
(CLAMSHELL MTG.)
PH-(A-F)

POLYCARBONATE
SIGNAL INDICATIONS 12" LED LENS*
(WITH BACKPLATES)


$$\begin{matrix} N1, & N2 \\ W1, & W2 \end{matrix}$$

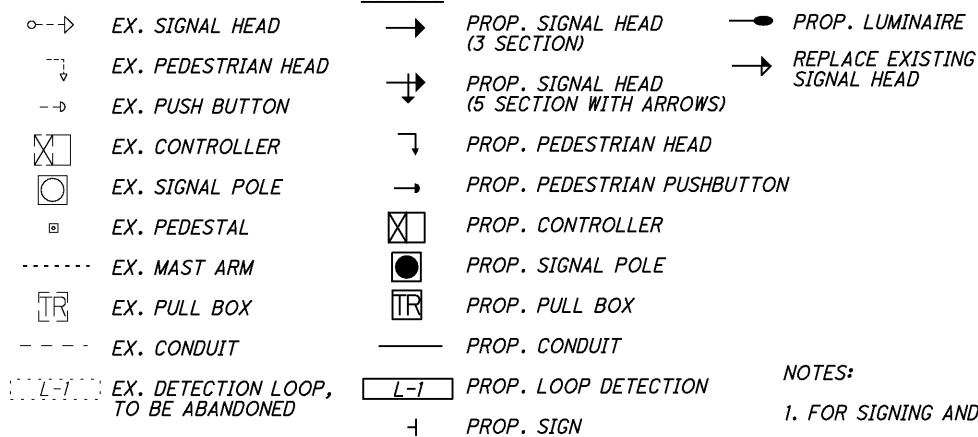
N3, N4
S2, S3, S4

E3, E4
E5

SI

* SIGNAL VISORS SHALL BE OPEN BOTTOM TUNNEL STYLE

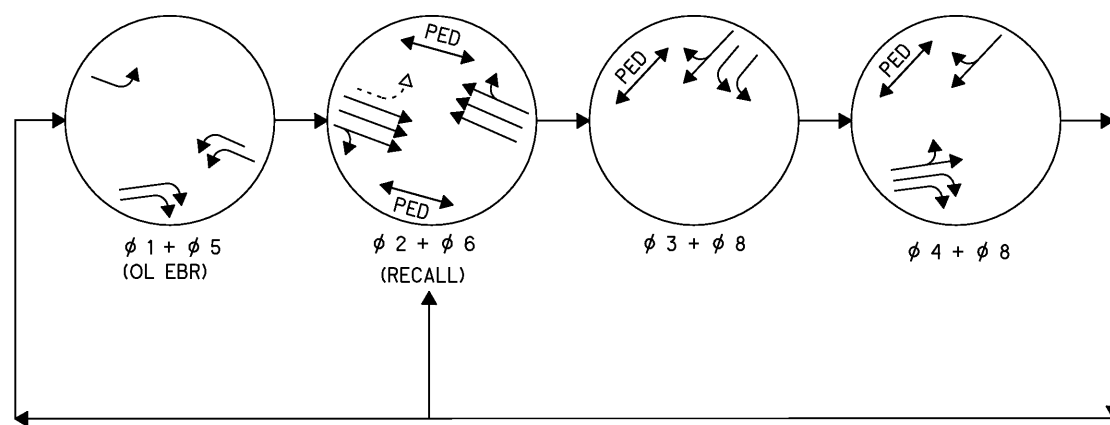
LEGEND













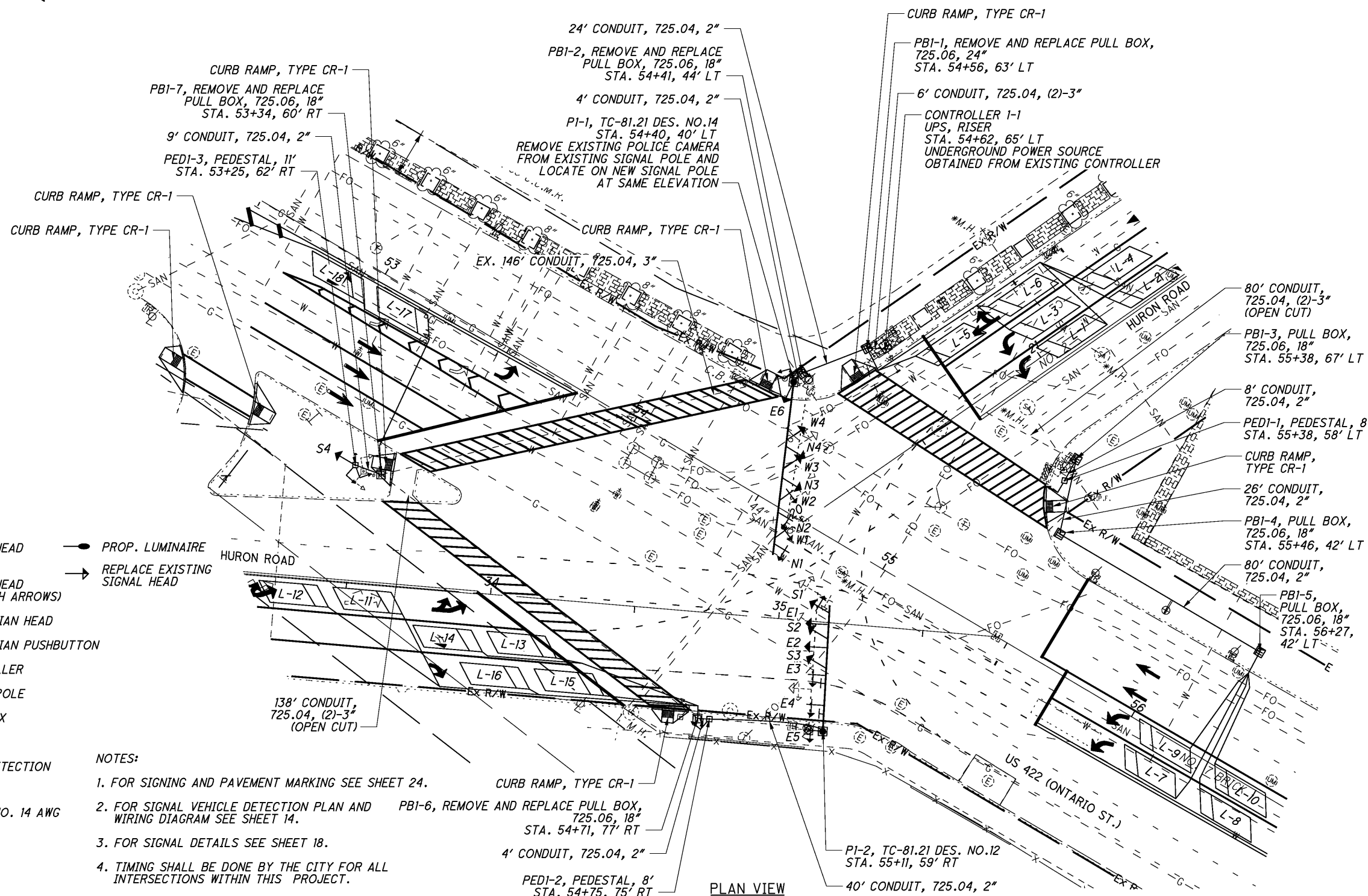
2C LOOP DETECTOR LEAD-IN CABLE, 2 CONDUCTOR, NO. 14 AWG
5C SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG
7C SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG
PWR POWER CABLE
INT INTERCONNECT CABLE

NOTES:

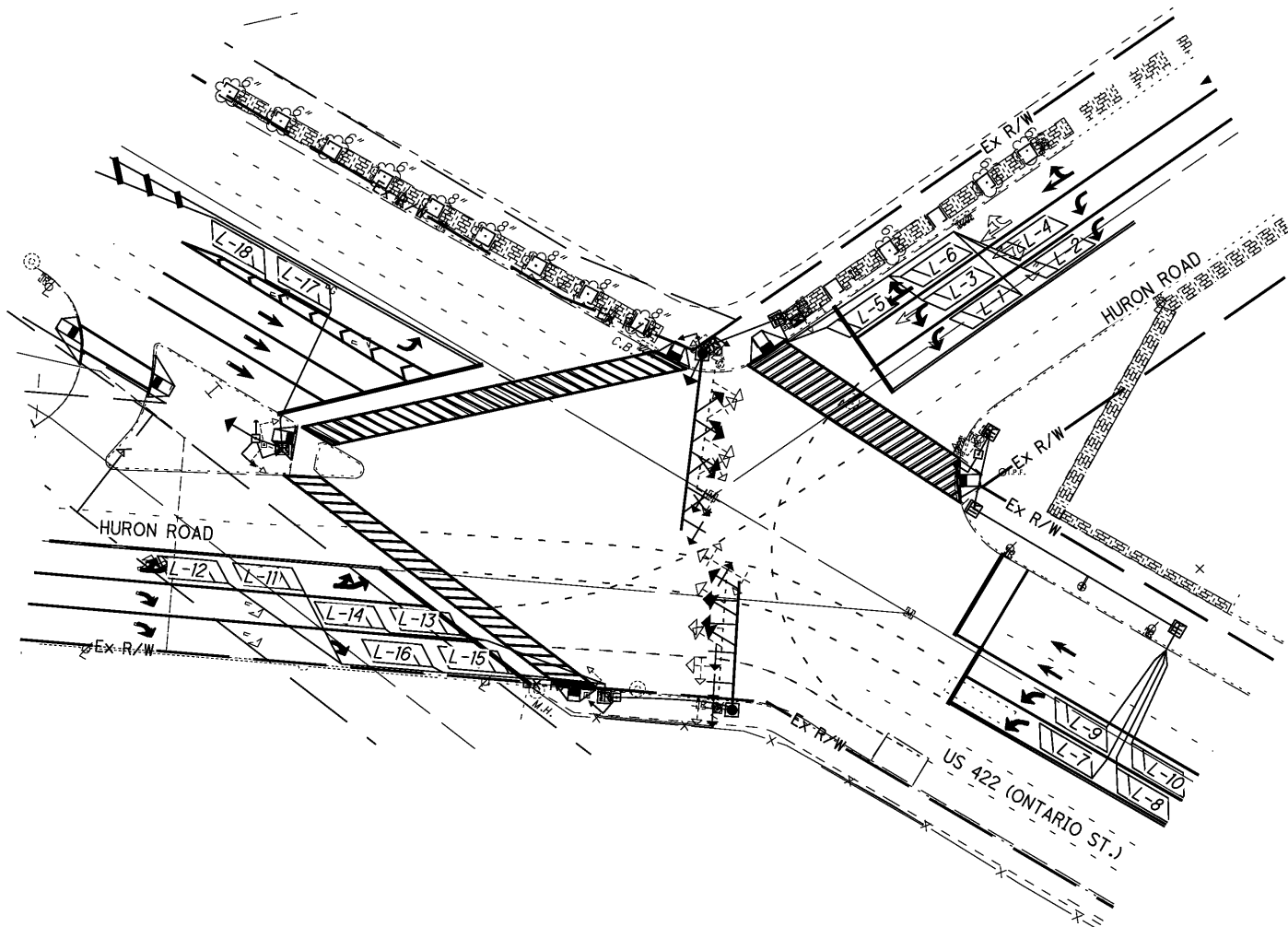
1. FOR SIGNING AND PAVEMENT MARKING SEE SHEET 24.
2. FOR SIGNAL VEHICLE DETECTION PLAN AND WIRING DIAGRAM SEE SHEET 14. PBI-6
3. FOR SIGNAL DETAILS SEE SHEET 18.
4. TIMING SHALL BE DONE BY THE CITY FOR ALL INTERSECTIONS WITHIN THIS PROJECT.



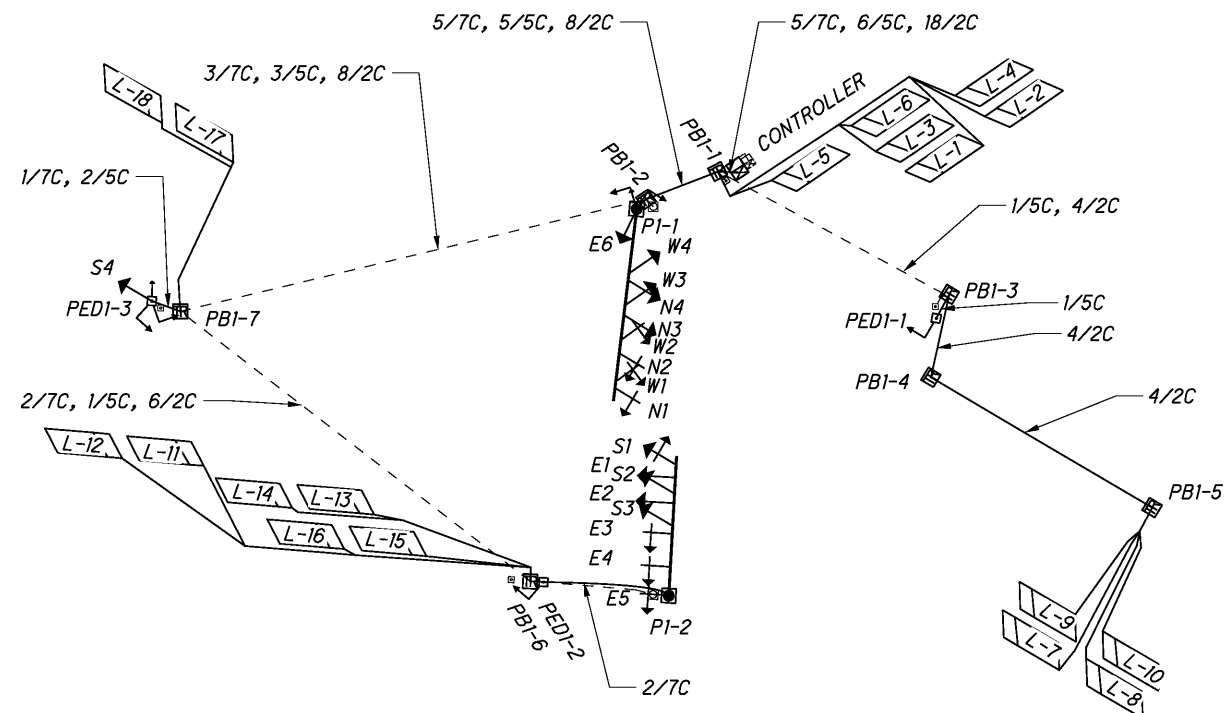
FIELD HOOKUP CHART							
SIGNAL HEAD	INDICATION	TERMINAL HEAD	FLASH	SIGNAL HEAD	INDICATION	TERMINAL HEAD	FLASH
N1,N2 (NBLT)		Ø 5 R	Y	E1,E2,E6 (EB)	R	Ø 4 R	R
		Ø 5 Y			Y	Ø 4 Y	
		Ø 5 G			G	Ø 4 G	
N3,N4 (NB)	R	Ø 2 R	Y	E3,E4, E5 (EBRT)	R	Ø 4 R	R
	Y	Ø 2 Y				Ø 4 Y	
	G	Ø 2 G				Ø 4 G	
S1 (SBLT)	R	Ø 6 R	Y	W1,W2 (WBLT)		Ø 3 R	R
	Y	Ø 6 Y				Ø 3 Y	
	G	Ø 6 G				Ø 3 G	
		Ø 1 Y		W3,W4 (WB)	R	Ø 8 R	R
		Ø 1 G			Y	Ø 8 Y	
S2,S3,S4 (SB)	R	Ø 6 R	Y		G	Ø 8 G	
	Y	Ø 6 Y					
	G	Ø 6 G					



PLAN VIEW























DETECTION SUMMARY										
INT	LOOP	CONFIGURATION	SIZE	NO. OF TURNS	PRESENCE/ PULSE	CONNECT TO PHASE	MOVEMENT	DELAY	EXT	REMARKS
ONTARIO ST. & HURON RD.	L-1	POWERHEAD	6' X 20'	3	PRESENCE	φ3	WB-LT	3		DELAY INHIBITED DURING GREEN PHASE
	L-2	POWERHEAD	6' X 20'	3	PRESENCE	φ3	WB-LT	3		DELAY INHIBITED DURING GREEN PHASE
	L-3	POWERHEAD	6' X 20'	3	PRESENCE	φ3	WB-LT	3		DELAY INHIBITED DURING GREEN PHASE
	L-4	POWERHEAD	6' X 20'	3	PRESENCE	φ3	WB-LT	3		DELAY INHIBITED DURING GREEN PHASE
	L-5	POWERHEAD	6' X 20'	3	PRESENCE	φ8	WB	10		DELAY INHIBITED DURING GREEN PHASE
	L-6	POWERHEAD	6' X 20'	3	PRESENCE	φ8	WB	10		DELAY INHIBITED DURING GREEN PHASE
	L-7	POWERHEAD	6' X 20'	3	PRESENCE	φ5	NB-LT	3		DELAY INHIBITED DURING GREEN PHASE
	L-8	POWERHEAD	6' X 20'	3	PRESENCE	φ5	NB-LT	3		DELAY INHIBITED DURING GREEN PHASE
	L-9	POWERHEAD	6' X 20'	3	PRESENCE	φ5	NB-LT	3		DELAY INHIBITED DURING GREEN PHASE
	L-10	POWERHEAD	6' X 20'	3	PRESENCE	φ5	NB-LT	3		DELAY INHIBITED DURING GREEN PHASE
	L-11	POWERHEAD	6' X 20'	3	PRESENCE	φ4	EB	3		DELAY INHIBITED DURING GREEN PHASE
	L-12	POWERHEAD	6' X 20'	3	PRESENCE	φ4	EB	3		DELAY INHIBITED DURING GREEN PHASE
	L-13	POWERHEAD	6' X 20'	3	PRESENCE	φ4	EB-RT	3		DELAY INHIBITED DURING GREEN PHASE
	L-14	POWERHEAD	6' X 20'	3	PRESENCE	φ4	EB-RT	3		DELAY INHIBITED DURING GREEN PHASE
	L-15	POWERHEAD	6' X 20'	3	PRESENCE	φ4	EB-RT	10		DELAY INHIBITED DURING GREEN PHASE
	L-16	POWERHEAD	6' X 20'	3	PRESENCE	φ4	EB-RT	10		DELAY INHIBITED DURING GREEN PHASE
	L-17	POWERHEAD	6' X 20'	3	PRESENCE	φ1	SB-LT	3		DELAY INHIBITED DURING GREEN PHASE
	L-18	POWERHEAD	6' X 20'	3	PRESENCE	φ1	SB-LT	3		DELAY INHIBITED DURING GREEN PHASE



NOTES:
1. EXCLUSIVE LEFT TURN BAY LOOP DETECTORS SHALL BE PLACED APPROXIMATELY 30 FEET BEHIND STOP BAR.

LEGEND

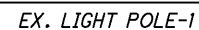
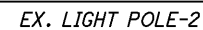
- | | | | |
|---|--|---|--|
|  | EX. SIGNAL HEAD |  | PROP. SIGNAL HEAD
(3 SECTION) |
|  | EX. PEDESTRIAN HEAD |  | PROP. SIGNAL HEAD
(5 SECTION WITH ARROWS) |
|  | EX. PUSH BUTTON |  | PROP. PEDESTRIAN HEAD |
|  | EX. CONTROLLER |  | PROP. PEDESTRIAN PUSHBUTTON |
|  | EX. SIGNAL POLE |  | PROP. CONTROLLER |
|  | EX. PEDESTAL |  | PROP. SIGNAL POLE |
|  | EX. MAST ARM |  | PROP. PULL BOX |
|  | EX. PULL BOX |  | PROP. CONDUIT |
|  | EX. CONDUIT |  | PROP. LOOP DETECTION |
|  | EX. DETECTION LOOP,
TO BE ABANDONED |  | PROP. SIGN |

5C SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG


7C SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG

2C LOOP DETECTOR LEAD-IN CABLE, 2 CONDUCTOR, NO. 14 AWG

POLE DETAILS

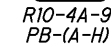


FIELD HOOKUP CHART

SIGNAL HEAD	INDICATION	TERMINAL HEAD	FLASH	SIGNAL HEAD	INDICATION	TERMINAL HEAD	FLASH
N1 (NBLT)	R	ø 2 R	Y	E1, E2 (EB)	R	ø 8 R	R
	Y	ø 2 Y			Y	ø 8 Y	
	G	ø 2 G			G	ø 8 G	
	Y	ø 5 Y		R	R	ø 4 R	R
	G	ø 5 G			Y	ø 4 Y	
N2 (NB)	R	ø 2 R	Y	W1, W2 (WB)	G	ø 4 G	
	Y	ø 2 Y					
	G	ø 2 G					
S1 (SBLT)	R	ø 6 R	Y	<div>PEDESTRIAN SIGNAL HEAD</div> 			
	Y	ø 6 Y					
	G	ø 6 G					
	Y	ø 1 Y					
	G	ø 1 G					
S2 (SB)	R	ø 6 R	Y				
	Y	ø 6 Y					
	G	ø 6 G					

PEDESTRIAN SIGNAL HEAD

PUSHBUTTON SIGNS



POLYCARBONATE
SIGNAL INDICATIONS 12" LED LENS

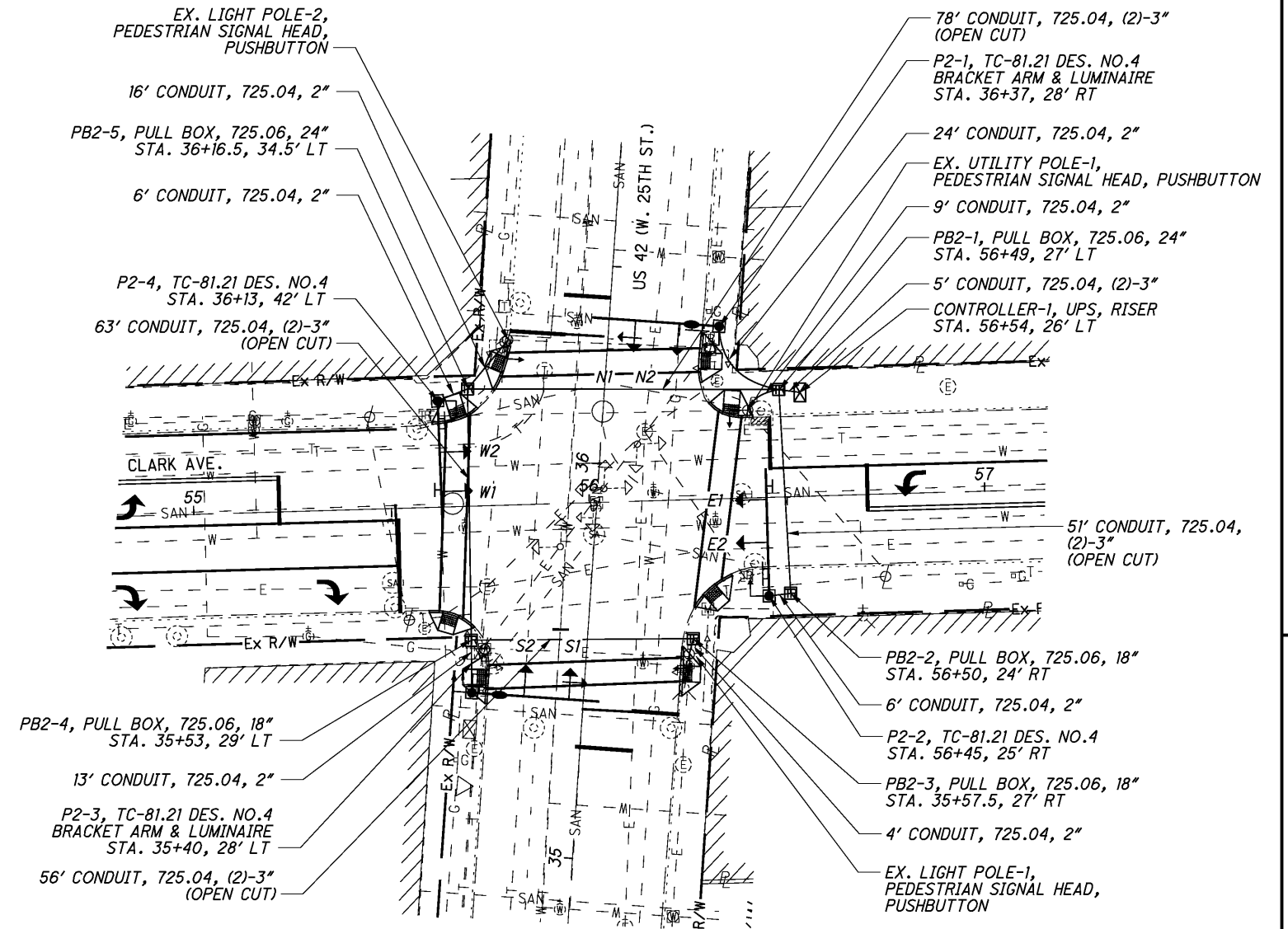
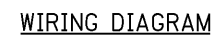
WITH
BACKPLATES



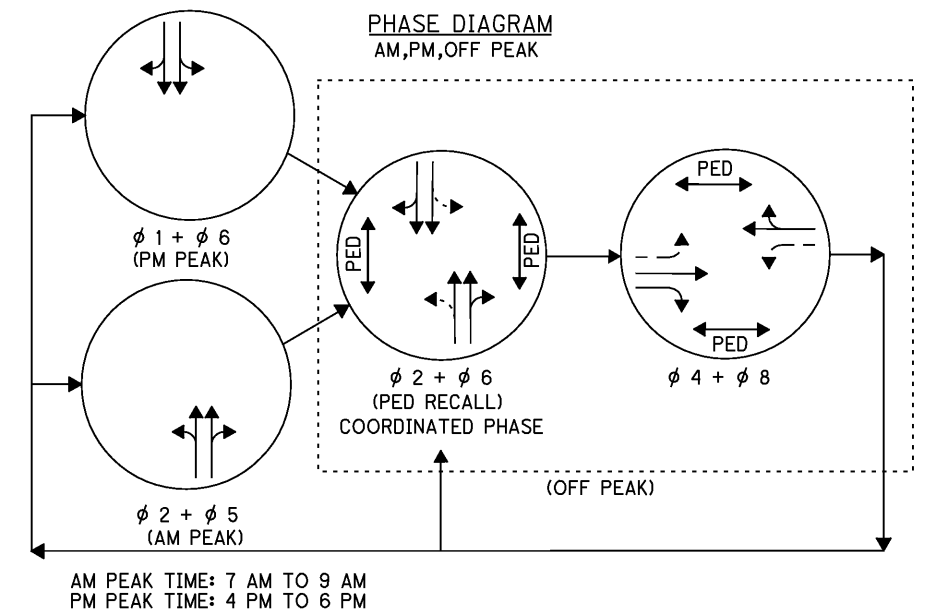
NOTES:

1. FOR SIGNAL LEGEND SEE SHEET 13.
2. FOR SIGNING AND PAVEMENT MARKING
SEE SHEET 26. 1/7C, 1.
3. TIMING SHALL BE DONE BY THE CITY
FOR ALL INTERSECTIONS WITHIN THIS
PROJECT.
4. EXISTING OVERHEAD ELECTRIC LINES
TO BE REROUTED TO CONNECT PROPOSED
LUMINAIRES ON THE SIGNAL POLES.
5. NEW CONTROLLER TO BE HARD-WIRED TO
EXISTING INTERCONNECT.
INTERCONNECT SPLICES ARE NOT PERMITTED.

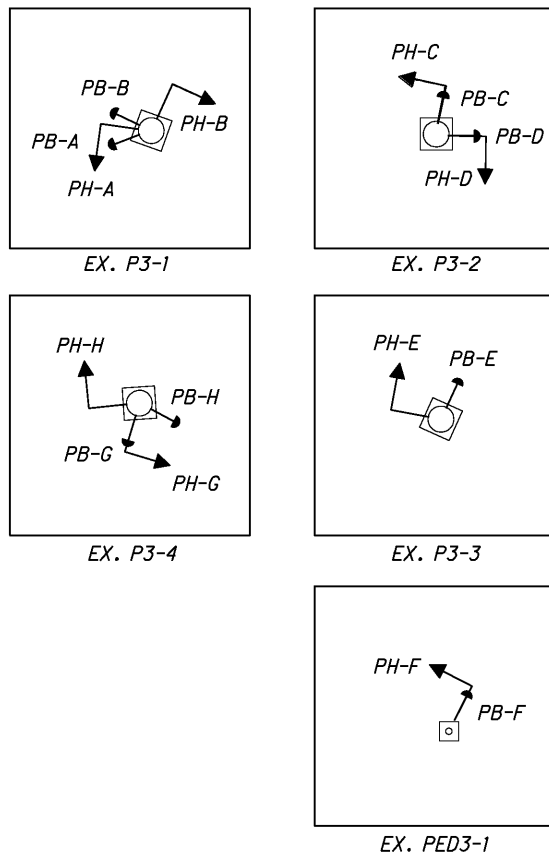
WIRING DIAGRAM



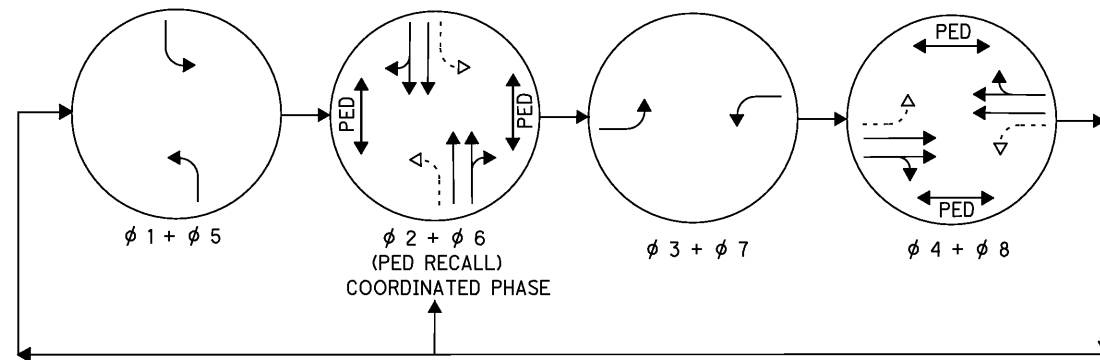
PLAN VIEW



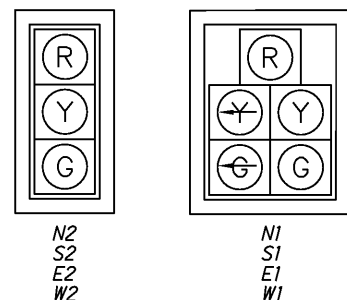
POLE DETAILS



PHASE DIAGRAM



POLYCARBONATE
SIGNAL INDICATIONS 12" LED LENS
WITH
BACKPLATES



PEDESTRIAN SIGNAL HEAD



D2 16" LED COUNTDOWN SIGNAL
(CLAMSHELL MTG.)
PH-(A-H)

PUSHBUTTON SIGNS

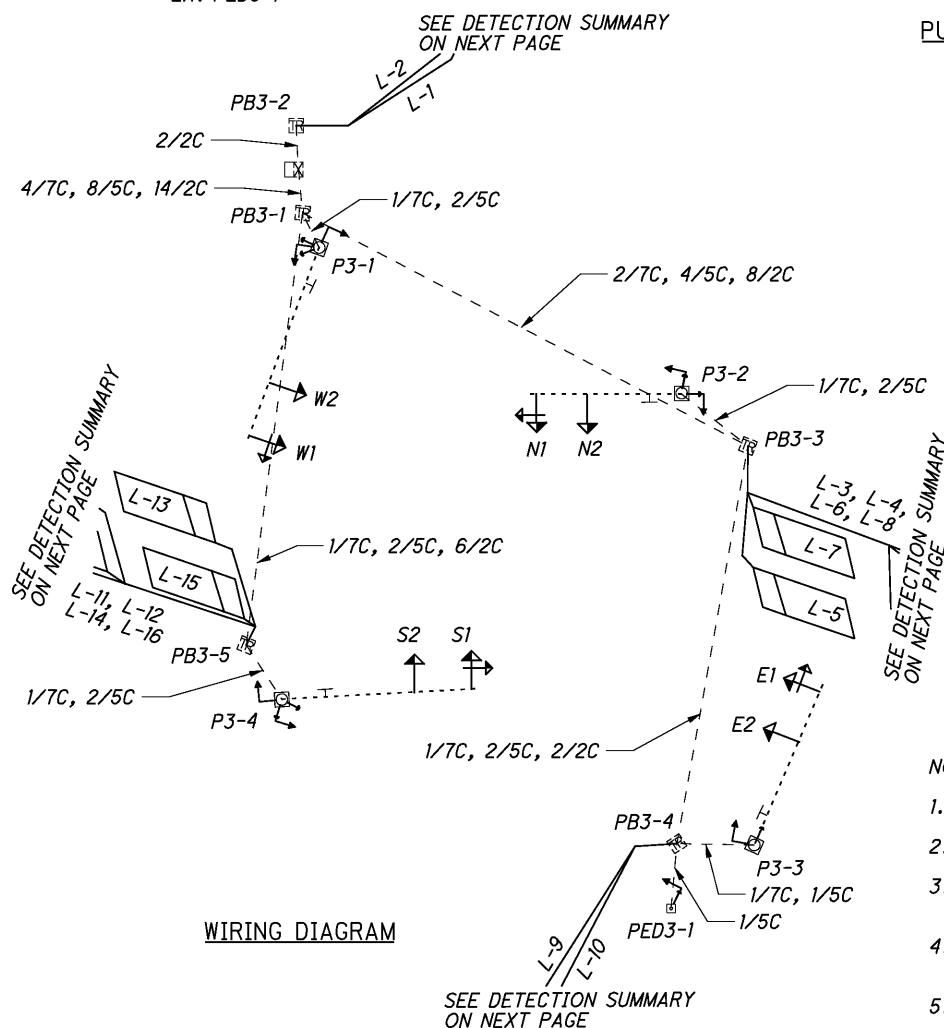


NOTES:

1. FOR SIGNAL LEGEND SEE SHEET 13.
2. FOR SIGNING AND PAVEMENT MARKING SEE SHEET 27.
3. FOR SIGNAL VEHICLE DETECTION PLAN DETAILS SEE SHEET 17.
4. TIMING SHALL BE DONE BY THE CITY FOR ALL INTERSECTIONS WITHIN THIS PROJECT.
5. USE ALL EXISTING CONDUIT TO CONNECT SIGNAL HEADS, PED HEADS AND PUSHBUTTONS.

FIELD HOOKUP CHART

SIGNAL HEAD	INDICATION	TERMINAL HEAD	FLASH	SIGNAL HEAD	INDICATION	TERMINAL HEAD	FLASH
N1 (NBLT)	R	ø 2 R	Y	E1 (EBLT)	R	ø 4 R	R
	Y	ø 2 Y			Y	ø 4 Y	
	G	ø 2 G			G	ø 4 G	
	ø 5 Y	ø 5 Y			ø 7 Y	ø 7 Y	
N2 (NB)	R	ø 2 R	Y	E2 (EB)	R	ø 4 R	R
	Y	ø 2 Y			Y	ø 4 Y	
	G	ø 2 G			G	ø 4 G	
	ø 5 Y	ø 5 Y			ø 7 Y	ø 7 Y	
S1 (SBLT)	R	ø 6 R	Y	W1 (WBLT)	R	ø 8 R	R
	Y	ø 6 Y			Y	ø 8 Y	
	G	ø 6 G			G	ø 8 G	
	ø 1 Y	ø 1 Y			ø 3 Y	ø 3 Y	
S2 (SB)	R	ø 6 R	Y	W2 (WB)	R	ø 8 R	R
	Y	ø 6 Y			Y	ø 8 Y	
	G	ø 6 G			G	ø 8 G	
	ø 6 G	ø 6 G			ø 8 G	ø 8 G	



WIRING DIAGRAM

EX. CONTROLLER,
PROPOSED UPS W/ FOUNDATION
(CONSTRUCTED NEXT TO
EX. CONTROLLER)

CURB RAMP, TYPE CR-1
P3-1, EX. SIGNAL POLE
PB3-1, EXISTING PULL BOX
CURB RAMP, TYPE CR-1

PB3-2, EXISTING PULL BOX

CURB RAMP, TYPE CR-1
P3-2, EX. SIGNAL POLE
CURB RAMP, TYPE CR-1
PB3-3, EXISTING PULL BOX

PB3-5, EXISTING PULL BOX
CURB RAMP, TYPE CR-1
P3-4, EX. SIGNAL POLE
CURB RAMP, TYPE CR-1

P3-3, EX. SIGNAL POLE
CURB RAMP, TYPE CR-1
PB3-4, EXISTING PULL BOX
CURB RAMP, TYPE CR-1
PED3-1, EX. PEDESTAL

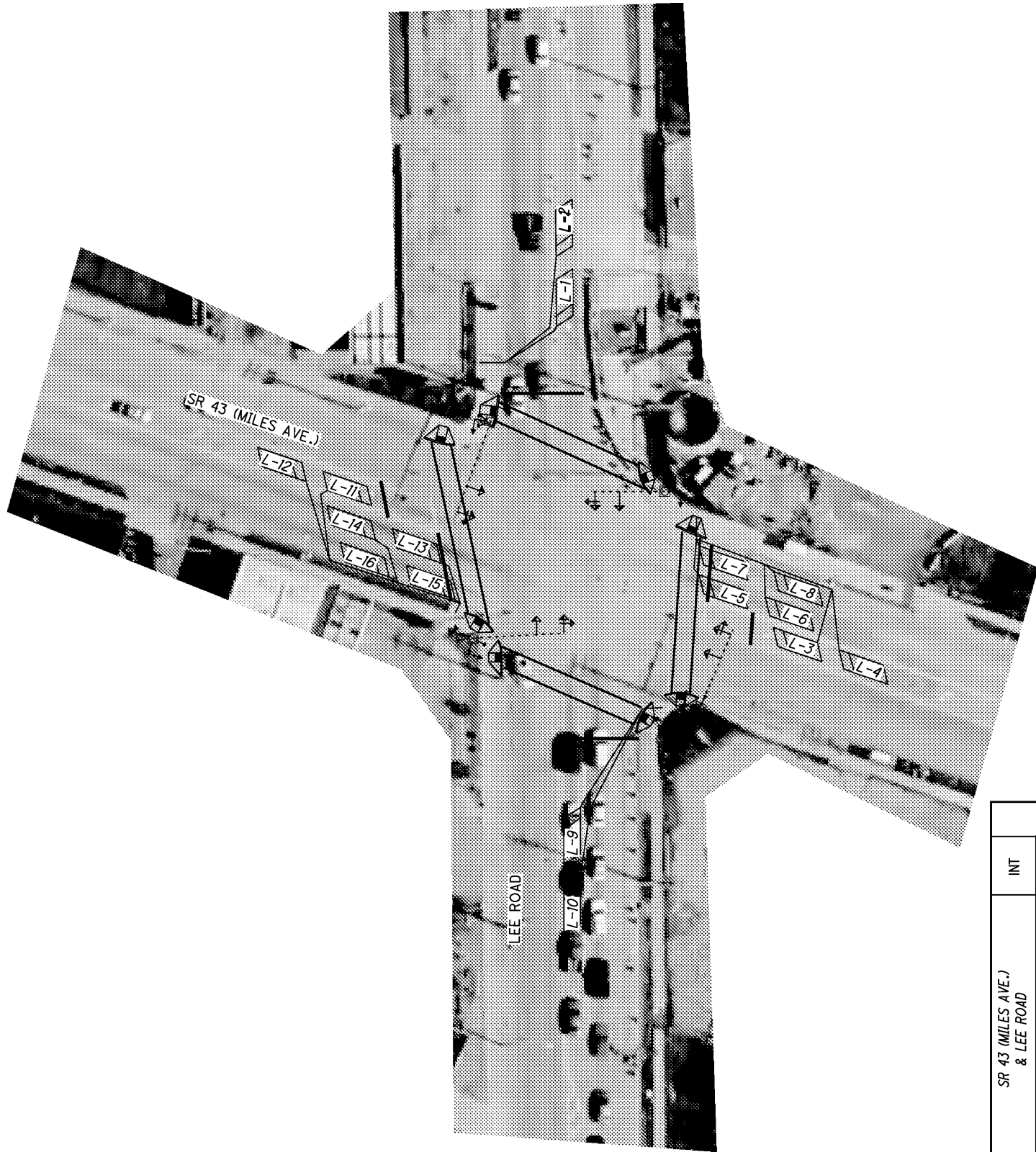
PLAN VIEW



0 20 40
HORIZONTAL
SCALE IN FEET
CALCULATED
JAW
CHECKED
DLW

SIGNAL PLAN
SR 43 (MILES AVE.) & LEE ROAD

D12-TSG-FY2013



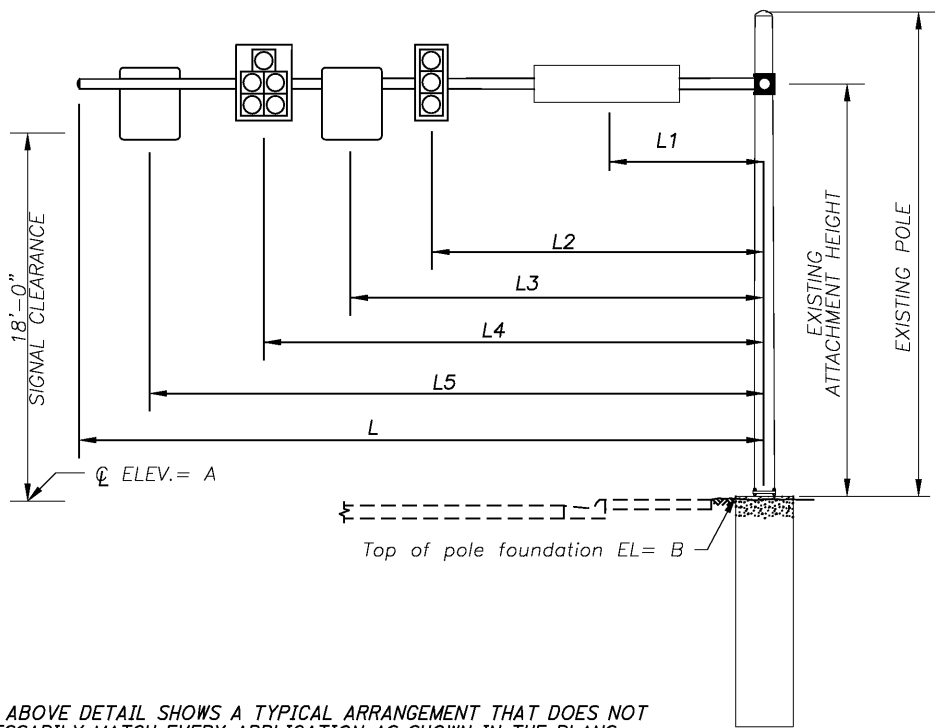
NOTES:
1. EXCLUSIVE LEFT TURN BAY LOOP DETECTORS SHALL BE PLACED
APPROXIMATELY 30 FEET BEHIND STOP BAR.

DETECTION SUMMARY										
INT	LOOP	CONFIGURATION	SIZE	NO. OF TURNS	PRESENCE/ PULSE	CONNECT TO PHASE	MOVEMENT	DELAY	EXT	REMARKS
SR 43 (MILES AVE.) & LEE ROAD	L-1	POWERHEAD	6' X 20'	3	PRESENCE	Ø1	SB-LT	3		DELAY INHIBITED DURING GREEN PHASE
	L-2	POWERHEAD	6' X 20'	3	PRESENCE	Ø1	SB-LT	3		DELAY INHIBITED DURING GREEN PHASE
	L-3	POWERHEAD	6' X 20'	3	PRESENCE	Ø3	WB-LT	3		DELAY INHIBITED DURING GREEN PHASE
	L-4	POWERHEAD	6' X 20'	3	PRESENCE	Ø3	WB-LT	3		DELAY INHIBITED DURING GREEN PHASE
	L-5	POWERHEAD	6' X 20'	3	PRESENCE	Ø8	WB			
	L-6	POWERHEAD	6' X 20'	3	PRESENCE	Ø8	WB			
	L-7	POWERHEAD	6' X 20'	3	PRESENCE	Ø8	WB	10		DELAY INHIBITED DURING GREEN PHASE
	L-8	POWERHEAD	6' X 20'	3	PRESENCE	Ø8	WB	10		DELAY INHIBITED DURING GREEN PHASE
	L-9	POWERHEAD	6' X 20'	3	PRESENCE	Ø5	NB-LT	3		DELAY INHIBITED DURING GREEN PHASE
	L-10	POWERHEAD	6' X 20'	3	PRESENCE	Ø5	NB-LT	3		DELAY INHIBITED DURING GREEN PHASE
	L-11	POWERHEAD	6' X 20'	3	PRESENCE	Ø7	EB-LT	3		DELAY INHIBITED DURING GREEN PHASE
	L-12	POWERHEAD	6' X 20'	3	PRESENCE	Ø7	EB-LT	3		DELAY INHIBITED DURING GREEN PHASE
	L-13	POWERHEAD	6' X 20'	3	PRESENCE	Ø4	EB			
	L-14	POWERHEAD	6' X 20'	3	PRESENCE	Ø4	EB			
	L-15	POWERHEAD	6' X 20'	3	PRESENCE	Ø4	EB	10		DELAY INHIBITED DURING GREEN PHASE
	L-16	POWERHEAD	6' X 20'	3	PRESENCE	Ø4	EB	10		DELAY INHIBITED DURING GREEN PHASE

J:\TS\10\10-179\Task 6- CUY Signals\CUY\88276\signals\sheets\88276CD001.dgn 12/19/2012 11:32:12 AM jowatt" ODOTV8i_PDF_Half.pltcfgr ODOTV8i_Pen-ME.tbl M-E Companies, Inc.

POLE ORIENTATION PLAN VIEW																											
INTERSECTION	FROM SHEET NO.	SUPPORT NO.	SIGNAL SUPPORT TC-81.20														ELEVATION		MAST ARM A ANGLE (DEG.)	ORIENTATION ANGLES (DEG) FROM MAST ARM A							
			-	SUPPORT DES. #TC-81.20 *	SUPPORT DES. #TC-81.21	POLE HEIGHT (FT)	ARM MOUNTING HEIGHT (FT)	L (FT)	LENGTH TO PROPOSED OR EXISTING OBJECT LOCATED ON THE MAST ARM (SEE PLAN VIEW FOR OBJECT)								A	B		MAST ARM B ANGLE (DEG.)	PEDESTRIAN SIGNAL	PEDESTRIAN BUTTON	POWER SERVICE	VEHICULAR SIGNAL HEAD (SIGNAL HEAD MOUNTING HEIGHT)	LUMINAIRE BRACKET	HANDHOLE	CABLE ENTRANCE 12" FROM TOP
									L1 (FT)	L2 (FT)	L3 (FT)	L4 (FT)	L5 (FT)	L6 (FT)	L7 (FT)	L8 (FT)											
US 422 (ONTARIO ST.) & HURON ROAD	13	P1-1	-		14	23	21	60	21	23	31	34	42	46	55	57	665.55	665.15	336	-	156/206	156		0 (10')	-	180	-
		P1-2	-		12	23	21	43	6	9	17	19/22	29	32	37	41	665.55	665.20	332	-	-	-		-	-	180	-
			-														-	-	-	-	-	-		-	-	-	-
			-														-	-	-	-	-	-		-	-	-	-
		PEDI-1	-			8											-	-	-	-	0	-		-	-	-	-
		PEDI-2	-			8											-	-	-	-	216	-		-	-	-	-
		PEDI-3	-			15											-	-	-	-	130/192	331		270 (10')	-	-	-
	-														-	-	-	-	-	-		-	-	-	-		
US 42 (W. 25TH ST.) & CLARK AVENUE	15	P2-1	-		4	30	21	32	6	10	21						682.45	682.46	-	-	-	266		-	0	180	-
		P2-2	-		4	23	21	32	6	10	13	24	28				682.40	682.40	-	-	-	270		-	-	180	-
		P2-3	-		4	30	21	32	6	13	25						682.50	682.51	-	-	-	270		-	0	180	-
		P2-4	-		4	23	21	32	6	13	22	25					682.45	682.45	-	-	-	273		-	-	180	-
			-														-	-	-	-	-	-		-	-	-	-
			-														-	-	-	-	-	-		-	-	-	-
			-														-	-	-	-	-	-		-	-	-	-
			-														-	-	-	-	-	-		-	-	-	-
SR 43 (MILES AVE.) & LEE ROAD	16	P3-1	*														-	-	-	-	-		-	-	-	-	
		P3-2	*														-	-	-	-	-		-	-	-	-	
		P3-3	*														-	-	-	-	-		-	-	-	-	
		P3-4	*														-	-	-	-	-		-	-	-	-	
			-															-	-	-	-	-		-	-	-	-

* EXISTING SIGNAL POLES



NOTE:

1. THE ABOVE DETAIL SHOWS A TYPICAL ARRANGEMENT THAT DOES NOT NECESSARILY MATCH EVERY APPLICATION AS SHOWN IN THE PLANS. DIMENSION L1 IS THE DISTANCE FROM THE POLE TO THE SIGNAL, SIGN OR CAMERA LOCATED CLOSEST TO THE POLE. DIMENSIONS L2 THROUGH L7 ARE THE DISTANCES FROM THE POLE TO EACH ADDITIONAL SIGNAL, SIGN OR CAMERA, IN INCREASING ORDER. SEE WIRING LAYOUT FOR THE ORDER OF MOUNTED ITEMS ON EACH INDIVIDUAL MAST ARM. ALL SIGNAL HEADS SHALL BE RIGID MOUNTED AT THE RED BALL AND MEET THE STANDARD ODOT SIGNAL HEAD CLEARANCE RANGE OF 16 TO 18 FOOT. THE CONTRACTOR SHALL ALIGN THE BOTTOM OF THE SIGNAL HEADS IN THE SAME PLANE ON EACH MAST ARM.

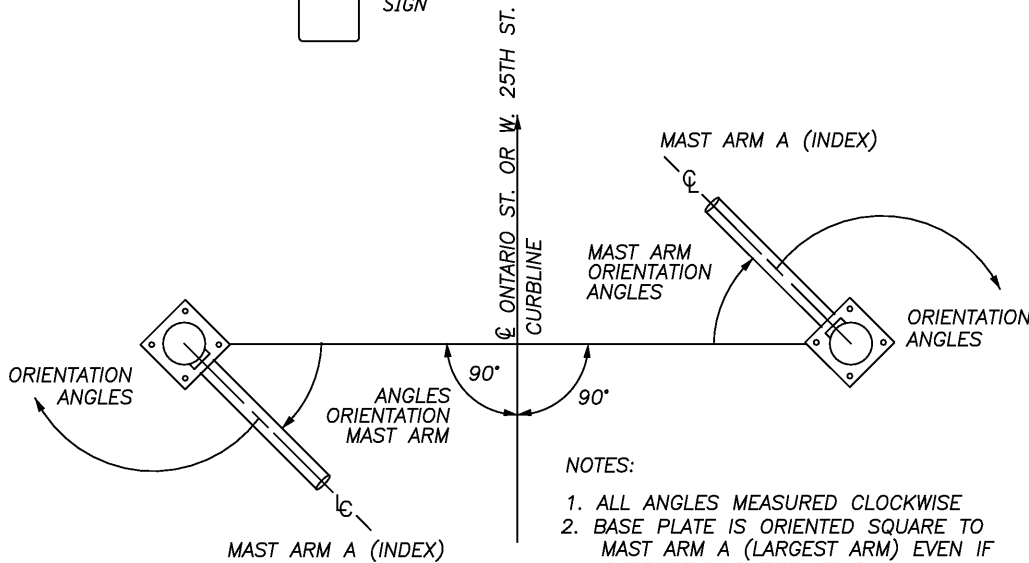
LEGEND



SIGNAL HEAD WITH BACKPLATE

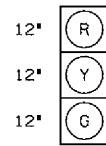


SIGN



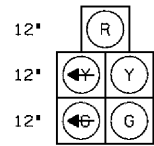
NOTES:

1. ALL ANGLES MEASURED CLOCKWISE
2. BASE PLATE IS ORIENTED SQUARE TO MAST ARM A (LARGEST ARM) EVEN IF SUPPORT HAS TWO ARMS.
3. INDEX LINE FOR PEDESTALS IS ASSUMED TO BE 90° FROM CENTERLINE



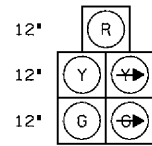
PROPOSED
POLYCARBONATE
SIGNAL HEAD

N1,
S2, W1, E1



PROPOSED
POLYCARBONATE
SIGNAL HEAD

N2,
S3, W2, E2



PROPOSED
POLYCARBONATE
SIGNAL HEAD

S1



PROPOSED
PEDESTRIAN
SIGNAL HEAD
SEE NOTE #1

PS1, PS2,
PS3, PS4, PS5,
PS6, PS7, PS8



PROPOSED
R3-5R-36

Sn1

PROP. 18" PULLBOX, PB1
SEE NOTE #2

PROP. 2" PVC CONDUIT

Ex. Strain Pole, P2
PROP. PEDESTRIAN SIGNAL HEADS,
PS3, PS4, AS PER PLAN

PROP. 2" GALV. CONDUIT,
AS PER PLAN

PROP. 18" PULLBOX, PB2
SEE NOTE #2

PROP. 2" PVC CONDUIT

PROP. 18" PULLBOX, PB3
SEE NOTE #2

PROP. STOP LINE, SEE NOTE #4

Ex. Strain Pole, P3
PROP. PEDESTRIAN SIGNAL HEADS,
PS5, PS6, AS PER PLAN

CONTRACTOR SHALL REWIRE OVERHEAD
CONNECTIONS

PROP. STOP LINE, SEE NOTE #4

Ex. Strain Pole, P1
PROP. PEDESTRIAN SIGNAL HEADS,
PS1, PS2, AS PER PLAN
PROP. POLE-MOUNTED CONTROLLER
AND CABINET, AS PER PLAN
PROP. POWER SERVICE, AS PER PLAN
PROP. 2" CONDUIT RISER, AS PER PLAN

BROOKPARK ROAD (SR 17)

LE2

LE1

PROP. 18" PULLBOX, PB6
SEE NOTE #2

PROP. 2" PVC CONDUIT

PROP. 18" PULLBOX, PB5
SEE NOTE #2

PROP. 2" GALV. CONDUIT,
AS PER PLAN

Ex. Strain Pole, P4
PROP. PEDESTRIAN SIGNAL HEADS,
PS7, PS8, AS PER PLAN

PROP. 2" PVC CONDUIT

PROP. 18" PULLBOX, PB4
SEE NOTE #2

STATE ROAD (SR 94)

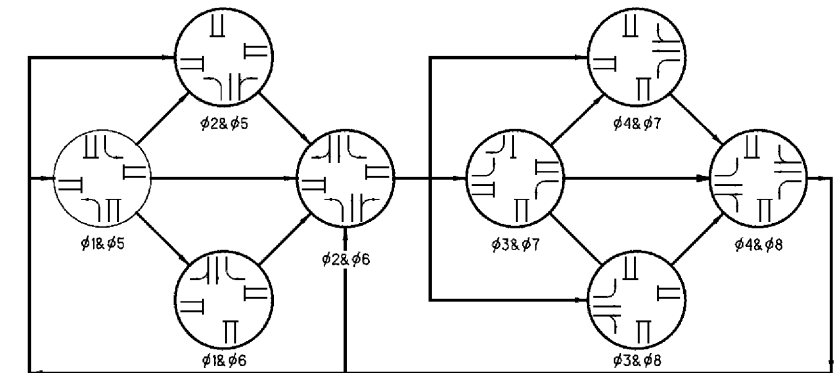
REMOVAL ITEMS FOR STORAGE

Vehicular Signal Head	8
Pedestrian Signal Head	8
Cabinet/Controller	1
Power Service	1
Messenger Wire/Cable	

LOOP DETECTOR UNIT SUMMARY

LOOP	SHAPE1	SIZE (FT)	TURNS	CONNECT TO PHASE	PRESENCE/PULSE	LOCK/ NON-LOCK	LOOP UNIT	LOOP CHAN	EXTEND (SEC.)	DELAY (SEC.)
LN1	P	6X25	3	5	PRES	NON-LOCK	1	A	3.0	-
LN2	P	6X25	3	5	PRES	NON-LOCK	1	B	3.0	-
LS1	P	6X25	3	1	PRES	NON-LOCK	2	A	3.0	-
LS2	P	6X25	3	1	PRES	NON-LOCK	2	B	3.0	-
LE1	P	6X25	3	3	PRES	NON-LOCK	3	A	3.0	-
LE2	P	6X25	3	3	PRES	NON-LOCK	3	B	3.0	-
LW1	P	6X25	3	7	PRES	NON-LOCK	4	A	3.0	-
LW2	P	6X25	3	7	PRES	NON-LOCK	4	B	3.0	-

1 SHAPES: POWERHEAD (P), QUADRUPOLE (Q), ANGULAR DESIGN DETECTOR (ADD), RECTANGULAR (R), OR DIAMOND (D).



SIGNAL PHASING
*Ped Phases Not Shown

NOTE #1: Proposed pedestrian signal heads shall be oriented on the existing poles to match the existing pedestrian signal head orientation, with the exception of PS2.

NOTE #2: Contractor to contact OUPS for field location of existing utilities and resolution of potential conflicts. Utilities on plans based on historical information.

NOTE #3: The contractor shall restripe all pavement markings within 200' of the stop line on all approaches. See Sub-Summary for quantities.

NOTE #4: The contractor shall relocate the existing stop lines as shown, including removal of existing markings and restriping longitudinal markings

UNDERGROUND UTILITIES	
CONTACT BOTH SERVICES CALL TWO WORKING DAYS BEFORE YOU DIG	
CALL 1-800-362-2764 (TOLL FREE)	
OHIO UTILITIES PROTECTION SERVICE NON-MEMBERS MUST BE CALLED DIRECTLY	
OIL & GAS PRODUCERS PROTECTIVE SERVICE CALL: 1-800-925-0988	



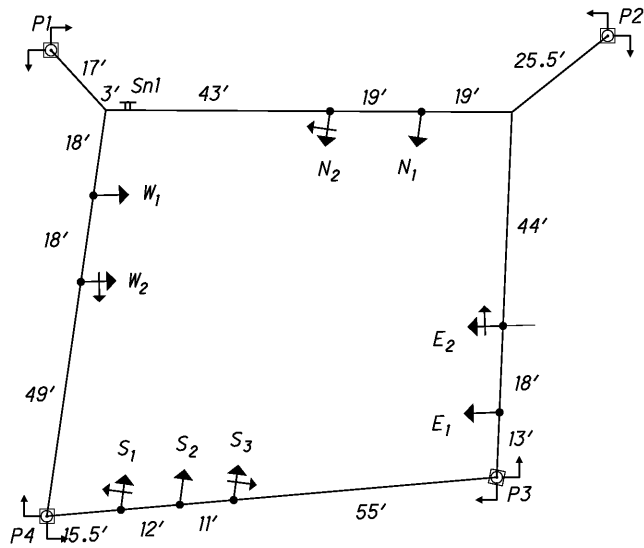
HORIZONTAL
SCALE IN FEET

CALCULATED
KRM
CHECKED
SAK

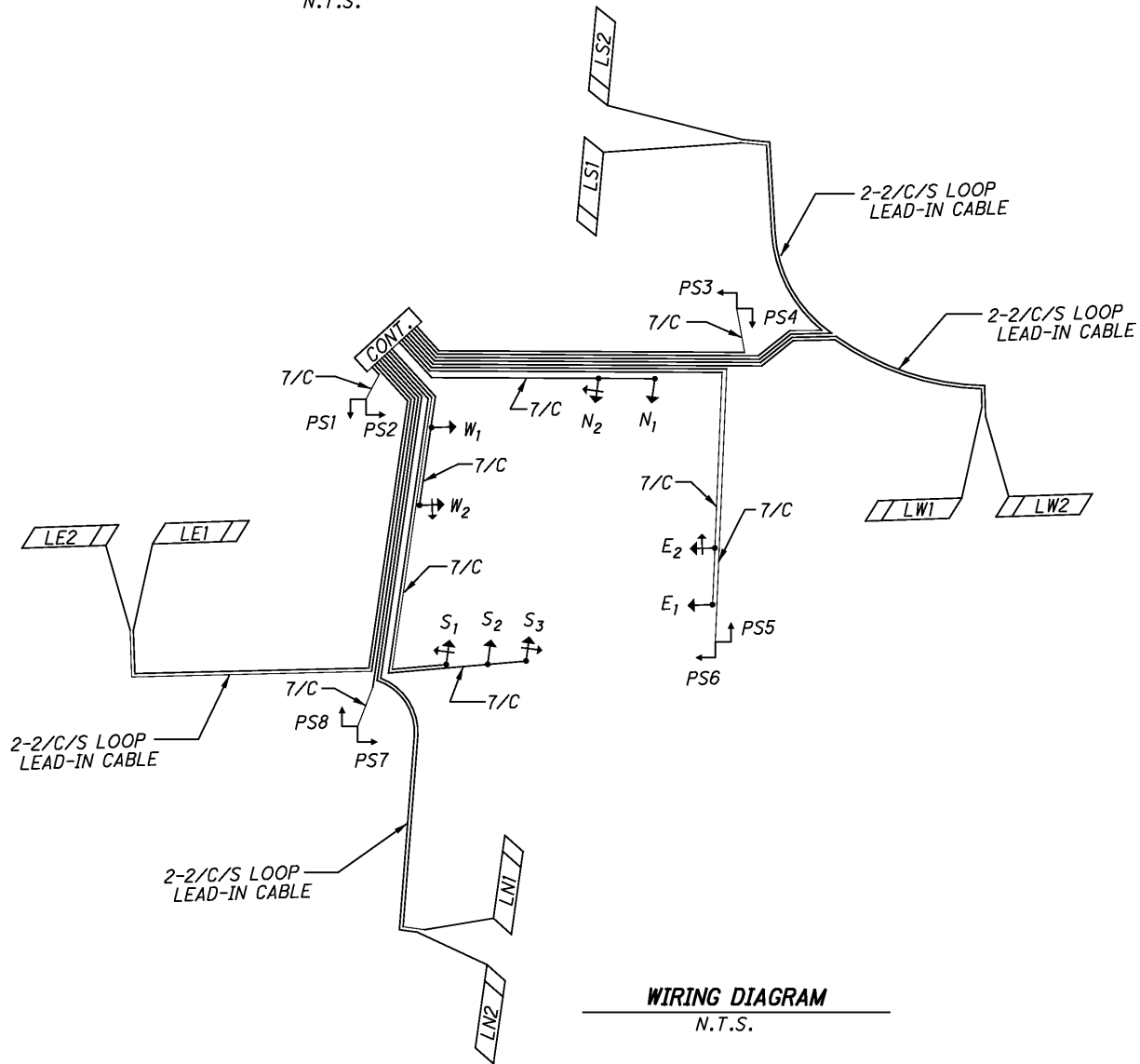
SIGNAL PLAN
SR 17 (BROOKPARK RD) & SR 94 (STATE RD)

D12-TSG-FY2013

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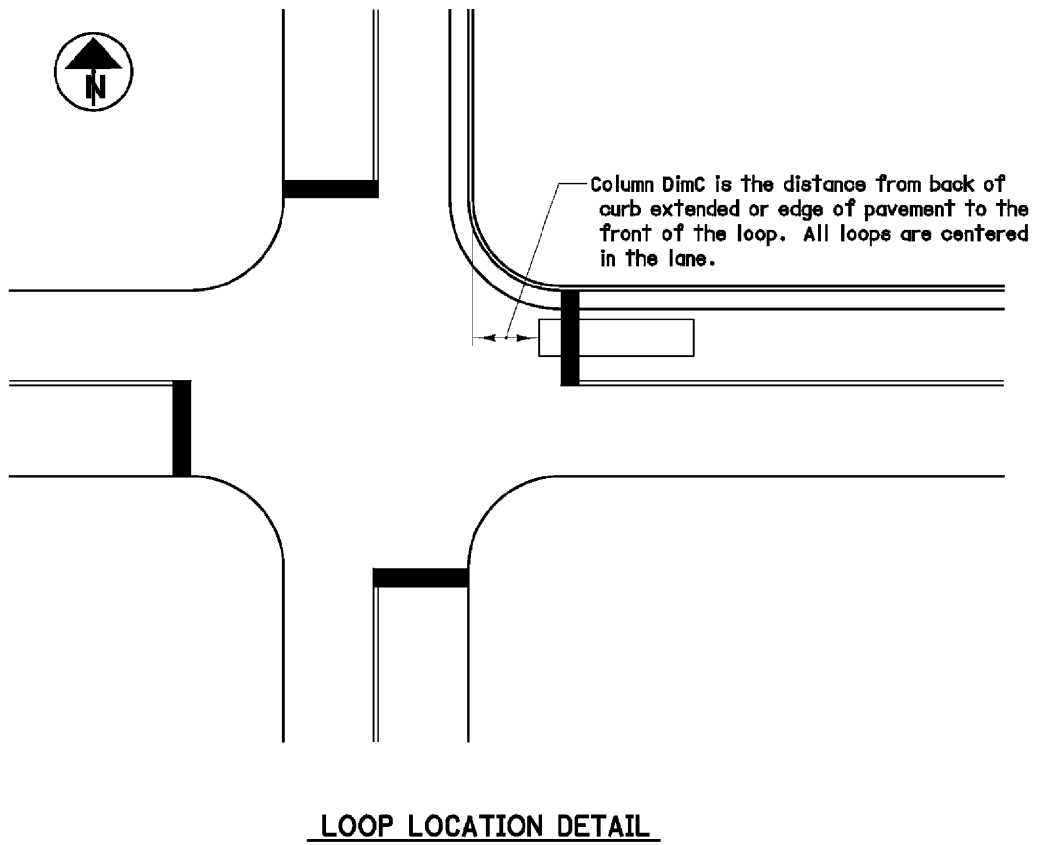
SPAN WIRE DIAGRAM
N.T.S.



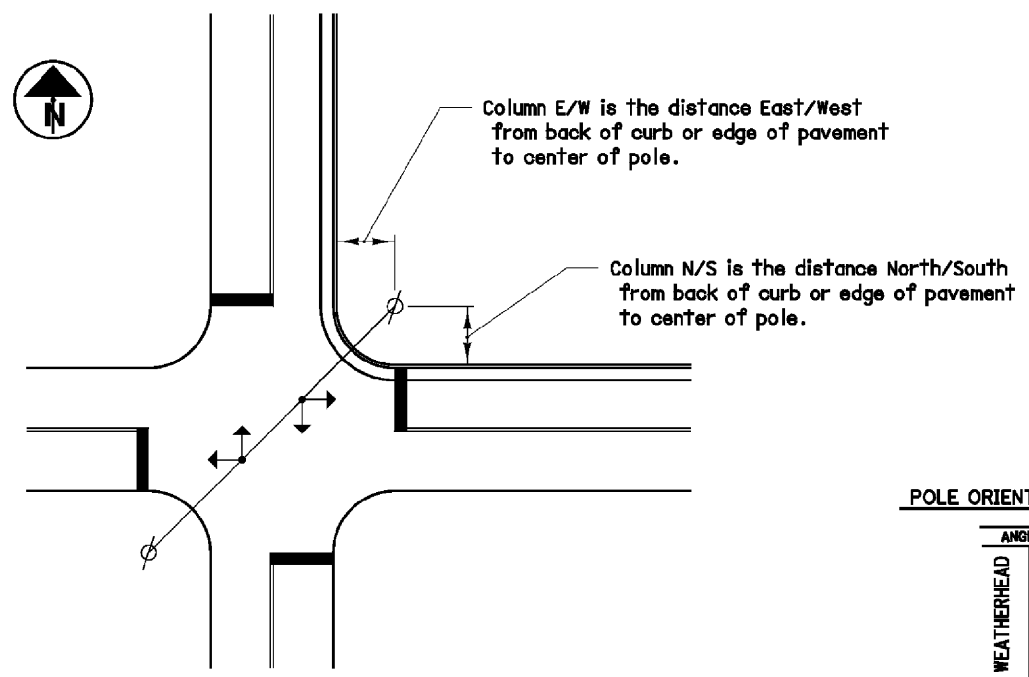
WIRING DIAGRAM
N.T.S.

SUB-SUMMARY			
ITEM	QUAN.	UNIT	DESCRIPTION
202	750	SQ FT	WALK REMOVED
608	750	SQ FT	4" CONCRETE WALK
614	1	LUMP	MAINTAINING TRAFFIC
625	265	FT	CONDUIT, 2", 725.05
625	20	FT	CONDUIT, 2", 725.04, AS PER PLAN
625	285	FT	TRENCH
625	6	EACH	PULL BOX, 725.08, 18"
625	285	FT	PLASTIC CAUTION TAPE
630	1	EACH	SIGN HANGER ASSEMBLY, SPAN WIRE
630	10.5	SF	SIGN, FLAT SHEET
632	4	EACH	VEHICULAR SIGNAL HEAD (LED), POLYCARBONATE, 3 SECTION, 12" LENS, 1-WAY, AS PER PLAN
632	5	EACH	VEHICULAR SIGNAL HEAD (LED), POLYCARBONATE, 5 SECTION, 12" LENS, 1-WAY, AS PER PLAN
632	8	EACH	PEDESTRIAN SIGNAL HEAD (LED), COUNTDOWN, AS PER PLAN
632	9	EACH	COVERING OF VEHICULAR SIGNAL HEAD, AS PER PLAN
632	8	EACH	COVERING OF PEDESTRIAN SIGNAL HEAD
632	390	FT	MESSENGER WIRE, 7 STRAND, 3/8" DIAMETER WITH ACCESSORIES
632	1460	EACH	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG
632	8	EACH	DETECTOR LOOP
632	2090	FT	LOOP DETECTOR LEAD-IN CABLE, 2 CONDUCTOR, NO. 14 AWG
632	200	FT	SERVICE CABLE, 3 CONDUCTOR, NO. 6 AWG
632	1	EACH	POWER SERVICE, AS PER PLAN
632	50	FT	POWER CABLE, 3 CONDUCTOR, NO. 6 AWG
632	1	EACH	REMOVAL OF TRAFFIC SIGNAL INSTALLATION FOR STORAGE, AS PER PLAN
632	1	EACH	CONDUIT RISER, 2" DIAMETER, AS PER PLAN
633	1	EACH	CONTROLLER UNIT, TYPE TS2/A2, WITH CABINET, TYPE TS2, AS PER PLAN (STATE RD)
642	70	FT	REMOVAL OF PAVEMENT MARKING
646	0.378	MILE	LANE LINE, 4"
646	0.152	MILE	CENTER LINE
646	1000	FT	CHANNELINZING LINE, 8"
646	175	FT	STOP LINE
646	670	FT	CROSSWALK LINE
646	17	EACH	LANE ARROW
646	1	EACH	WORD ON PAVEMENT, 72"

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LOOP LOCATION DETAIL



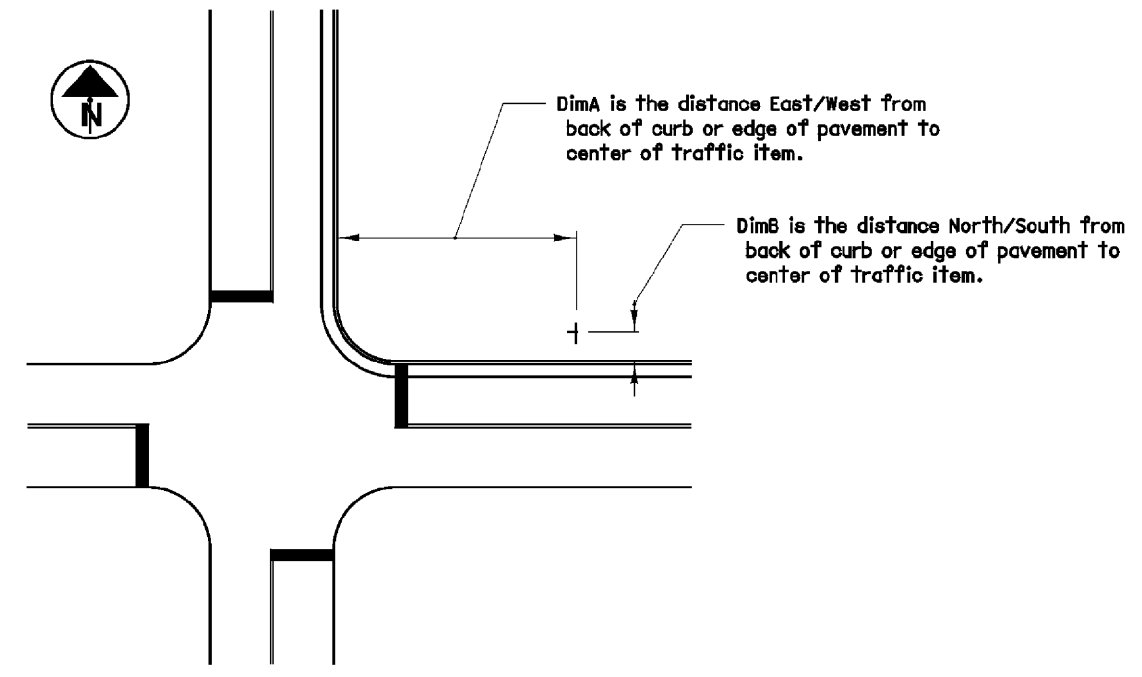
POLE LOCATION DETAIL

POLE ORIENTATION

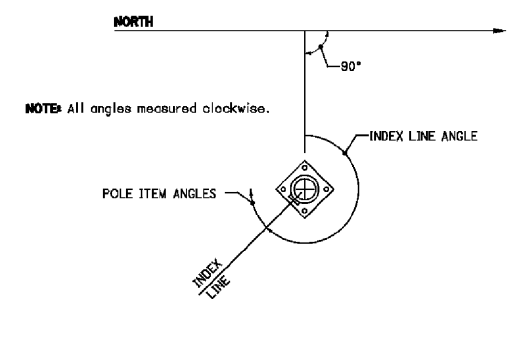
ANGLE (DEG) FROM INDEX LINE						
WEATHERHEAD	CONDUIT ELL	BLIND COUPLING	CONDUIT RISER	N/S	E/W	

LOOP DETECTOR UNIT SUMMARY

PRESENCE/PULSE	LOCK/NON-LOCK	DimC



MISCELLANEOUS SIGNAL EQUIPMENT DETAIL



INDEX DETAIL

TRAFFIC CONTROL SUBSUMMARY

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SHEET NO.	REFERENCE NO.	LOCATION	STATION		SIDE	CODE	630																	644						
			FROM	TO			GROUND MOUNTED SUPPORT, NO. 3 POST	SURFACE PREPARATION, EXISTING SUPPORT SECTION	SURFACE PREPARATION, NEW SUPPORT SECTION	COATING, EPOXY INTERMEDIATE COAT, SUPPORT SECTION	COATING, URETHANE TOP COAT, SUPPORT SECTION	OVERHEAD SIGN SUPPORT, TC-16.21, DESIGN 13	SIGN HANGER ASSEMBLY, MAST ARM	SIGN SUPPORT ASSEMBLY, POLE MOUNTED	SIGN, FLAT SHEET	SIGN, STREET NAME	RIGID OVERHEAD SIGN SUPPORT FOUNDATION	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	REMOVAL OF GROUND MOUNTED POST AND DISPOSAL	REMOVAL OF POLE MOUNTED SIGN AND DISPOSAL	REMOVAL OF POLE MOUNTED SIGN AND REERECTION	SIGNING, MISC.: SIGN ADJUSTMENT	CENTER LINE	CHANNELIZING LINE	STOP LINE	CROSSWALK LINE	LANE ARROW	REMOVAL OF PAVEMENT MARKING		
																													FT	EACH
22	S-15	CLARK AVENUE	54+10 (EX. LIGHT POLE)		RT	R3-8B-48							1	10																
22	S-16		57+42		LT	R3-H8BH-36	26							7.5																
22	S-17		P3-4			R3-5L-30			2	2	2	1		5																
22	S-18		P3-4			W. 25 St						1				1														
22	S-19		P3-1			Clark			2	2	2	1				1														
22	S-20		P3-2			R3-5L-30			2	2	2	1		5																
22	S-21		P3-2			R3-5R-30						1		5																
22	S-22		P3-2			W. 25 St						1				1														
22	S-23		P3-3			Clark			2	2	2	1				1														
22	CD-1		53+01	55+22	LT																0.04						250			
22	CH-3		54+03	55+51	RT																	148								
22	CH-4		54+22	55+51	RT																	129								
22	A-8		54+33		LT/RT																					2				
22	A-9		54+88		LT/RT																					2				
22	A-10		55+37		RT																					1				
22	SL-3		55+22		LT/RT																			11						
22	SL-4		55+51		RT																			24						
22	SL-5		55+32	55+42	LT																			22						
22	XW-4																										102			
22	XW-5																										100			
22	XW-6																										100			
22	XW-7																										98			
22	SL-6		55+28	55+38	RT																			22						
22	SL-7		56+46		LT																			13						
22	SL-8		55+70		LT/RT																			11						
22	A-11		56+77		LT																						1			
22	A-12		57+15		LT																						1			
22	CH-5		56+46	57+26	LT																				80					
22	CD-2		56+70	57+96	RT																				126		150			
23	SL-9	MILES AVENUE															1	2							15					
23	SL-10	MILES AVENUE																							30					
23	SL-11	LEE ROAD																							36					
23	SL-12	MILES AVENUE																							24					
23	SL-13	MILES AVENUE																							12					
23	SL-14	LEE ROAD																							36					
23	XW-8																										156			
23	XW-9																										142			
23	XW-10																										140			
23	XW-11																										132			
23		P3-1						2		2	2									1										
23		P3-2						2		2	2									1										
23		P3-3						2		2	2									1										
23		P3-4						2		2	2									1										
TOTALS THIS SHEET							26	8	8	16	16	0	7	1	32.5	4	0	1	2	0	0	4	0.04	277	462	970	7	400		
TOTALS CARRIED FROM PREVIOUS SHEET							52	0	6	6	6	1	7	4	104.5	0	1	3	4	2	4	0	0	870	99	1094	21	130		
TOTALS CARRIED TO SHEET GENERAL SUMMARY							78	8	14	22	22	1	14	5	137.0	4	1	4	6	2	4	4	0.04	1147	561	2064	28	530		

TRAFFIC CONTROL SUBSUMMARY

D12-TSG-FY2013

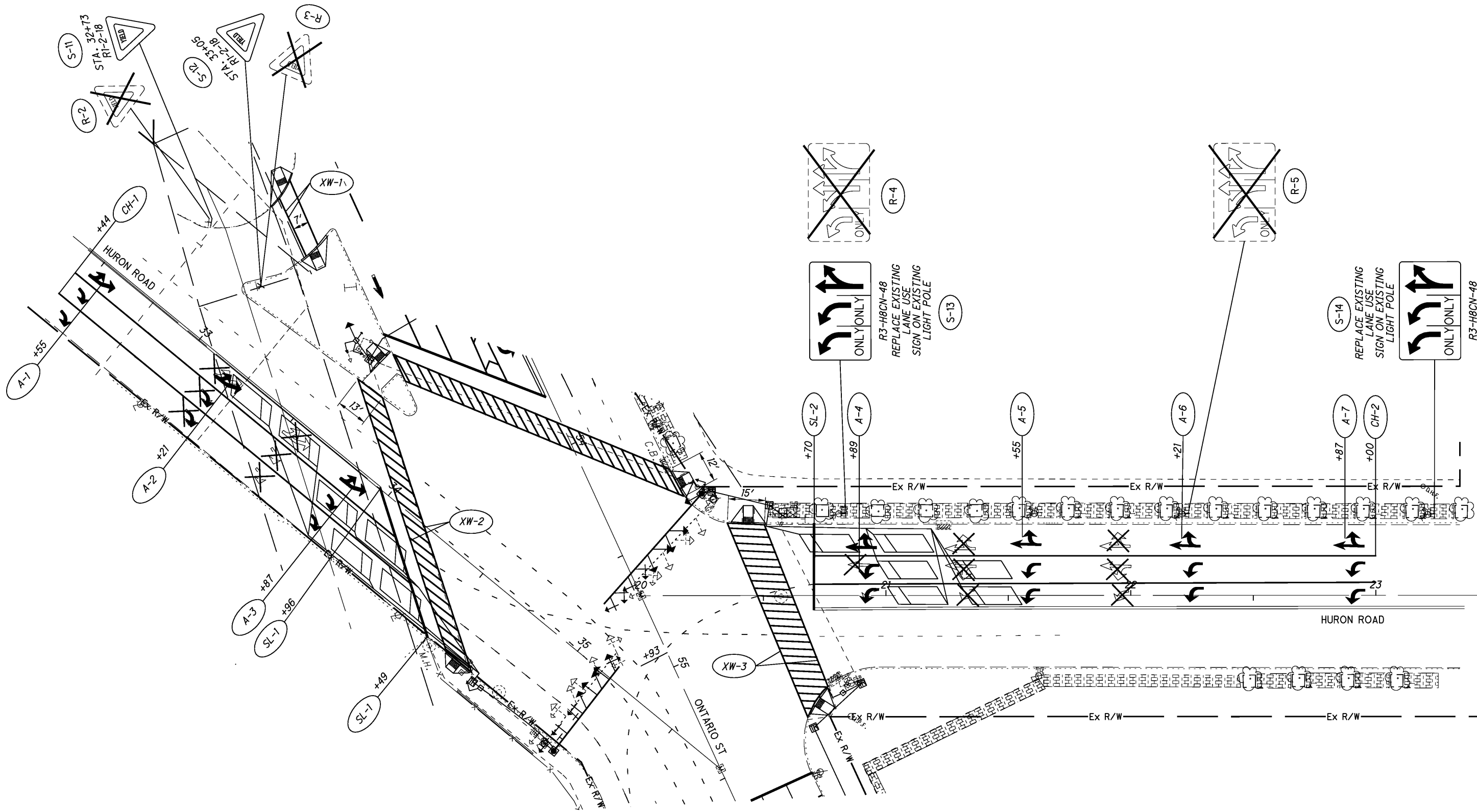
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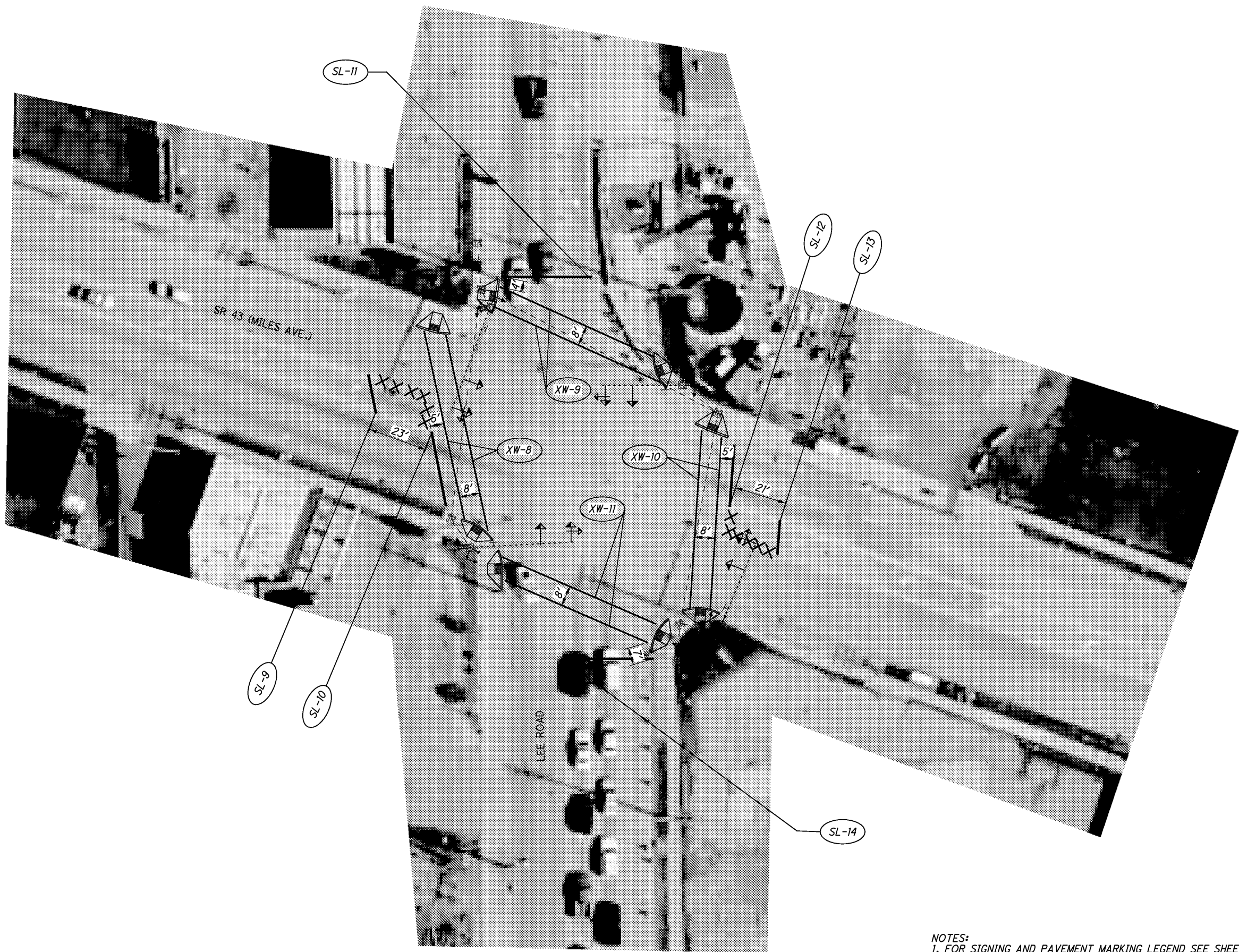
TRAFFIC CONTROL SUBSUMMARY

CALCULATED
JAW
CHECKED
DLW

D12-TSG-FY2013

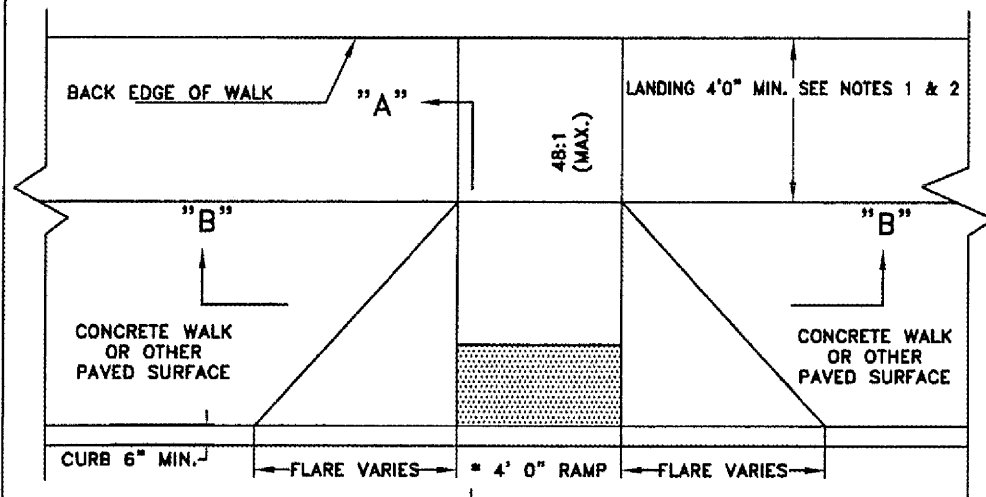
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NOTES:
1. FOR SIGNING AND PAVEMENT MARKING LEGEND SEE SHEET 24

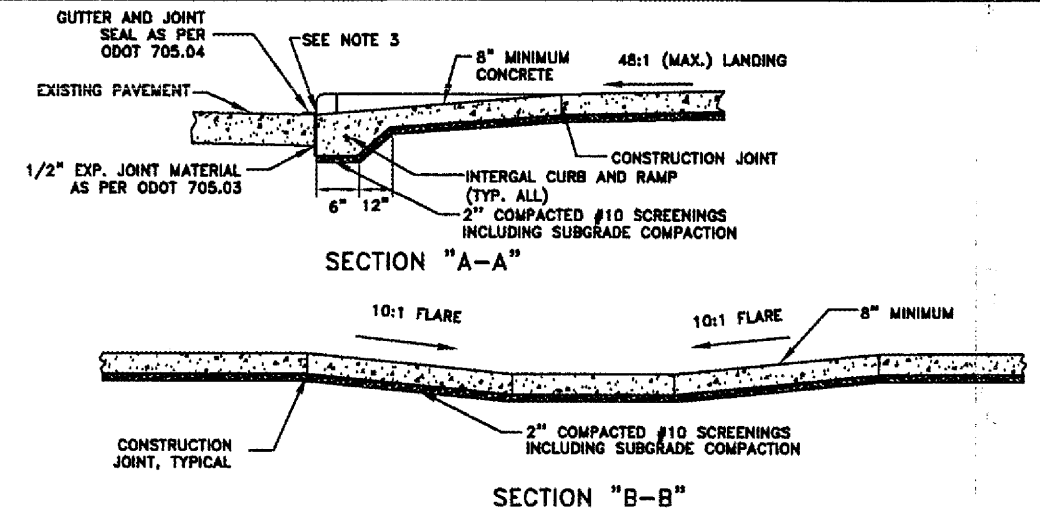
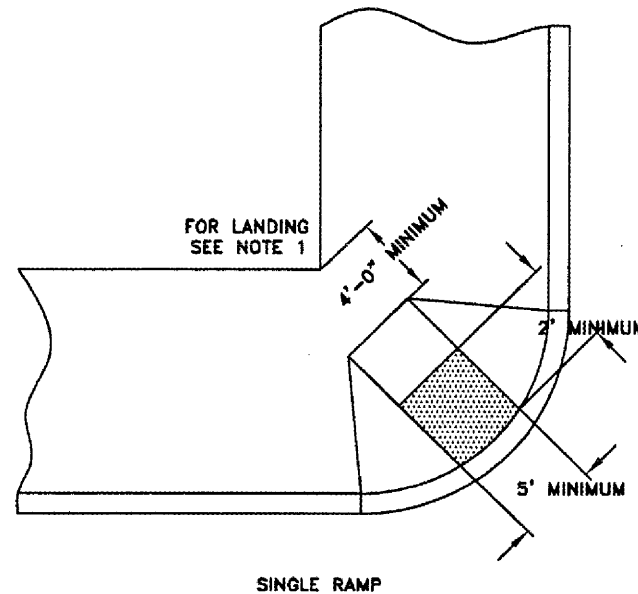
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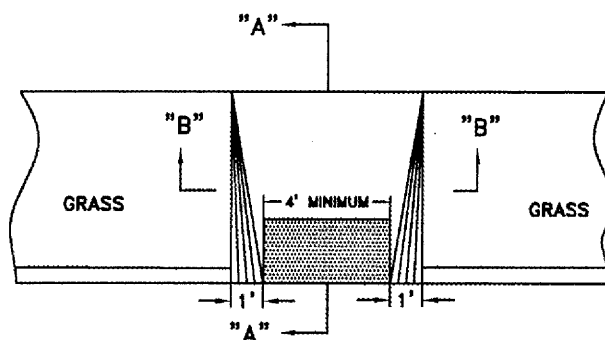
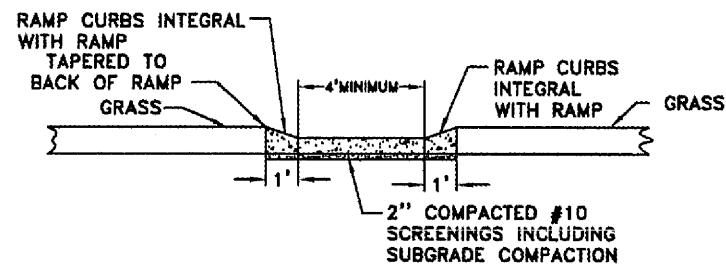
* 3'-0" RAMP WIDTH MAY BE ACCEPTED WITH THE APPROVAL OF ENGINEER

NOTES:

- 1) MAY BE REDUCED TO 3'-0" IN EXISTING SIDEWALK IF THE LANDING IS CONSTRAINED ALONG THE BACK EDGE.
- 2) WHERE THE LANDING IS LESS THAN 4'-0", THE RAMP FLARE SHALL BE INCREASED TO 12:1.
- 3) GUTTER SEAL, 705.04, 4" WIDE THE BOTTOM EDGE OF THE ADJACENT PAVEMENT AND GUTTER LINE.
- 4) SURFACE TEXTURE OF ALL RAMPS SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE RAMP SLOPES AS DIRECTED BY THE ENGINEER AND SHALL BE ROUGHER THAN ADJACENT WALK.



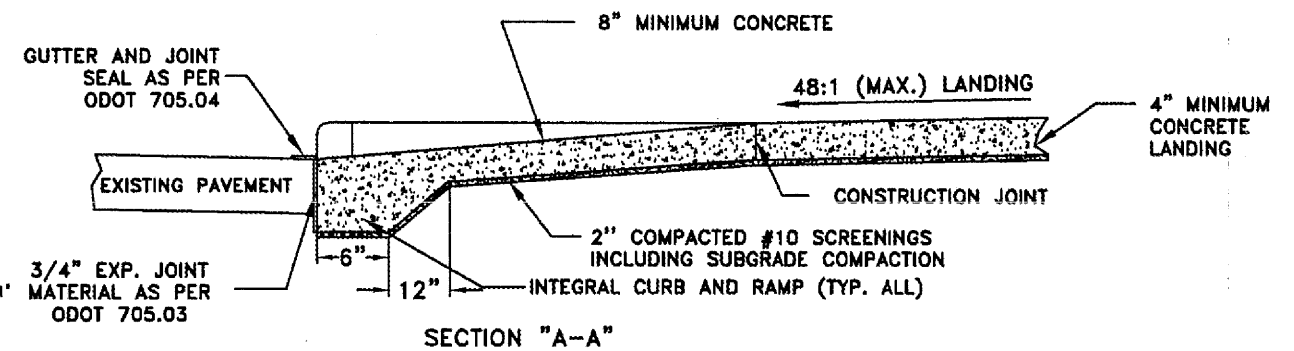
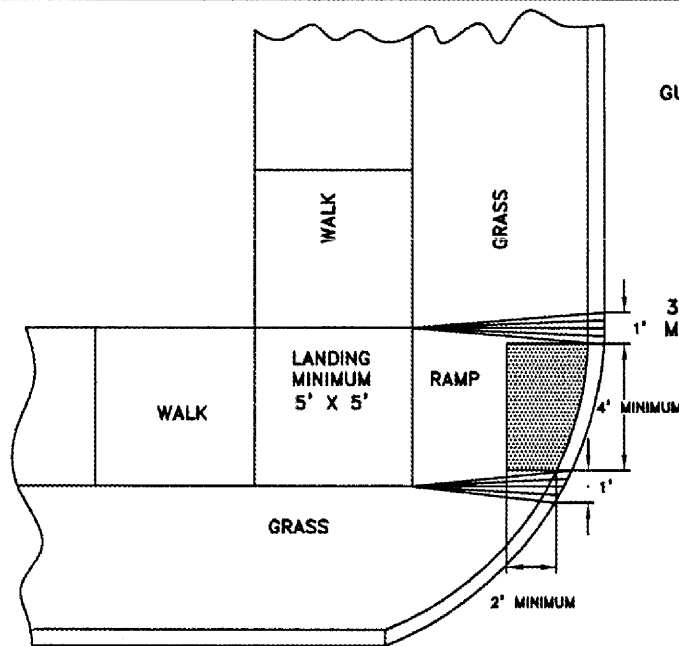
CR-1



* 3'-0" RAMP WIDTH MAY BE ACCEPTED WITH THE APPROVAL OF ENGINEER

NOTES:

- 1-THE BOTTOM EDGE OF THE CURB RAMP SHALL BE FLUSH WITH THE EDGE OF THE ADJACENT PAVEMENT AND GUTTER LINE.
- 2-SURFACE TEXTURE OF ALL RAMPS SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE RAMP SLOPES AS DIRECTED BY THE ENGINEER AND SHALL BE ROUGHER THAN ADJACENT WALK.
- 3-GUTTER SEAL, 705.04, 4" WIDE THE BOTTOM EDGE OF THE ADJACENT PAVEMENT AND GUTTER LINE.



CR-2

REVISED 12/8/09

CITY OF CLEVELAND

DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING & CONSTRUCTION
JOMARIE WASIK-DIRECTOR OF PUBLIC SERVICE

TYPICAL CONSTRUCTION
CURB RAMPS
NOT TO SCALE

DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08
SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08

APPROVED:  DATE: 4/14/08
COMMISSIONER OF ENGINEERING AND CONSTRUCTION

FILE NO.: CR-1 SHEET 1/6

11

CITY OF CLEVELAND

DESIGNED
REVIEWED
CHECKED

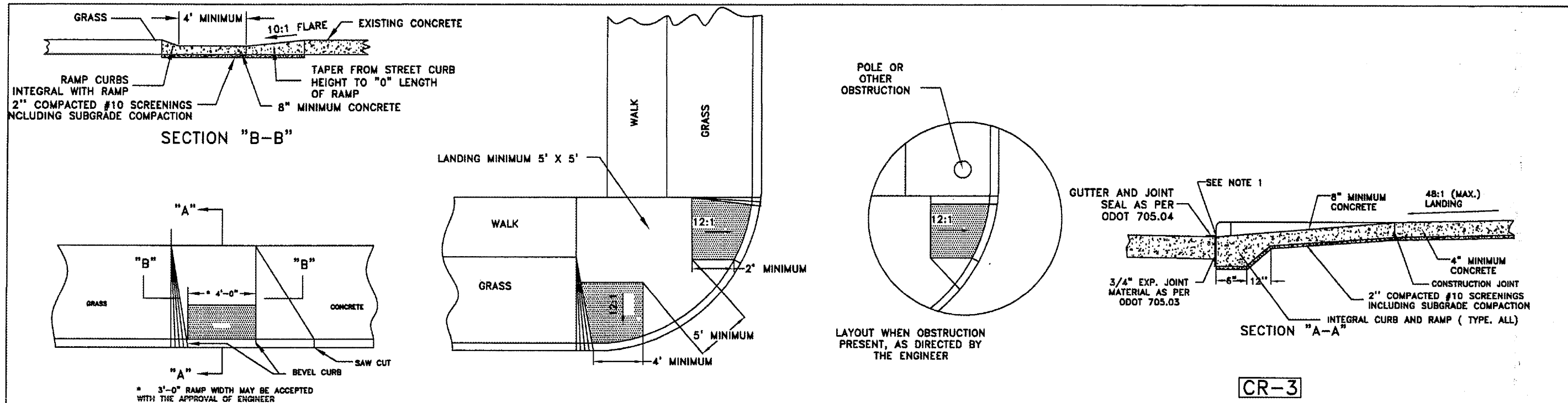
PLAN INSERT SHEET
CITY OF CLEVELAND
CURB RAMPS

D12-TSG-FY2013

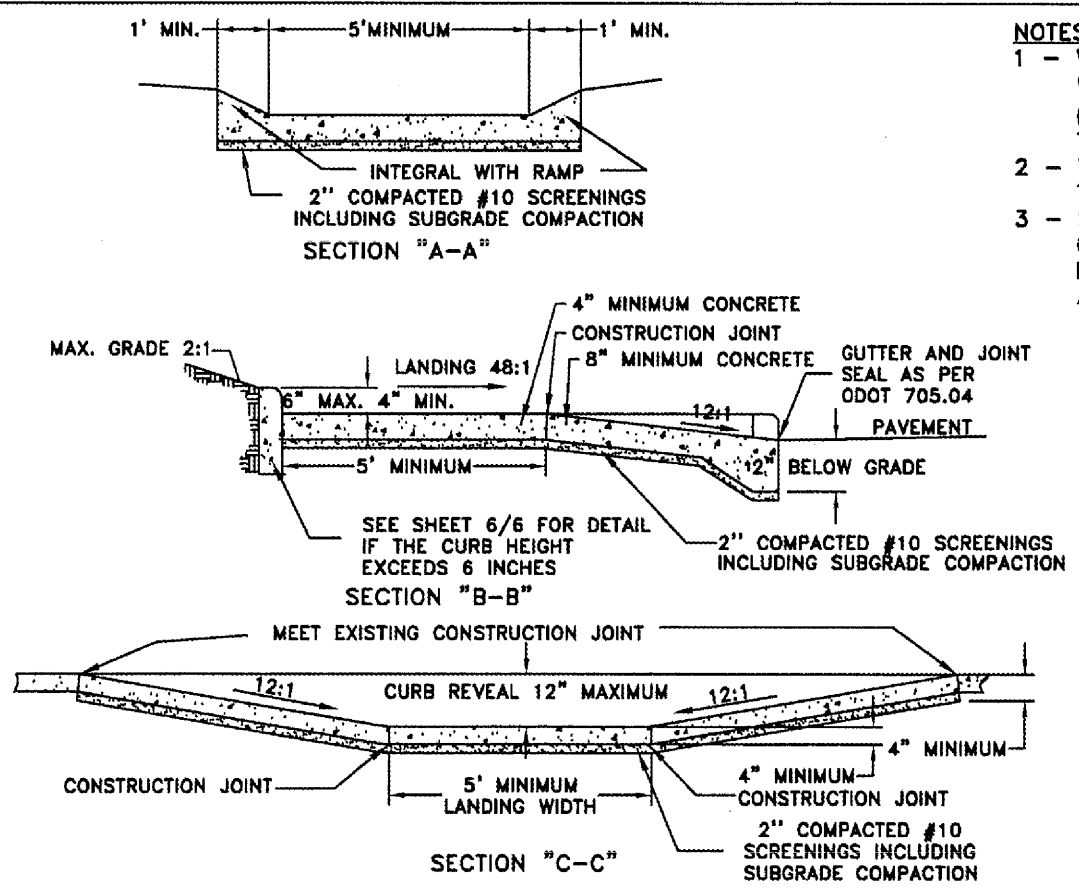
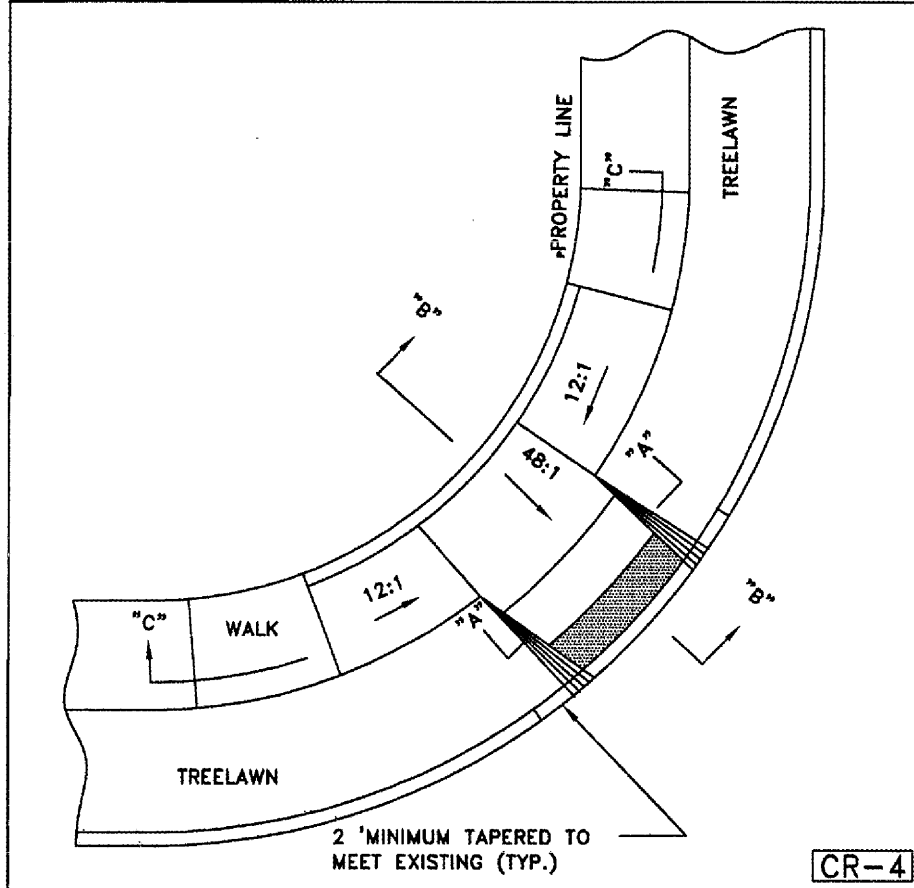
1/6

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- NOTES:
- 1-THE BOTTOM EDGE OF THE CURB RAMP SHALL BE FLUSH WITH THE EDGE OF THE ADJACENT PAVEMENT AND GUTTER LINE.
 - 2-SURFACE TEXTURE OF ALL RAMPS SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE RAMP SLOPES AS DIRECTED BY THE ENGINEER AND SHALL BE ROUGHER THAN ADJACENT WALK.
 - 3-BARRIER CURB INSTALLATION ONLY WHEN ADJACENT OBSTACLE PRESENT AND AS DIRECTED BY THE ENGINEER



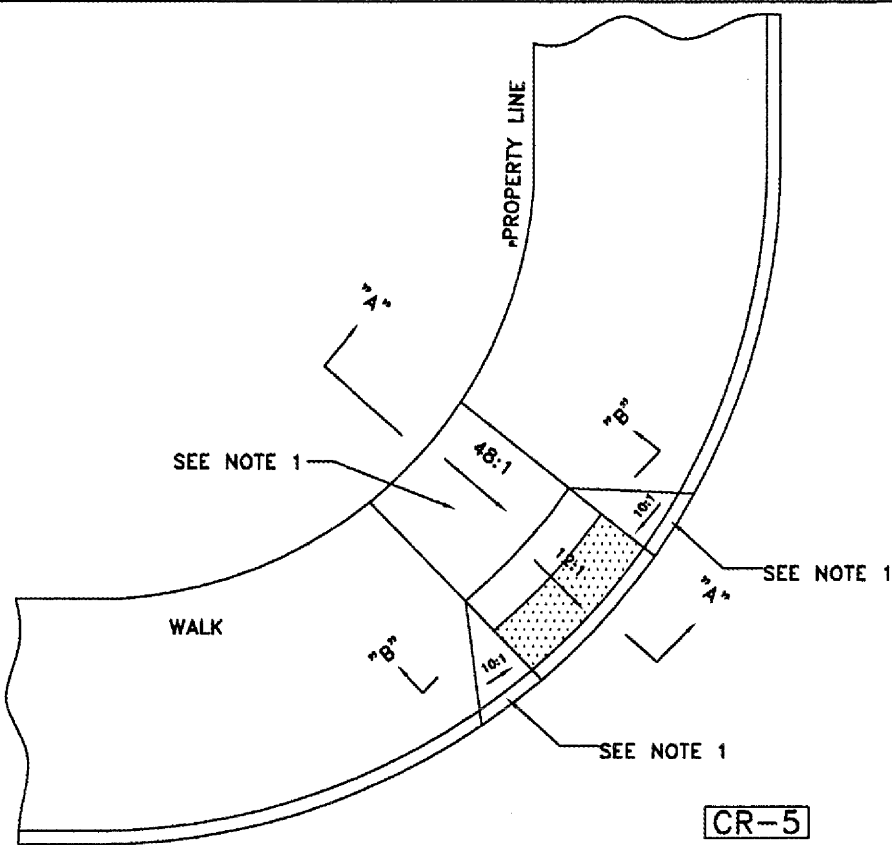
- NOTES:
- 1 - WHERE A ROLLED CURB EXCEEDS SIX INCHES ABOVE THE WALK, THE CONTRACTOR SHALL INSTALL TYPE "6" CURB (6" X 18"). ROLLED CURB SHALL BE INSTALLED ONLY AT THE DIRECTION OF THE ENGINEER.
 - 2 - THE BOTTOM EDGE OF THE CURB SHALL BE FLUSH WITH THE EDGE OF THE ADJACENT PAVEMENT AND GUTTER LINE.
 - 3 - SURFACE TEXTURE OF ALL RAMPS SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE RAMP SLOPES AS DIRECTED BY THE ENGINEER AND SHALL BE ROUGHER THAN ADJACENT WALK.

REVISED 12/8/09

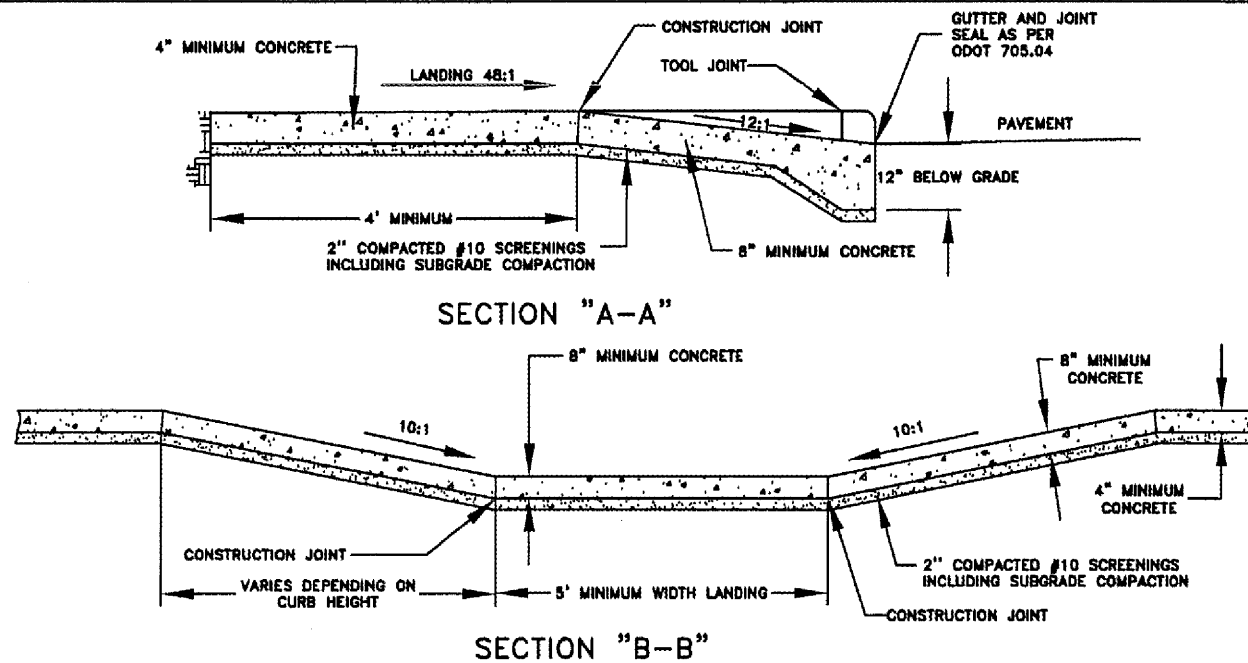
CITY OF CLEVELAND
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING & CONSTRUCTION
JOMARIE WASIK-DIRECTOR OF PUBLIC SERVICE
TYPICAL CONSTRUCTION
CURB RAMPS
NOT TO SCALE

DRAWN BY: R. PILODZINSKAS DATE: 4/8/08
SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08
APPROVED: [Signature] DATE: 4/14/08
COMMISSIONER OF ENGINEERING AND CONSTRUCTION

FILE NO.: CR 1 SHEET 2/6

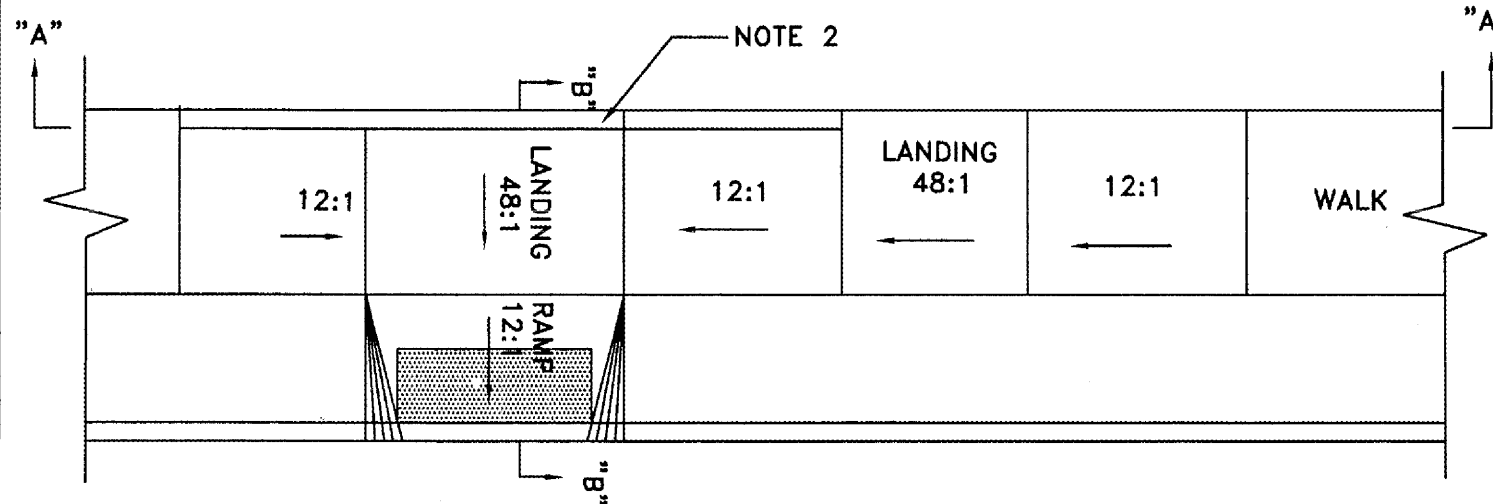


CR-5

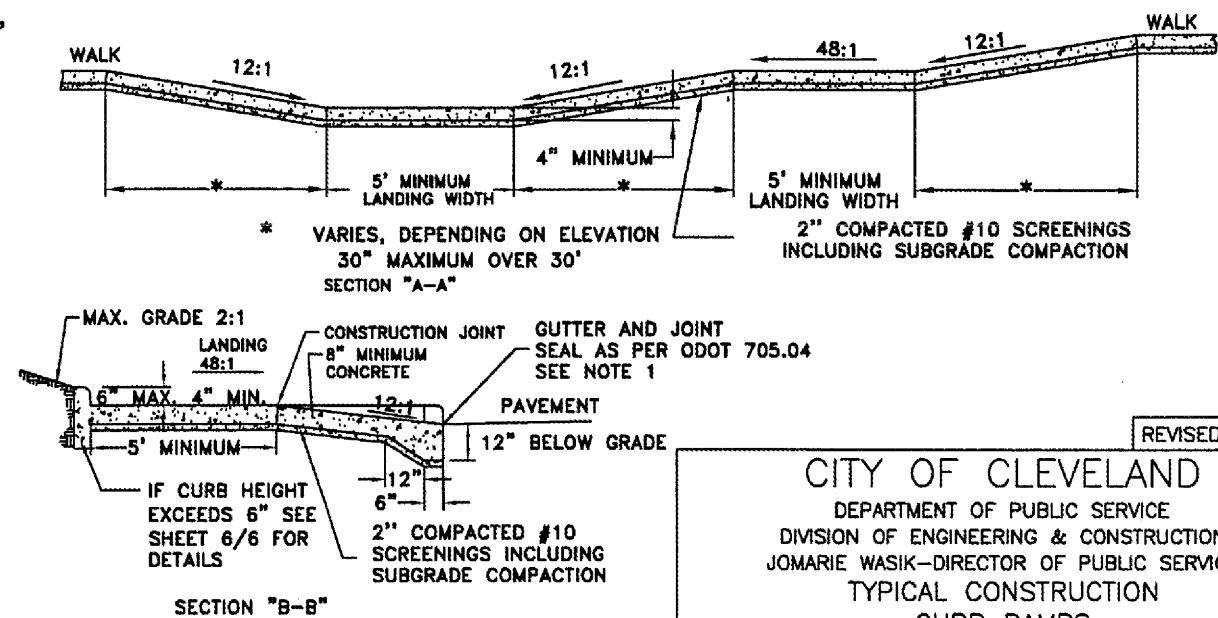


NOTES:

- 1 - WHERE THE LANDING IS LESS THAN 4'-0" THE RAMP FLARE SHALL BE INCREASED TO 12:1.
- 2 - SURFACE TEXTURE OF ALL RAMPS SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE RAMP SLOPES AS DIRECTED BY THE ENGINEER AND SHALL BE ROUGHER THAN ADJACENT WALK.
- 3 - THE BOTTOM EDGE OF THE CURB RAMP SHALL BE FLUSH WITH THE EDGE OF THE ADJACENT PAVEMENT OR GUTTER LINE.
- 4 - GUTTER SEAL, 705.04, 6" WIDE THE BOTTOM EDGE OF THE ADJACENT PAVEMENT AND GUTTER LINE.



CR-6



NOTES:

- 1 - THE BOTTOM EDGE OF THE CURB RAMP SHALL BE FLUSH WITH THE EDGE OF THE ADJACENT PAVEMENT OR GUTTER LINE.
- 2 - WHERE A ROLLED CURB EXCEEDS SIX INCHES ABOVE THE WALK, THE CONTRACTOR SHALL INSTALL TYPE "6" CURB (6" X 18"). ROLLED CURB SHALL BE INSTALLED ONLY AT THE DIRECTION OF THE ENGINEER.
- 3 - SURFACE TEXTURE OF ALL RAMPS SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE RAMP SLOPES AS DIRECTED BY THE ENGINEER AND SHALL BE ROUGHER THAN ADJACENT WALK.

CITY OF CLEVELAND
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING & CONSTRUCTION
JOMARIE WASIK-DIRECTOR OF PUBLIC SERVICE
TYPICAL CONSTRUCTION
CURB RAMPS
NOT TO SCALE

DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08
SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08

APPROVED: *[Signature]* DATE: 4/14/08

COMMISSIONER OF ENGINEERING AND CONSTRUCTION

FILE NO.: CR 1 SHEET 3/6

13

CITY OF CLEVELAND

DESIGNED
REVIEWED
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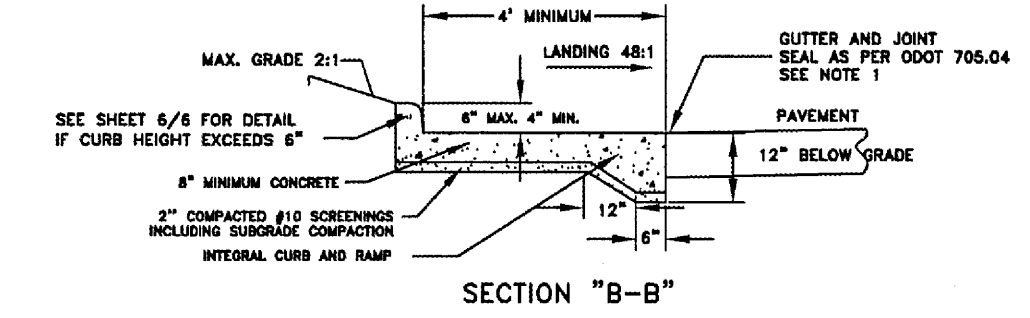
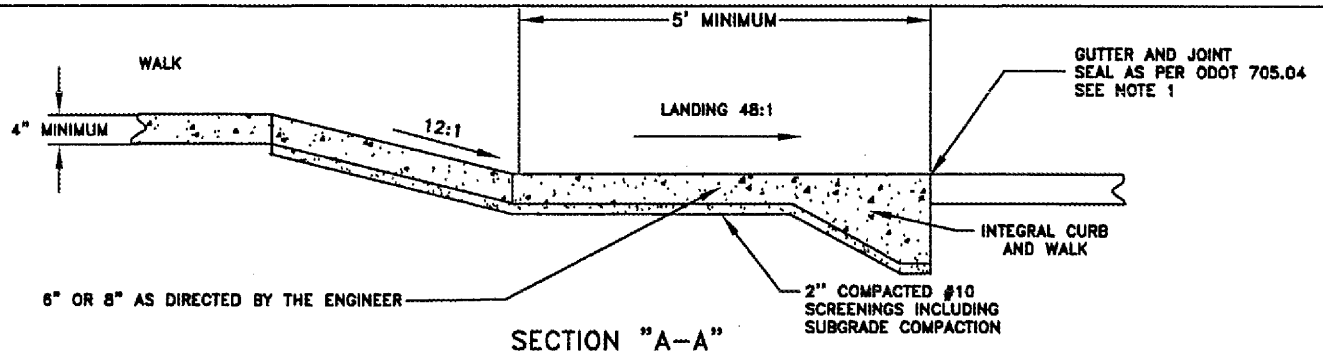
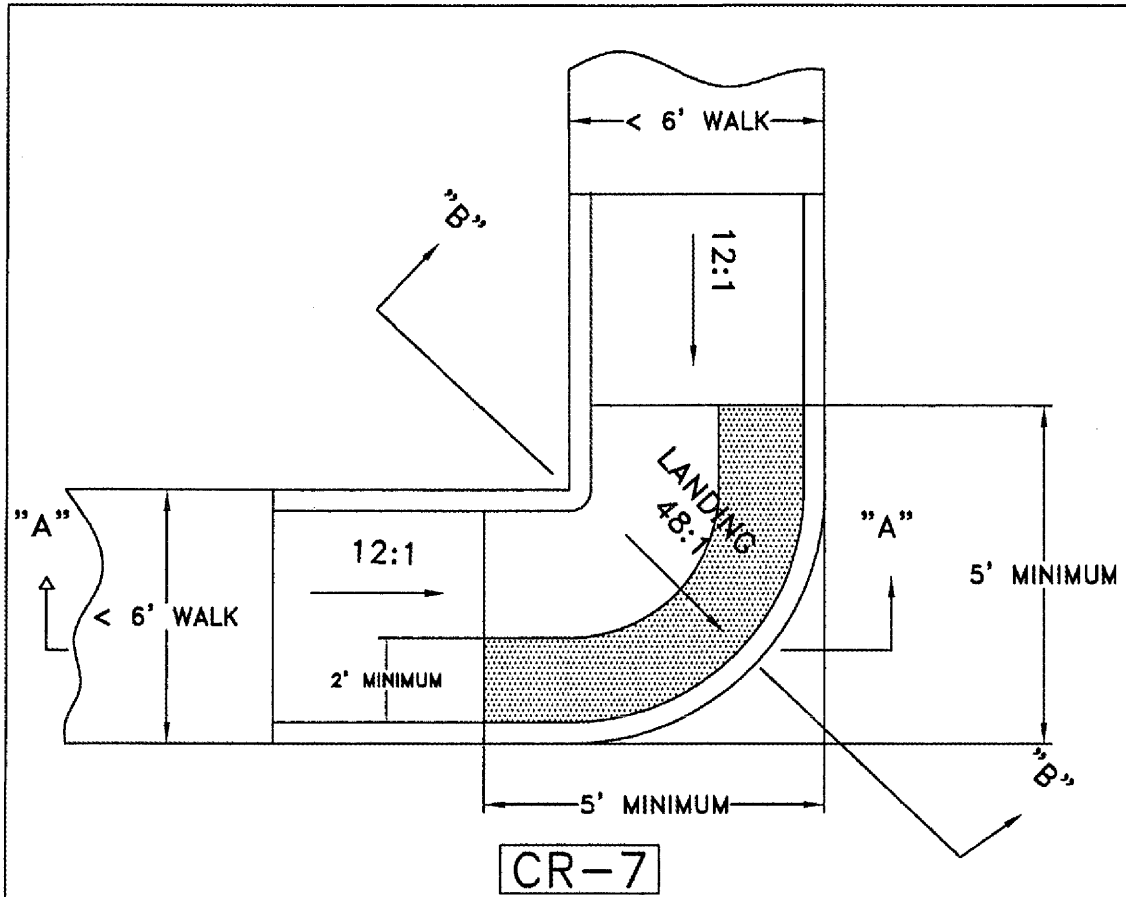
PLAN INSERT SHEET
CITY OF CLEVELAND
CURB RAMPS

D12-TSG-FY2013

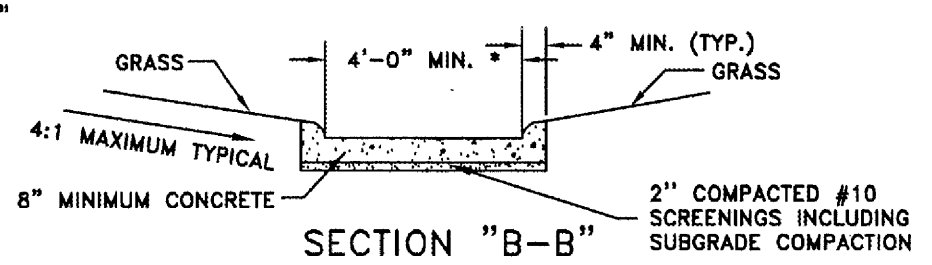
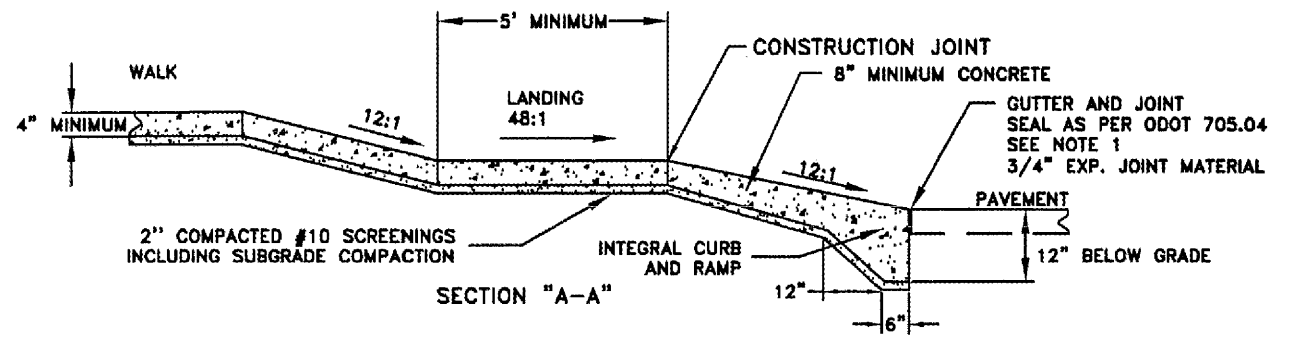
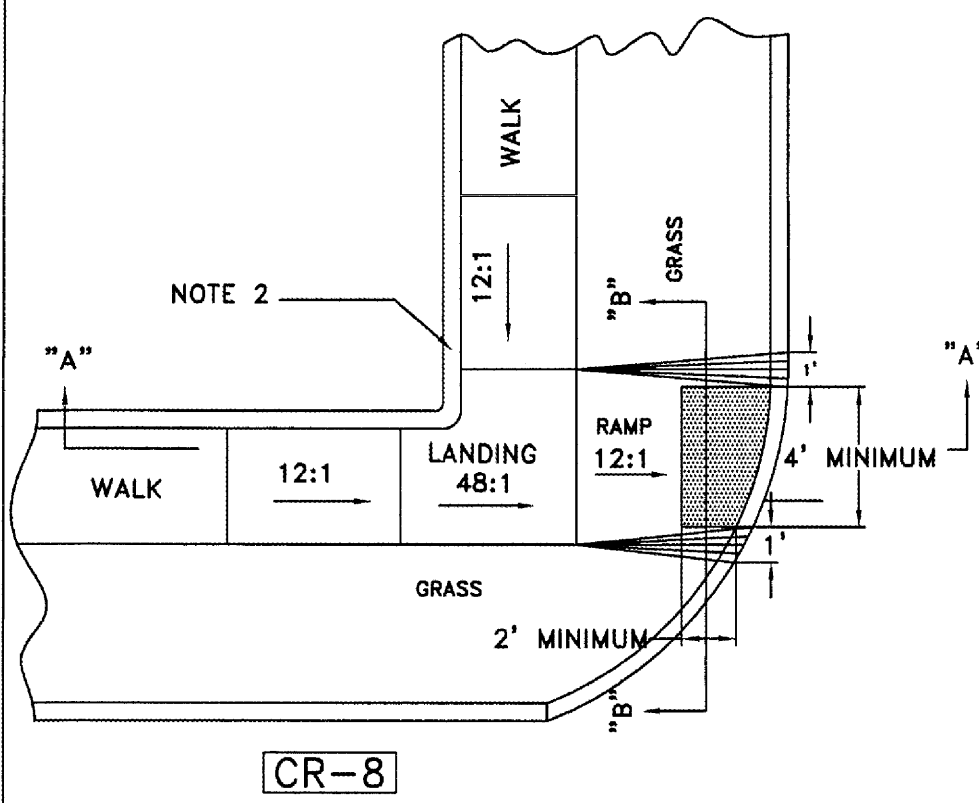
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- NOTES:**
- 1 - THE BOTTOM EDGE OF THE CURB RAMP SHALL BE FLUSH WITH THE EDGE OF THE ADJACENT PAVEMENT OR GUTTER LINE.
 - 2 - WHERE A ROLLED CURB EXCEEDS SIX INCHES ABOVE THE WALK, THE CONTRACTOR SHALL INSTALL TYPE "6" CURB (6" X 18"). ROLLED CURB SHALL BE INSTALLED ONLY AT THE DIRECTION OF THE ENGINEER.
 - 3 - SURFACE TEXTURE OF ALL RAMPS SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE RAMP SLOPES AS DIRECTED BY THE ENGINEER AND SHALL BE ROUGHER THAN ADJACENT WALK.



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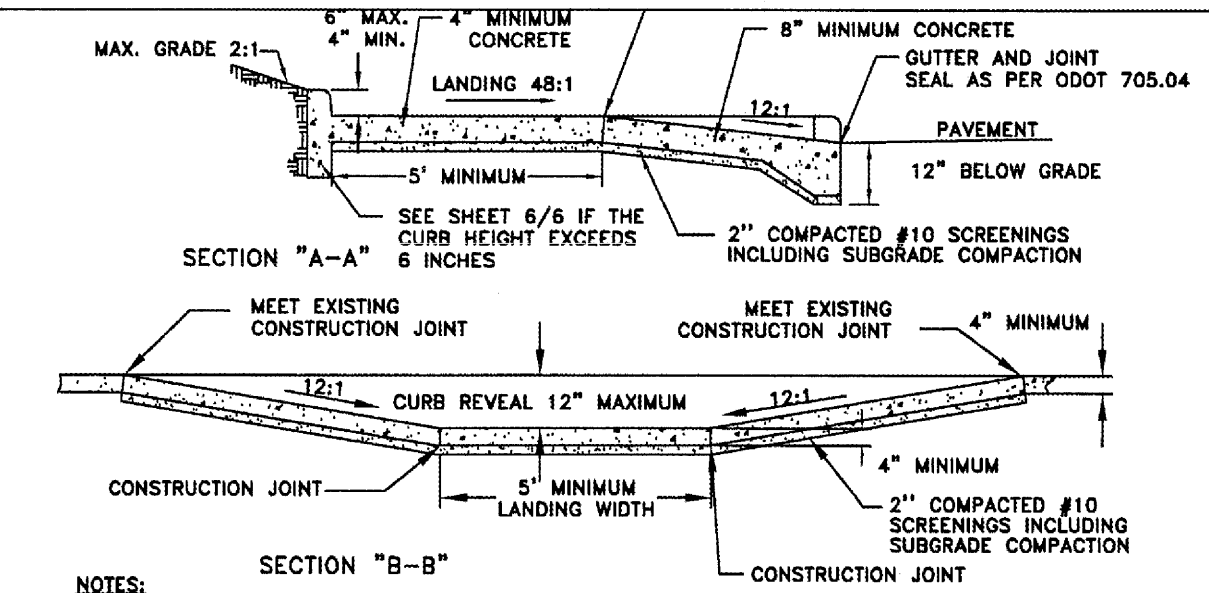
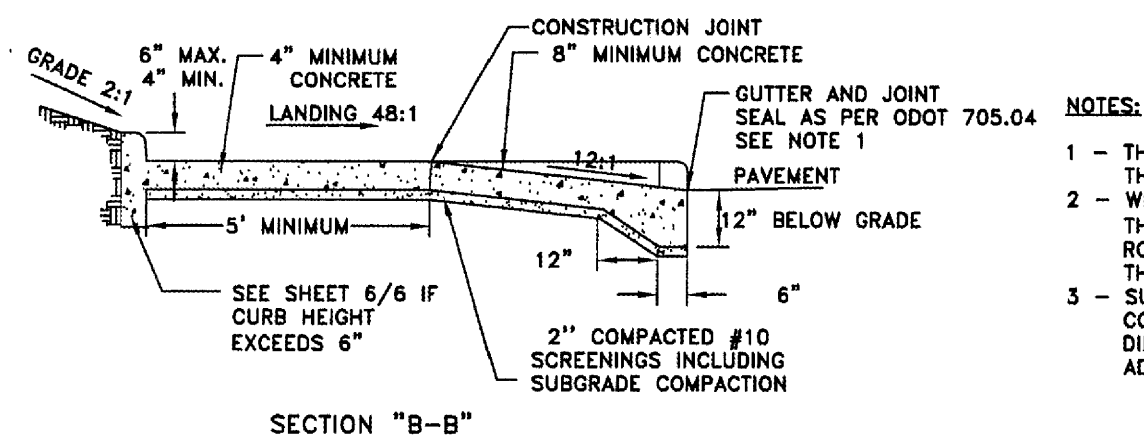
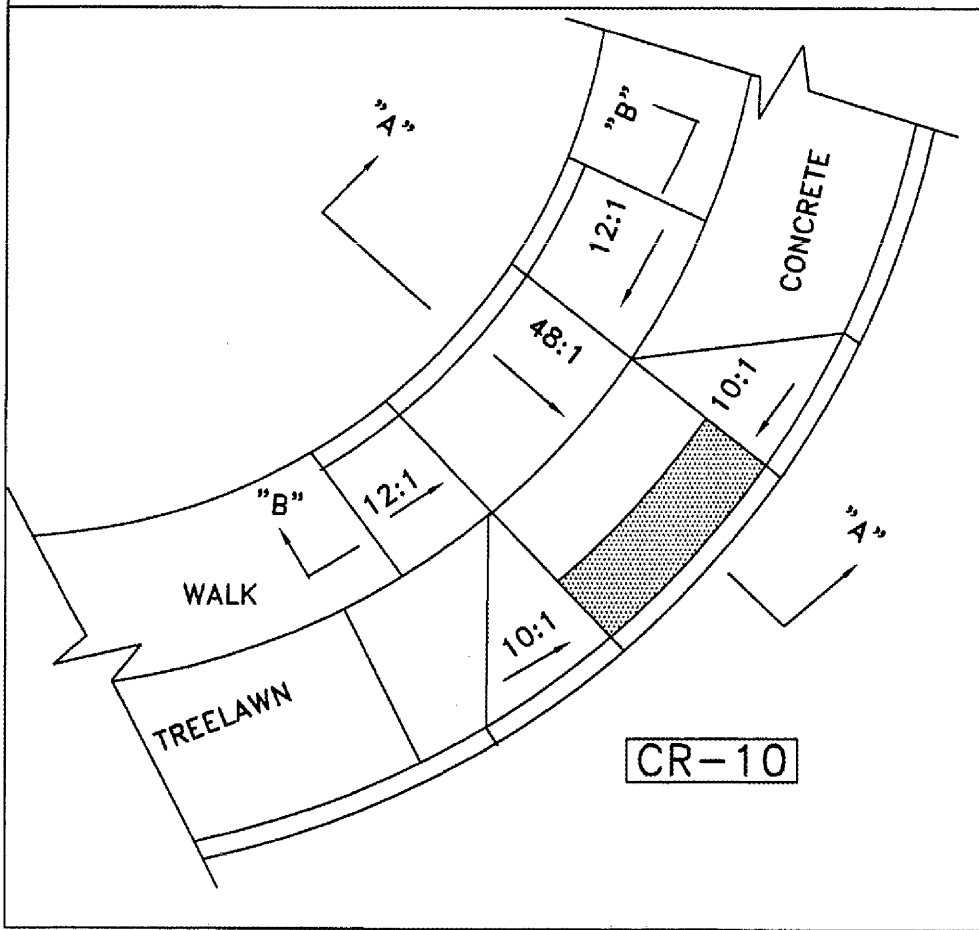
REVISED 12/8/09

CITY OF CLEVELAND
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING & CONSTRUCTION
JOMARIE WASIK-DIRECTOR OF PUBLIC SERVICE
TYPICAL CONSTRUCTION
CURB RAMPS
NOT TO SCALE

DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08
SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08

APPROVED: *[Signature]* DATE: 4/14/08
COMMISSIONER OF ENGINEERING AND CONSTRUCTION

FILE NO.: CR 1 SHEET 4/6



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REVISED 12/9/08

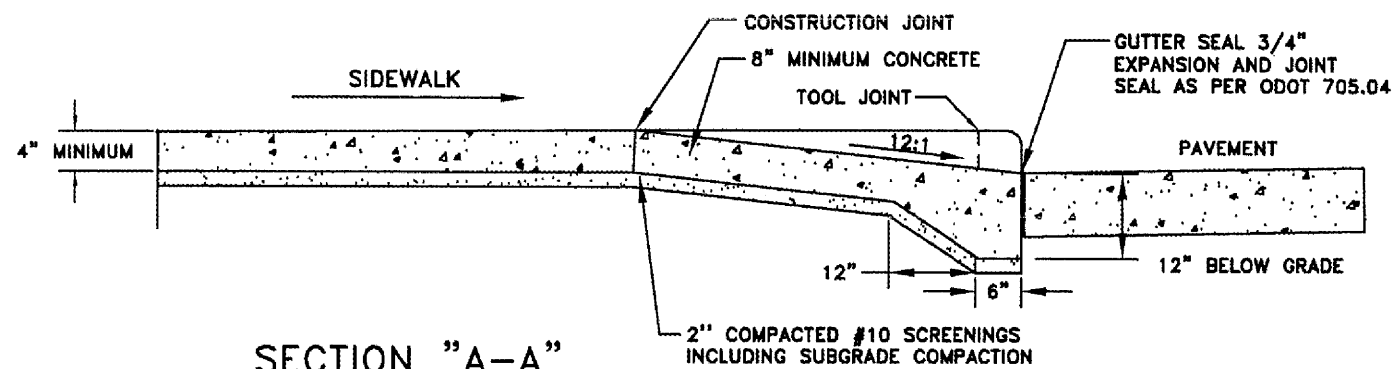
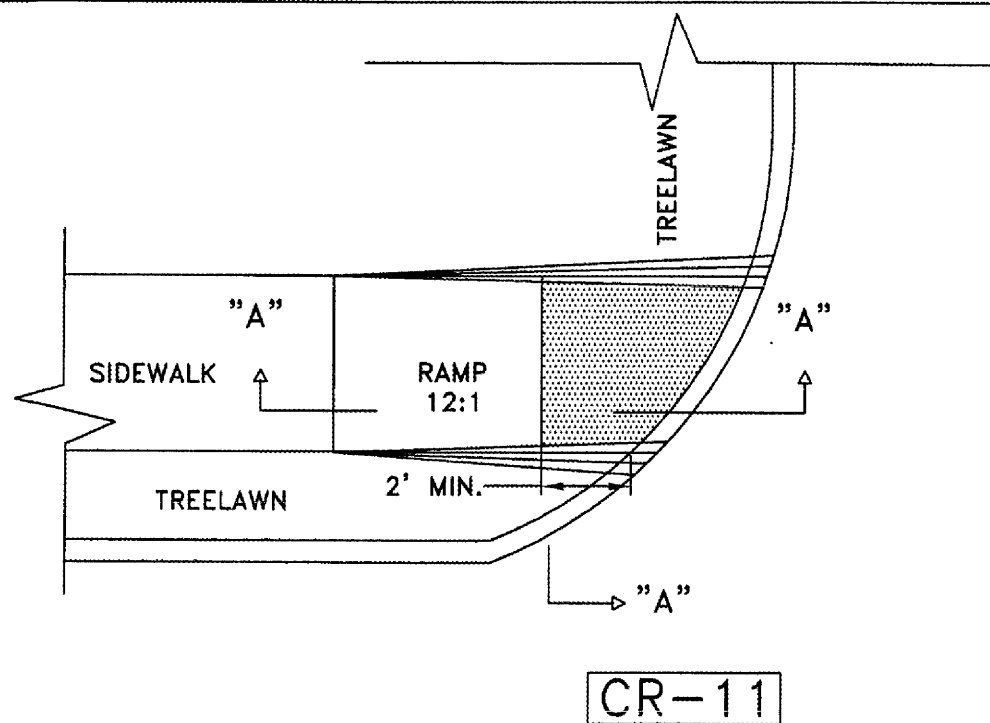
CITY OF CLEVELAND
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING & CONSTRUCTION
JOMARIE WASIK-DIRECTOR OF PUBLIC SERVICE
TYPICAL CONSTRUCTION
CURB RAMPS
NOT TO SCALE

DRAWN BY: <u>R. PLIODZINSKAS</u>	DATE: <u>4/8/08</u>
SUBMITTED BY: <u>W. MCLAUGHLIN</u>	DATE: <u>4/8/08</u>
APPROVED: <u><i>[Signature]</i></u>	DATE: <u><i>4/14/08</i></u>

COMMISSIONER OF ENGINEERING AND CONSTRUCTION

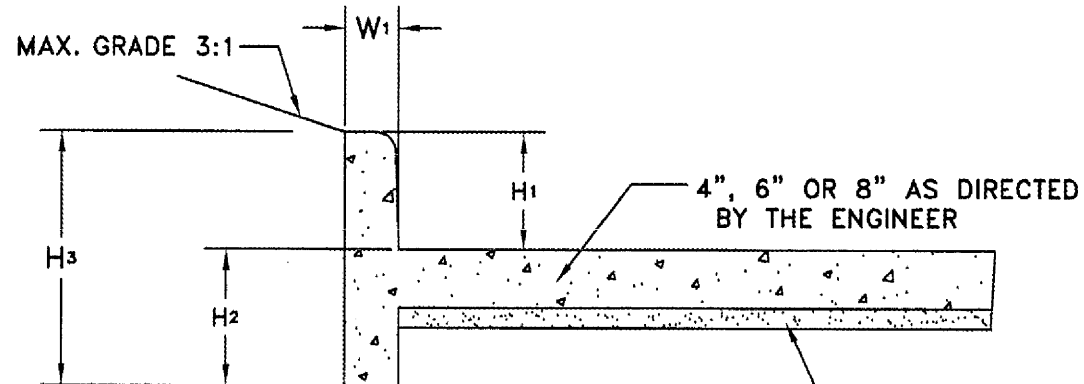
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- 4 - THIS DETAIL SHALL ONLY BE USED TO RETROFIT EXISTING CURB RAMPS AND SHALL NOT BE USED FOR NEW CURB RAMP CONSTRUCTION.



H ₁	W ₁	H ₂	H ₃
6"	6"	6"	12"
8"	6"	10"	18"
10"	8"	12"	22"
12"	10"	12"	24"

ROLLED CURB
INSTALL ONLY AT THE DIRECTION
OF THE ENGINEER

2" COMPACTED #10 SCREENINGS
INCLUDING SUBGRADE COMPACTION

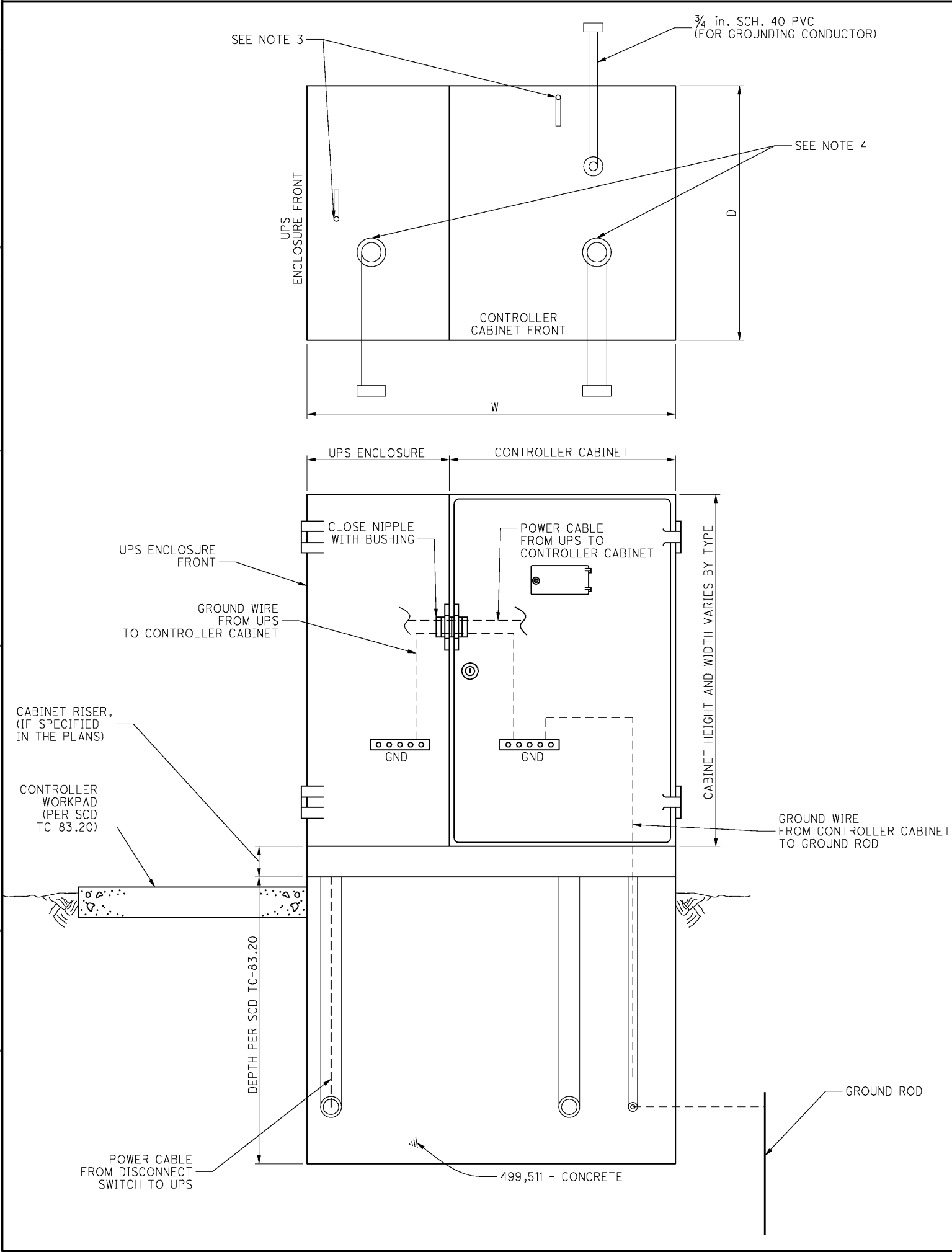
NOTES:

- 1 - WHERE A ROLLED CURB EXCEEDS SIX INCHES ABOVE THE WALK, THE CONTRACTOR SHALL INSTALL CURB PER THIS DETAIL. ROLLED CURB SHALL BE INSTALLED ONLY AT THE DIRECTION OF THE ENGINEER.

REVISED 12/8/09

CITY OF CLEVELAND	
DEPARTMENT OF PUBLIC SERVICE	
DIVISION OF ENGINEERING & CONSTRUCTION	
JOMARIE WASIK-DIRECTOR OF PUBLIC SERVICE	
TYPICAL CONSTRUCTION	
CURB RAMPS & ROLLED CURB DETAIL	
NOT TO SCALE	
SUBMITTED BY: R. PLIODZINSKAS	DATE: 4/8/08
W. MCLAUGHLIN	DATE: 4/8/08
	DATE: 4/14/08
COMMISSIONER OF ENGINEERING AND CONSTRUCTION	
FILE NO.: CR 1	SHEET 6/6

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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 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 inch schedule 40 PVC shall be installed in each foundation.
5. 1/2 inch preformed joint filler as per CMS 705.03 shall be used between foundations and adjacent paved areas.
6. See Standard Construction Drawing TC-83.20 for further details.

TYPE	W (Inches)	D (Inches)	FOUNDATION CONCRETE (Cu. Yd.)
TS-1	60	24	1.23
TS-2	70	36	2.16
2070/170	50	36	1.54

D12-TSG-FY2013	UNINTERRUPTIBLE POWER SUPPLY (UPS) AND CONTROLLER CABINET FOUNDATION		OFFICE OF TRAFFIC ENGINEERING	
	1 / 1	DESIGNED RJL	REVIEWED JMY	