



Purchasing Division
18 North County St 9th Floor
Waukegan, IL 60085-4350
Phone 847 377 2929
Fax 847 984 5889

April 25, 2013

ADDENDUM #1 (Page 1 of 8 plus 39 pages of Draft plans)

REQUEST FOR PROPOSAL #13036

Adaptive Traffic Signal Control for the Lake County Division of Transportation

Proposal Due Date: Thursday, May 9, 2013; 2:00 p.m. Local Time

Please note the following clarifications, revisions, and additions to the bid documents.

CLARIFICATIONS

1. Re: Attachment G: PROPOSAL PRICE SHEET, Item #1, Base Proposal Price

Item #1, Base Proposal Price, includes the amount for Item #3, Initial Deployment Price. Item #3, Initial Deployment Price, is listed separately to provide additional information for the selection committee. Item #1, Base Proposal Price, does not include the amount for Item #2, Software Maintenance and Support Price.

ADDITIONAL INFORMATION

- 1. Draft plans, 39 pages, are included in Addendum #1. These plans are for the Low Bid construction contract identified in the RFP.
2. A list of the attendees to the Pre-Proposal Meeting held on 4/18/13 is included in Addendum #1, 3 pages.

REQUESTS FOR INFORMATION

- 1. Question: What is the cost estimate or budgeted value for this RFP?
Response: The estimated budget for the scope of this RFP is \$300,000.
2. Question: In response to this RFP, we will be submitting proprietary and confidential information. Therefore, we request that certain pages of this proposal response be treated as confidential material and not be released without our written approval.
Response: This Request For Proposal is subject to the provisions of the Open Meetings Act 5 ILCS 120/1 et seq and the Freedom of Information Act 5 LCS 140/1 et seq. In the event that a FOIA request is received, requesting a submitted RFP, the Lake County States' Attorney Office will make the decision if proprietary and confidential information may be redacted prior to releasing the FOIA request.

PLEASE SIGN THIS FORM AND E-MAIL TO purchasing@lakecountyil.gov or FAX TO 847-984-5889 WITHIN 24 BUSINESS HOURS. RETURN ORIGINAL WITH RFP.

I will be submitting a RFP _____ or I will not be submitting a RFP because _____

Sincerely,

Acknowledged and Accepted 13036-01:

[Handwritten signature of RuthAnne K. Hall]

RuthAnne K. Hall
Lake County Purchasing Agent

Signature: _____
Company: _____



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REQUEST FOR PROPOSAL #13036

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Addendum #1 continued

REQUESTS FOR INFORMATION

3. **Question:** Regarding the Proposer's General Information and Qualifications on page 62 of the RFP, should the information under "Provide a description of you firm, including scope of operations (local, regional, or national), number of locations, types of business activities and services, and other pertinent data) be completed on a separate word document? Is the response to this section separate from item (c) Proposer Qualifications and Experience?
Response: Yes. This information can be a separate document and is the requested information in item c of the submittal requirements. The form on page 62 must be completed and submitted as well.
4. **Question:** Regarding the References section on page 63, what additional information does the County require? The Proposer is prepared to provide reference letters and deployment descriptions and results.
Response: Additional pages are allowed beyond the information listed on this form as referenced in the opening paragraph.
5. **Question:** Is there sufficient capacity in the conduit between the cabinet and the signals?
Response: Yes. Refer to the draft plans.
6. **Question:** What type of cabinet is used at each intersection on the proposed corridor?
Response: TS-2 Type 1.
7. **Question:** What type of connection/cabling is in use at each intersection?
Response: NEMA cabinets are in use.
8. **Question:** What type of detection is in place at each approach of each intersection? Where is the detection located and what is it programmed to detect (i.e., vehicle presence or queue length)?
Response: Video detection is in use. Queue detectors and loop detectors are being added under the Low Bid Contract. Refer to the draft plans.
9. **Question:** Will the County provide traffic data, including turning counts, phasing for each intersection, etc.?
Response: The Low Bid contract will include a pay item for Optimize Traffic Signal System, Special. This will require an IDOT District 1 approved Signal Coordination and Timing (SCAT) consultant to perform manual turning movement counts at all intersections.
10. **Question:** Will the County provide signal plans for each intersection associated with this RFP?
Response: Yes. Draft plans are provided in Addendum #1.
11. **Question:** Will a before-and-after study be conducted? If so, by whom? What method of data collection will be used and which measurements will be reported and/or evaluated?
Response: Yes. Before and after studies will be performed in accordance with the Validation plan guideline listed in the System Engineering Document.

April 25, 2013

ADDENDUM #1 (Page 3 of 8 plus 39 pages of Draft plans)

REQUEST FOR PROPOSAL #13036

Adaptive Traffic Signal Control for the Lake County Division of Transportation

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Addendum #1 continued

REQUESTS FOR INFORMATION

12. **Question:** Are there existing communications to the corridor? If so, do the communications extend to each cabinet?
Why type of communications is in place?
Response: Yes. Fiber optic communication exists to all cabinets.
13. **Question:** When will the communications systems be operational?
Response: Communication is existing and operational.
14. **Question:** Can the County provide a letter demonstrating tax exempt status?
Response: Yes. The awarded contractor will be sent the appropriate letter.
15. **Question:** Does the County have special training needs? Does the County have special maintenance needs?
Response: Training and maintenance requirements are listed in the RFP.
16. **Question:** Do the intersections have cable run lengths greater than 300ft (100m) from each camera to the cabinet?
Are Ethernet repeaters needed?
Response: Refer to the draft plans. No Ethernet repeaters are currently used.
17. **Question:** Is cabling to be purchased from the Proposer or elsewhere?
Response: Cable shall be provided by the proposer.
18. **Question:** Does the controller at each intersection have configurable pin inputs?
Response: NEMA cabinets are in place.
19. **Question:** Does the County have or require media converters for communications?
Response: Cisco 2955 layer 2 switches are in all cabinets.
20. **Question:** Are communications ports available, or are additional switches needed?
Response: The existing switches typically have at least 6 ports available.
21. **Question:** Are only registered entities permitted to submit the response to the RFP?
Response: No. Anyone can respond to the RFP, including non-registered entities.
22. **Question:** Has the IP scheme been developed?
Response: Yes. The IP scheme is set and IP addresses will be provided as required.
23. **Question:** Please clarify System Requirements related to Railroad Interconnected locations, (11.09, 11.0-10, and 14.0-3.0-1).
Response: ICC testing will be required for any modifications to the existing traffic signal controller or cabinet located at Aptakisic Road & Weiland Road due to the interconnection with the railroad warning gates. This may require shop testing of an equivalent traffic signal cabinet and controller prior to implementation of the adaptive system.



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ADDENDUM #1 (Page 4 of 8 plus 39 pages of Draft plans)

REQUEST FOR PROPOSAL #13036

Adaptive Traffic Signal Control for the Lake County Division of Transportation

Proposal Due Date: Thursday, May 9, 2013; 2:00 p.m. Local Time

Addendum #1 continued

REQUESTS FOR INFORMATION

24. **Question:** Is NTCIP compatibility required?
Response: The existing traffic signal centralized system communicates with Eagle and Econolite controllers. This communication must be maintained and cannot be altered by the adaptive system.
25. **Question:** Will the adaptive equipment be installed by LCDOT or contractor?
Response: Any required adaptive equipment to be installed in the traffic signal cabinet will be completed by the contractor of the subsequent, low bid contract.
26. **Question:** Who will maintain the detection equipment?
Response: Existing detection will continue to be maintained by LCDOT.
27. **Question:** Are communication failures currently logged and alarmed by the system?
Response: Yes.
28. **Question:** Will VPN access be provided?
Response: Yes.
29. **Question:** Who needs to provide an implementation schedule?
Response: The selected proposer shall develop a precise implementation schedule in accordance with Item 6 of the RFP.
30. **Question:** Who will be responsible for the adaptive configuration and settings?
Response: The selected proposer.
31. **Question:** Is not meeting certain sections of the desired system requirements document considered pass/fail? Or will responses with exceptions that utilize alternative approaches to accomplish similar results be considered?
Response: No. Pass/fail is based upon the experience of the firm with adaptive system implementations and response to the RFP. Alternative approaches to system requirements will be considered.
32. **Question:** If a superior ASCT technology was available that required replacing the legacy controllers, would Lake County be willing to consider responses that included replacing the Econolite ASC-3 controllers with superior ATC controllers, if the price were right?
Response: No.
33. **Question:** Would Lake County be willing to deploy a separate central traffic control software for the intersections on the adaptive corridor?
Response: No. The communication to the existing centralized signal control system must be maintained. However, the ASCT does not need to be integrated into this system and can run as a standalone software package.



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REQUEST FOR PROPOSAL #13036

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Addendum #1 continued

REQUESTS FOR INFORMATION

34. **Question:** In reference to controller communications, what is the primary method being used now?
Response: Fiber optic cable and Ethernet.
35. **Question:** Has Lake County completed a systems engineering document for this project? If so, would this be available for review?
Response: Yes. It is included with the RFP documents.
36. **Question:** If we are unable to attend the pre-proposal meeting, will it be possible to get electronic copies of the materials covered and transcripts of the Q&A session?
Response: All items covered at the Pre-Proposal Meeting will be included in Addendum #1, which will be posted on the Lake County web-site by April 26, 2013.
37. **Question:** To whom should the cover letter be addressed?
Response: RuthAnne Hall, Lake County Purchasing Agent.
38. **Question:** What type of detector connection is used with the NEMA TS-2 cabinets (i.e., SDLC, ABC cabling, D connectors for EVP and pedestrians, etc.)?
Response: Typically ASC-3/1000 controllers are in place without the use of ABC or D connectors.

The following (2) questions are in reference to the "D 13036 Compliance with System Requirements" sections Con Ops 2.0-1.0-6, Con Ops 3.1.1.1.0-5, and Con Ops 3.6.2.0-2.

39. **Question:** Does the present signal timing plan allow for adequate bi-directional service on the main line given the signal spacing and cycle length required on the route?
Response: Yes. Also, the existing timings shall be optimized prior to adaptive control becoming operational.
40. **Question:** Will the County consider dynamic phase sequencing between coordinated movements? Driver expectancy has not been an issue for the Proposer's past deployments. In fact, dynamic phasing based on real-time analysis of queue volumes has yielded significant improvements in efficiency.
Response: Dynamic phase sequence will not be allowed at intersections interconnected with railroad warning gates. See requirement 2.1.2.0-12 and previous response to Question 31.

END OF ADDENDUM #1

PRE-PROPOSAL MEETING SIGN IN SHEET

RFP NO. 13036

ADAPTIVE TRAFFIC SIGNAL CONTROL

APRIL 18, 2013

TIME: 10:30 A.M. (PLEASE PRINT LEGIBLY)

Name: LARRY WOLLHEIM
Company: LAKE COUNTY PURCHASING DIV.
Address, City, State & Zip: 18 N. COUNTY ST. 9th Floor
WAUKEGAN, IL 60085
Phone: 847-377-2171 Fax: 847-984-5992
Email: LWOLLHEIM@LAKECOUNTYIL.GOV

Name: BREEM PLUM
Company: TRAFFIC CONTROL CORP.
Address, City, State & Zip: 10435 ARCOMB WOODS
WOODRIDGE, IL
Phone: 630-543-1300 Fax: 630-543-5050
Email: BPLUM@TRAFFICCONTROLCORP.COM

Name: Todd Downs
Company: Brown Traffic Products
Address, City, State & Zip: 739 FEDERAL, DAVENPORT IL
Phone: 563-594-9742 Fax: _____
Email: tdowns@browntraffic.com

Name: ERIC CONNORWAY
Company: Rhythm Engineering
Address, City, State & Zip: 58155 Roseway Dr
Shelby Twp MI
Phone: 566-612-8660 Fax: _____
Email: ERIC.CONNORWAY@RHYTHMTRAFFIC.COM

PRE-PROPOSAL MEETING SIGN IN SHEET
RFP NO. 13036
ADAPTIVE TRAFFIC SIGNAL CONTROL
APRIL 18, 2013
TIME: 10:30 A.M. (PLEASE PRINT LEGIBLY)

Name: DOUG BRAZELTON
Company: DELCAN CORP.
Address, City, State & Zip: 650 E. ALGONQUEN ROAD SUITE 400
SCHAUMBURG, IL 60173
Phone: 847-925-0120 Fax: 847-925-0140
Email: d.brazelton@delcan.com

Name: AL GIERTYCHA
Company: LAKE COUNTY DOT
Address, City, State & Zip: _____

Phone: 847-377-7410 Fax: _____
Email: agiertychc@lakecountyil.gov

Name: FREN HEREDIA
Company: LAKE COUNTY
Address, City, State & Zip: 18 N. COUNTY ST.
WAUKEGAN IL 60085
Phone: 847 377-2165 Fax: _____
Email: FHEREDIA@LAKECOUNTYIL.GOV

Name: M. Lee Turner
Company: LC DOT
Address, City, State & Zip: 600 W. Winchester
Libertyville IL 60048
Phone: 847-377-7474 Fax: _____
Email: mturner@lakecountyil.gov

PRE-PROPOSAL MEETING SIGN IN SHEET
RFP NO. 13036
ADAPTIVE TRAFFIC SIGNAL CONTROL
APRIL 18, 2013
TIME: 10:30 A.M. (PLEASE PRINT LEGIBLY)

Name: Jon Nelson

Company: LAKE COUNTY DOT

Address, City, State & Zip: 600 W. WINCHESTER
LIBERTYVILLE, IL 60188

Phone: 847-377-7400 Fax: _____

Email: jonelson@lakecountyil.gov

Name: Tuan Nguyen

Company: GBA Systems Integrators LLC

Address, City, State & Zip: 1600 4th Ave Suite 410
Rock Island IL, 61201

Phone: 309-588-0165 Fax: _____

Email: tnghuyen@gbasi.com

Name: Doug Pershall

Company: GBASI

Address, City, State & Zip: 1600 4th Ave Suite 410
Rock Island IL 61201

Phone: 309-428-3993 Fax: _____

Email: DPERSHALL@GBASI.COM

Name: _____

Company: _____

Address, City, State & Zip: _____

Phone: _____ Fax: _____

Email: _____

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1258	11-00088-19-TL	LAKE	39	1
FED. ROAD DIST. NO.		ILLINOIS CONTRACT NO.		

FOR INDEX OF SHEETS, SEE SHEET NO. 2

IDOT STANDARDS	
STD. No.	DESCRIPTION
000001-06	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
001006	DECIMAL OF AN INCH AND OF A FOOT
701001-02	OFF-RD OPERATIONS, 2L, 2W, MORE THAN 15' (4.5 M) AWAY
701006-03	OFF-RD OPERATIONS, 2L, 2W, 15' (4.5 M) TO 24" (600 MM) FROM PAVEMENT
701101-02	OFF-RD OPERATIONS, MULTILANE, 15' (4.5 M) TO 24" (600 MM) FROM PAVEMENT EDGE
701106-02	OFF-RD OPERATIONS, MULTILANE, MORE THAN 15' (4.5 M) AWAY
701201-04	LANE CLOSURE, 2L, 2W, DAY ONLY, FOR SPEEDS >= 45 MPH
701606-08	URBAN LANE CLOSURE, MULTILANE, 2W WITH MOUNTABLE MEDIAN
701701-08	URBAN LANE CLOSURE, MULTILANE INTERSECTION
701901-02	TRAFFIC CONTROL DEVICES
814001-02	HANDHOLES
857001-01	STANDARD PHASE DESIGNATION DIAGRAMS AND PHASE SEQUENCES
886001-01	DETECTOR LOOP INSTALLATIONS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

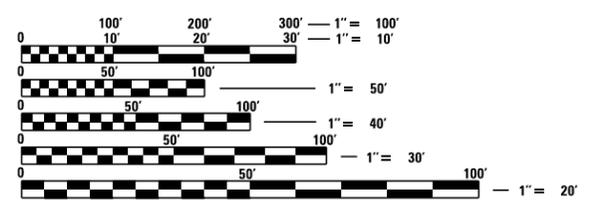
**PLANS FOR PROPOSED
FEDERAL AID HIGHWAY**

**CONGESTION MITIGATION AIR QUALITY
LAKE COUNTY PASSAGE
APTAKISIC ROAD
IN
BUFFALO GROVE**

FEDERAL PROJECT NO.: CMM-9003(926)
F.A.U. ROUTE 1258 / Aptakisic Road
MFT SECTION 11-00088-19-TL
PROJECT NO. C-91-183-12
LAKE COUNTY

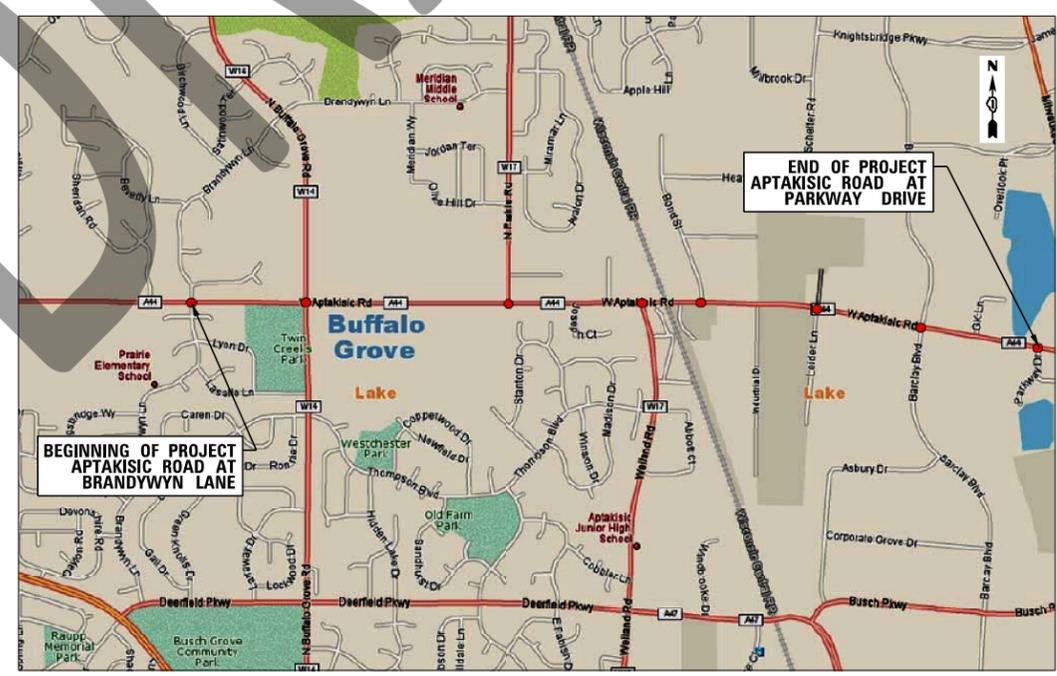
TRAFFIC DATA

ROUTE SEGMENT	SPEED (MPH)	ADT (2011)	CLASSIFICATION
APTAKISIC RD FROM IL 214US45 TO WEILAND ROAD	45	18,700	URBAN 5 LANE MINOR ARTERIAL
APTAKISIC RD FROM WEILAND RD TO PRAIRIE ROAD	45	19,400	URBAN 5 LANE MINOR ARTERIAL
APTAKISIC RD FROM PRAIRIE RD TO BUFFALO GROVE RD	45	18,000	URBAN 5 LANE MINOR ARTERIAL
APTAKISIC RD FROM BUFFALO GROVE RD TO BRANDYWYN LN	45	12,000	RURAL 3 LANE MINOR ARTERIAL



FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
1-800-892-0123
OR 811



CONTRACT NO.

PROJECT LENGTH = 2.1 MILES



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED _____ 20 _____
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

_____ 20 _____
ENGINEER OF DESIGN AND ENVIRONMENT

_____ 20 _____
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

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OF THE STATE OF ILLINOIS**

DISTRICT 1 - BUREAU OF TRAFFIC: STEVE TRAVIA / DARYLE DREW (847) 705-4420

LAKE COUNTY DIVISION OF TRANSPORTATION GENERAL NOTES

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GENERAL

- 1) All construction shall be done according to the State of Illinois "Standard Specifications for Road and Bridge Construction" adopted Jan. 1, 2013; the "Supplemental Specifications and Recurring Special Provisions", adopted Jan. 1, 2013; the Standards and Details shown on these plans; and the Special Provisions included in the contract documents.
- 2) The Contractor shall give notices and comply with applicable laws, ordinances, rules, regulations and lawful orders of all public authorities bearing on safety of persons or property or their protection from damage, injury or loss.
- 3) The Contractor shall notify the Engineer, Lake County Division of Transportation (847) 377-7400 a minimum of 72 hours prior to the commencement of work. The Contractor shall also notify the other agencies (state and local) and utilities prior to construction.
- 4) The Contractor shall ensure all permits have been obtained prior to the commencement of work.
- 5) Before acceptance by the County and final payment, all work will be inspected and approved by the Engineer. Final payment will be made after all the Contractor's work has been approved and accepted.
- 6) The Contractor shall at all times provide Traffic Control and Protection. No work shall commence until the Traffic Control requirements are met. This shall be accomplished by the application of traffic control devices as required by the Standard Specifications, contract special provisions and as shown on the plans.
- 7) The contract documents (plan, special provisions, details and standards) are not intended to show every detail and/or all details of the work to be performed and/or the materials and equipment to be supplied. The intent of the contract documents is to illustrate the design and layout. The Contractor shall be knowledgeable and regularly engaged in the type of work described by the contract documents, and shall be responsible for understanding their intent. Any work performed or item of equipment to be supplied which is not specifically called for by the contract document, but which is necessary to provide a complete and successful working system shall be included in the Contractor's scope of work at no additional cost to the County.
- 8) The Contractor shall plan his/her work based on their own explorations and observations to determine soil conditions at the location of the proposed work.
- 9) Trenches across paved surfaces shall be patched with either permanent or temporary pavement at the end of each work day. Temporary patching of trenches will not be paid for separately, but shall be included in the cost of the item placed in the trench.
- 10) The Contractor will be required to relocate or remove and replace signs which interfere with construction operations, and to temporarily reset all such signs during construction operations. This work will not be paid for separately, but shall be included in the cost of TRAFFIC CONTROL AND PROTECTION. All work involving signs shall be governed by the following requirements:
 - a) Signs shall not be moved until progress of work necessitates it.
 - b) Every sign removed must be re-erected at a temporary location in a workmanlike manner and be visible to traffic for which it is intended. All such signs must be maintained straight and clean for the duration of the temporary setting.
 - c) All signs shall be re-erected in permanent locations as the roadway is completed. Horizontal location from the edge of pavement shall be as designated by the engineer.
 - d) All unused signs will be returned to the County.
 - e) Longer posts may be required at some temporary or permanent sign locations to maintain proper sign elevations.

REMOVAL

- 1) It shall be the Contractor's responsibility to remove any and all materials and debris from the site that result from Construction operations, at no additional cost to the County. Removed pavement, sidewalk, curb, curb and gutter, unusable/unsalvageable materials, short term pavement markings, etc., shall be disposed of outside the right-of-way according to Article 202.03 of the Standard Specifications at locations provided by the Contractor at no additional cost to the County.

- 2) USE OF CCDD FILL OPERATIONS: If the Contractor chooses to dispose of uncontaminated soil mix with Clean Construction and Demolition Debris (CCDD) at a CCDD fill operation, it shall be the Contractor's responsibility to perform all necessary field and laboratory analysis and to obtain the licensed professional engineer's certification required as per Public Act 96-1416 to use the site. No additional compensation will be provided.

DRAINAGE

- 1) CONSTRUCTION OPERATIONS: During construction operations the Contractor shall ensure positive site drainage at the conclusion of each day. Site drainage may be achieved by ditching, pumping, or any other method acceptable to the Engineer. During construction operations when any loose material is deposited in the flow line of ditches, gutters or drainage structures so the natural flow of water is obstructed, the material shall be removed at the close of each working day. At the conclusion of construction operations all drainage structures shall be free from all dirt and debris. This work will not be paid for separately but shall be considered included in the cost of the project.

MEASUREMENTS

- 1) Unless otherwise noted, locations shown on the plans are to the edge of pavement, etc., are measured from the centerline. Flat tops and cones are to be eccentric. Station/offset labels and locations for flared end sections are to the outside end of the end sections.

MISCELLANEOUS

- 1) The Contractor shall provide access to the abutting properties at all times during construction of this project. Any cost incurred by the Contractor to meet this requirement that is not covered by a specific pay item will be included in the unit cost of TRAFFIC CONTROL AND PROTECTION.
- 2) The Contractor shall be responsible for returning all existing areas (to remain) affected by construction activities, equipment, or laborers to the original undisturbed conditions. The Contractor shall also be responsible for protecting all new work until the completion of the contract.
- 3) Where new work is proposed to meeting existing features, it shall be the Contractors responsibility to field check all dimensions and elevations and notify the Engineer of discrepancies before proceeding with construction.
- 4) Where proposed curb and/or curb and gutter meet existing curb and gutter, the proposed curb and gutter shall transition to the existing over a distance of ten feet or as directed by the Engineer. The transition length will be paid for at the contract unit price of the proposed curb and gutter.
- 5) All unballasted Type I and Type II barricades shall be installed as specified in the NCHRP 350 Letter for the device.
- 6) The Contractors attention is called to the fact that some quantities are given in both summary form and on the plan sheets. Care should be taken to avoid duplication of quantities
- 7) All pedestrian routes constructed as part of this project shall be ADA compliant. Depressed curbs shall be provided as shown on the plans. Transitions from full curb height to depressed curb shall be six feet long. This work shall be included in the unit price of the proposed concrete curb and gutter.
- 8) Sidewalk ramps shall be installed at all intersecting streets at the locations shown on the plans. The ramps shall be installed according to IDOT standard 424001 and LCDOT standard LC4201. Detectable Warnings shall be placed in the sidewalk at locations shown on the plans, behind the depressed concrete curb and gutter.
- 9) The Contractor shall repair, to the satisfaction of the Engineer, all damage to existing items not scheduled for removal. This work shall be done by the Contractor at the Contractors own expense.
- 10) POLLUTION CONTROL: The Contractor shall be required to comply with all state and local regulations regarding air, water and noise pollution. The Contractor will not be allowed to build fires on the site.
- 11) ROW MONUMENTS: Where section and subsection monuments are encountered, the Engineer shall be notified before the monuments are removed. The Contractor shall carefully preserve all property marks and monuments until the owner, authorized surveyor or agent has witnessed or otherwise reference their location. Any right-of-way markers distributed by the Contractors operations that are not scheduled for removal shall be reestablished by a Registered Land Surveyor at the Contractors expense.

UTILITIES

- 1) The locations of public and/or private utilities shown on the plans are approximate and their accuracy is not guaranteed. The Contractor shall be required to ascertain the exact location of such utilities so as not to damage them according to Article 107.31 of the Standard Specifications. The Contractor shall be responsible for contacting the utility owners so that their facilities may be adjusted or relocated if necessary prior to construction operations.
- 2) The Contractor shall be responsible for any damage or destruction of public or private property according to Article 107.20 of the Standard Specifications. The Contractor shall restore such property at his/her own expense. The Contractor shall use all necessary precautions and protective measures required to maintain existing utilities, sewers and appurtenances that must be kept in operation. In particular the Contractor shall take adequate measures to prevent the undermining of utilities and sewers which are still in service.
- 3) When the plans or special provisions include information pertaining to the location of existing utility facilities, such information only represents the opinion of the Engineer as to the location of such facilities and is only included for the Contractor's convenience. The Engineer and the County assume no responsibility for the sufficiency or accuracy of the information shown in the plan relating to the location of existing facilities or the manner in which they are to be removed or adjusted.
- 4) Coordination of all utility work involved in the construction area will be discussed at the preconstruction meeting. The Contractor is responsible for verifying the nature and status of all utility relocation work prior to the start of construction. The Contractor shall take appropriate measures to ensure that his/her construction activities do not interfere with utility facilities and relocation work. The Contractor's schedule should reflect construction sequencing which coordinates with all utility relocation work. The Contractor shall be required to adjust the sequence schedule of work to coordinate with the relocation schedule of conflicting utility companies.

SURVEYED _____ ALIGNED _____ RT. OF WAY CHECKED _____ PLOTTED FILE NAME _____	DATE _____ BY _____
PLAN _____ NOTE BOOK _____ NO. _____	DATE _____ BY _____
CHRISTOPHER B. BURKE ENGINEERING LTD. 8575 West Higgins Road, Suite 600 Rosemont, Illinois 60018 (647) 923-9500	
SURVEYED _____ GRADES CHECKED _____ ELEM. NOTED _____ STRUCTURE NOTATIONS CHKD _____	DATE _____ BY _____
PROFILE _____ NOTE BOOK _____ NO. _____	

FILE NAME =	USER NAME = ejensen	DESIGNED - FN	REVISED -	LakeCounty Division of Transportation	INDEX OF SHEETS			F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.		
N:\LCDDT\120226V2 - Aptakisic Adaptive	Traffic\INDEX OF SHEETS.dgn	DRAWN - EAJ	REVISED -		SCALE:	SHEET NO.	OF SHEETS	STA.	TO STA.	1258	11-00088-19-TL	LAKE	39	2
	PLOT SCALE = 48"	CHECKED - GMZ	REVISED -					CONTRACT NO.						
	PLOT DATE = 4/19/2013	DATE - 8/15/2012	REVISED -		FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT									

SUMMARY OF QUANTITIES

PROFILE SURVEYED _____ DATE _____
 GRADES CHECKED _____
 ELEM. NOTED _____
 STRUCTURE NOTATIONS OKWD
 NO. _____
 NOTE BOOK _____
 PLAN SURVEYED _____ DATE _____
 RT. OF WAY CHECKED _____
 ALIGNMENT CHECKED _____
 NO. _____
 NO. _____
 SURVEYED _____ DATE _____
 RT. OF WAY CHECKED _____
 ALIGNMENT CHECKED _____
 NO. _____
 NO. _____

CHRISTOPHER B. BURKE
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 8575 West Higgins Road, Suite 600
 Rosemont, Illinois 60018
 (647) 923-9500

CODE NO.	ITEM	UNIT	TOTAL	Aptakistic @ Brandywyn Ln	Aptakistic @ Buffalo Grove Rd	Aptakistic @ Prairie Rd	Aptakistic @ Weiland Rd	Aptakistic @ Bond St	Aptakistic @ Leider Ln	Aptakistic @ Barclay Blvd	Aptakistic @ Parkway Dr	Aptakistic Interconnect
67100100	MOBILIZATION	L SUM	1									1
81028200	UNDERGROUND CONDUIT, GALVANIZED STEEL, 2" DIA.	FOOT	815	406					409			
81400100	HANDHOLE	EACH	2	1					1			
85000200	MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	8	1	1	1	1	1	1	1	1	
87301305	ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR	FOOT	12366	1264	1074	1030	3448	1050	2460	996	1044	
87900200	DRILL EXISTING HANDHOLE	EACH	7	2			2		3			
88500100	INDUCTIVE LOOP DETECTOR	EACH	20	2	2	2	4	2	4	2	2	
88600100	DETECTOR LOOP, TYPE I	FOOT	255	58			66		131			
89502210	MODIFY EXISTING CONTROLLER CABINET	EACH	8	1	1	1	1	1	1	1	1	
X7010216	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)	L SUM	1									1
X8570215	FULL-ACTUATED CONTROLLER IN EXISTING CABINET	EACH	6		1	1	1	1		1	1	
XX008256	UPGRADE EXISTING CONTROLLER TO NTCIP SPECIAL	EACH	2	1					1			
XX008392	OUTDOOR RATED NETWORK CABLE	FOOT	550	65	67	58	75	54	97	66	68	
XX008708	CHANNEL CONTACT CLOSURE CARD	EACH	2				1	1				
Z0033056	OPTIMIZE TRAFFIC SIGNAL SYSTEM	EACH	1									1
	BLUETOOTH DETECTOR	EACH	8	1	1	1	1	1	1	1	1	

DRAFT

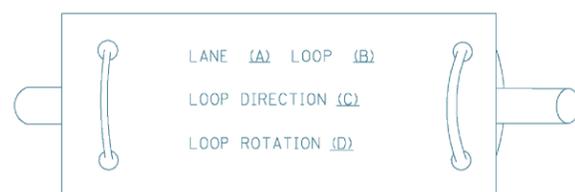
TRAFFIC SIGNAL LEGEND

ITEM	REMOVAL	EXISTING	PROPOSED	ITEM	REMOVAL	EXISTING	PROPOSED	ITEM	REMOVAL	EXISTING	PROPOSED
CONTROLLER CABINET				EMERGENCY VEHICLE LIGHT DETECTOR				ELECTRIC CABLE IN CONDUIT, TRACER, NO. 14 1/C, UNLESS NOTED OTHERWISE			
RAILROAD CONTROL CABINET				CONFIRMATION BEACON				COAXIAL CABLE			
COMMUNICATIONS CABINET				HANDHOLE				VENDOR CABLE FOR CAMERA			
MASTER CONTROLLER				HEAVY DUTY HANDHOLE				COPPER INTERCONNECT CABLE, NO. 18 3 PAIR TWISTED, SHIELDED			
MASTER MASTER CONTROLLER				DOUBLE HANDHOLE				FIBER OPTIC CABLE NO. 62.5/125, MM12F			
UNINTERRUPTIBLE POWER SUPPLY				JUNCTION BOX				FIBER OPTIC CABLE NO. 62.5/125, MM12F SM12F			
SERVICE INSTALLATION, (P) POLE OR (G) GROUND MOUNT				GALVANIZED STEEL CONDUIT IN TRENCH (T) OR PUSHED (P)				FIBER OPTIC CABLE NO. 62.5/125, MM12F SM21F			
TELEPHONE CONNECTION (P) POLE OR (G) GROUND MOUNT				TEMPORARY SPAN WIRE, TETHER WIRE, AND CABLE				FIBER OPTIC CABLE NO. 62.5/125, (NUMBER OF FIBERS & TYPE TO BE NOTED ON PLANS)			
STEEL MAST ARM ASSEMBLY AND POLE				COMMON TRENCH				GROUND ROD AT (C) CONTROLLER, (H) HANDHOLE, (P) POST, (M) MAST ARM, OR (S) SERVICE			
ALUMINUM MAST ARM ASSEMBLY AND POLE				COILABLE NONMETALLIC CONDUIT (EMPTY)				CONTROLLER CABINET AND FOUNDATION TO BE REMOVED			
STEEL COMBINATION MAST ARM ASSEMBLY AND POLE WITH LUMINAIRE				SYSTEM ITEM				STEEL MAST ARM POLE AND FOUNDATION TO BE REMOVED			
STEEL COMBINATION MAST ARM ASSEMBLY AND POLE WITH PTZ CAMERA				INTERSECTION ITEM				ALUMINUM MAST ARM POLE AND FOUNDATION TO BE REMOVED			
SIGNAL POST				REMOVE ITEM				STEEL COMBINATION MAST ARM ASSEMBLY AND POLE WITH LUMINAIRE AND FOUNDATION TO BE REMOVED			
TEMPORARY WOOD POLE (CLASS 5 OR BETTER) 45 FOOT (13.7m) MINIMUM				RELOCATE ITEM				SIGNAL POST AND FOUNDATION TO BE REMOVED			
GUY WIRE				ABANDON ITEM				INTERSECTION & SAMPLING (SYSTEM) DETECTOR			
SIGNAL HEAD				12" (300mm) TRAFFIC SIGNAL SECTION				SAMPLING (SYSTEM) DETECTOR			
SIGNAL HEAD CONSTRUCTION STAGES (NUMBERS INDICATE THE CONSTRUCTION STAGE)				12" (300mm) RED WITH 8" (200mm) YELLOW AND GREEN TRAFFIC SIGNAL FACE				EXISTING INTERSECTION LOOP DETECTOR PROPOSED INTERSECTION AND SAMPLING (SYSTEM) DETECTOR			
SIGNAL HEAD WITH BACKPLATE				SIGNAL FACE				EXISTING PREFORMED INTERSECTION LOOP DETECTOR PROPOSED INTERSECTION AND SAMPLING (SYSTEM) DETECTOR			
SIGNAL HEAD OPTICALLY PROGRAMMED				SIGNAL FACE WITH BACKPLATE. "P" INDICATES PROGRAMMED HEAD				PREFORMED INTERSECTION AND SAMPLING (SYSTEM) DETECTOR			
FLASHER INSTALLATION (S DENOTES SOLAR POWER)				12" (300mm) PEDESTRIAN SIGNAL HEAD WALK/DON'T WALK SYMBOL				PREFORMED SAMPLING (SYSTEM) DETECTOR			
PEDESTRIAN SIGNAL HEAD				12" (300mm) PEDESTRIAN SIGNAL HEAD INTERNATIONAL SYMBOL, OUTLINED				RAILROAD SYMBOLS			
PEDESTRIAN PUSHBUTTON DETECTOR				12" (300mm) PEDESTRIAN SIGNAL HEAD INTERNATIONAL SYMBOL, SOLID				RAILROAD CONTROL CABINET			
ACCESSIBLE PEDESTRIAN PUSHBUTTON DETECTOR				PEDESTRIAN SIGNAL HEAD, INTERNATIONAL SYMBOL, WITH COUNTDOWN TIMER				RAILROAD CANTILEVER MAST ARM			
ILLUMINATED SIGN "NO LEFT TURN"				RADIO INTERCONNECT				FLASHING SIGNAL			
ILLUMINATED SIGN "NO RIGHT TURN"				RADIO REPEATER				CROSSING GATE			
DETECTOR LOOP, TYPE I				DENOTES NUMBER OF CONDUCTORS, ELECTRIC CABLE NO. 14, UNLESS NOTED OTHERWISE, ALL DETECTOR LOOP CABLE TO BE SHIELDED				CROSSBUCK			
PREFORMED DETECTOR LOOP				GROUND CABLE IN CONDUIT NO. 6 SOLID COPPER (GREEN)							
MICROWAVE VEHICLE SENSOR											
VIDEO DETECTION CAMERA											
VIDEO DETECTION ZONE											
PAN, TILT, ZOOM CAMERA											
WIRELESS DETECTOR SENSOR											
WIRELESS ACCESS POINT											

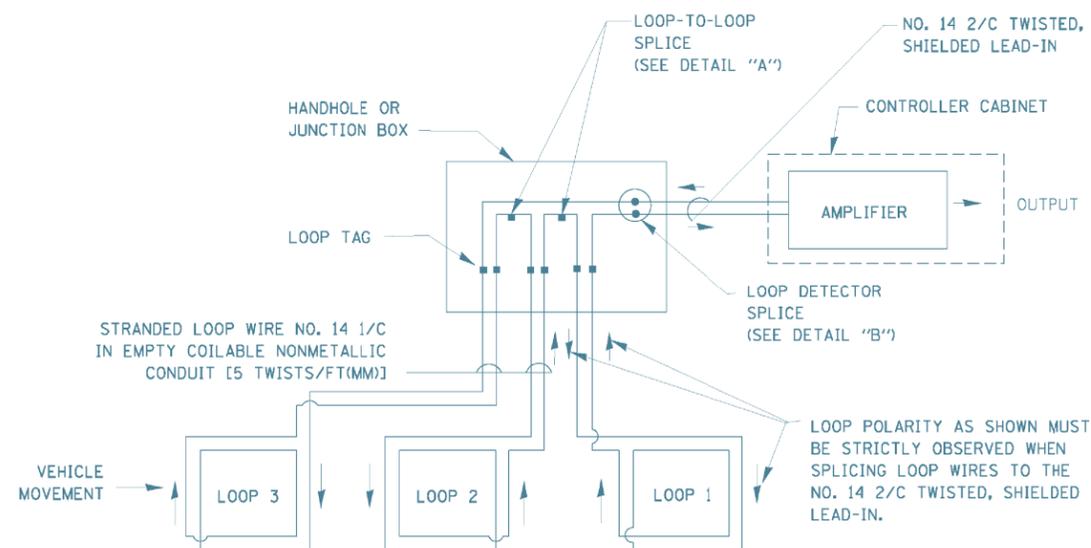
LOOP DETECTOR NOTES

- EACH PAIR OF LOOP WIRES SHALL BE PLACED IN A SEPARATE EMPTY COILABLE NONMETALLIC CONDUIT FROM THE EDGE OF PAVEMENT TO THE HANDHOLE. SPACING BETWEEN THE HOLES DRILLED IN THE PAVEMENT SHALL NOT BE LESS THAN 6" (150 mm). EMPTY COILABLE NONMETALLIC CONDUIT SHALL BE INCLUDED IN THE COST OF THE LOOP WIRE.
- THE NUMBER OF LOOP TURNS SHALL BE AS RECOMMENDED BY THE AMPLIFIER MANUFACTURER. ALL ADJACENT SIDES OF THE LOOPS SHALL BE INSTALLED IN SUCH A WAY THAT THE CURRENT FLOW IS IN THE SAME DIRECTION TO REINFORCE ITS MAGNETIC FIELDS FOR SMALL VEHICLE DETECTION.
- EACH LOOP LEAD-IN SHALL BE IDENTIFIED AND PERMANENTLY TAGGED IN THE HANDHOLE. EACH LEAD-IN CABLE TAG SHALL INDICATE THE LOCATION OF THE LOOP, LOOP ROTATION (CLOCKWISE/COUNTERCLOCKWISE), LOOP LEAD-IN DIRECTION (IN OR OUT), LOOP CABLE NUMBER AND LOCATION IN CABINET, AND NUMBER OF TURNS IN THE DETECTOR LOOPS IN WATER PROOF INK AS INDICATED ON THE DISTRICT 1 STANDARD TRAFFIC SIGNAL DESIGN DETAIL. THE CONTRACTOR SHALL MARK LOOP LOCATIONS ON RECORD DRAWINGS AND PRESENT TO THE ENGINEER AFTER FINAL INSPECTION. LOOPS SHALL BE MARKED BY LANE AND LOOP NUMBER. SEE DETAIL BELOW.
- ALL LOOP CABLE SHALL BE FASTENED WITH PLASTIC TIE WRAP TO THE HANDHOLE HOOKS.
- IN ASPHALT PAVEMENT, LOOPS SHOULD BE PLACED IN THE BINDER AND DIVEHOLES MARKED AT THE CURB WITH A SAW-CUT. THE SAW-CUT SHALL BE CUT IN ACCORDANCE WITH LOCAL AND E.P.A. DUST CONTROL REQUIREMENTS. DETECTOR LOOP(S) SHALL NOT BE INSTALLED IN WET CONDITIONS AND THE SAW-CUTS MUST BE FREE OF DEBRIS AND RESIDUE SUCH AS DUST AND WATER WHICH IS TO BE ACHIEVED BY THE USE OF COMPRESSED AIR, WIRE BRUSHING AND HEAT DRYING ACCORDING TO SEALANT MANUFACTURER REQUIREMENTS. THE DETECTOR WIRE SHALL BE HELD IN PLACE BY THE USE OF FORM WEDGES. WEDGES SHALL BE SPACED NO MORE THAN 18" (450 mm) APART.
- LOOP SPLICES SHALL BE SOLDERED USING A SOLDERING IRON. BLOW TORCHES OR OTHER DEVICES WHICH OXIDIZE COPPER CABLE SHALL NOT BE ALLOWED FOR SOLDERING OPERATIONS. SEE DETAIL BELOW RIGHT.
- PREFORMED DETECTOR LOOPS SHALL BE USED, AS SHOWN ON THE PLANS, WHERE NEW CONCRETE PAVEMENT IS PROPOSED. THE INSTALLATION OF PREFORMED LOOPS SHALL BE IN ACCORDANCE WITH THE DISTRICT 1 SPECIFICATIONS OR AS DIRECTED BY THE ENGINEER.

LOOP LEAD-IN CABLE TAG

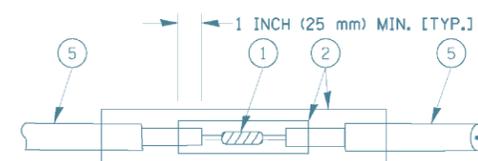


- LANE 1 IS THE LANE CLOSEST TO THE CENTERLINE OF THE ROADWAY
- LOOP #1 IS THE LOOP IN THE LANE CLOSEST TO THE INTERSECTION.
- LABEL LOOP CABLE "IN" OR LOOP CABLE "OUT".
- LABEL LOOP CABLE CLOCKWISE OR LOOP CABLE COUNTERCLOCKWISE.

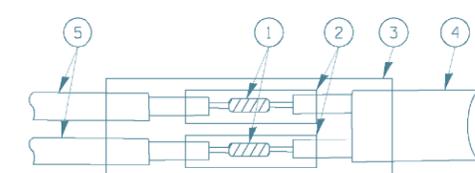


DETECTOR LOOP WIRING SCHEMATIC

- LOOPS SHALL BE SPLICED IN SERIES.
- SAW-CUTS SHALL BE A MINIMUM WIDTH OF 5/16" (8 mm).
- SAW-CUT DEPTHS SHALL BE 3" (75 mm). IF IN CONCRETE, THE SAW-CUT DEPTH SHALL BE TO THE TOP OF THE REINFORCEMENT.
- LOOP CORNERS SHALL BE DRILLED WITH A 2" (50 mm) DIAMETER CORE.

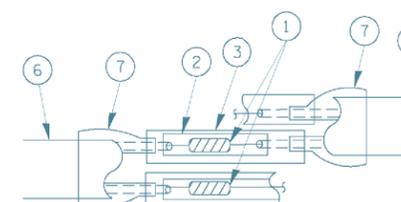


DETAIL "A"
LOOP-TO-LOOP SPLICE

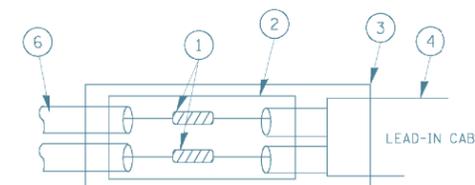


DETAIL "B"
LOOP-TO-CONTROLLER SPLICE

TYPE I LOOP



DETAIL "A"
LOOP-TO-LOOP SPLICE



DETAIL "B"
LOOP-TO-CONTROLLER SPLICE

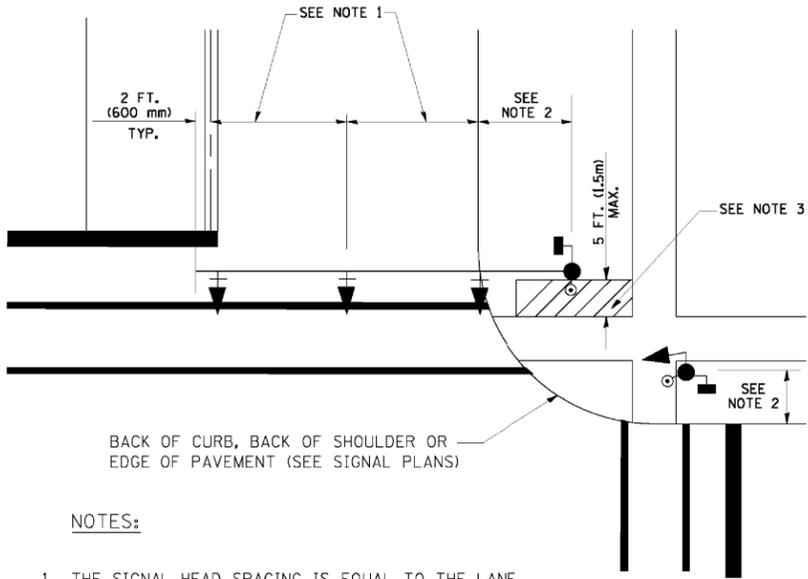
LOOP DETECTOR SPLICE

- WESTERN UNION SPLICE SOLDERED WITH ROSIN CORE FLUX. ALL EXPOSED SURFACES OF THE SOLDER SHALL BE SMOOTH.
- WCSMW 30/100 HEAT SHRINK TUBE, MINIMUM LENGTH 3" (75 mm), UNDERWATER GRADE.
- WCS 200/750 HEAT SHRINK TUBE, MINIMUM LENGTH 6" (150 mm), UNDERWATER GRADE.
- NO. 14 2/C TWISTED, SHIELDED CABLE.
- LOOP CONDUCTOR WITH FLEXIBLE PLASTIC TUBE.
- PREFORMED LOOP
- XL POLYOLEFIN 2 CONDUCTOR BREAKOUT SEALS. TYCO CBR-2 OR APPROVED EQUAL

FILE NAME =	USER NAME = bauerdl	DESIGNED - DAD	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DISTRICT ONE STANDARD TRAFFIC SIGNAL DESIGN DETAILS	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
ca:\work\p\1001\BAUERDL\d0106315\ts05.dgn	DRAWN - BCK	REVISED -	1258			11-00088-19-TL	LAKE	39	5	
PLOT SCALE = 50.0000 / / IN.	CHECKED - DAD	REVISED -	TS-05			CONTRACT NO.				
PLOT DATE = 11/4/2009	DATE - 10-28-09	REVISED -	FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT							
				SCALE: NONE	SHEET NO. 1 OF 6 SHEETS	STA.	TO STA.			

TRAFFIC SIGNAL MAST ARM AND SIGNAL POST

MAST ARM MOUNTED SIGNALS IN EXISTING, PROPOSED OR FUTURE SIDEWALK/BICYCLE PATH AREA. INTERSECTION SHOWN WITH PEDESTRIAN SIGNALS AND PEDESTRIAN PUSHBUTTON DETECTORS.

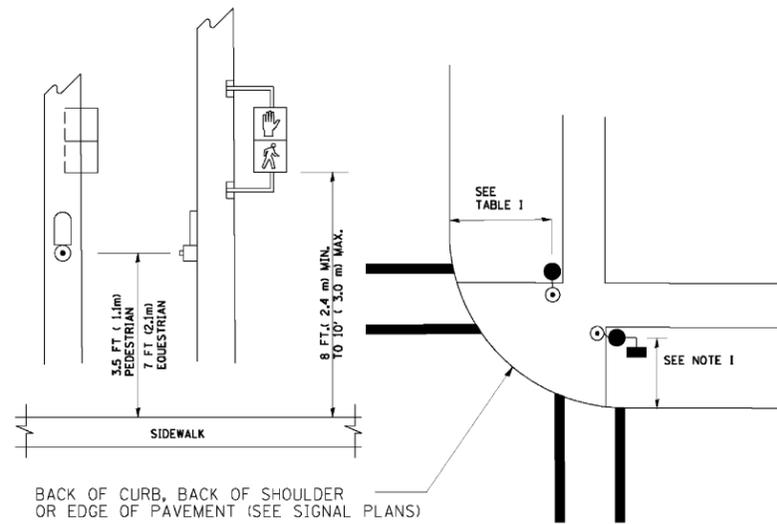


BACK OF CURB, BACK OF SHOULDER OR EDGE OF PAVEMENT (SEE SIGNAL PLANS)

NOTES:

1. THE SIGNAL HEAD SPACING IS EQUAL TO THE LANE WIDTH OR AS SHOWN ON THE TRAFFIC SIGNAL PLAN.
2. REFER TO THE TRAFFIC SIGNAL EQUIPMENT OFFSET TABLE.
3. PROVIDE A LEVEL ALL-WEATHER SURFACE (CONCRETE SIDEWALK, ASPHALT BICYCLE PATH SURFACE OR MATCHING MATERIAL TO THE ADJACENT SURFACE) UP TO THE MAST ARM SHAFT OR THE SIGNAL POST.
4. THE FACE OF THE PEDESTRIAN PUSHBUTTON SHALL BE PARALLEL TO THE CROSSWALK TO BE USED.
5. THE LOCATIONS AND INSTALLATION OF PEDESTRIAN SIGNAL HEADS AND PEDESTRIAN PUSHBUTTONS SHALL MEET THE REQUIREMENTS OF THE MUTCD AND INFORMATION FOUND IN THE "AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES FOR BUILDINGS AND FACILITIES."

PEDESTRIAN SIGNAL POST AND PEDESTRIAN PUSH BUTTON POST

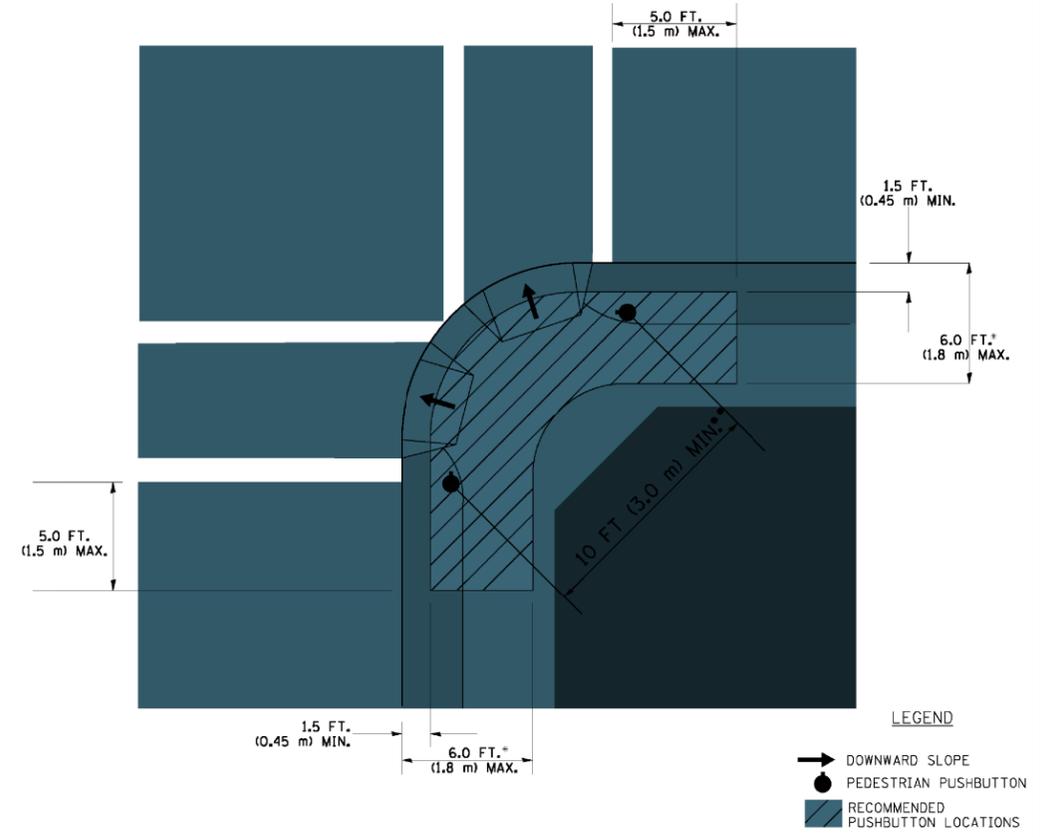


BACK OF CURB, BACK OF SHOULDER OR EDGE OF PAVEMENT (SEE SIGNAL PLANS)

NOTES:

1. REFER TO THE TRAFFIC SIGNAL EQUIPMENT OFFSET TABLE.
2. PROVIDE A LEVEL ALL-WEATHER SURFACE (CONCRETE SIDEWALK, ASPHALT BICYCLE PATH SURFACE OR MATCHING MATERIAL TO THE ADJACENT SURFACE) UP TO THE PEDESTRIAN SIGNAL POST OR THE PEDESTRIAN PUSH BUTTON POST.
3. THE FACE OF THE PEDESTRIAN PUSHBUTTON SHALL BE PARALLEL TO THE CROSSWALK TO BE USED.
4. THE LOCATIONS AND INSTALLATION OF PEDESTRIAN SIGNAL HEADS AND PEDESTRIAN PUSHBUTTONS SHALL MEET THE REQUIREMENTS OF THE MUTCD AND INFORMATION FOUND IN THE "AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES FOR BUILDINGS AND FACILITIES."

RECOMMENDED PUSHBUTTON LOCATIONS



LEGEND

- DOWNWARD SLOPE
- PEDESTRIAN PUSHBUTTON
- RECOMMENDED PUSHBUTTON LOCATIONS

- WHERE THERE ARE CONSTRAINTS THAT MAKE IT IMPRACTICAL TO PLACE THE PEDESTRIAN PUSHBUTTON BETWEEN 1.5 FT (0.45 m) AND 6 FT (1.8 m) FROM THE EDGE OF THE CURB, SHOULDER, OR PAVEMENT, IT SHOULD NOT BE FURTHER THAN 10 FT (3 m) FROM THE EDGE OF CURB, SHOULDER, OR PAVEMENT.
- WHERE THERE ARE CONSTRAINTS ON A PARTICULAR CORNER THAT MAKE IT IMPRACTICAL TO PROVIDE THE 10 FT (3 m) SEPERATION BETWEEN THE TWO PEDESTRIAN PUSHBUTTONS, THE PUSHBUTTONS MAY BE PLACED CLOSER TOGETHER OR ON THE SAME POLE.

NOTES:

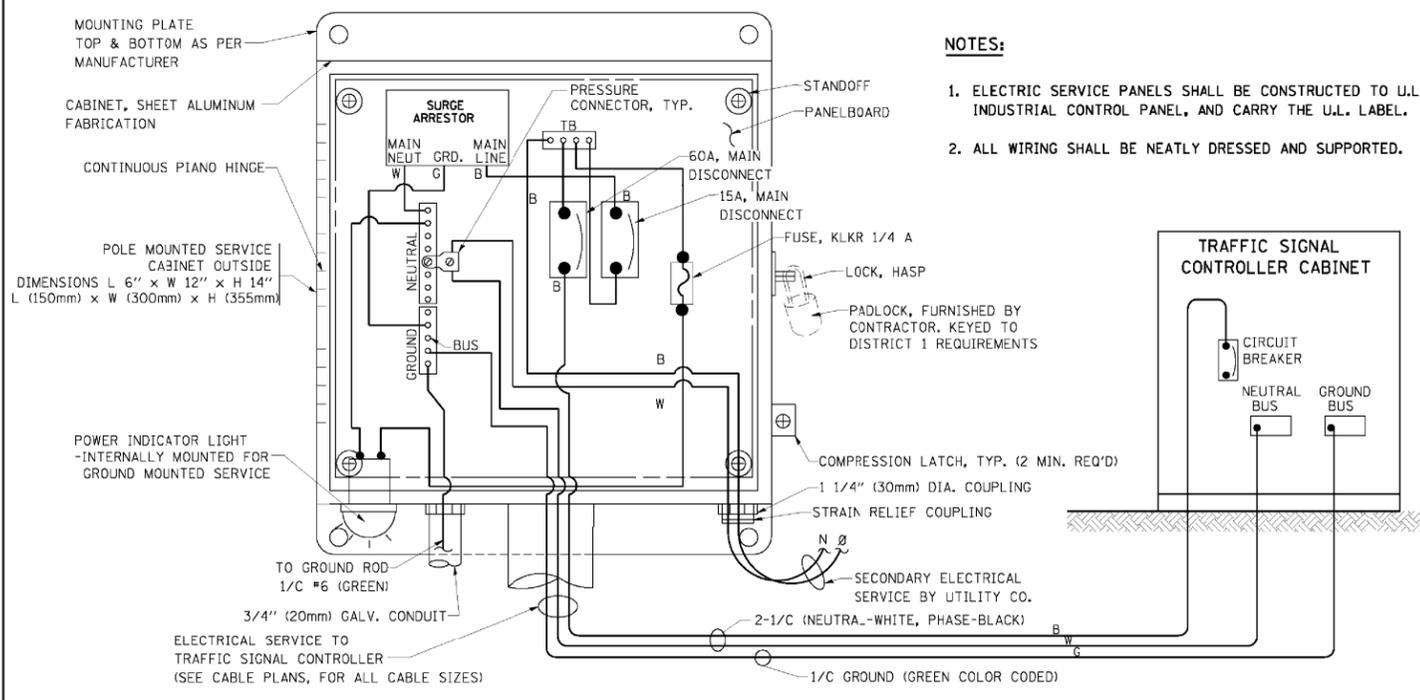
1. PEDESTRIAN SIGNAL HEADS SHALL BE MOUNTED WITH THE BOTTOM OF THE SIGNAL HOUSING INCLUDING BRACKETS NOT LESS THAN 8 FT (2.4 m) OR MORE THAN 10 FT (3 m) ABOVE SIDEWALK LEVEL, AND SHALL BE POSITIONED AND ADJUSTED TO PROVIDE MAXIMUM VISIBILITY AT THE BEGINNING OF THE CONTROLLED CROSSWALK.
2. THE BOTTOM OF THE SIGNAL HOUSING (INCLUDING BRACKETS) OF A VEHICULAR SIGNAL FACE THAT IS NOT LOCATED OVER A HIGHWAY SHALL BE AT LEAST 8 FT (2.4 m) BUT NOT MORE THAN 19 FT (5.8 m) ABOVE THE SIDEWALK OR, IF THERE IS NO SIDEWALK, ABOVE THE PAVEMENT GRADE AT THE CENTER OF THE ROADWAY.
3. THE BOTTOM OF THE SIGNAL HOUSING AND ANY RELATED ATTACHMENTS TO A SIGNAL FACE LOCATED OVER ANY PORTION OF A HIGHWAY SHALL BE ACCORDING TO CURRENT STATE STANDARDS 877001, 877002, 877006, 877011 AND 877012 WITH A MINIMUM OF 16 FT (5.0 m) AND A MAXIMUM OF 18 FT. (5.5 m) FROM THE HIGHEST POINT OF PAVEMENT.
4. THE BOTTOM OF THE TEMPORARY SPAN WIRE MOUNTED SIGNAL HOUSING AND ANY RELATED ATTACHMENTS TO A SIGNAL FACE LOCATED OVER ANY PORTION OF A HIGHWAY SHALL BE ACCORDING TO CURRENT STATE STANDARD 880001 WITH A MINIMUM OF 17 FT (5.18 m) FROM THE HIGHEST POINT OF PAVEMENT.
5. THE TOP OF THE SIGNAL HOUSING OF A SIGNAL FACE LOCATED OVER ANY PORTION OF A HIGHWAY SHALL NOT BE MORE THAN 25.6 FT (7.8 m) ABOVE THE PAVEMENT.

TRAFFIC SIGNAL EQUIPMENT OFFSET

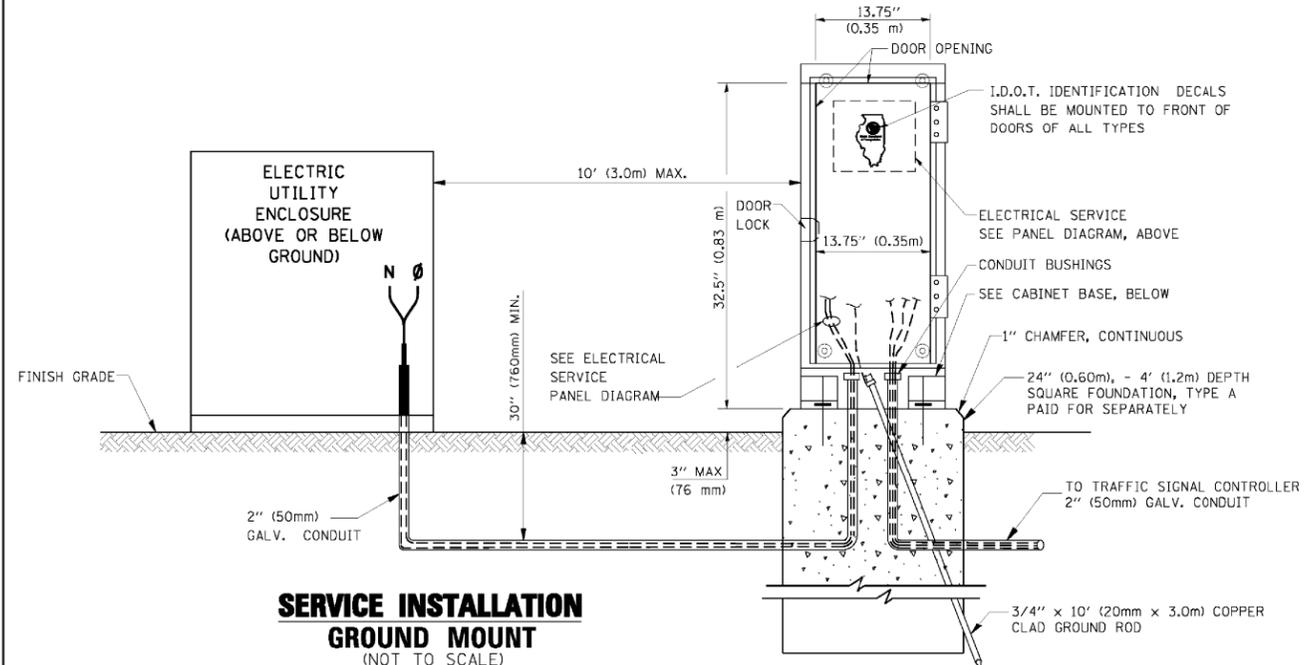
TRAFFIC SIGNAL EQUIPMENT	COMBINATION CONCRETE CURB AND GUTTER (MINIMUM DISTANCE FROM BACK OF CURB TO CENTERLINE OF FOUNDATION)	SHOULDER/NON-CURBED AREA (MINIMUM DISTANCE FROM EDGE OF PAVEMENT TO CENTERLINE OF FOUNDATION)
TRAFFIC SIGNAL MAST ARM POLE	6 FT (1.8m)	SHOULDER WIDTH + 2 FT (0.6m), MINIMUM 10 FT (3.0m)
TRAFFIC SIGNAL POST	4 FT (1.2m)	SHOULDER WIDTH + 2 FT (0.6m), MINIMUM 10 FT (3.0m)
PEDESTRIAN SIGNAL POST	4 FT (1.2m)	SHOULDER WIDTH + 2 FT (0.6m), MINIMUM 10 FT (3.0m)
PEDESTRIAN PUSHBUTTON POST	4 FT (1.2m)	SHOULDER WIDTH + 2 FT (0.6m), MINIMUM 10 FT (3.0m)
TEMPORARY WOOD POLE	6 FT (1.8m)	SHOULDER WIDTH + 2 FT (0.6m), MINIMUM 10 FT (3.0m)
CONTROLLER CABINET	6 FT (1.8m) MINIMUM DISTANCE SEE NOTE 2	SHOULDER WIDTH + 6 FT (1.8m), MINIMUM 16 FT (4.9m) SEE NOTE 3.
SERVICE INSTALLATION, GROUND MOUNT	6 FT (1.8m) MINIMUM DISTANCE SEE NOTE 2	SHOULDER WIDTH + 6 FT (1.8m), MINIMUM 16 FT (4.9m) SEE NOTE 3.

NOTES:

1. CONTACT THE "AREA TRAFFIC SIGNAL MAINTENANCE AND OPERATIONS ENGINEER" FOR ASSISTANCE IN LOCATING THE TRAFFIC SIGNAL EQUIPMENT WHEN THERE ARE CONFLICTS WITH DITCHES OR THE MINIMUM OFFSET DISTANCES CANNOT BE MET.
2. MINIMUM DISTANCE FROM THE BACK OF CURB TO THE ROADWAY SIDE OF THE FOUNDATION.
3. MINIMUM DISTANCE FROM THE EDGE OF PAVEMENT TO THE ROADWAY SIDE OF THE FOUNDATION.
4. ANY CHANGES TO THE OFFSETS OF THE FOUNDATIONS, FROM THE MINIMUM DISTANCES LISTED IN THE "TRAFFIC SIGNAL EQUIPMENT OFFSET" CHART AND THE TRAFFIC SIGNAL INSTALLATION PLAN, COULD EFFECT THE PLACEMENT OF THE SIGNAL HEADS, PEDESTRIAN SIGNAL HEADS AND THE PEDESTRIAN PUSHBUTTONS. THE SIGNAL HEAD PLACEMENT ON THE MAST ARMS SHALL REMAIN AS PER THE TRAFFIC SIGNAL INSTALLATION PLAN AND THE "TRAFFIC SIGNAL MAST ARM AND SIGNAL POST" DETAIL ABOVE. THE PROPOSED MAST ARM LENGTHS MAY NEED TO BE REVISED TO MEET THE ABOVE REQUIREMENTS. THE PEDESTRIAN SIGNAL HEADS AND PEDESTRIAN PUSHBUTTONS MUST MEET THE REQUIREMENTS UNDER THE DETAILS ON THIS SHEET.

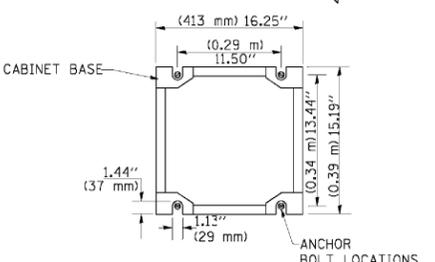


ELECTRICAL SERVICE - PANEL DIAGRAM (TYPICAL FOR POLE AND GROUND MOUNTED SERVICE)
SERVICE INSTALLATION POLE MOUNT (SHOWN)
 (NOT TO SCALE)



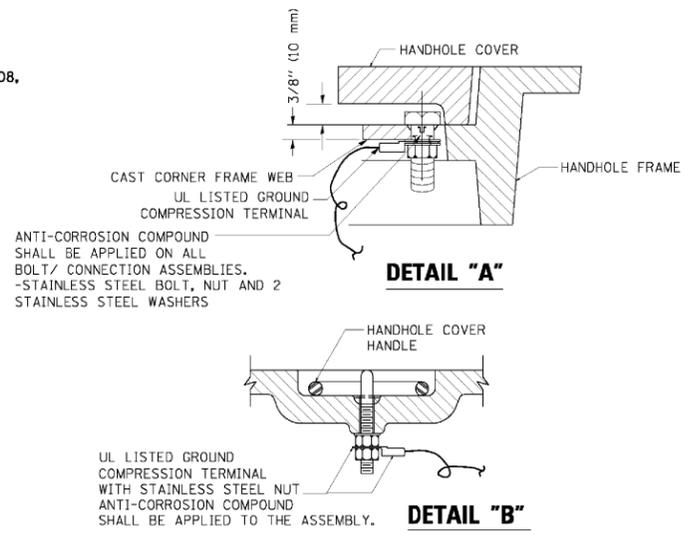
SERVICE INSTALLATION GROUND MOUNT
 (NOT TO SCALE)

CABINET - BASE BOLT PATTERN
 (NOT TO SCALE)

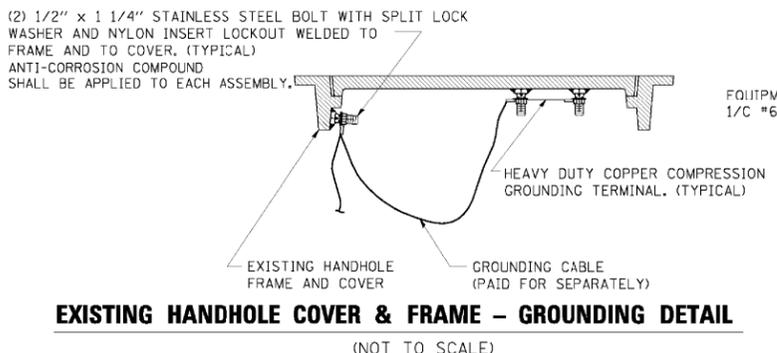


NOTES:

1. ELECTRIC SERVICE PANELS SHALL BE CONSTRUCTED TO U.L. STD 508, INDUSTRIAL CONTROL PANEL, AND CARRY THE U.L. LABEL.
2. ALL WIRING SHALL BE NEATLY DRESSED AND SUPPORTED.



HANDHOLE COVER & FRAME - GROUNDING DETAIL
 (NOT TO SCALE)

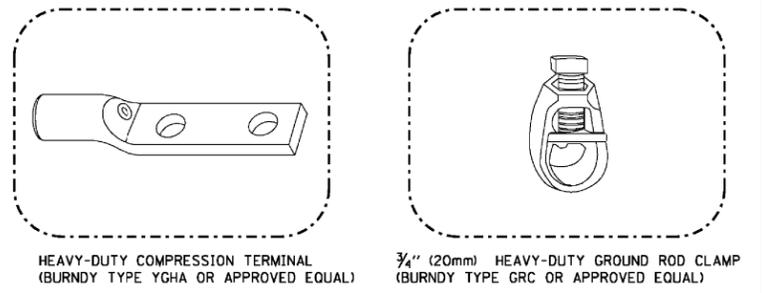


EXISTING HANDHOLE COVER & FRAME - GROUNDING DETAIL
 (NOT TO SCALE)

NOTES:

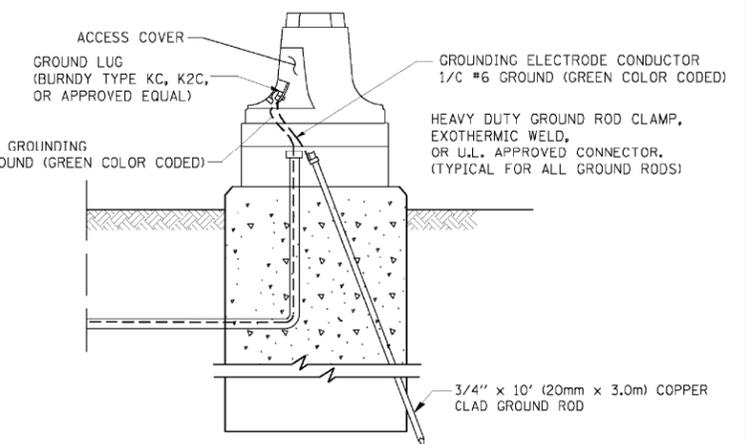
GROUNDING SYSTEM

1. THE GROUNDING SYSTEM SHALL CONSIST OF AN INSULATED CONDUCTOR TYPE XLP, NO. 6 A.W.G., STRANDED COPPER TO BE INSTALLED IN RACEWAYS. THE GROUNDING CABLE SHALL BE INSTALLED IN A CONTINUOUS MANNER AS SHOWN ON THE CABLE PLAN PROVIDED. ALL GROUNDING CONDUCTORS SHALL BE BONDED TO METAL ENCLOSURE (HANDHOLE, POST, MAST ARM, CONTROLLER, ETC.). GROUND ROD SHALL BE 3/4" DIA. x 10'-0" (20mm x 3.0m) LONG, COPPER CLAD. ONE GROUND ROD SHALL BE INSTALLED AT ALL POST FOUNDATIONS, POLE FOUNDATIONS, CONTROLLER CABINET FOUNDATION AND ELECTRICAL SERVICE INSTALLATION AS INDICATED ON THE CABLE PLAN. IF THERE ARE ANY SPECIAL CONDITIONS SUCH AS SUB-SURFACE CONDITIONS OR INSTALLATION PROBLEMS, THE RESIDENT ENGINEER SHALL BE NOTIFIED OR CONTACT THE BUREAU OF TRAFFIC, ILLINOIS DEPARTMENT OF TRANSPORTATION DISTRICT ONE AT (847) 705-4139.
2. THE NEUTRAL CONDUCTOR AND THE GROUND CONDUCTOR SHALL BE CONNECTED IN THE SERVICE INSTALLATION. AT NO OTHER POINT IN THE TRAFFIC SIGNAL SYSTEM SHALL THE NEUTRAL AND GROUND CONDUCTORS BE CONNECTED.
3. ALL EQUIPMENT GROUNDING CONDUCTORS SHALL TERMINATE AT THE GROUND BUS IN THE CONTROLLER CABINET.
4. THE CONTRACTOR SHALL PROVIDE A GROUND CABLE WITH CONNECTORS BETWEEN THE HANDHOLE COVER AND HANDHOLE FRAME.



NOTES:

- ALL CLAMPS SHALL BE BRONZE OR COPPER, UL APPROVED.
- GROUND CABLE SHALL BE LOOPED OVER HOOKS IN THE HANDHOLES 6.5' (2.0m) SLACK SHALL BE PROVIDED IN SINGLE HANDHOLES 13' (4.0m) OF SLACK SHALL BE PROVIDED IN DOUBLE HANDHOLES. 5' (1.4m) OF SLACK SHALL BE PROVIDED BETWEEN FRAME AND COVER.



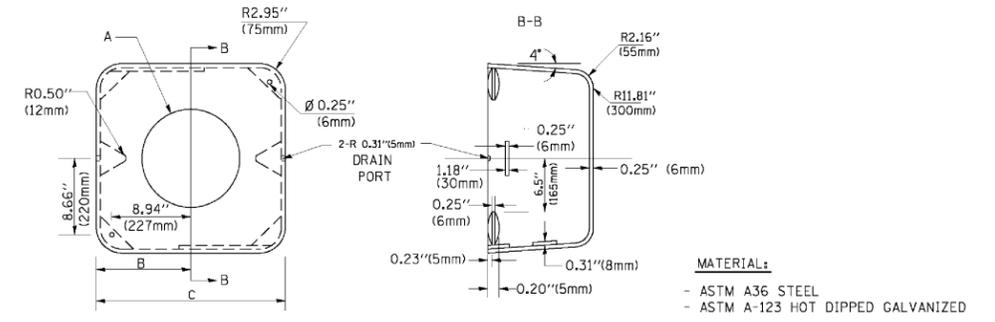
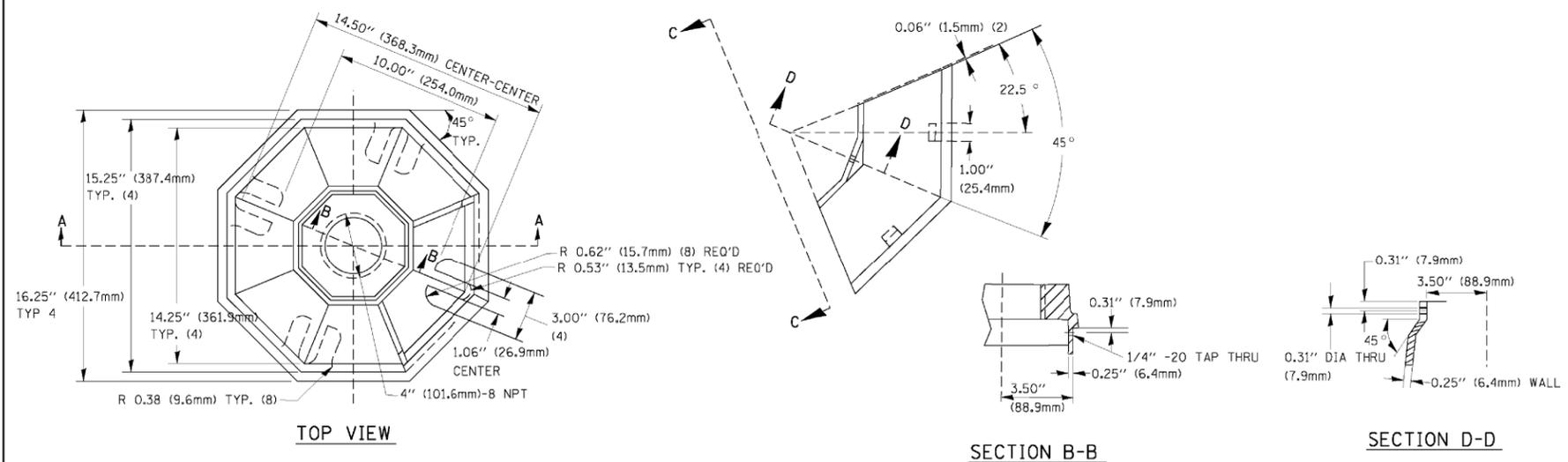
MAST ARM POLE / POST-GROUNDING DETAIL
 (NOT TO SCALE)

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c:\work\k\PWIDOT\BAUERD\01020315\1925.dgn		DRAWN - BCK	REVISED -
		CHECKED - DAD	REVISED -
		DATE - 10-28-09	REVISED -

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

DISTRICT ONE	
STANDARD TRAFFIC SIGNAL DESIGN DETAILS	
SCALE: NONE	SHEET NO. 3 OF 6 SHEETS STA. TO STA.

F.A.U. RTE. 1258	SECTION 11-0088-19-TL	COUNTY LAKE	TOTAL SHEETS 39	SHEET NO. 7
TS-05			CONTRACT NO.	
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

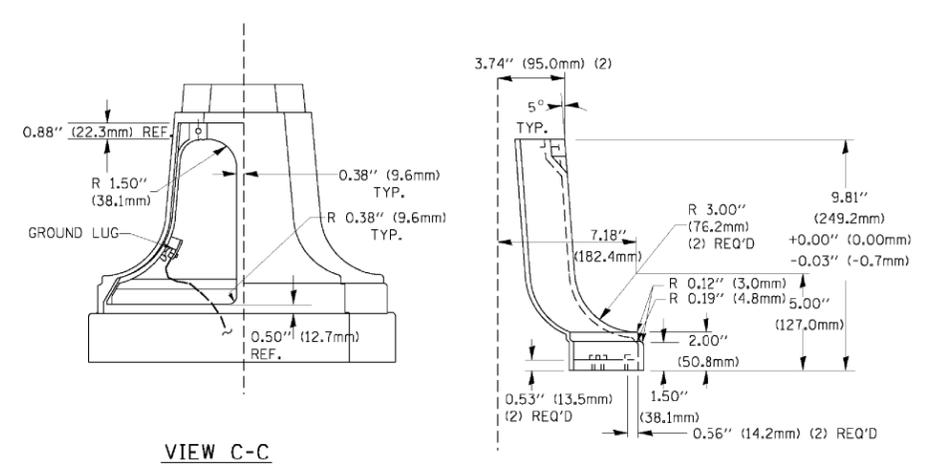
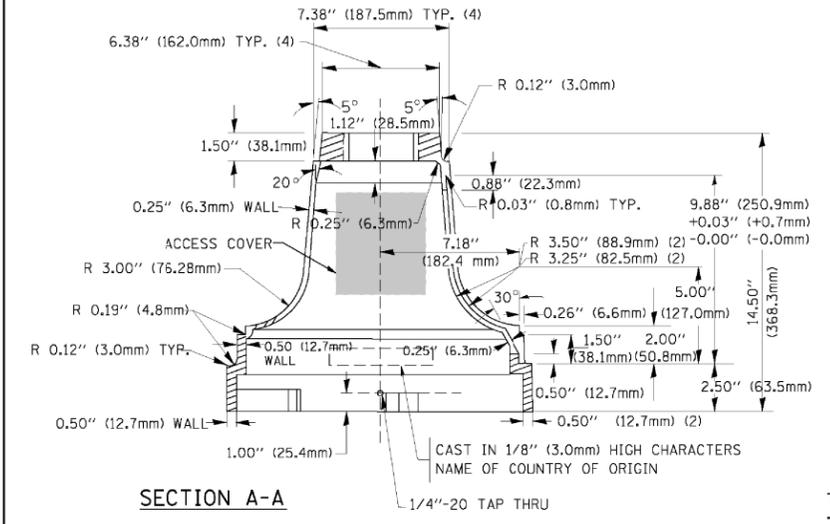


	A	B	C	HEIGHT	WEIGHT
VARIABLES	VARIES	9.5\"(241mm)	19\"(483mm)	7\"(178mm) - 12\"(300mm)	53 lbs (24kg)
VARIABLES	VARIES	10.75\"(273mm)	21.5\"(546mm)	7\"(178mm) - 12\"(300mm)	68 lbs (31 kg)
VARIABLES	VARIES	13.0\"(330mm)	26\"(660mm)	7\"(178mm) - 12\"(300mm)	81 lbs (37 kg)
VARIABLES	VARIES	18.5\"(470mm)	37\"(940mm)	7\"(178mm) - 12\"(300mm)	126 lbs (57 kg)

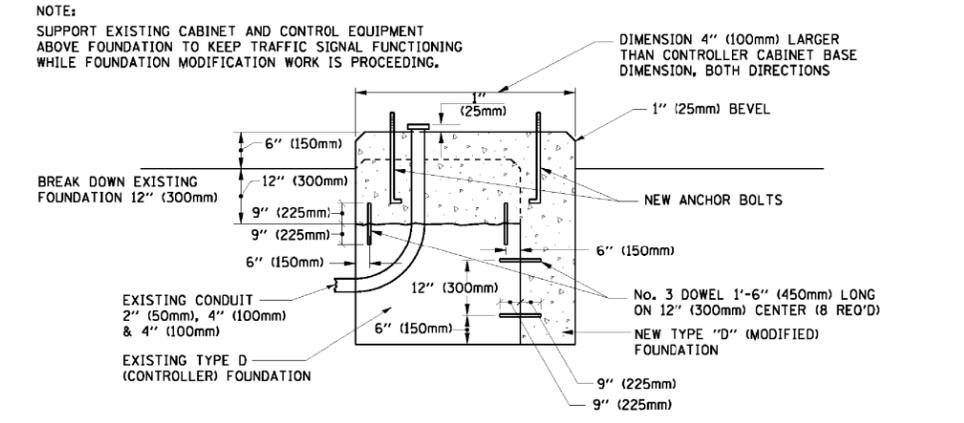
SHROUD

NOTES:

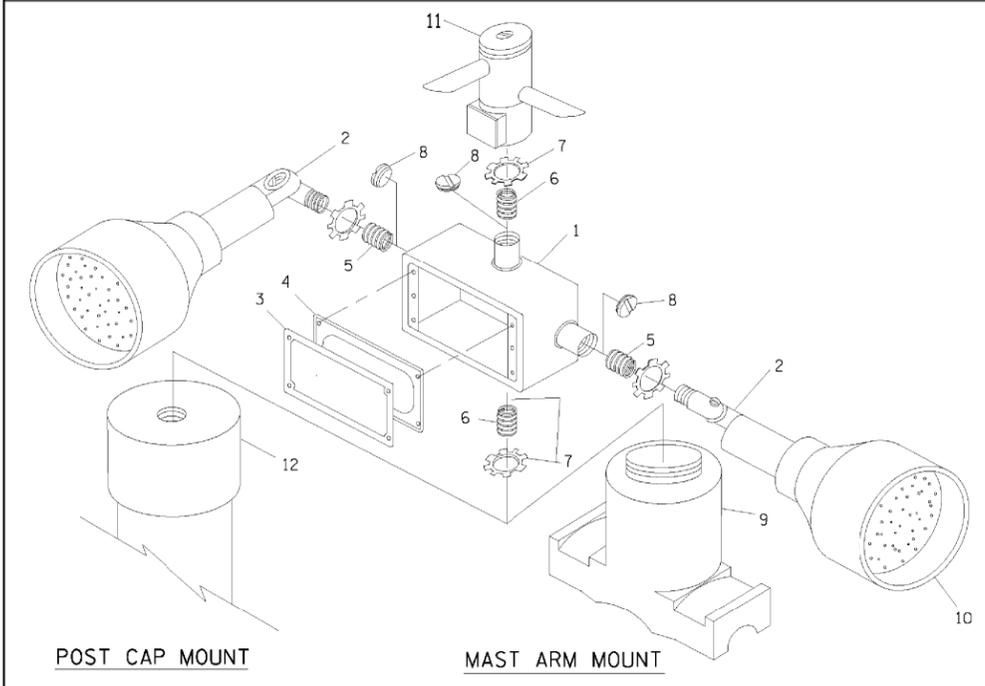
- DIMENSION "A" IS EQUAL TO THE DIAMETER OF THE MAST ARM POLE AT THE TOP OF THE SHROUD. THE SHROUD SHALL BE TIGHT TO THE MAST ARM POLE.
- THE SUPPLIER SHALL VERIFY THE ABOVE DIMENSIONS BASED ON MAST ARM REQUIREMENTS.
- THE HEIGHT OF THE SHROUD SHALL COVER THE ANCHOR BOLTS, NUTS AND MAST ARM POLE BASE.



TRAFFIC SIGNAL POST - MOUNTING BASE - TYPE A



MODIFY EXISTING TYPE "D" FOUNDATION

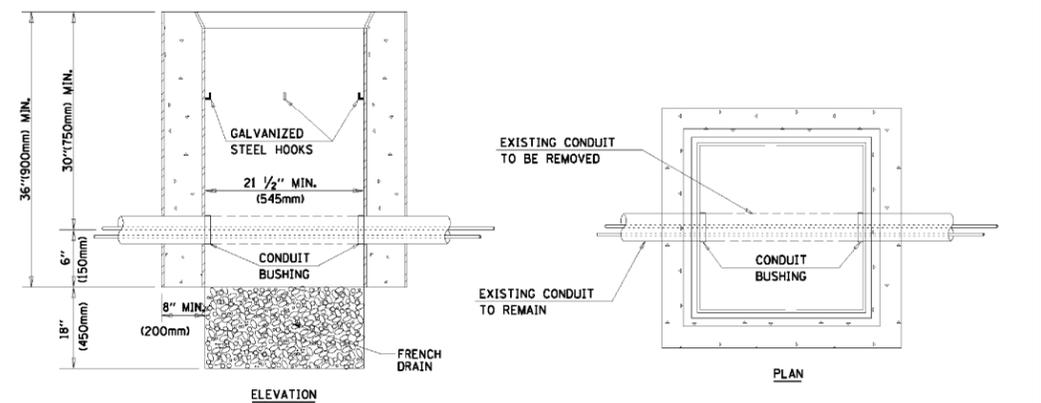


POST CAP MOUNT MAST ARM MOUNT EMERGENCY VEHICLE DETECTOR WITH CONFIRMATION BEACON MOUNTING DETAIL

ITEM NO.	IDENTIFICATION
1	OUTLET BOX- GALV. 21 CU.IN. (0.000344 CU-M)
2	LAMP HOLDER AND COVER
3	OUTLET BOX COVER
4	RUBBER COVER GASKET
5	REDUCING BUSHING
6	3/4\"(19 mm) CLOSE NIPPLE
7	3/4\"(19 mm) LOCKNUT
8	3/4\"(19 mm) HOLE PLUG
9	SADDLE BRACKET - GALV.
10	6 WATT PAR 38 LED FLOOD LAMP
11	DETECTOR UNIT
12	POST CAP [18 FT. (5.4 m) POST MIN.]

NOTES:

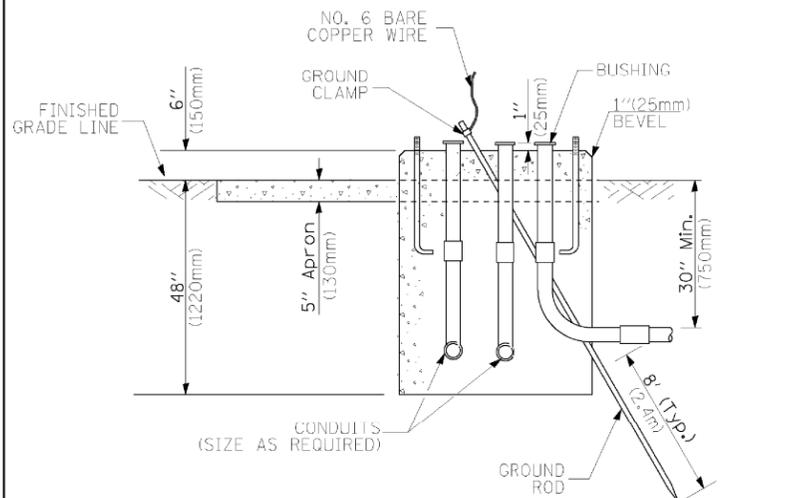
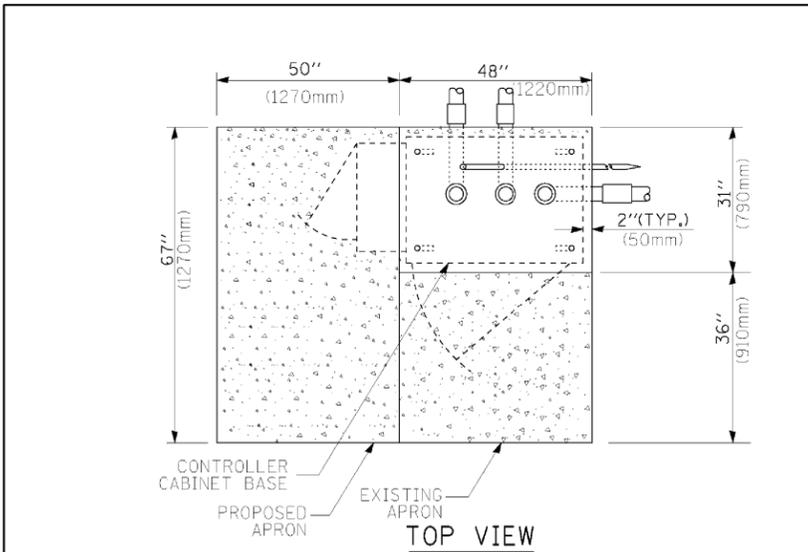
- ALL ELECTRICAL ITEMS, EXCEPT ITEMS #2 AND #11 SHALL BE ALUMINUM OR GALVANIZED
- ITEM #1- OZ/GEDNEY FSX-1-50 OR EQUIVALENT
ITEM #2- MULBERRY CON-0-SHADE LAMP SHIELD OR EQUIVALENT
ITEM #9- "BAND-IT" SADDLE BRACKET OR EQUIVALENT
- WHEN POST MOUNTING IS SPECIFIED, ITEM #9 SHALL NOT BE REQUIRED. THE DETECTION UNIT SHALL BE MOUNTED DIRECTLY ON TOP OF THE CAP BY DRILLING AND TAPPING A 3/4\"(19 mm) HOLE WITH PIPE THREADS. THE POST CAP SHALL EITHER BE SCREWED TO THE TOP OF THE POST OR A MINIMUM OF 3 TIGHTENING SCREWS SHALL BE REQUIRED ON EACH CAP.



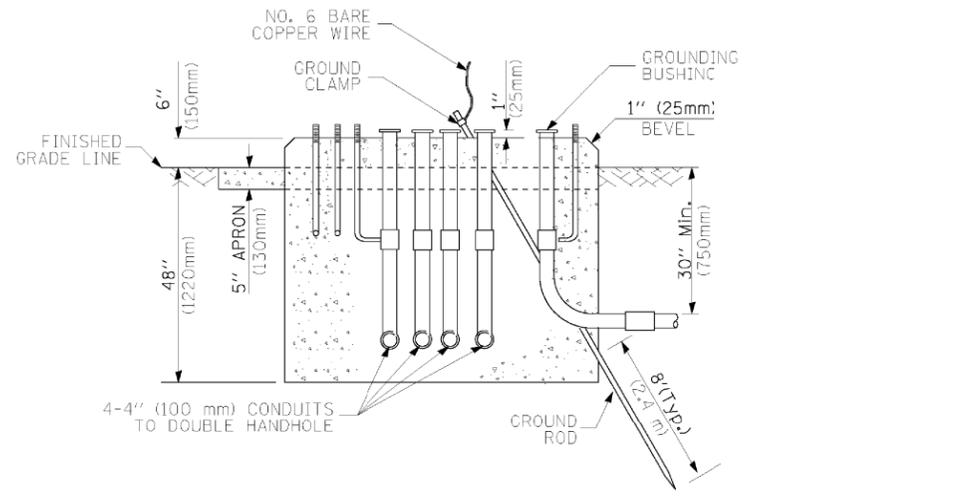
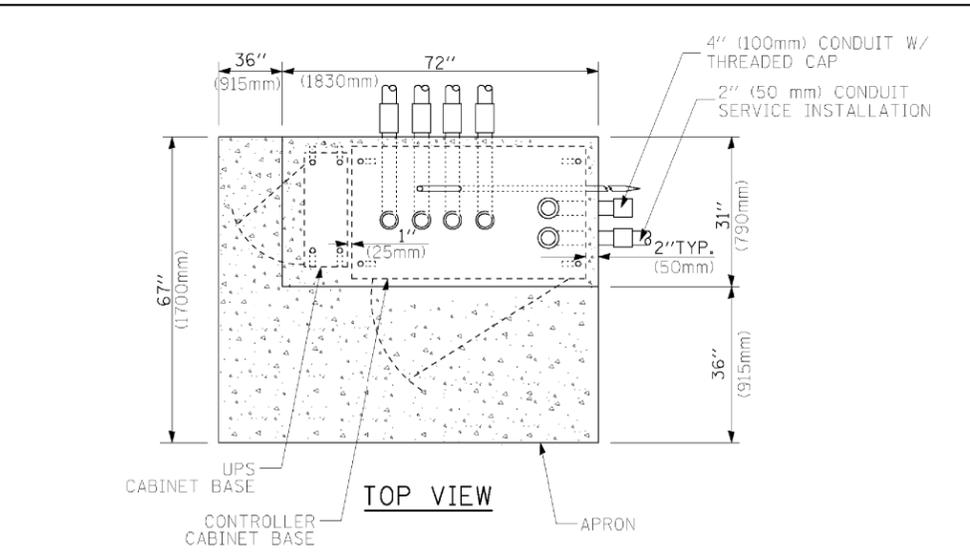
NOTES:

- HANDHOLE CONSTRUCTED PER STATE STANDARD 814001.
- REMOVAL OF THE EXISTING CONDUIT FROM THE HANDHOLE AND THE INSTALLATION OF THE CONDUIT BUSHINGS SHALL BE INCIDENTAL TO THE HANDHOLE.

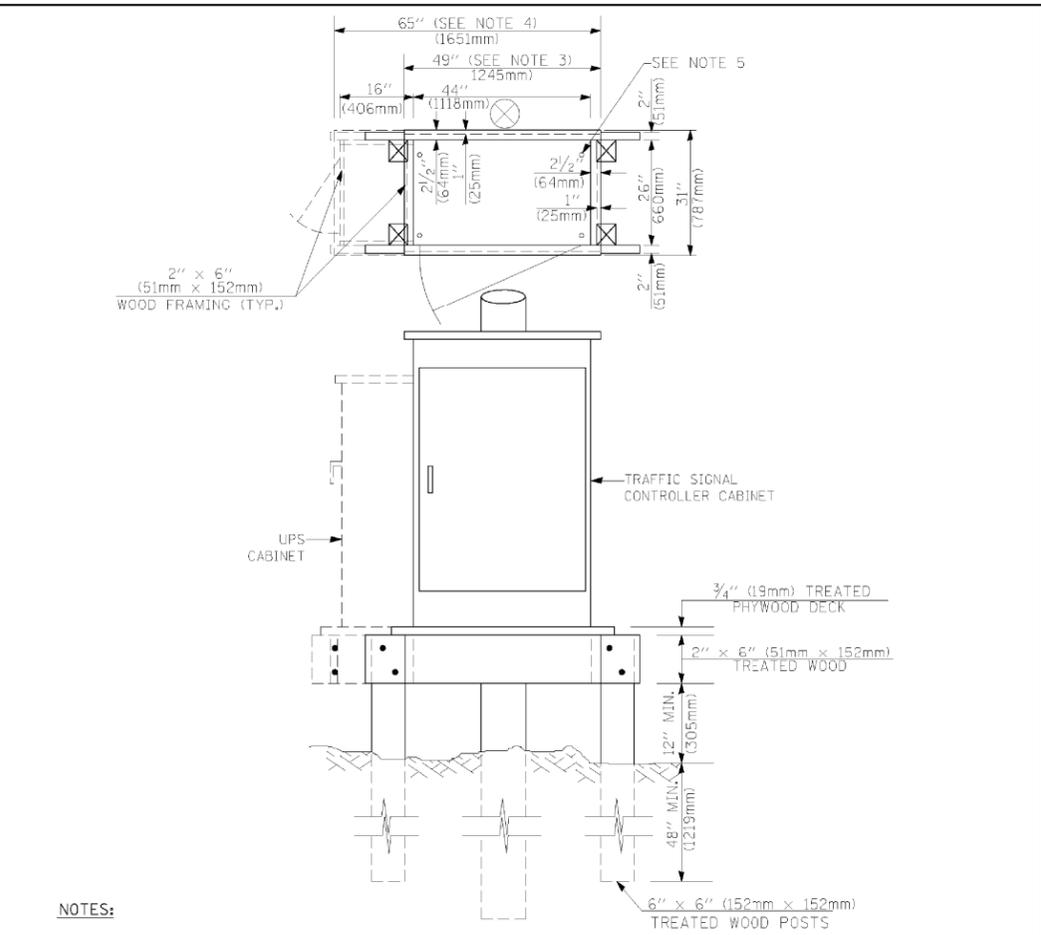
HANDHOLE TO INTERCEPT EXISTING CONDUIT



**TYPE D
FOR GROUND MOUNTED
CONTROLLER CABINET
AND UPS BATTERY CABINET**



**TYPE C
FOR GROUND MOUNTED
CONTROLLER CABINET
AND UPS BATTERY CABINET**



- NOTES:**
- BASED ON CONTROLLER CABINET TYPE IV WITH BASE DIMENSIONS OF 26" x 44" (660mm x 1118mm). ADJUST PLATFORM SIZE TO FIT CABINET BASE DIMENSIONS BEING SUPPLIED.
 - BASED ON UNINTERRUPTIBLE POWER SUPPLY CABINET WITH BASE DIMENSIONS OF 16" x 25" (406mm x 635mm). ADJUST PLATFORM SIZE TO FIT CABINET BASE DIMENSIONS BEING SUPPLIED.
 - PLATFORM SIZE FOR CONTROLLER CABINET TYPE IV.
 - PLATFORM SIZE FOR CONTROLLER CABINET TYPE IV AND UNINTERRUPTIBLE POWER SUPPLY CABINET.
 - DRILLED HOLES THROUGH THE PLATFORM BASE TO MATCH THE CONTROLLER CABINET BOLT TEMPLATE. FASTEN THE CONTROLLER CABINET TO THE PLATFORM WITH CARRIAGE BOLTS, WASHERS AND NUTS.
 - FASTEN ALL SUPPORT WOOD FRAMING TO THE WOOD POSTS WITH 2 LAG SCREWS FOR EACH CONNECTION.
- TEMPORARY SIGNAL CONTROLLER
WOOD SUPPORT PLATFORM**

CABLE SLACK LENGTH	FEET	METER
HANDHOLE	6.5	2.0
DOUBLE HANDHOLE	13.0	4.0
SIGNAL POST	2.0	0.6
MAST ARM	2.0	0.6
CONTROLLER CABINET	1.5	0.5
FIBER OPTIC AT CABINET	13.0	4.0
ELECTRIC SERVICE AT (CABINET OR SERVICE LOCATION)	1.5	0.5
GROUND CABLE (SIGNAL POST, MAST ARM, CABINET)	1.5	0.5
GROUND CABLE (BETWEEN FRAME AND COVER)	5.0	1.6

CABLE SLACK

VERTICAL CABLE LENGTH	FEET	METER
MAST ARM POLE (MAST ARM MOUNTED SIGNAL HEAD) (L = MAST ARM LENGTH - DISTANCE TO SIGNAL HEAD FROM END OF ARM)	20.0+L	6.0+L
BRACKET MOUNTED (MAST ARM POLE OR SIGNAL POLE)	13.0	4.0
PEDESTRIAN PUSH BUTTON	6.0	2.0
SERVICE INSTALLATION POLE MOUNT TO SERVICE DROP	13.5	4.1
SERVICE INSTALLATION POLE MOUNT TO GROUND	13.5	4.1
SERVICE INSTALLATION GROUND MOUNT	6.0	2.0
FOUNDATION (SIGNAL POST, MAST ARM POLE, CONTROLLER CABINET, SERVICE-GROUND MOUNT)	3.0	1.0

VERTICAL CABLE LENGTH

FOUNDATION	DEPTH
TYPE A - Signal Post	4'-0" (1.2m)
TYPE C - CONTROLLER W/ UPS	4'-0" (1.2m)
TYPE D - CONTROLLER	4'-0" (1.2m)
SERVICE INSTALLATION, GROUND MOUNT, TYPE A - SQUARE	4'-0" (1.2m)

DEPTH OF FOUNDATION

Mast Arm Length	① Foundation Depth	Foundation Diameter	Spiral Diameter	Quantity of Rebars	Size of Rebars
Less than 30' (9.1 m)	10'-0" (3.0 m)	30" (750mm)	24" (600mm)	8	6(19)
Greater than or equal to 30' (9.1 m) and less than 40' (12.2 m)	13'-6" (4.1 m)	30" (750mm)	24" (600mm)	8	6(19)
Greater than or equal to 40' (12.2 m) and less than 50' (15.2 m)	11'-0" (3.4 m)	36" (900mm)	36" (900mm)	12	7(22)
Greater than or equal to 50' (15.2 m) and up to 55' (16.8 m)	13'-0" (4.0 m)	36" (900mm)	30" (750mm)	12	7(22)
Greater than or equal to 55' (16.8 m) and less than 65' (19.8 m)	15'-0" (4.6 m)	36" (900mm)	30" (750mm)	12	7(22)
Greater than or equal to 65' (19.8 m) and less than 75' (22.9 m)	21'-0" (6.4 m)	42" (1060mm)	36" (900mm)	16	8(25)
Greater than or equal to 75' (22.9 m)	25'-0" (7.6 m)	42" (1060mm)	36" (900mm)	16	8(25)

- NOTES:**
- These foundation depths are for sites which have cohesive soils (clayey silt, sandy clay, etc.) along the length of the shaft, with an average unconfined compressive strength (Qu) > 1.0 tsf (100 kpa). This strength shall be verified by boring data prior to construction or with testing by the Engineer during foundation drilling. The Bureau of Bridges & Structures should be contacted for a revised design if other conditions are encountered.
 - Combination mast arm assemblies under 55 feet (16.8 m) shall use 36" (900 mm) diameter foundations.
 - Combination mast arm assemblies under 56 feet (16.8 m) through 75 feet (22.9 m) shall use 42" (1060 mm) diameter foundations.
 - For mast arm assemblies with dual arms refer to state standard 878001.

DEPTH OF MAST ARM FOUNDATIONS, TYPE E

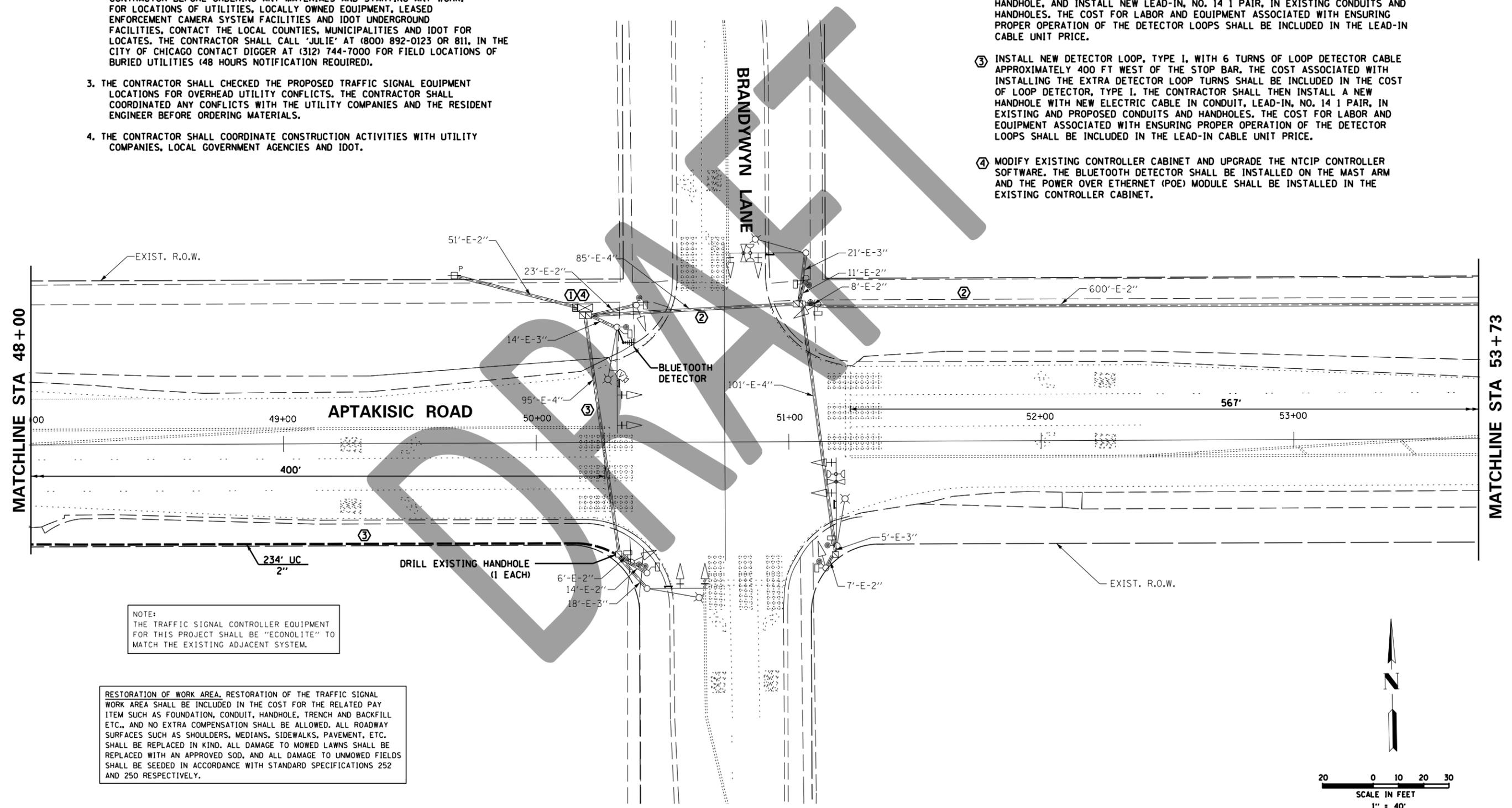
SURVEYED _____ DATE _____
 ALIGNED _____
 RT. OF WAY CHECKED _____
 ADD. FILE NAME _____
 PLAN NO. _____
 ENGINEERING LTD.
CHRISTOPHER B. BURKE
 9575 West Higgins Road, Suite 600
 Rosemont, Illinois 60018
 (647) 623-5500
 SURVEYED _____ DATE _____
 GRADES CHECKED _____
 ELEM. NOTED _____
 STRUCTURE NOTATIONS OKWD
 PROFILE NO. _____

GENERAL NOTES

- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL DIMENSIONS AND CONDITIONS EXISTING IN THE FIELD PRIOR TO ORDERING MATERIALS AND BEGINNING CONSTRUCTION. THIS SHALL INCLUDE LOCATING THE MAST ARM FOUNDATIONS AND VERIFYING THE MAST ARMS LENGTHS.
- THE EXACT LOCATION OF ALL UTILITIES SHALL BE FIELD VERIFIED BY THE CONTRACTOR BEFORE ORDERING ANY MATERIALS AND STARTING ANY WORK. FOR LOCATIONS OF UTILITIES, LOCALLY OWNED EQUIPMENT, LEASED ENFORCEMENT CAMERA SYSTEM FACILITIES AND IDOT UNDERGROUND FACILITIES, CONTACT THE LOCAL COUNTIES, MUNICIPALITIES AND IDOT FOR LOCATES. THE CONTRACTOR SHALL CALL 'JULIE' AT (800) 892-0123 OR 811, IN THE CITY OF CHICAGO CONTACT DIGGER AT (312) 744-7000 FOR FIELD LOCATIONS OF BURIED UTILITIES (48 HOURS NOTIFICATION REQUIRED).
- THE CONTRACTOR SHALL CHECKED THE PROPOSED TRAFFIC SIGNAL EQUIPMENT LOCATIONS FOR OVERHEAD UTILITY CONFLICTS. THE CONTRACTOR SHALL COORDINATED ANY CONFLICTS WITH THE UTILITY COMPANIES AND THE RESIDENT ENGINEER BEFORE ORDERING MATERIALS.
- THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH UTILITY COMPANIES, LOCAL GOVERNMENT AGENCIES AND IDOT.

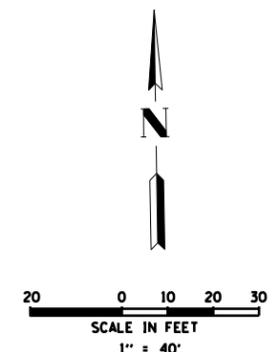
NOTE:

- DISABLE FAR BACK VIDEO DETECTION ZONES ON APTAKISIC ROAD.
- INSTALL NEW DETECTOR LOOP, TYPE I, WITH 6 TURNS OF LOOP DETECTOR CABLE APPROXIMATELY 567 FT EAST OF THE STOP BAR. THE COST ASSOCIATED WITH INSTALLING THE EXTRA DETECTOR LOOP TURNS SHALL BE INCLUDED IN THE COST OF LOOP DETECTOR, TYPE I. THE CONTRACTOR SHALL THEN DRILL THE EXISTING HANDHOLE, AND INSTALL NEW LEAD-IN, NO. 14 1 PAIR, IN EXISTING CONDUITS AND HANDHOLES. THE COST FOR LABOR AND EQUIPMENT ASSOCIATED WITH ENSURING PROPER OPERATION OF THE DETECTOR LOOPS SHALL BE INCLUDED IN THE LEAD-IN CABLE UNIT PRICE.
- INSTALL NEW DETECTOR LOOP, TYPE I, WITH 6 TURNS OF LOOP DETECTOR CABLE APPROXIMATELY 400 FT WEST OF THE STOP BAR. THE COST ASSOCIATED WITH INSTALLING THE EXTRA DETECTOR LOOP TURNS SHALL BE INCLUDED IN THE COST OF LOOP DETECTOR, TYPE I. THE CONTRACTOR SHALL THEN INSTALL A NEW HANDHOLE WITH NEW ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR, IN EXISTING AND PROPOSED CONDUITS AND HANDHOLES. THE COST FOR LABOR AND EQUIPMENT ASSOCIATED WITH ENSURING PROPER OPERATION OF THE DETECTOR LOOPS SHALL BE INCLUDED IN THE LEAD-IN CABLE UNIT PRICE.
- MODIFY EXISTING CONTROLLER CABINET AND UPGRADE THE NTCIP CONTROLLER SOFTWARE. THE BLUETOOTH DETECTOR SHALL BE INSTALLED ON THE MAST ARM AND THE POWER OVER ETHERNET (POE) MODULE SHALL BE INSTALLED IN THE EXISTING CONTROLLER CABINET.



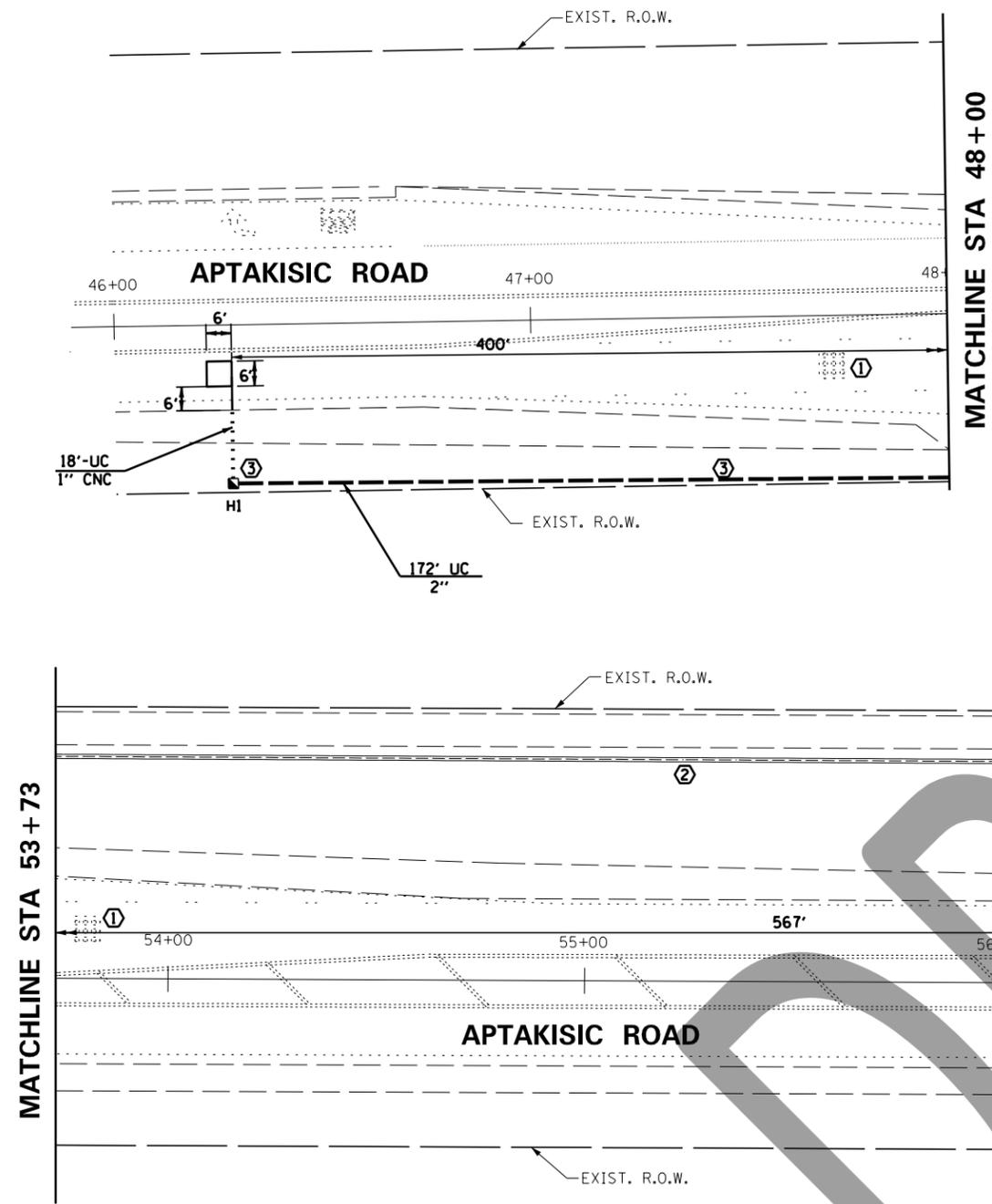
NOTE:
 THE TRAFFIC SIGNAL CONTROLLER EQUIPMENT FOR THIS PROJECT SHALL BE "ECONOLITE" TO MATCH THE EXISTING ADJACENT SYSTEM.

RESTORATION OF WORK AREA, RESTORATION OF THE TRAFFIC SIGNAL WORK AREA SHALL BE INCLUDED IN THE COST FOR THE RELATED PAY ITEM SUCH AS FOUNDATION, CONDUIT, HANDHOLE, TRENCH AND BACKFILL ETC., AND NO EXTRA COMPENSATION SHALL BE ALLOWED. ALL ROADWAY SURFACES SUCH AS SHOULDERS, MEDIANS, SIDEWALKS, PAVEMENT, ETC. SHALL BE REPLACED IN KIND. ALL DAMAGE TO MOWED LAWNS SHALL BE REPLACED WITH AN APPROVED SOD, AND ALL DAMAGE TO UNMOWED FIELDS SHALL BE SEEDED IN ACCORDANCE WITH STANDARD SPECIFICATIONS 252 AND 250 RESPECTIVELY.



FILE NAME = N:\LCD001\120226\2 - Aptakisic Adaptive\Traffic\MOD_BRANDYWYNE.dgn	USER NAME = ejensen	DESIGNED - FN	REVISED -		TRAFFIC SIGNAL MODIFICATION PLANS APTAKISIC ROAD AND BRANDYWYN LANE SHEET 1 OF 2			F.A.U. RTE. 1258	SECTION 11-00088-19-TL	COUNTY LAKE	TOTAL SHEETS 39	SHEET NO. 10
PLOT SCALE = 48'	CHECKED - GMZ	REVISED -	REVISED -		SCALE:	SHEET NO.	OF SHEETS	STA.	TO STA.	CONTRACT NO.		
PLOT DATE = 4/19/2013	DATE - 8/15/2012	REVISED -	REVISED -		FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT							

PROFILE SURVEYED _____ DATE _____
 GRADES CHECKED _____
 ELEM. NOTED _____
 STRUCTURE NOTATIONS OKWD
 NOTE BOOK NO. _____
 PLAN SURVEYED _____ DATE _____
 ALIGNMENT CHECKED _____
 RT. OF WAY CHECKED _____
 CAD FILE NAME _____
 NOTE BOOK NO. _____
 ENGINEERING LTD.
CHRISTOPHER B. BURKE
 9575 West Higgins Road, Suite 600
 Rosemont, Illinois 60018
 (647) 923-9300



GENERAL NOTES

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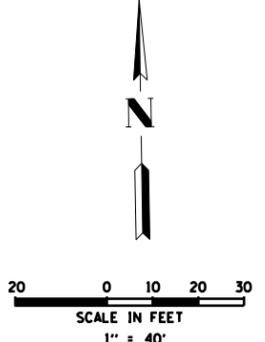
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TRAFFIC SIGNAL EQUIPMENT DATA

APTAKISIC ROAD			
ITEM	STATIONING	OFFSET	POSSIBLE UTILITY CONFLICT
HI	46+28	38.0' RT.	



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	Traffic\MOD_BRANDYWYNE.02.dgn	DRAWN - EAJ	REVISED -
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	PLT DATE = 4/19/2013	DATE - 8/15/2012	REVISED -

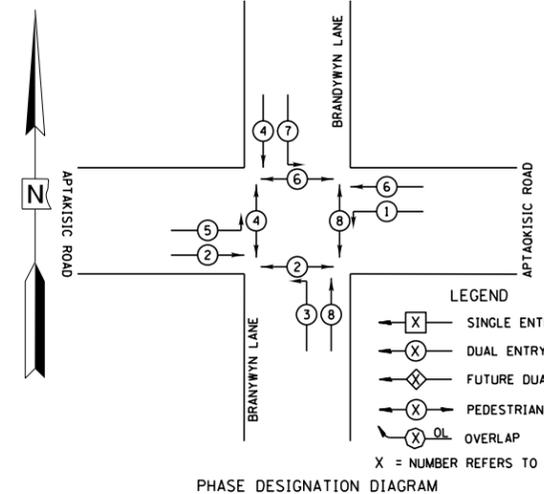


TRAFFIC SIGNAL MODIFICATION PLANS APTAKISIC ROAD AND BRANDYWYN LANE SHEET 2 OF 2				
SCALE:	SHEET NO.	OF SHEETS	STA.	TO STA.

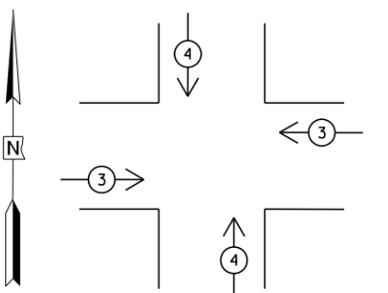
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1258	11-00088-19-TL	LAKE	39	11
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	

BY: DATE: SURVEYED: GRADES CHECKED: ALIGNMENT CHECKED: RT. OF WAY CHECKED: SADD FILE NAME: PLAN: NOTE BOOK NO.: PROFILE: SURVEYED: GRADES CHECKED: ALIGNMENT CHECKED: RT. OF WAY CHECKED: SADD FILE NAME: NO. DATE: BY: CHRISTOPHER B. BURKE ENGINEERING LTD. 8575 West Higgins Road, Suite 600 Rosemont, Illinois 60018 (847) 624-5900

CONTROLLER SEQUENCE
REFERRING TO STANDARD 857001, THE VEHICULAR AND PEDESTRIAN PHASES USED ARE DESIGNATED BELOW.



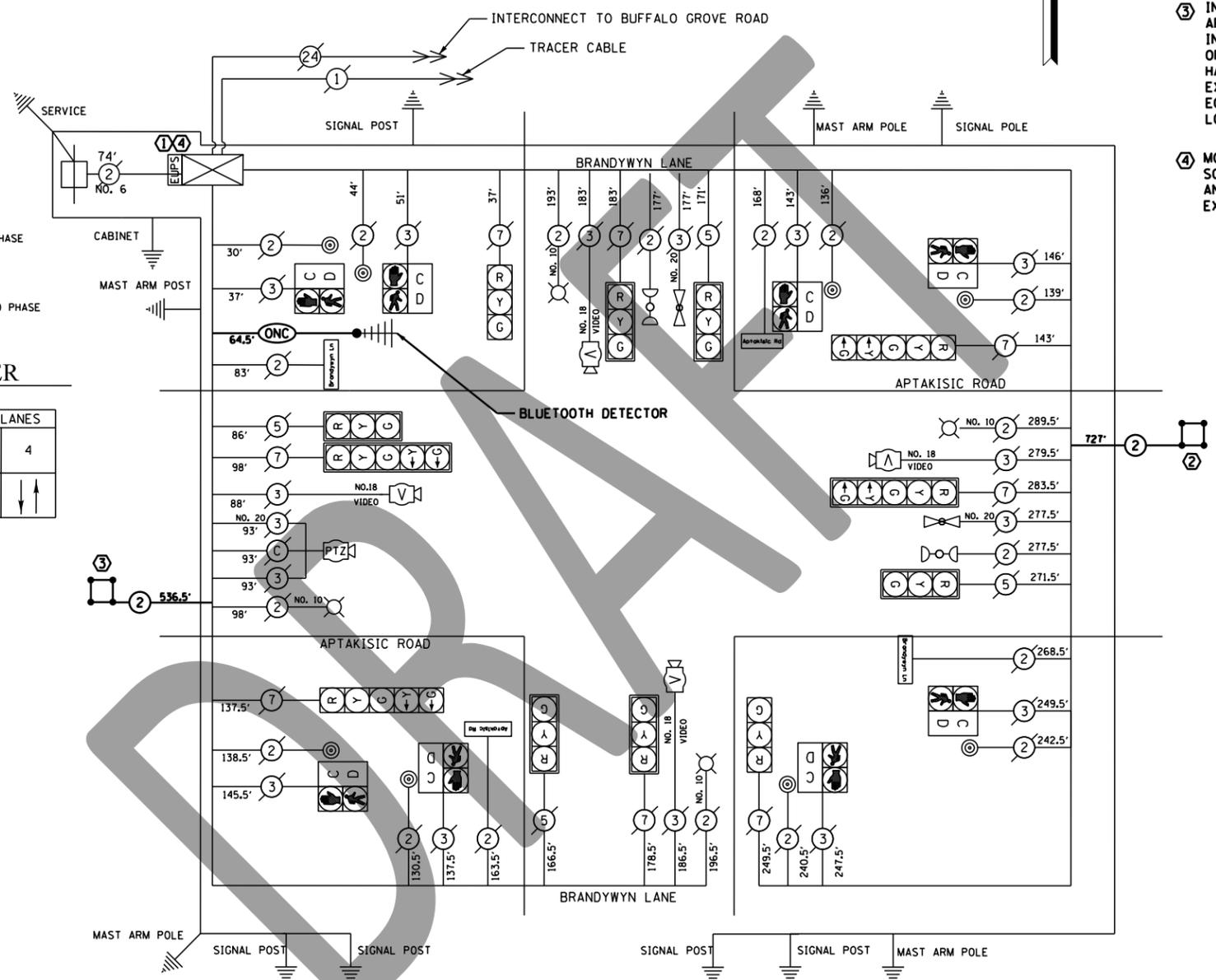
PRIORITY SEQUENCE FOR CONTROLLER



PROPOSED PRIORITY LANES	
PRIORITY LANE	3 4
INTERVAL	
MOVEMENT	↔ ↕

L.C.D.O.T. TRAFFIC SIGNAL INSTALLATION ELECTRICAL SERVICE REQUIREMENTS					TOTAL
TYPE	NO. LAMPS	WATTAGE INCAND.	WATTAGE LED	% OPERATION	WATTAGE
SIGNAL (RED)	12	10	0.50	0.50	60
(YELLOW)	12	19	0.25	0.25	57
(GREEN)	12	11	0.25	0.25	33
ARROW	8	9	0.10	0.10	7.2
PED. SIGNAL	8	9	1.00	1.00	72
CONTROLLER	1	100	1.00	1.00	100
ILLUM. SIGN (ST.)	4	10	0.50	0.50	20
ILLUMINAIRE	4	250	0.50	0.50	500
VIDEO DETECT.	4	150	1.00	1.00	600
BATT. BACK-UP	1	25	1.00	1.00	25
PTZ CAMERA	1	80	1.00	1.00	80
FLASHER					
TOTAL =					1554.2

VILLAGE OF BUFFALO GROVE
50 RAUPP BLVD.
BUFFALO GROVE, IL 60089
ENERGY SUPPLY: CONTACT: AMADOR VELEZ
PHONE: (847) 816-5248
COMPANY: COMED



- NOTES:
- ONCE PREEMPTION HAS BEEN CALLED, TERMINATION OF A PHASE(S) SHALL BE IDENTICAL TO THE NORMAL SEQUENCE OF OPERATIONS TERMINATION OF A PHASE(S) AS DESCRIBED IN STANDARD 857001.
 - CONTINUATION OR TERMINATION OF ALL RIGHT TURN OVERLAPS SHALL BE IDENTICAL TO THE NORMAL SEQUENCE OF OPERATION'S CONTINUATION OR TERMINATION OF RIGHT TURN OVERLAPS AS DESCRIBED IN THE CLEARANCE NOTES FOR RIGHT TURN OVERLAPS.
 - TERMINATION OF ALL PEDESTRIAN PHASES SHALL INCLUDE A FULL FLASHING "DON'T WALK" INTERVAL.
 - IF ALL RED CLEARANCE IS USED IN THE NORMAL SEQUENCE OF OPERATION, IT MUST BE DISPLAYED AFTER THE YELLOW CLEARANCE INTERVAL WHEN ENTERING OR LEAVING THE PREEMPTIVE SEQUENCE.

NOTE:

- DISABLE FAR BACK VIDEO DETECTION ZONES ON APTAKISIC ROAD.
- INSTALL NEW DETECTOR LOOP, TYPE I, WITH 6 TURNS OF LOOP DETECTOR CABLE APPROXIMATELY 567 FT EAST OF THE STOP BAR. THE COST ASSOCIATED WITH INSTALLING THE EXTRA DETECTOR LOOP TURNS SHALL BE INCLUDED IN THE COST OF LOOP DETECTOR, TYPE I. THE CONTRACTOR SHALL THEN DRILL THE EXISTING HANDHOLE, AND INSTALL NEW LEAD-IN, NO. 14 1 PAIR, IN EXISTING CONDUITS AND HANDHOLES. THE COST FOR LABOR AND EQUIPMENT ASSOCIATED WITH ENSURING PROPER OPERATION OF THE DETECTOR LOOPS SHALL BE INCLUDED IN THE LEAD-IN CABLE UNIT PRICE.
- INSTALL NEW DETECTOR LOOP, TYPE I, WITH 6 TURNS OF LOOP DETECTOR CABLE APPROXIMATELY 400 FT WEST OF THE STOP BAR. THE COST ASSOCIATED WITH INSTALLING THE EXTRA DETECTOR LOOP TURNS SHALL BE INCLUDED IN THE COST OF LOOP DETECTOR, TYPE I. THE CONTRACTOR SHALL THEN INSTALL A NEW HANDHOLE WITH NEW ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR, IN EXISTING AND PROPOSED CONDUITS AND HANDHOLES. THE COST FOR LABOR AND EQUIPMENT ASSOCIATED WITH ENSURING PROPER OPERATION OF THE DETECTOR LOOPS SHALL BE INCLUDED IN THE LEAD-IN CABLE UNIT PRICE.
- MODIFY EXISTING CONTROLLER CABINET AND UPGRADE THE NTCIP CONTROLLER SOFTWARE. THE BLUETOOTH DETECTOR SHALL BE INSTALLED ON THE MAST ARM AND THE POWER OVER ETHERNET (POE) MODULE SHALL BE INSTALLED IN THE EXISTING CONTROLLER CABINET.

RESTORATION OF WORK AREA, RESTORATION OF THE TRAFFIC SIGNAL WORK AREA SHALL BE INCLUDED IN THE COST FOR THE RELATED PAY ITEM SUCH AS FOUNDATION, CONDUIT, HANDHOLE, TRENCH AND BACKFILL ETC., AND NO EXTRA COMPENSATION SHALL BE ALLOWED. ALL ROADWAY SURFACES SUCH AS SHOULDERS, MEDIANS, SIDEWALKS, PAVEMENT, ETC. SHALL BE REPLACED IN KIND. ALL DAMAGE TO MOWED LAWNS SHALL BE REPLACED WITH AN APPROVED SOD, AND ALL DAMAGE TO UNMOWED FIELDS SHALL BE SEEDED IN ACCORDANCE WITH STANDARD SPECIFICATIONS 252 AND 250 RESPECTIVELY.

NOTE:
THE TRAFFIC SIGNAL CONTROLLER EQUIPMENT FOR THIS PROJECT SHALL BE "ECONOLITE" TO MATCH THE EXISTING ADJACENT SYSTEM.

SCHEDULE OF QUANTITIES		
ITEM	UNIT	QUANTITY
UNDERGROUND CONDUIT, GALVANIZED STEEL, 2" DIA.	FOOT	406
HANDHOLE	EACH	1
MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	1
ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR	FOOT	1264
DRILL EXISTING HANDHOLE	EACH	2
INDUCTIVE LOOP DETECTOR	EACH	2
DETECTOR LOOP, TYPE I	FOOT	58
MODIFY EXISTING CONTROLLER CABINET	EACH	1
UPGRADE EXISTING CONTROLLER TO NTCIP SPECIAL	EACH	1
OUTDOOR RATED NETWORK CABLE	FOOT	65
BLUETOOTH DETECTOR	EACH	1

FILE NAME =	USER NAME = ejensen	DESIGNED - FN	REVISED -
N:\LCD001\120226\2 - Aptakisic Adaptive\Traffic\CAB_Brandywyne.dgn		DRAWN - EAJ	REVISED -
		CHECKED - GMZ	REVISED -
		DATE - 8/15/2012	REVISED -

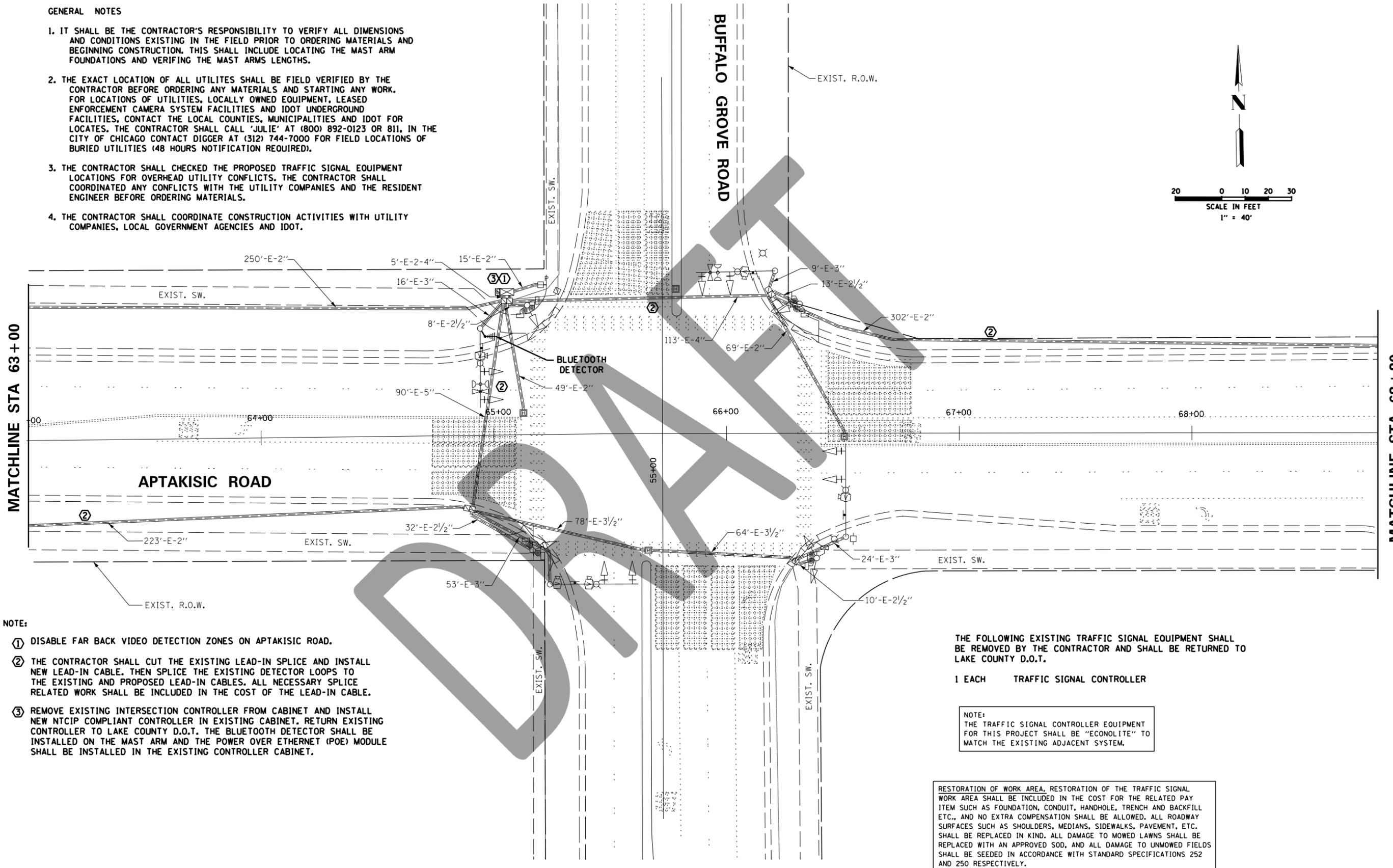
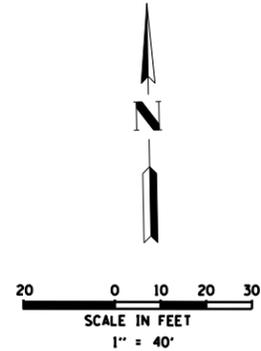


CABLE PLAN
APTAKISIC ROAD AT BRANDYWYN LANE
SCALE: SHEET NO. OF SHEETS STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1258	11-00088-19-TL	LAKE	39	12
CONTRACT NO.				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

GENERAL NOTES

1. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL DIMENSIONS AND CONDITIONS EXISTING IN THE FIELD PRIOR TO ORDERING MATERIALS AND BEGINNING CONSTRUCTION. THIS SHALL INCLUDE LOCATING THE MAST ARM FOUNDATIONS AND VERIFYING THE MAST ARMS LENGTHS.
2. THE EXACT LOCATION OF ALL UTILITES SHALL BE FIELD VERIFIED BY THE CONTRACTOR BEFORE ORDERING ANY MATERIALS AND STARTING ANY WORK. FOR LOCATIONS OF UTILITIES, LOCALLY OWNED EQUIPMENT, LEASED ENFORCEMENT CAMERA SYSTEM FACILITIES AND IDOT UNDERGROUND FACILITIES, CONTACT THE LOCAL COUNTIES, MUNICIPALITIES AND IDOT FOR LOCATES. THE CONTRACTOR SHALL CALL 'JULIE' AT (800) 892-0123 OR 811, IN THE CITY OF CHICAGO CONTACT DIGGER AT (312) 744-7000 FOR FIELD LOCATIONS OF BURIED UTILITIES (48 HOURS NOTIFICATION REQUIRED).
3. THE CONTRACTOR SHALL CHECKED THE PROPOSED TRAFFIC SIGNAL EQUIPMENT LOCATIONS FOR OVERHEAD UTILITY CONFLICTS. THE CONTRACTOR SHALL COORDINATED ANY CONFLICTS WITH THE UTILITY COMPANIES AND THE RESIDENT ENGINEER BEFORE ORDERING MATERIALS.
4. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH UTILITY COMPANIES, LOCAL GOVERNMENT AGENCIES AND IDOT.



NOTE:

- ① DISABLE FAR BACK VIDEO DETECTION ZONES ON APTAKISIC ROAD.
- ② THE CONTRACTOR SHALL CUT THE EXISTING LEAD-IN SPLICE AND INSTALL NEW LEAD-IN CABLE. THEN SPLICE THE EXISTING DETECTOR LOOPS TO THE EXISTING AND PROPOSED LEAD-IN CABLES. ALL NECESSARY SPLICE RELATED WORK SHALL BE INCLUDED IN THE COST OF THE LEAD-IN CABLE.
- ③ REMOVE EXISTING INTERSECTION CONTROLLER FROM CABINET AND INSTALL NEW NTCIP COMPLIANT CONTROLLER IN EXISTING CABINET. RETURN EXISTING CONTROLLER TO LAKE COUNTY D.O.T. THE BLUETOOTH DETECTOR SHALL BE INSTALLED ON THE MAST ARM AND THE POWER OVER ETHERNET (POE) MODULE SHALL BE INSTALLED IN THE EXISTING CONTROLLER CABINET.

THE FOLLOWING EXISTING TRAFFIC SIGNAL EQUIPMENT SHALL BE REMOVED BY THE CONTRACTOR AND SHALL BE RETURNED TO LAKE COUNTY D.O.T.

1 EACH TRAFFIC SIGNAL CONTROLLER

NOTE:
THE TRAFFIC SIGNAL CONTROLLER EQUIPMENT FOR THIS PROJECT SHALL BE "ECONOLITE" TO MATCH THE EXISTING ADJACENT SYSTEM.

RESTORATION OF WORK AREA, RESTORATION OF THE TRAFFIC SIGNAL WORK AREA SHALL BE INCLUDED IN THE COST FOR THE RELATED PAY ITEM SUCH AS FOUNDATION, CONDUIT, HANDHOLE, TRENCH AND BACKFILL ETC., AND NO EXTRA COMPENSATION SHALL BE ALLOWED. ALL ROADWAY SURFACES SUCH AS SHOULDERS, MEDIANS, SIDEWALKS, PAVEMENT, ETC. SHALL BE REPLACED IN KIND. ALL DAMAGE TO MOWED LAWNS SHALL BE REPLACED WITH AN APPROVED SOD, AND ALL DAMAGE TO UNMOWED FIELDS SHALL BE SEEDED IN ACCORDANCE WITH STANDARD SPECIFICATIONS 252 AND 250 RESPECTIVELY.

DATE	BY	DATE	BY
DATE	BY	DATE	BY
DATE	BY	DATE	BY
DATE	BY	DATE	BY

PROFILE SURVEYED
GRADE CHECKED
BLM. NOTED
STRUCTURE NOTATIONS OKWD

PLAN NOTE BOOK NO.
SURVEYED
ALIGNED
RT. OF WAY CHECKED
CADD FILE NAME

ENGINEERING LTD.
3575 West Higgins Road, Suite 600
Rosemont, Illinois 60018
(647) 822-5500

CHRISTOPHER B. BURKE
3575 West Higgins Road, Suite 600
Rosemont, Illinois 60018
(647) 822-5500

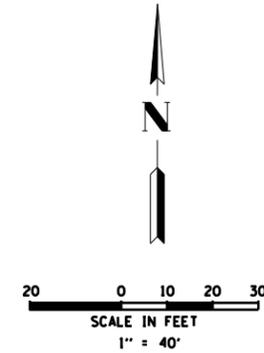
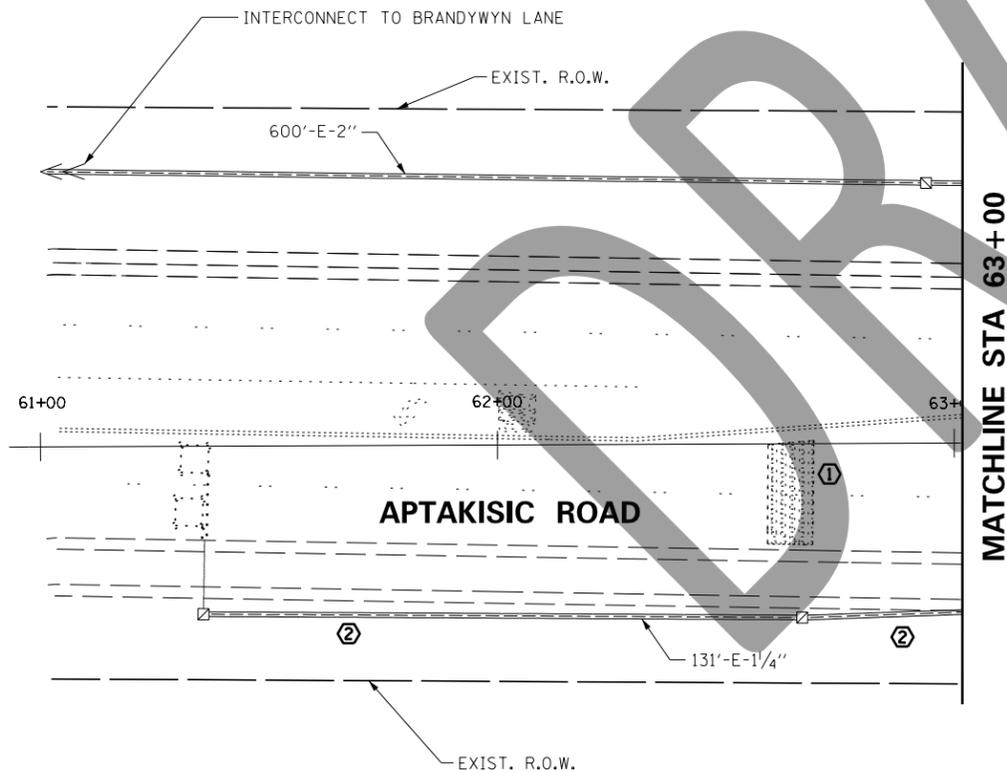
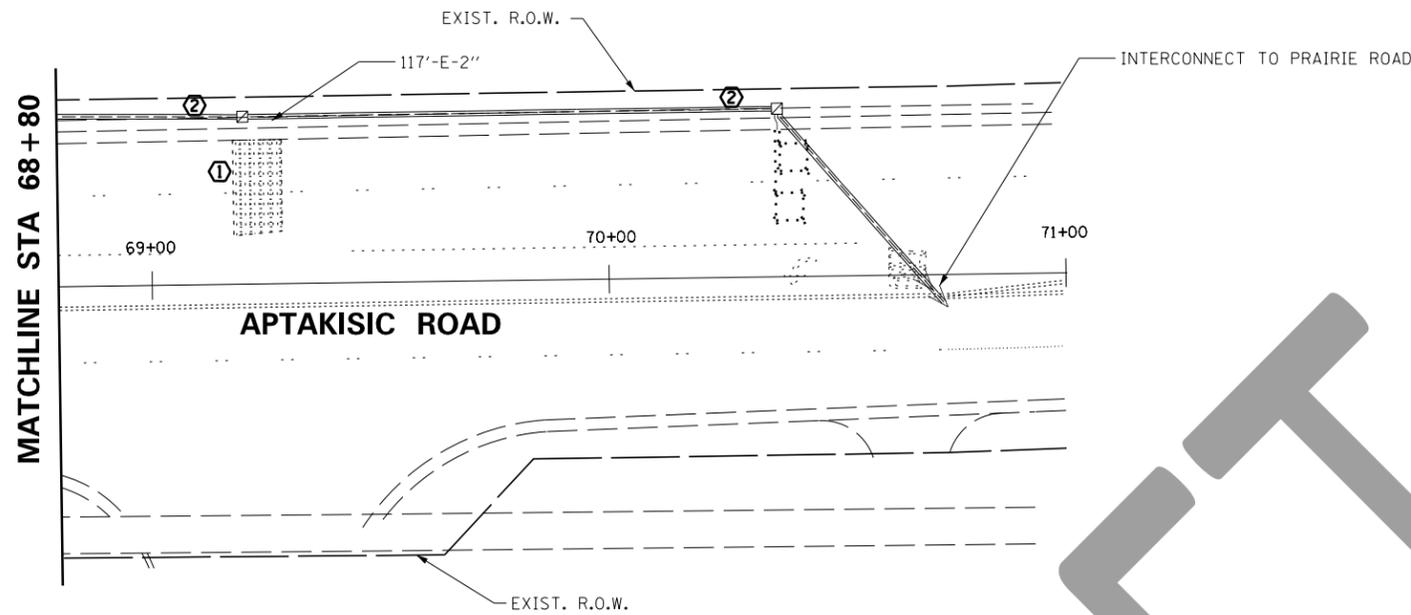
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		CHECKED - GMZ	REVISED -
		DATE - 8/15/2012	REVISED -



TRAFFIC SIGNAL MODIFICATION PLAN			
APTAKISIC ROAD AND BUFFALO GROVE ROAD			
SHEET 1 OF 2			
SCALE:	SHEET NO.	OF SHEETS	STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1258	11-00088-19-TL	LAKE	39	13
CONTRACT NO.				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

DATE	BY	SURVEYED	ALIGNED	CHECKED	DATE
		RT. OF WAY	CHECKED		
		FILE NAME			
PLAN	NO.	NO.			
CHRISTOPHER B. BURKE ENGINEERING LTD. 3575 West Higgins Road, Suite 600 Rosemont, Illinois 60018 (647) 923-5500					
DATE	BY	SURVEYED	GRADES	CHECKED	DATE
		STRUCTURE	NOTATION	CHKD	
		NO.			



GENERAL NOTES

- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL DIMENSIONS AND CONDITIONS EXISTING IN THE FIELD PRIOR TO ORDERING MATERIALS AND BEGINNING CONSTRUCTION. THIS SHALL INCLUDE LOCATING THE MAST ARM FOUNDATIONS AND VERIFYING THE MAST ARMS LENGTHS.
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NOTE:

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- THE CONTRACTOR SHALL CUT THE EXISTING LEAD-IN SPLICE AND INSTALL NEW LEAD-IN CABLE. THEN SPLICE THE EXISTING DETECTOR LOOPS TO THE EXISTING AND PROPOSED LEAD-IN CABLES. ALL NECESSARY SPLICE RELATED WORK SHALL BE INCLUDED IN THE COST OF THE LEAD-IN CABLE.

NOTE:
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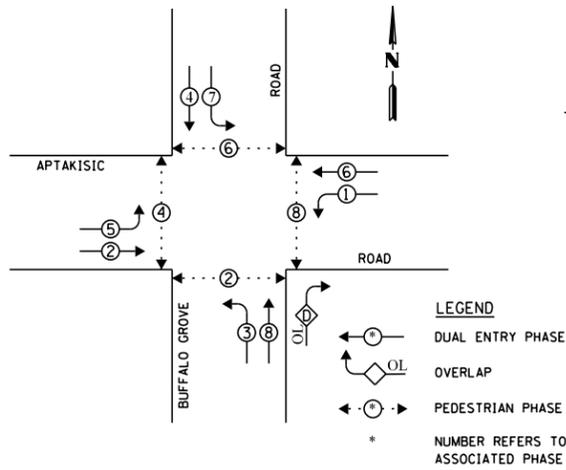
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N:\LCD007\120226\2 - Aptakisic Adaptive\Traffic\MOD\buffalo grove.02.dgn	DRAWN - EAJ	REVISED -	1258					11-00088-19-TL	LAKE	39	14	
PLOT SCALE = 48'	CHECKED - GMZ	REVISED -	CONTRACT NO.									
PLOT DATE = 4/19/2013	DATE - 8/15/2012	REVISED -					SCALE:	SHEET NO.	OF SHEETS	STA.	TO STA.	FED. ROAD DIST. NO.

DATE: _____ BY: _____
 SURVEYED: _____ ALIGNED: _____ CHECKED: _____
 GRADES: _____ RT. OF WAY: _____
 NOTE BOOK NO.: _____
 STRUCTURE: _____ NOTATIONS: _____

DATE: _____ BY: _____
 SURVEYED: _____ ALIGNED: _____ CHECKED: _____
 GRADES: _____ RT. OF WAY: _____
 NOTE BOOK NO.: _____
 STRUCTURE: _____ NOTATIONS: _____

ENGINEERING LTD.
CHRISTOPHER B. BURKE
 8575 West Higgins Road, Suite 600
 Rosemont, Illinois 60018
 (847) 822-5930

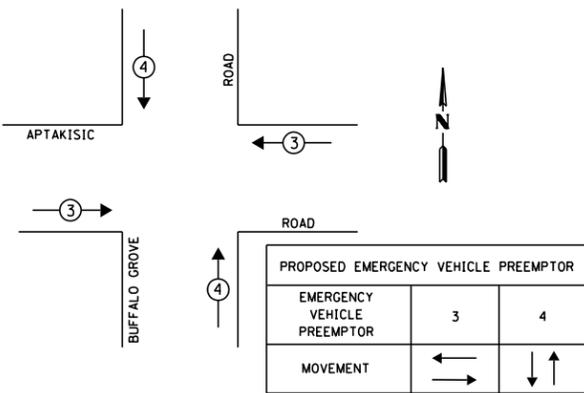
CONTROLLER SEQUENCE



RIGHT TURN OVERLAP PHASE DESIGNATION

OVERLAP LETTER	PERMISSIVE PHASE	PROTECTED PHASE
D	= 8	+ 1

EMERGENCY VEHICLE PREEMPTION SEQUENCE



PROPOSED EMERGENCY VEHICLE PREEMPTOR		
EMERGENCY VEHICLE PREEMPTOR	3	4
MOVEMENT	← →	↑ ↓

L.C.D.O.T. TRAFFIC SIGNAL INSTALLATION ELECTRICAL SERVICE REQUIREMENTS					TOTAL WATTAGE
TYPE	NO. OF LAMPS	WATTAGE INCAND.	LED	% OPERATION	
SIGNAL (RED)	13	-	17	0.50	110.5
(YELLOW)	13	-	25	0.25	81.3
(GREEN)	13	-	15	0.25	48.8
ARROW	20	-	12	0.10	24.0
PED. SIGNAL	8	-	25	1.00	200.0
CONTROLLER	1	-	100	1.00	100.0
LUMINAIRES	4	-	250	0.50	500.0
PTZ CAMERA	1	-	80	1.00	80.0
VIDEO DET.	4	-	150	1.00	600.0
BATT BACK-UP	1	-	25	1.00	25.0

ENERGY COSTS TO: TOTAL = 1769.6

LAKE COUNTY DIVISION OF TRANSPORTATION
 600 WEST WINCHESTER ROAD
 LIBERTYVILLE, ILLINOIS 60048-1381
 ENERGY SUPPLY CONTACT: DOROTHY PROSEN
 PHONE: (847) 816-5323
 COMPANY: COMED

FILE NAME = N:\LCDOT\120226\2 - Aptakisic Adaptive\Traffic\CAB_BUFFALO GROVE RD.dgn	USER NAME = ejensen	DESIGNED - FN	REVISED -
PLOT SCALE = 41'		DRAWN - EAJ	REVISED -
PLOT DATE = 4/19/2013		CHECKED - GMZ	REVISED -
		DATE - 8/15/2012	REVISED -



CABLE PLAN
 APTAKISIC ROAD AND BUFFALO GROVE ROAD

SCALE: SHEET NO. OF SHEETS STA. TO STA.

F.A.U. RT.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1258	11-00088-19-TL	LAKE	39	15

CONTRACT NO. _____
 FED. ROAD DIST. NO. _____ ILLINOIS FED. AID PROJECT _____

NOTE:

- DISABLE FAR BACK VIDEO DETECTION ZONES ON APTAKISIC ROAD.
- THE CONTRACTOR SHALL CUT THE EXISTING LEAD-IN SPLICE AND INSTALL NEW LEAD-IN CABLE. THEN SPLICE THE EXISTING DETECTOR LOOPS TO THE EXISTING AND PROPOSED LEAD-IN CABLES. ALL NECESSARY SPLICE RELATED WORK SHALL BE INCLUDED IN THE COST OF THE LEAD-IN CABLE.
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NOTE:
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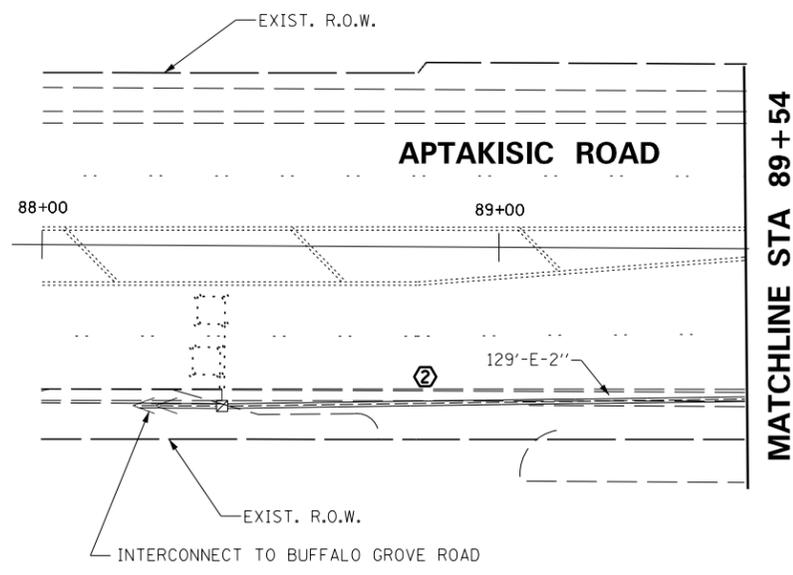
RESTORATION OF WORK AREA, RESTORATION OF THE TRAFFIC SIGNAL WORK AREA SHALL BE INCLUDED IN THE COST FOR THE RELATED PAY ITEM SUCH AS FOUNDATION, CONDUIT, HANDHOLE, TRENCH AND BACKFILL ETC., AND NO EXTRA COMPENSATION SHALL BE ALLOWED. ALL ROADWAY SURFACES SUCH AS SHOULDERS, MEDIANS, SIDEWALKS, PAVEMENT, ETC. SHALL BE REPLACED IN KIND. ALL DAMAGE TO MOWED LAWNS SHALL BE REPLACED WITH AN APPROVED SOD, AND ALL DAMAGE TO UNMOWED FIELDS SHALL BE SEEDED IN ACCORDANCE WITH STANDARD SPECIFICATIONS 252 AND 250 RESPECTIVELY.

SCHEDULE OF QUANTITIES

ITEM	UNIT	QUANTITY
MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	1
ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR	FOOT	1074
INDUCTIVE LOOP DETECTOR	EACH	2
MODIFY EXISTING CONTROLLER CABINET	EACH	1
FULL-ACTUATED CONTROLLER IN EXISTING CABINET	EACH	1
OUTDOOR RATED NETWORK CABLE	FOOT	67
BLUETOOTH DETECTOR	EACH	1

DATE	BY	SURVEYED	DATE	BY	SURVEYED
		GRADES CHECKED			GRADES CHECKED
		BLM. NOTED			BLM. NOTED
		STRUCTURE NOTATIONS			STRUCTURE NOTATIONS
		NOTE BOOK NO.			NOTE BOOK NO.
		PLAN NO.			PLAN NO.
		DATE			DATE
		BY			BY
		DATE			DATE

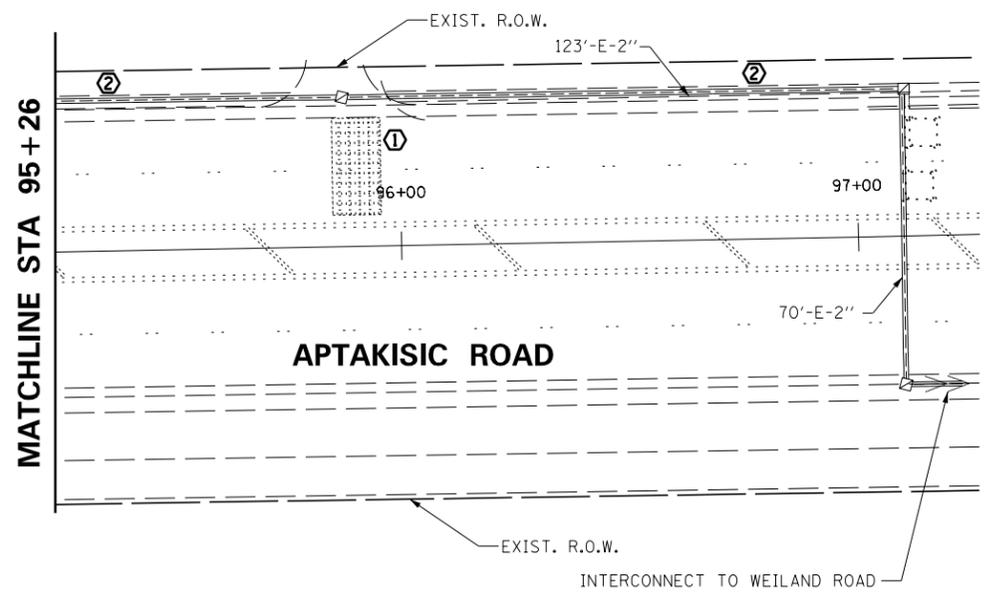
CHRISTOPHER B. BURKE
 ENGINEERING LTD.
 3575 West Higgins Road, Suite 600
 Rosemont, Illinois 60018
 (617) 623-5500



- NOTE:**
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1 EACH TRAFFIC SIGNAL CONTROLLER

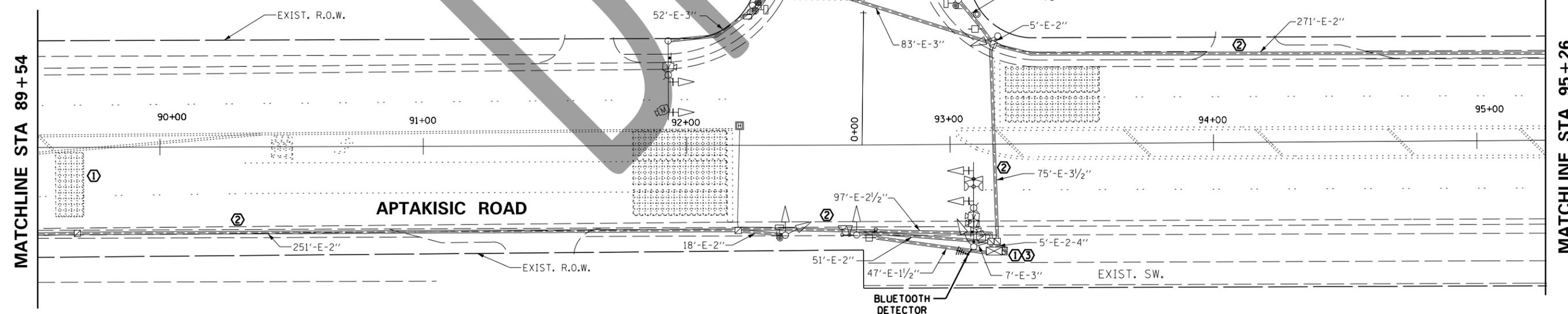
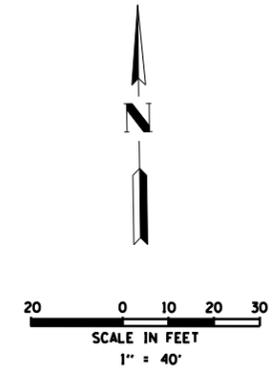


GENERAL NOTES

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NOTE:
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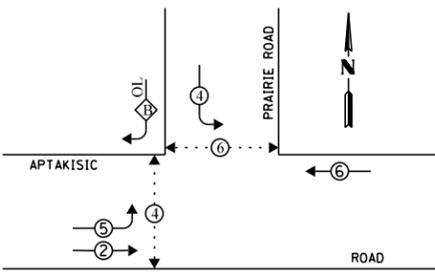


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PLOT SCALE = 48'	CHECKED - GMZ	REVISIED -	REVISIED -			CONTRACT NO.					
PLOT DATE = 4/19/2013	DATE - 8/15/2012	REVISIED -	REVISIED -			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT					
						SCALE:	SHEET NO.	OF SHEETS	STA.	TO STA.	

DATE: _____ BY: _____
 SURVEYED: _____ ALIGNED: _____
 PLAN: _____ RT. OF WAY CHECKED: _____
 NOTE BOOK NO.: _____
 FILE: _____
 SURVEYED: _____
 GRADES CHECKED: _____
 ELEM. NOTED: _____
 STRUCTURE NOTATIONS: OK/NO

BY: **CHRISTOPHER B. BURKE** ENGINEERING LTD.
 8575 West Higgins Road, Suite 600
 Rosemont, Illinois 60018
 (847) 923-5500

CONTROLLER SEQUENCE

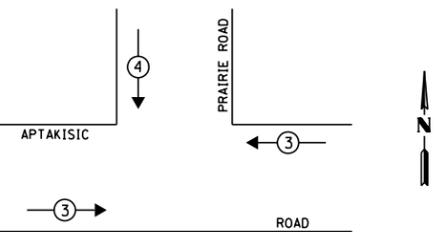


- LEGEND**
- ⊖ ⊕ DUAL ENTRY PHASE
 - OL OVERLAP
 - ⊖ ⊕ PEDESTRIAN PHASE
 - * NUMBER REFERS TO ASSOCIATED PHASE

RIGHT TURN OVERLAP PHASE DESIGNATION

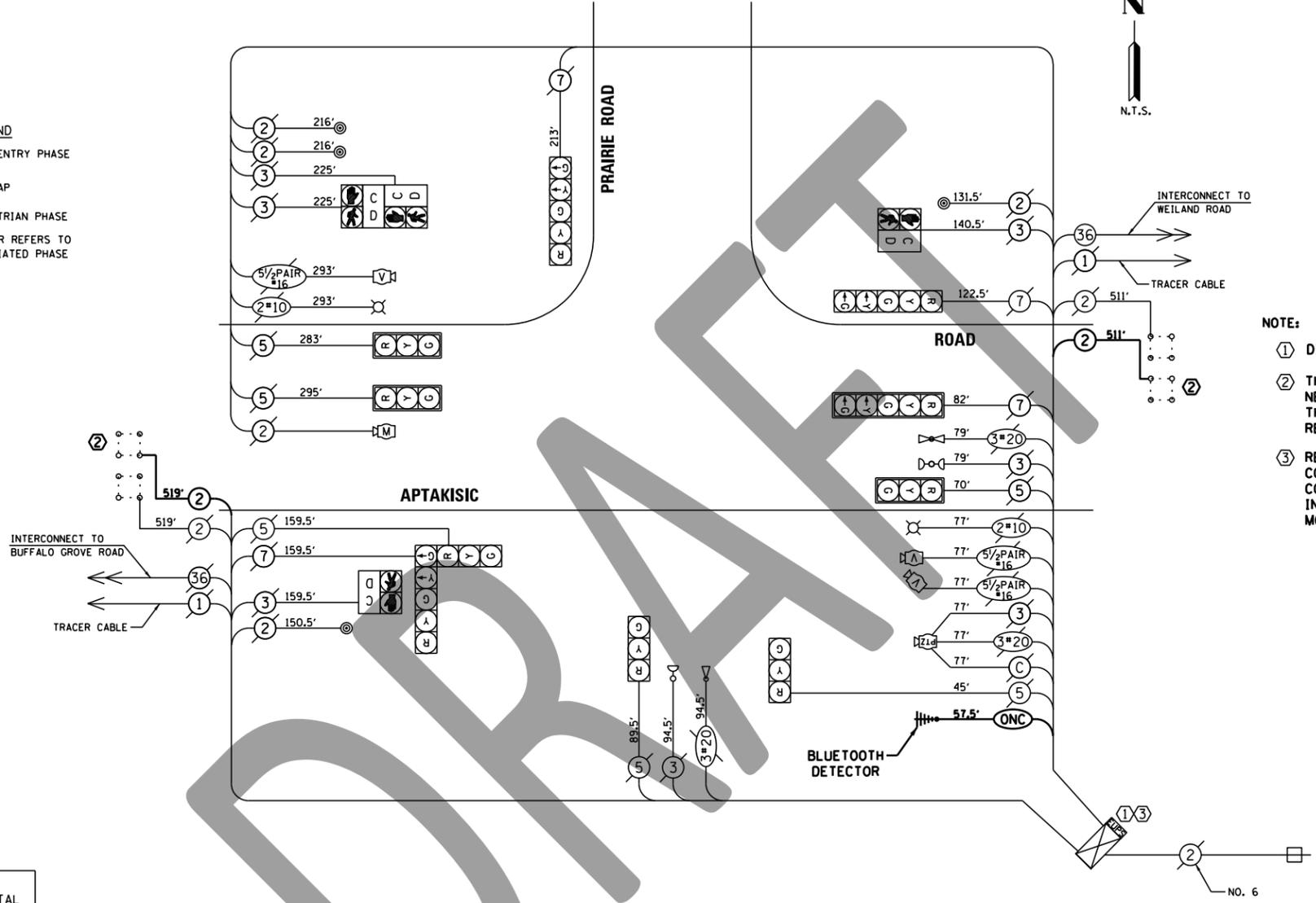
OVERLAP LETTER	PERMISSIVE PHASE	PROTECTED PHASE
B	= 4	+ 5

EMERGENCY VEHICLE PREEMPTION SEQUENCE



PROPOSED EMERGENCY VEHICLE PREEMPTOR

EMERGENCY VEHICLE PREEMPTOR	3	4
MOVEMENT	←	↓



NOTE:

- ① DISABLE FAR BACK VIDEO DETECTION ZONES ON APTAKISIC ROAD.
- ② THE CONTRACTOR SHALL CUT THE EXISTING LEAD-IN SPLICE AND INSTALL NEW LEAD-IN CABLE. THEN SPLICE THE EXISTING DETECTOR LOOPS TO THE EXISTING AND PROPOSED LEAD-IN CABLES. ALL NECESSARY SPLICE RELATED WORK SHALL BE INCLUDED IN THE COST OF THE LEAD-IN CABLE.
- ③ REMOVE EXISTING CONTROLLER FROM CABINET AND INSTALL NEW NTCIP COMPLIANT CONTROLLER IN EXISTING CABINET. RETURN EXISTING CONTROLLER TO LAKE COUNTY D.O.T. THE BLUETOOTH DETECTOR SHALL BE INSTALLED ON THE MAST ARM AND THE POWER OVER ETHERNET (POE) MODULE SHALL BE INSTALLED IN THE EXISTING CONTROLLER CABINET.

NOTE:
 THE TRAFFIC SIGNAL CONTROLLER EQUIPMENT FOR THIS PROJECT SHALL BE "ECONOLITE" TO MATCH THE EXISTING ADJACENT SYSTEM.

RESTORATION OF WORK AREA, RESTORATION OF THE TRAFFIC SIGNAL WORK AREA SHALL BE INCLUDED IN THE COST FOR THE RELATED PAY ITEM SUCH AS FOUNDATION, CONDUIT, HANDHOLE, TRENCH AND BACKFILL ETC., AND NO EXTRA COMPENSATION SHALL BE ALLOWED. ALL ROADWAY SURFACES SUCH AS SHOULDERS, MEDIANS, SIDEWALKS, PAVEMENT, ETC. SHALL BE REPLACED IN KIND. ALL DAMAGE TO MOWED LAWNS SHALL BE REPLACED WITH AN APPROVED SOD, AND ALL DAMAGE TO UNMOWED FIELDS SHALL BE SEEDED IN ACCORDANCE WITH STANDARD SPECIFICATIONS 252 AND 250 RESPECTIVELY.

L.C.D.O.T. TRAFFIC SIGNAL INSTALLATION ELECTRICAL SERVICE REQUIREMENTS

TYPE	NO. OF LAMPS	WATTAGE INCAND.	LED	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	10	-	17	0.50	85.0
(YELLOW)	10	-	25	0.25	62.5
(GREEN)	10	-	15	0.25	37.5
ARROW	8	-	12	0.10	9.6
PED. SIGNAL	4	-	25	1.00	100.0
CONTROLLER	1	-	100	1.00	100.0
LUMINAIRES	2	-	250	0.50	250.0
VIDEO DET.	3	-	150	1.00	450.0
BATT BACK-UP	1	-	25	1.00	25.0
PTZ CAMERA	1	-	80	1.00	80.0

ENERGY COSTS TO: TOTAL = 1199.6

LAKE COUNTY DIVISION OF TRANSPORTATION
 600 WEST WINCHESTER ROAD
 LIBERTYVILLE, ILLINOIS 60048-1381
 ENERGY SUPPLY: CONTACT: DOROTHY PROSEN
 PHONE: (847) 816-5323
 COMPANY: COMED

SCHEDULE OF QUANTITIES

ITEM	UNIT	QUANTITY
MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	1
ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR	FOOT	1030
INDUCTIVE LOOP DETECTOR	EACH	2
MODIFY EXISTING CONTROLLER CABINET	EACH	1
FULL-ACTUATED CONTROLLER IN EXISTING CABINET	EACH	1
OUTDOOR RATED NETWORK CABLE	FOOT	58
BLUETOOTH DETECTOR	EACH	1

FILE NAME = N:\LCOOT\120226\2 - Aptakisic Adaptive\Traffic\CAB_PRAIRIE.dgn	USER NAME = ejensen	DESIGNED - FN	REVISED -
PLLOT SCALE = 41'	PLLOT DATE = 4/19/2013	DRAWN - EAJ	REVISED -
		CHECKED - GMZ	REVISED -
		DATE - 8/15/2012	REVISED -



CABLE PLAN
APTAKISIC ROAD AND PRAIRIE ROAD

SCALE: _____ SHEET NO. _____ OF _____ SHEETS _____ STA. _____ TO STA. _____

F.A.U. RTE. 1258	SECTION 11-00088-19-TL	COUNTY LAKE	TOTAL SHEETS 39	SHEET NO. 17
CONTRACT NO. _____				
FED. ROAD DIST. NO. _____ ILLINOIS FED. AID PROJECT _____				

DATE	BY	SURVEYED	ALIGNED	CHECKED
		PLAN	NOTE BOOK	NO.
DATE	BY	SURVEYED	ALIGNED	CHECKED
		PROFILE	NOTE BOOK	NO.

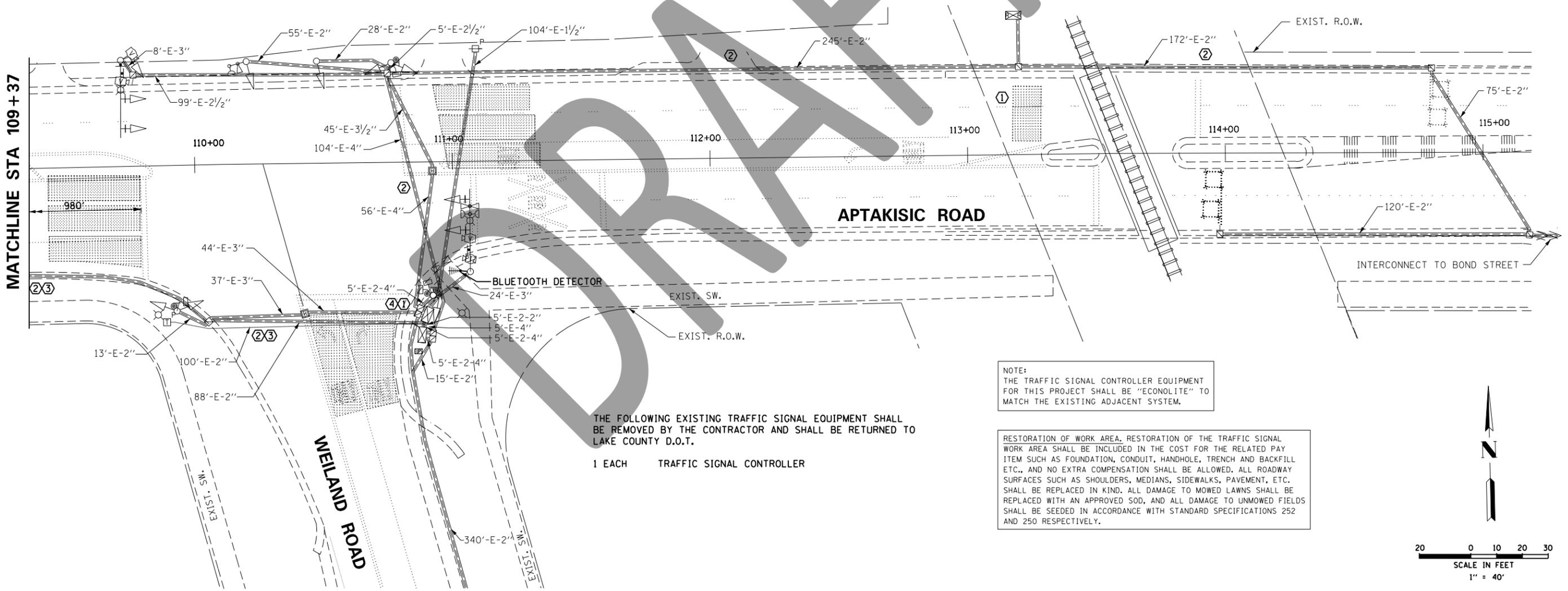
CHRISTOPHER B. BURKE
ENGINEERING LTD.
9575 West Higgins Road, Suite 600
Rosemont, Illinois 60018
(847) 823-5600

GENERAL NOTES

- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL DIMENSIONS AND CONDITIONS EXISTING IN THE FIELD PRIOR TO ORDERING MATERIALS AND BEGINNING CONSTRUCTION. THIS SHALL INCLUDE LOCATING THE MAST ARM FOUNDATIONS AND VERIFYING THE MAST ARMS LENGTHS.
- THE EXACT LOCATION OF ALL UTILITIES SHALL BE FIELD VERIFIED BY THE CONTRACTOR BEFORE ORDERING ANY MATERIALS AND STARTING ANY WORK. FOR LOCATIONS OF UTILITIES, LOCALLY OWNED EQUIPMENT, LEASED ENFORCEMENT CAMERA SYSTEM FACILITIES AND IDOT UNDERGROUND FACILITIES, CONTACT THE LOCAL COUNTIES, MUNICIPALITIES AND IDOT FOR LOCATES. THE CONTRACTOR SHALL CALL 'JULIE' AT (800) 892-0123 OR 811, IN THE CITY OF CHICAGO CONTACT DIGGER AT (312) 744-7000 FOR FIELD LOCATIONS OF BURIED UTILITIES (48 HOURS NOTIFICATION REQUIRED).
- THE CONTRACTOR SHALL CHECKED THE PROPOSED TRAFFIC SIGNAL EQUIPMENT LOCATIONS FOR OVERHEAD UTILITY CONFLICTS. THE CONTRACTOR SHALL COORDINATED ANY CONFLICTS WITH THE UTILITY COMPANIES AND THE RESIDENT ENGINEER BEFORE ORDERING MATERIALS.
- THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH UTILITY COMPANIES, LOCAL GOVERNMENT AGENCIES AND IDOT.

NOTE:

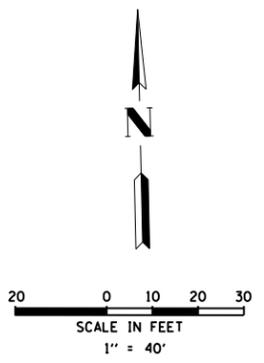
- DISABLE FAR BACK VIDEO DETECTION ZONES ON APTAKISIC ROAD.
- THE CONTRACTOR SHALL CUT THE EXISTING LEAD-IN SPLICE AND INSTALL NEW LEAD-IN CABLE. THEN SPLICE THE EXISTING DETECTOR LOOPS TO THE EXISTING AND PROPOSED LEAD-IN CABLES. ALL NECESSARY SPLICE RELATED WORK SHALL BE INCLUDED IN THE COST OF THE LEAD-IN CABLE.
- INSTALL QUEUE DETECTORS APROXIMATELY 980 FT WEST OF THE STOP BAR WITH 6 TURNS OF LOOP DETECTOR CABLE, WHICH SHALL BE INCLUDED IN THE COST OF LOOP DETECTOR TYPE I. INSTALL ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR, IN EXISTING CONDUITS AND HANDHOLES.
- REMOVE EXISTING CONTROLLER FROM CABINET AND INSTALL NEW NTCIP COMPLIANT CONTROLLER IN EXISTING CABINET. RETURN EXISTING CONTROLLER TO LAKE COUNTY D.O.T. THE BLUETOOTH DETECTOR SHALL BE INSTALLED ON THE MAST ARM AND THE POWER OVER ETHERNET (POE) MODULE SHALL BE INSTALLED IN THE EXISTING COMMUNICATIONS CABINET. INSTALL CONTACT CLOSURE CARD IN EXISTING CONTROLLER CABINET CONFIGURED TO TRANSMIT QUEUE DETECTOR INPUT AND RELEASE OF RAILROAD PREEMPTION FROM THE WEILAND ROAD CONTROLLER TO THE BOND STREET CONTROLLER USING THE EXISTING MULTIMODE FIBER OPTIC CABLES.



THE FOLLOWING EXISTING TRAFFIC SIGNAL EQUIPMENT SHALL BE REMOVED BY THE CONTRACTOR AND SHALL BE RETURNED TO LAKE COUNTY D.O.T.
1 EACH TRAFFIC SIGNAL CONTROLLER

NOTE:
THE TRAFFIC SIGNAL CONTROLLER EQUIPMENT FOR THIS PROJECT SHALL BE "ECONOLITE" TO MATCH THE EXISTING ADJACENT SYSTEM.

RESTORATION OF WORK AREA, RESTORATION OF THE TRAFFIC SIGNAL WORK AREA SHALL BE INCLUDED IN THE COST FOR THE RELATED PAY ITEM SUCH AS FOUNDATION, CONDUIT, HANDHOLE, TRENCH AND BACKFILL ETC., AND NO EXTRA COMPENSATION SHALL BE ALLOWED. ALL ROADWAY SURFACES SUCH AS SHOULDERS, MEDIANS, SIDEWALKS, PAVEMENT, ETC. SHALL BE REPLACED IN KIND. ALL DAMAGE TO MOWED LAWNS SHALL BE REPLACED WITH AN APPROVED SOD, AND ALL DAMAGE TO UNMOWED FIELDS SHALL BE SEEDED IN ACCORDANCE WITH STANDARD SPECIFICATIONS 252 AND 250 RESPECTIVELY.



FILE NAME =	USER NAME = ejensen	DESIGNED - FN	REVISED -
N:\LCDOT\120226\2 - Aptakisic Adaptive\office\MOD_WEILAND.dgn		DRAWN - EAJ	REVISED -
		CHECKED - GMZ	REVISED -
		DATE - 8/15/2012	REVISED -

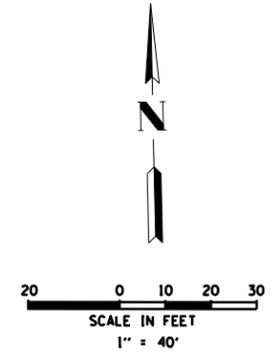
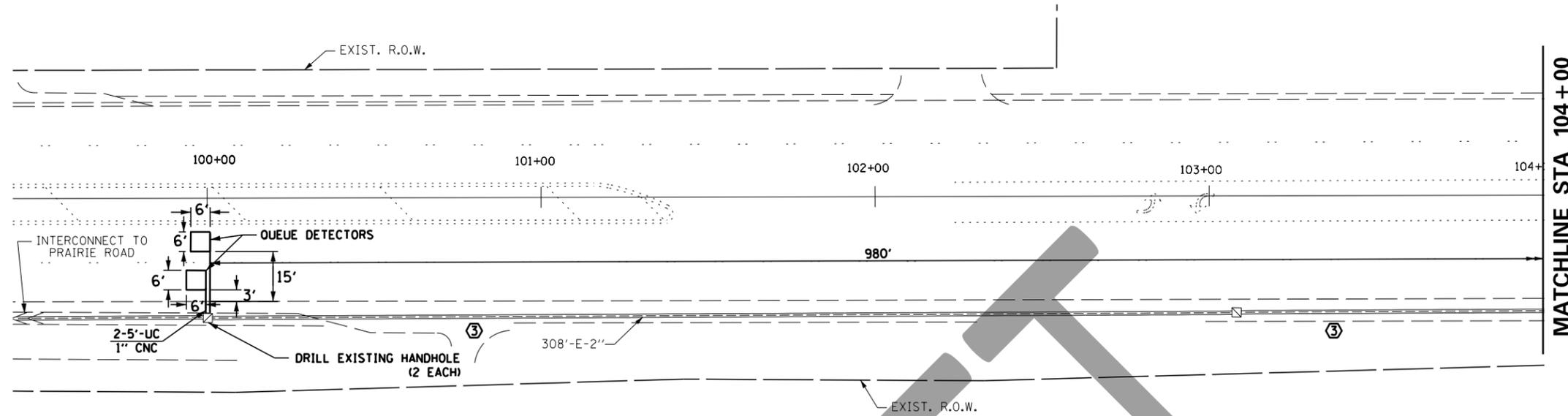


TRAFFIC SIGNAL MODIFICATION PLAN			
APTAKISIC ROAD AND WEILAND ROAD			
SHEET 1 OF 2			
SCALE:	SHEET NO.	OF SHEETS	STA. TO STA.

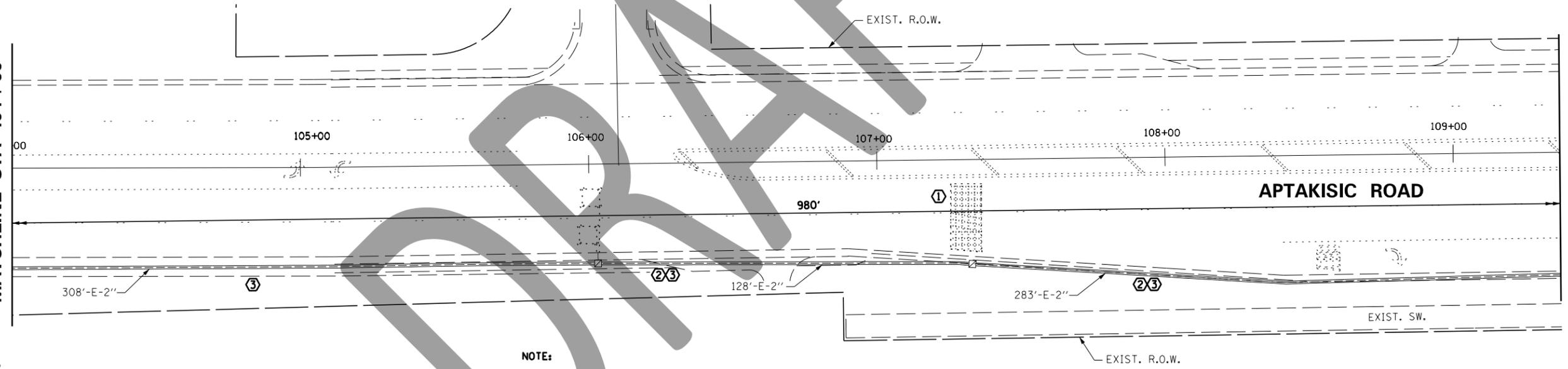
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1258	11-00088-19-TL	LAKE	39	18
CONTRACT NO.				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

PROFILE SURVEYED _____ DATE _____
 GRADES CHECKED _____
 ELEM. NOTED _____
 STRUCTURE NOTATIONS OKWD
 NO. _____
 PLAN SURVEYED _____ DATE _____
 NOTE BOOK _____
 NO. _____
 SURVEYED _____
 ALIGNMENT CHECKED _____
 RT. OF WAY CHECKED _____
 ADD. FILE NAME _____

CHRISTOPHER B. BURKE ENGINEERING LTD.
 9575 West Higgins Road, Suite 600
 Rosemont, Illinois 60018
 (647) 929-9500



MATCHLINE STA 104+00



MATCHLINE STA 109+37

GENERAL NOTES

1. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL DIMENSIONS AND CONDITIONS EXISTING IN THE FIELD PRIOR TO ORDERING MATERIALS AND BEGINNING CONSTRUCTION. THIS SHALL INCLUDE LOCATING THE MAST ARM FOUNDATIONS AND VERIFYING THE MAST ARMS LENGTHS.
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4. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH UTILITY COMPANIES, LOCAL GOVERNMENT AGENCIES AND IDOT.

NOTE:

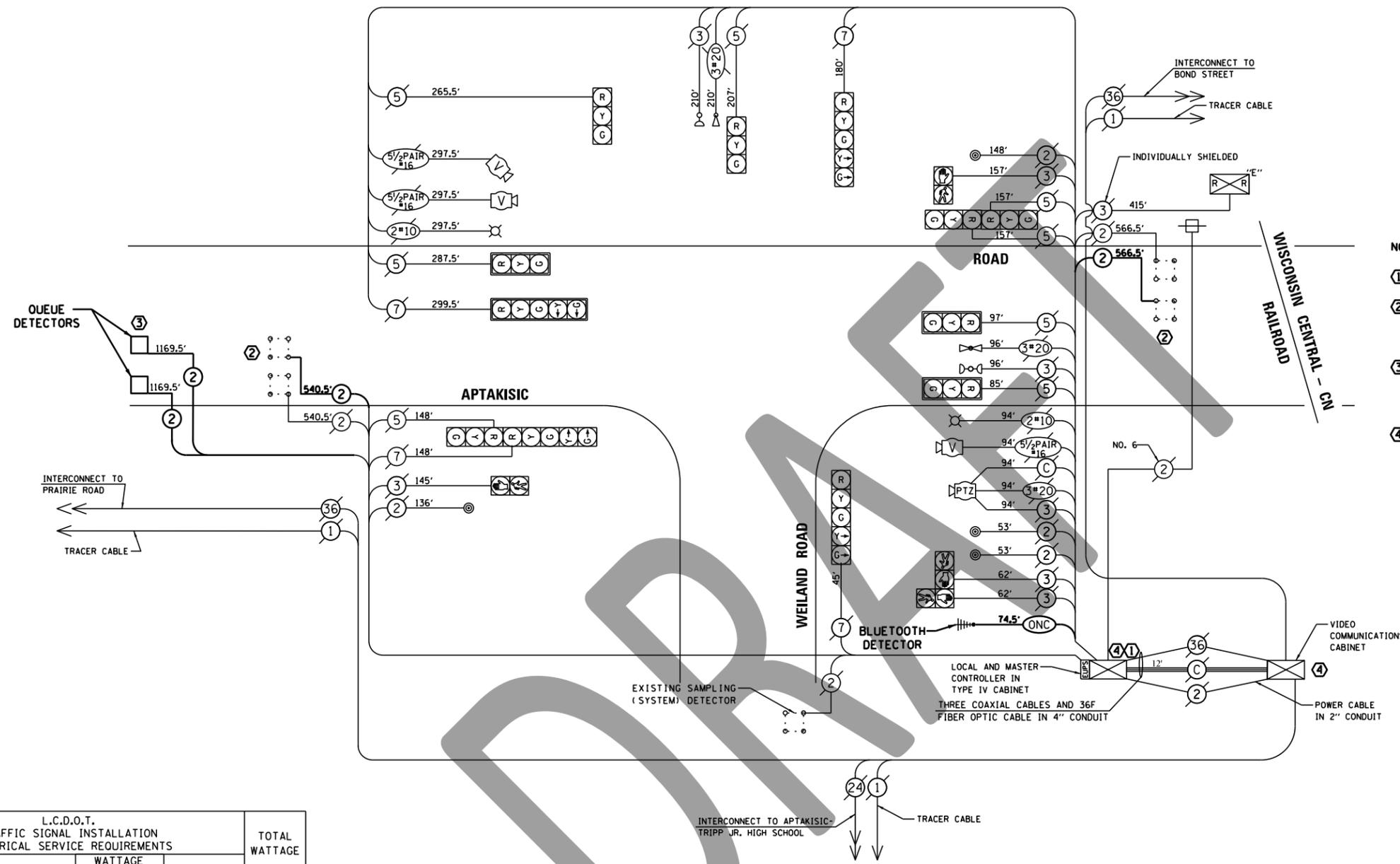
- ① DISABLE FAR BACK VIDEO DETECTION ZONES ON APTAKISIC ROAD.
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FILE NAME = N:\LCD007\120226V2 - Aptakisic Adaptive	USER NAME = ejensen	DESIGNED - FN	REVISED -		TRAFFIC SIGNAL MODIFICATION PLAN APTAKISIC ROAD AND WEILAND ROAD SHEET 2 OF 2			F.A.U. RTE. 1258	SECTION 11-00088-19-TL	COUNTY LAKE	TOTAL SHEETS 39	SHEET NO. 19
PLT. SCALE = 48"	CHECKED - GMZ	REVISED -	REVISED -					SCALE: SHEET NO. OF SHEETS STA. TO STA.			CONTRACT NO.	
PLT. DATE = 4/19/2013	DATE - 8/15/2012	REVISED -	REVISED -		FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT							

DATE: _____ BY: _____
 SURVEYED: _____ ALIGNED: _____ CHECKED: _____
 PLAN: _____ NOTE BOOK: _____
 NO. _____
CHRISTOPHER B. BURKE ENGINEERING LTD.
 9575 West Higgins Road, Suite 600
 Rosemont, Illinois 60018
 (847) 923-5930
 DATE: _____ BY: _____
 SURVEYED: _____ GRADES CHECKED: _____
 PROFILE: _____ ELEM. NOTED: _____
 NO. _____ STRUCTURE: NOTATIONS: OK/NO



- NOTE:**
- ① DISABLE FAR BACK VIDEO DETECTION ZONES ON APTAKISIC ROAD.
 - ② THE CONTRACTOR SHALL CUT THE EXISTING LEAD-IN SPLICE AND INSTALL NEW LEAD-IN CABLE. THEN SPLICE THE EXISTING DETECTOR LOOPS TO THE EXISTING AND PROPOSED LEAD-IN CABLES. ALL NECESSARY SPLICE RELATED WORK SHALL BE INCLUDED IN THE COST OF THE LEAD-IN CABLE.
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L.C.D.O.T. TRAFFIC SIGNAL INSTALLATION ELECTRICAL SERVICE REQUIREMENTS					TOTAL WATTAGE
TYPE	NO. OF LAMPS	WATTAGE INCAND.	LED	% OPERATION	
SIGNAL (RED)	12	-	17	0.50	102.0
(YELLOW)	12	-	25	0.25	75.0
(GREEN)	12	-	15	0.25	45.0
ARROW	8	-	12	0.10	9.6
PED. SIGNAL	4	-	25	1.00	100.0
CONTROLLER	2	-	100	1.00	200.0
LUMINAIRES	2	-	250	0.50	250.0
VIDEO DET.	3	-	150	1.00	450.0
BATT BACK-UP	1	-	25	1.00	25.0
PTZ CAMERA	1	-	80	1.00	80.0
ENERGY COSTS TO:					TOTAL = 1336.6

LAKE COUNTY DIVISION OF TRANSPORTATION
 600 WEST WINCHESTER ROAD
 LIBERTYVILLE, ILLINOIS 60048-1381
 ENERGY SUPPLY CONTACT: DOROTHY PROSEN
 PHONE: (847) 816-5323
 COMPANY: COMED

SCHEDULE OF QUANTITIES			
ITEM	UNIT	QUANTITY	
MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	1	
ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR	FOOT	3448	
DRILL EXISTING HANDHOLE	EACH	2	
INDUCTIVE LOOP DETECTOR	EACH	4	
DETECTOR LOOP, TYPE I	FOOT	66	
MODIFY EXISTING CONTROLLER CABINET	EACH	1	
FULL-ACTUATED CONTROLLER IN EXISTING CABINET	EACH	1	
OUTDOOR RATED NETWORK CABLE	FOOT	75	
CHANNEL CONTACT CLOSURE CARD	EACH	1	
BLUETOOTH DETECTOR	EACH	1	

FILE NAME = N:\LCDOT\120226\2 - Aptakisic Adaptive\Traffic\CAB_WEILAND.dgn	USER NAME = ejensen	DESIGNED - FN	REVISED -
PLOT SCALE = 41'		DRAWN - EAJ	REVISED -
PLOT DATE = 4/19/2013		CHECKED - GMZ	REVISED -
		DATE - 8/15/2012	REVISED -



CABLE PLAN
APTAKISIC ROAD AND WEILAND ROAD
 SCALE: _____ SHEET NO. _____ OF _____ SHEETS _____ STA. _____ TO STA. _____

F.A.U. RT.E. 1258	SECTION 11-00088-19-TL	COUNTY LAKE	TOTAL SHEETS 39	SHEET NO. 20
CONTRACT NO. _____				
FED. ROAD DIST. NO. _____ ILLINOIS FED. AID PROJECT				

DATE: _____ BY: _____
 SURVEYED: _____ ALIGNED: _____ CHECKED: _____
 PLAN: _____ NO. _____
 NOTE BOOK: _____
 DATE: _____ BY: _____
 SURVEYED: _____ GRADES CHECKED: _____
 PROFILE: _____ E.M. NOTED: _____
 NOTE BOOK: _____ STRUCTURE NOTATIONS: _____

CHRISTOPHER B. BURKE ENGINEERING LTD.
 3575 West Higgins Road, Suite 600
 Rosemont, Illinois 60018
 (630) 923-9500

SEQUENCE OF OPERATION

MOVEMENT	1 + 6			2 + 6			8			F L A S H		
	1	2	3	4	5	6A	6B	7	8		9A	9B
CHANGE TO	2+6			8			1+6 2+6					
APTAKISIC ROAD ALL SIGNALS	E/B	R	R	R	G	G	Y	R	R	R	R	R
APTAKISIC ROAD NEAR RIGHT AND FAR RIGHT MAST ARM SIGNALS	W/B	G	G	G	G	G	Y	R	R	R	R	R
APTAKISIC ROAD END MAST ARM AND FAR LEFT SIGNALS	W/B	G ←	G ←	Y	G	G	G	Y	R	R	R	R
WEILAND ROAD FAR LEFT AND MIDDLE SIGNALS	N/B	R	R	R	R	R	R	R	G	G	Y	R
WEILAND ROAD NEAR RIGHT AND FAR RIGHT SIGNALS	N/B	R G →	R Y →	R	R	R	R	R	G	G	Y	R
PEDESTRIAN SIGNALS CROSSING WEILAND ROAD ON SOUTH SIDE OF APTAKISIC ROAD		H	H	H	*P	**FH	H	H	H	H	H	H
PEDESTRIAN SIGNALS CROSSING APTAKISIC ROAD ON EAST SIDE OF WEILAND ROAD		H	H	H	H	H	H	*P	**FH	H	H	H

* TO APPEAR ONLY UPON PUSHBUTTON ACTUATION
 ** FLASHING "FH" IS TO TERMINATE AT THE COMPLETION OF THE PEDESTRIAN INTERVAL CLEARANCE.
 P = ILLUMINATED PERSON = WALK
 FH = ILLUMINATED FLASHING HAND = FLASHING DON'T WALK
 H = ILLUMINATED SOLID HAND = DON'T WALK
 PHASE 2+6 SHALL BE PLACED ON RECALL.

RAILROAD PREEMPTION SEQUENCE OF OPERATION

CHANGE FROM NORMAL SEQUENCE OF OPERATION INTERVAL NUMBER	PREEMPTOR NUMBER 3			PREEMPTOR NUMBER 4			PREEMPTOR NUMBER 2			CLEAR TO NORMAL SEQUENCE							
	1	4	7	2	3	1A	1B	1C	1D		1E	1F	1G	1H	1J	2	3
CHANGE FROM EMERGENCY VEHICLE PREEMPTION SEQUENCE OF OPERATION INTERVAL NUMBER																	
RAILROAD PREEMPTION SEQUENCE OF OPERATION INTERVAL NUMBER	1A	1B	1C	1D	1E	1F	1G	1H	1J	2	3	4	5	CLEAR TO NORMAL SEQUENCE			
CHANGE TO RAILROAD PREEMPTION SEQUENCE OF OPERATION INTERVAL NUMBER	2	1C	2	1E	2	1G	2	1J	2	3	4	5					
APTAKISIC ROAD ALL SIGNALS	E/B	R	Y	R	R	R	Y	R	R	R	R	R	R	△			
APTAKISIC ROAD NEAR RIGHT AND FAR RIGHT MAST ARM SIGNALS	W/B	G	G	G	R	R	G	G	R	R	G	Y	R	△			
APTAKISIC ROAD END MAST ARM AND FAR LEFT SIGNALS	W/B	G ←	G	G	R	R	G	G	R	R	G ←	Y	R	△			
WEILAND ROAD FAR LEFT AND MIDDLE SIGNALS	N/B	R	R	R	Y	R	R	R	Y	R	R	R	G	△			
WEILAND ROAD NEAR RIGHT AND FAR RIGHT SIGNALS	N/B	R Y →	R	R	Y	R	R	R	Y	R	R	R	G	△			
PEDESTRIAN SIGNALS CROSSING WEILAND ROAD ON SOUTH SIDE OF APTAKISIC ROAD		H	FH	H	H	H	H	H	H	H	H	H	H	△			
PEDESTRIAN SIGNALS CROSSING APTAKISIC ROAD ON EAST SIDE OF WEILAND ROAD		H	H	H	FH	H	H	H	H	H	H	H	H	△			

△ RAILROAD PREEMPTION SEQUENCE SHALL PROVIDE THE PROPER CLEARANCE INTERVAL TO RESUME THE NORMAL SEQUENCE OF OPERATION OR PROPER CLEARANCE INTERVAL TO DISPLAY AN EMERGENCY VEHICLE INTERVAL (IF APPLICABLE) AFTER RAILROAD PREEMPTION INTERVAL 5 IS TERMINATED.

HOLD

EMERGENCY VEHICLE PREEMPTION SEQUENCE OF OPERATION

CHANGE FROM NORMAL SEQUENCE OF OPERATION INTERVAL NUMBER	PREEMPTOR NUMBER 3			PREEMPTOR NUMBER 4			CLEAR TO NORMAL SEQUENCE								
	1	1	4	4	7	7									
EMERGENCY VEHICLE PREEMPTION SEQUENCE OF OPERATION INTERVAL NUMBER	1A	1B	1C	1D	1E	1F	1G	1H	1J	1K	1L	1M	2	3	CLEAR TO NORMAL SEQUENCE
CHANGE TO EMERGENCY VEHICLE PREEMPTION SEQUENCE OF OPERATION INTERVAL NUMBER	1B	2	1D	3	2	1G	1H	3	1K	1L	2	3			
APTAKISIC ROAD ALL SIGNALS	E/B	R	R	R	R	G	G	Y	R	R	R	R	G	R	◇
APTAKISIC ROAD NEAR RIGHT AND FAR RIGHT MAST ARM SIGNALS	W/B	G	G	Y	R	G	G	Y	R	R	R	R	G	R	◇
APTAKISIC ROAD END MAST ARM AND FAR LEFT SIGNALS	W/B	G ←	Y	R	G	G	Y	R	R	R	R	R	G	R	◇
WEILAND ROAD FAR LEFT AND MIDDLE SIGNALS	N/B	R	R	R	R	R	R	R	G	Y	R	G	R	G	◇
WEILAND ROAD NEAR RIGHT AND FAR RIGHT SIGNALS	N/B	R Y →	R	R	Y →	R	R	R	R	G	Y	R	G	R	◇
PEDESTRIAN SIGNALS CROSSING WEILAND ROAD ON SOUTH SIDE OF APTAKISIC ROAD		H	H	H	H	FH	FH	H	H	H	H	H	H	H	◇
PEDESTRIAN SIGNALS CROSSING APTAKISIC ROAD ON EAST SIDE OF WEILAND ROAD		H	H	H	H	H	H	H	FH	H	H	FH	H	H	◇

◇ EMERGENCY VEHICLE SEQUENCE SHALL PROVIDE THE PROPER CLEARANCE INTERVAL TO RESUME THE NORMAL SEQUENCE OF OPERATION OR PROPER CLEARANCE INTERVAL TO DISPLAY A DIFFERENT EMERGENCY INTERVAL AFTER EMERGENCY VEHICLE INTERVAL 2 OR 3 IS TERMINATED.

FILE NAME = N:\LCD001\120226V2 - Aptakistic Adaptive	USER NAME = ejensen	DESIGNED - FN	REVISED -
	TRAFFIC\SEQ>Weiland81.dgn	DRAWN - EAJ	REVISED -
	PLOT SCALE = 2"	CHECKED - GMZ	REVISED -
	PLOT DATE = 4/19/2013	DATE - 8/15/2012	REVISED -



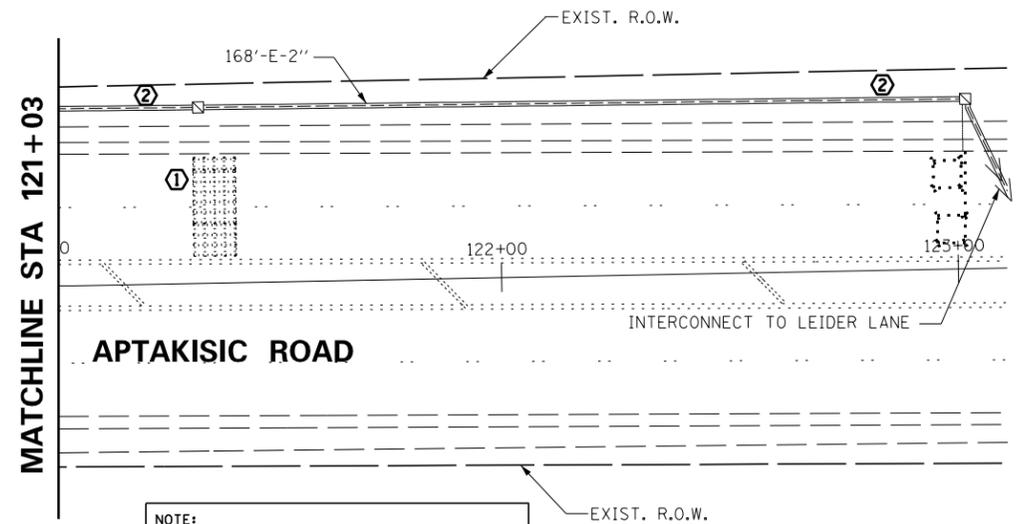
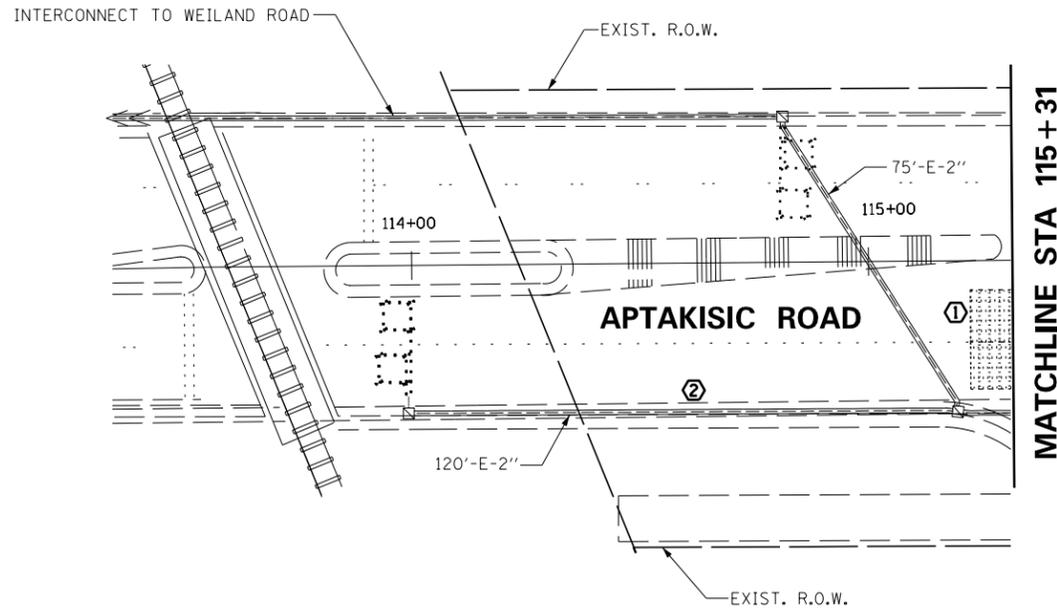
SEQUENCE OF OPERATION, RAILROAD PREEMPTION SEQUENCE OF OPERATION AND EMERGENCY VEHICLE PREEMPTION SEQUENCE OF OPERATION APTAKISIC ROAD AND WEILAND ROAD			
SCALE:	SHEET NO. OF SHEETS	STA. TO STA.	

F.A.U. RTE. 1258	SECTION 11-00088-19-TL	COUNTY LAKE	TOTAL SHEETS 39	SHEET NO. 21
CONTRACT NO.				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

DATE	BY	DATE	BY
DATE	BY	DATE	BY
DATE	BY	DATE	BY
DATE	BY	DATE	BY

ENGINEERING LTD.
CHRISTOPHER B. BURKE
 9575 West Higgins Road, Suite 600
 Rosemont, Illinois 60018
 (647) 823-5500

PROFILING
 SURVEYED
 GRADES CHECKED
 ELEM. NOTED
 STRUCTURE NOTATIONS OKWD

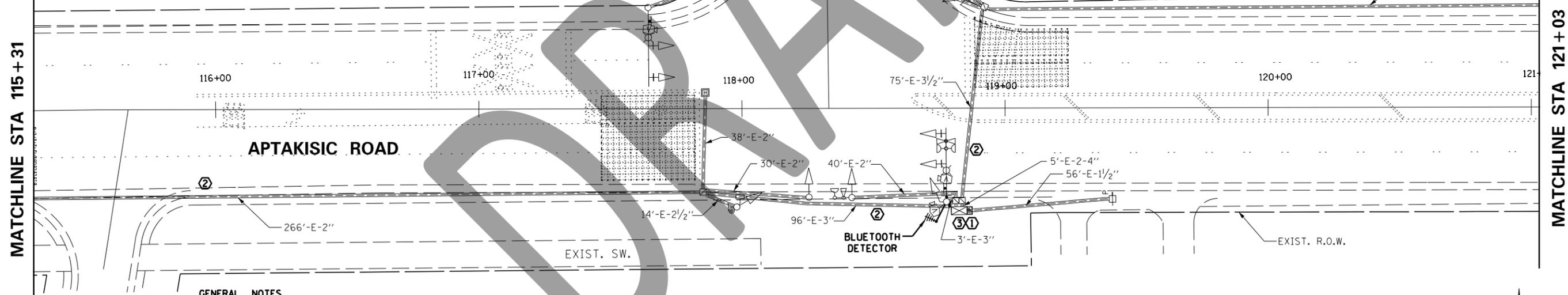


THE FOLLOWING EXISTING TRAFFIC SIGNAL EQUIPMENT SHALL BE REMOVED BY THE CONTRACTOR AND SHALL BE RETURNED TO LAKE COUNTY D.O.T.

1 EACH TRAFFIC SIGNAL CONTROLLER

NOTE:
 THE TRAFFIC SIGNAL CONTROLLER EQUIPMENT FOR THIS PROJECT SHALL BE "ECONOLITE" TO MATCH THE EXISTING ADJACENT SYSTEM.

RESTORATION OF WORK AREA, RESTORATION OF THE TRAFFIC SIGNAL WORK AREA SHALL BE INCLUDED IN THE COST FOR THE RELATED PAY ITEM SUCH AS FOUNDATION, CONDUIT, HANDHOLE, TRENCH AND BACKFILL ETC., AND NO EXTRA COMPENSATION SHALL BE ALLOWED. ALL ROADWAY SURFACES SUCH AS SHOULDERS, MEDIANS, SIDEWALKS, PAVEMENT, ETC. SHALL BE REPLACED IN KIND. ALL DAMAGE TO MOWED LAWNS SHALL BE REPLACED WITH AN APPROVED SOD, AND ALL DAMAGE TO UNMOWED FIELDS SHALL BE SEEDED IN ACCORDANCE WITH STANDARD SPECIFICATIONS 252 AND 250 RESPECTIVELY.

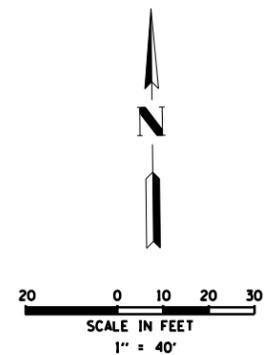


GENERAL NOTES

- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL DIMENSIONS AND CONDITIONS EXISTING IN THE FIELD PRIOR TO ORDERING MATERIALS AND BEGINNING CONSTRUCTION. THIS SHALL INCLUDE LOCATING THE MAST ARM FOUNDATIONS AND VERIFYING THE MAST ARMS LENGTHS.
- THE EXACT LOCATION OF ALL UTILITIES SHALL BE FIELD VERIFIED BY THE CONTRACTOR BEFORE ORDERING ANY MATERIALS AND STARTING ANY WORK. FOR LOCATIONS OF UTILITIES, LOCALLY OWNED EQUIPMENT, LEASED ENFORCEMENT CAMERA SYSTEM FACILITIES AND IDOT UNDERGROUND FACILITIES, CONTACT THE LOCAL COUNTIES, MUNICIPALITIES AND IDOT FOR LOCATES. THE CONTRACTOR SHALL CALL 'JULIE' AT (800) 892-0123 OR 811, IN THE CITY OF CHICAGO CONTACT DIGGER AT (312) 744-7000 FOR FIELD LOCATIONS OF BURIED UTILITIES (48 HOURS NOTIFICATION REQUIRED).
- THE CONTRACTOR SHALL CHECKED THE PROPOSED TRAFFIC SIGNAL EQUIPMENT LOCATIONS FOR OVERHEAD UTILITY CONFLICTS. THE CONTRACTOR SHALL COORDINATED ANY CONFLICTS WITH THE UTILITY COMPANIES AND THE RESIDENT ENGINEER BEFORE ORDERING MATERIALS.
- THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH UTILITY COMPANIES, LOCAL GOVERNMENT AGENCIES AND IDOT.

NOTE:

- DISABLE FAR BACK VIDEO DETECTION ZONES ON APTAKISIC ROAD.
- THE CONTRACTOR SHALL CUT THE EXISTING LEAD-IN SPLICE AND INSTALL NEW LEAD-IN CABLE. THEN SPLICE THE EXISTING DETECTOR LOOPS TO THE EXISTING AND PROPOSED LEAD-IN CABLES. ALL NECESSARY SPLICE RELATED WORK SHALL BE INCLUDED IN THE COST OF THE LEAD-IN CABLE.
- REMOVE EXISTING CONTROLLER FROM CABINET AND INSTALL NEW NTCIP COMPLIANT CONTROLLER IN EXISTING CABINET. RETURN EXISTING CONTROLLER TO LAKE COUNTY D.O.T. THE BLUETOOTH DETECTOR SHALL BE INSTALLED ON THE MAST ARM AND THE POWER OVER ETHERNET (POE) MODULE SHALL BE INSTALLED IN THE EXISTING CONTROLLER CABINET. INSTALL CONTACT CLOSURE CARD IN EXISTING CONTROLLER CABINET CONFIGURED TO RECEIVE QUEUE DETECTOR INPUT AND RELEASE OF RAILROAD PREEMPTION SENT FROM WEILAND ROAD CONTROLLER TO BOND STREET CONTROLLER USING THE EXISTING MULTIMODE FIBER OPTIC CABLE.



FILE NAME =	USER NAME = ejensen	DESIGNED - FN	REVISED -
N:\L\CDOT\120226\2 - Aptakisic Adaptive Traffic\MOD_BOND.dgn		DRAWN - EAJ	REVISED -
		CHECKED - GMZ	REVISED -
		DATE - 8/15/2012	REVISED -



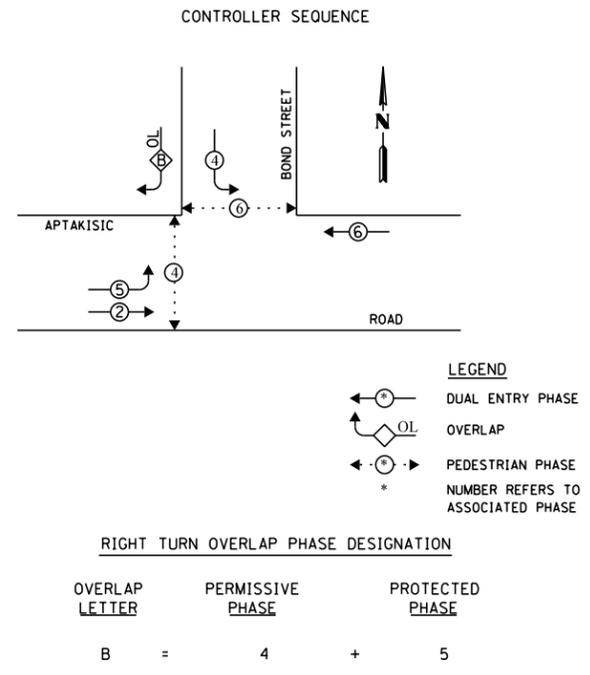
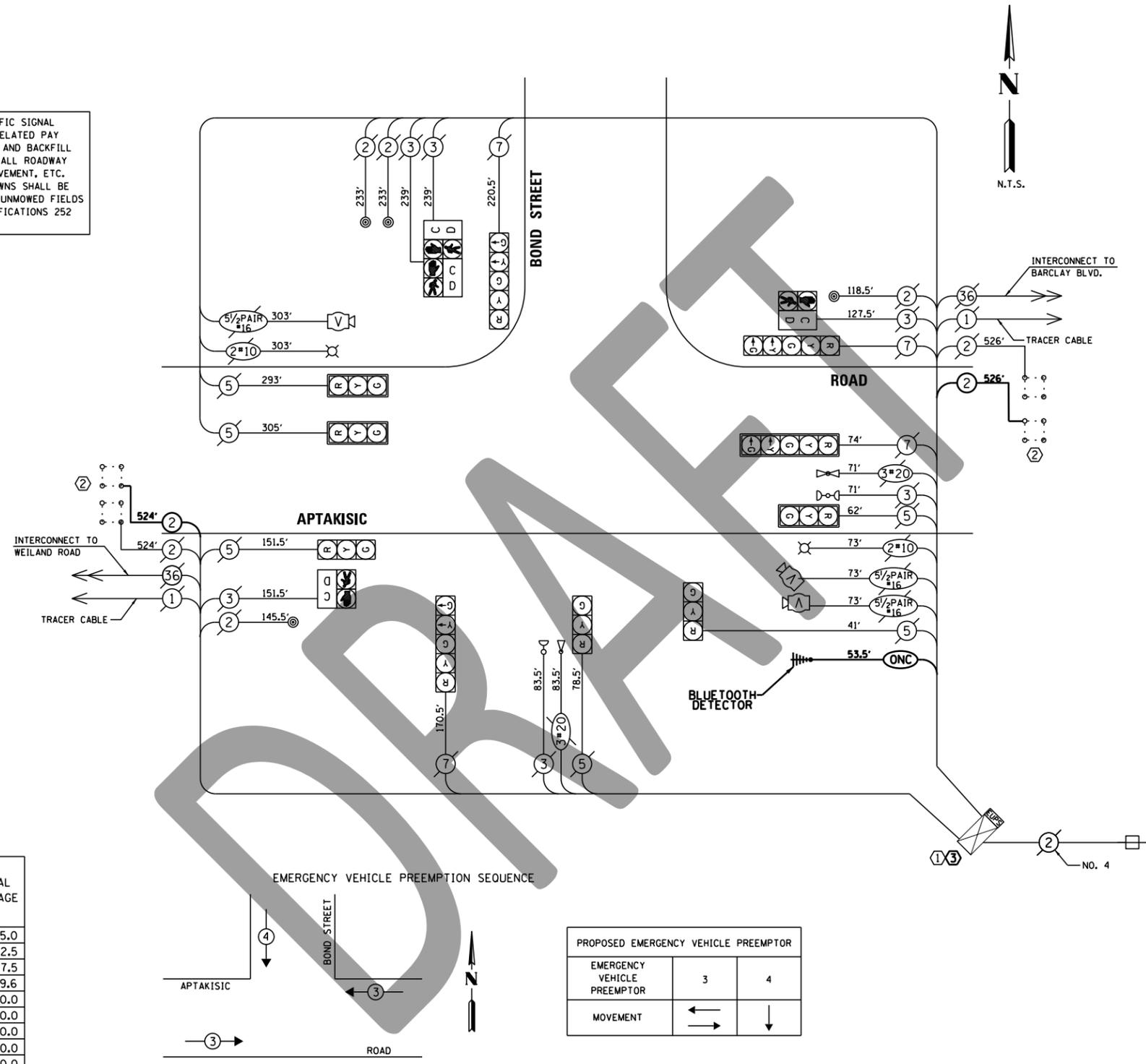
TRAFFIC SIGNAL MODIFICATION PLAN APTAKISIC ROAD AND BOND STREET			
SCALE:	SHEET NO.	OF SHEETS	STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1258	11-00088-19-TL	LAKE	39	22
CONTRACT NO.				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

DATE: _____ BY: _____
 SURVEYED: _____ ALIGNED: _____
 RT. OF WAY CHECKED: _____
 DATE: _____ FILE NAME: _____
 PLAN NO. _____
 NOTE BOOK NO. _____
CHRISTOPHER B. BURKE ENGINEERING LTD.
 9575 West Higgins Road, Suite 600
 Rosemont, Illinois 60018
 (647) 923-5930
 DATE: _____ BY: _____
 SURVEYED: _____ GRADES CHECKED: _____
 ELEM. NOTED: _____ STRUCTURE NOTATIONS OKWD
 NOTE BOOK NO. _____

NOTE:
 THE TRAFFIC SIGNAL CONTROLLER EQUIPMENT FOR THIS PROJECT SHALL BE "ECONOLITE" TO MATCH THE EXISTING ADJACENT SYSTEM.

RESTORATION OF WORK AREA, RESTORATION OF THE TRAFFIC SIGNAL WORK AREA SHALL BE INCLUDED IN THE COST FOR THE RELATED PAY ITEM SUCH AS FOUNDATION, CONDUIT, HANDHOLE, TRENCH AND BACKFILL ETC., AND NO EXTRA COMPENSATION SHALL BE ALLOWED. ALL ROADWAY SURFACES SUCH AS SHOULDERS, MEDIANS, SIDEWALKS, PAVEMENT, ETC. SHALL BE REPLACED IN KIND. ALL DAMAGE TO MOWED LAWNS SHALL BE REPLACED WITH AN APPROVED SOD, AND ALL DAMAGE TO UNMOWED FIELDS SHALL BE SEEDED IN ACCORDANCE WITH STANDARD SPECIFICATIONS 252 AND 250 RESPECTIVELY.



- NOTE:**
- DISABLE FAR BACK VIDEO DETECTION ZONES ON APTAKISIC ROAD.
 - THE CONTRACTOR SHALL CUT THE EXISTING LEAD-IN SPLICE AND INSTALL NEW LEAD-IN CABLE. THEN SPLICE THE EXISTING DETECTOR LOOPS TO THE EXISTING AND PROPOSED LEAD-IN CABLES. ALL NECESSARY SPLICE RELATED WORK SHALL BE INCLUDED IN THE COST OF THE LEAD-IN CABLE.
 - REMOVE EXISTING CONTROLLER FROM CABINET AND INSTALL NEW NTCIP COMPLIANT CONTROLLER IN EXISTING CABINET. RETURN EXISTING CONTROLLER TO LAKE COUNTY D.O.T. THE BLUETOOTH DETECTOR SHALL BE INSTALLED ON THE MAST ARM AND THE POWER OVER ETHERNET (POE) MODULE SHALL BE INSTALLED IN THE EXISTING CONTROLLER CABINET. INSTALL CONTACT CLOSURE CARD IN EXISTING CONTROLLER CABINET CONFIGURED TO RECEIVE QUEUE DETECTOR INPUT AND RELEASE OF RAILROAD PREEMPTION SENT FROM WEILAND ROAD CONTROLLER TO BOND STREET CONTROLLER USING THE EXISTING MULTIMODE FIBER OPTIC CABLE.

I.D.O.T. TRAFFIC SIGNAL INSTALLATION ELECTRICAL SERVICE REQUIREMENTS

TYPE	NO. OF LAMPS	WATTAGE X INCAND.	LED	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	10	-	17	0.50	85.0
(YELLOW)	10	-	25	0.25	62.5
(GREEN)	10	-	15	0.25	37.5
ARROW	8	-	12	0.10	9.6
PED. SIGNAL	4	-	25	1.00	100.0
CONTROLLER	1	-	100	1.00	100.0
LUMINAIRES	2	-	250	0.50	250.0
PTZ CAMERA	1	-	80	1.00	80.0
VIDEO DET.	3	-	150	1.00	350.0
BATT BACK-UP	1	-	25	1.00	25.0

PROPOSED EMERGENCY VEHICLE PREEMPTOR

EMERGENCY VEHICLE PREEMPTOR	3	4
MOVEMENT	← →	↓

SCHEDULE OF QUANTITIES

ITEM	UNIT	QUANTITY
MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	1
ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR	FOOT	1050
INDUCTIVE LOOP DETECTOR	EACH	2
MODIFY EXISTING CONTROLLER CABINET	EACH	1
FULL-ACTUATED CONTROLLER IN EXISTING CABINET	EACH	1
OUTDOOR RATED NETWORK CABLE	FOOT	54
CHANNEL CONTACT CLOSURE CARD	EACH	1
BLUETOOTH DETECTOR	EACH	1

ENERGY COSTS TO: TOTAL = 1099,6

LAKE COUNTY DIVISION OF TRANSPORTATION
 600 WEST WINCHESTER ROAD
 LIBERTYVILLE, ILLINOIS 60048-1381
 ENERGY SUPPLY: CONTACT: DOROTHY PROSEN
 PHONE: (847) 816-5323
 COMPANY: COMED

FILE NAME = N:\LCD001\120226V2 - Aptakisic Adaptive\Traffic\CAB_BOND.dgn	USER NAME = ejensen	DESIGNED - FN	REVISED -
		DRAWN - EAJ	REVISED -
		CHECKED - GMZ	REVISED -
		DATE - 8/15/2012	REVISED -

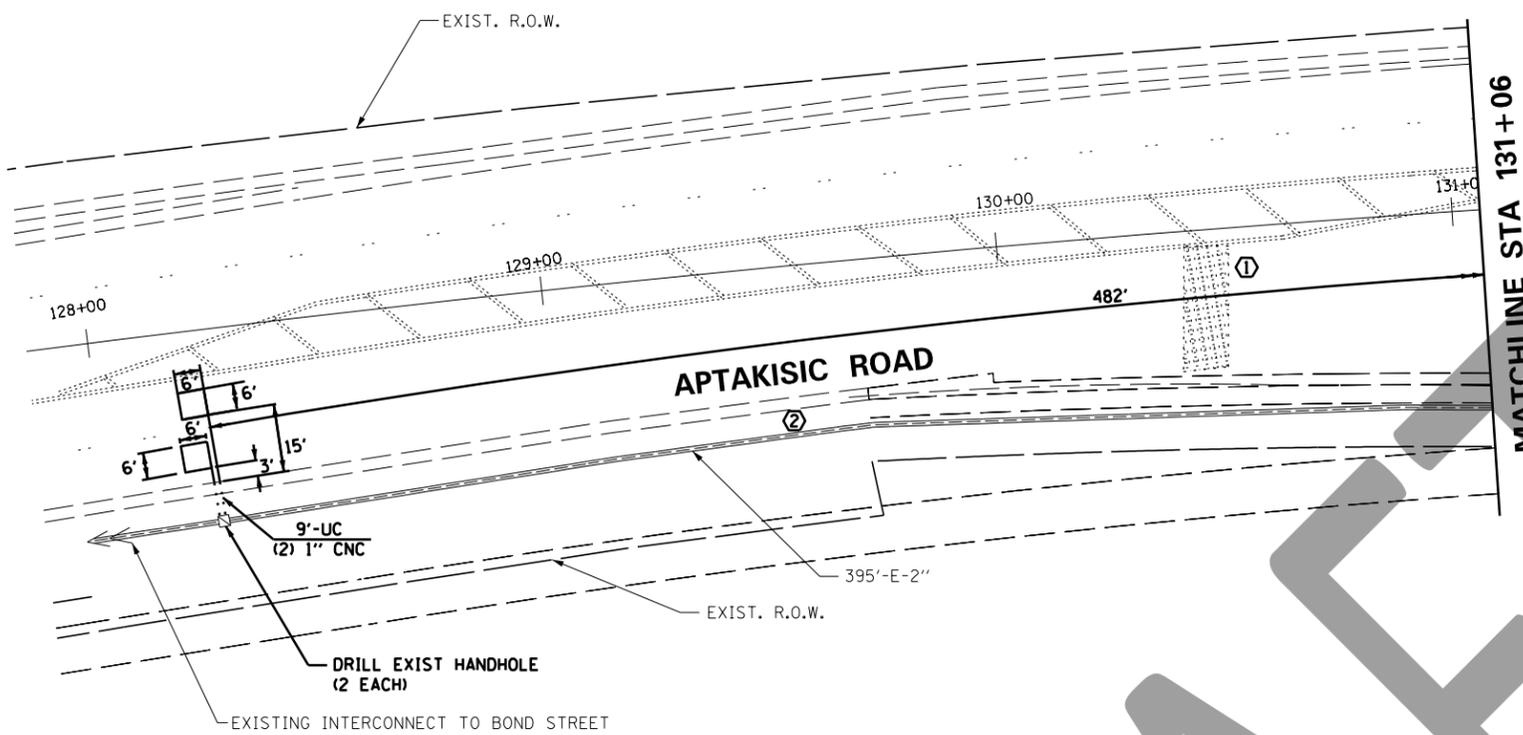


CABLE PLAN
APTAKISIC ROAD AND BOND STREET

SCALE: _____ SHEET NO. _____ OF _____ SHEETS STA. _____ TO STA. _____

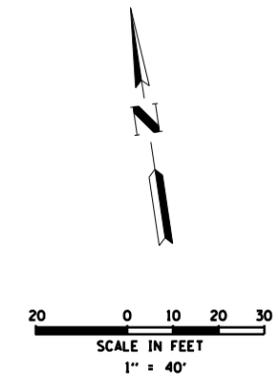
F.A.U. RTE. 1258	SECTION 11-00088-19-TL	COUNTY LAKE	TOTAL SHEETS 39	SHEET NO. 23
CONTRACT NO. _____				
FED. ROAD DIST. NO. _____ ILLINOIS FED. AID PROJECT _____				

PROFILE SURVEYED _____ DATE _____
 GRADES CHECKED _____
 ELEM. NOTED _____
 STRUCTURE NOTATIONS OKWD
 NOTE BOOK NO. _____
 PLAN SURVEYED _____ DATE _____
 ALIGNMENT CHECKED _____
 RT. OF WAY CHECKED _____
 ADD. FILE NAME _____
 NOTE BOOK NO. _____
 ENGINEERING LTD.
CHRISTOPHER B. BURKE
 9575 West Higgins Road, Suite 600
 Rosemont, Illinois 60018
 (647) 923-5930

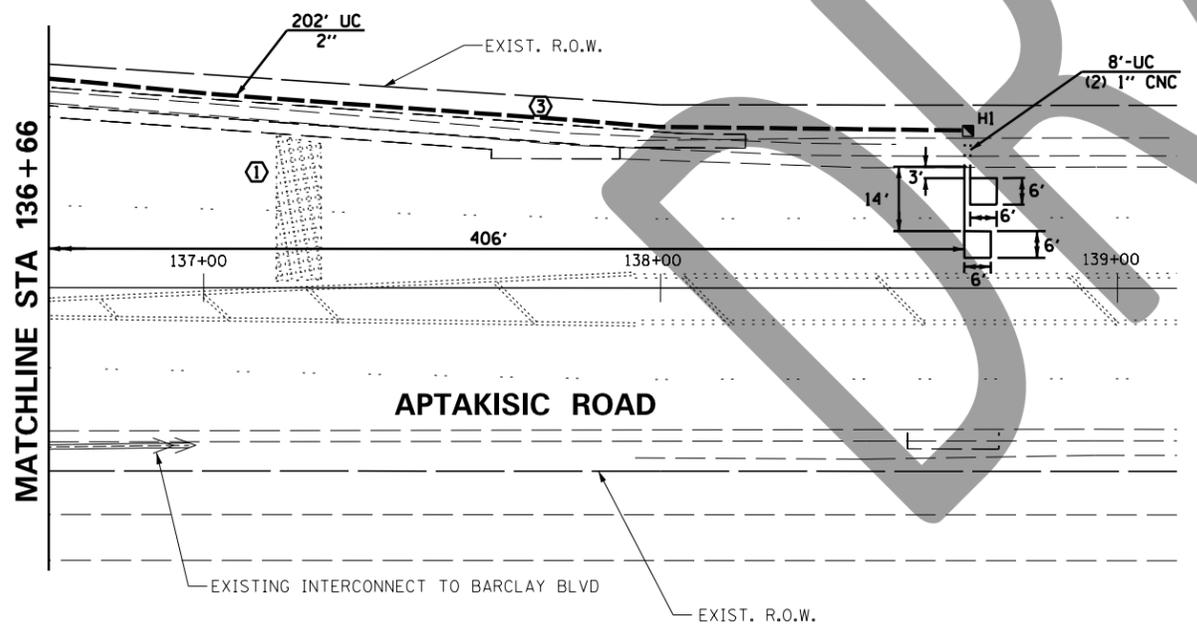


NOTE:
 THE TRAFFIC SIGNAL CONTROLLER EQUIPMENT FOR THIS PROJECT SHALL BE "ECONOLITE" TO MATCH THE EXISTING ADJACENT SYSTEM.

RESTORATION OF WORK AREA, RESTORATION OF THE TRAFFIC SIGNAL WORK AREA SHALL BE INCLUDED IN THE COST FOR THE RELATED PAY ITEM SUCH AS FOUNDATION, CONDUIT, HANDHOLE, TRENCH AND BACKFILL ETC., AND NO EXTRA COMPENSATION SHALL BE ALLOWED. ALL ROADWAY SURFACES SUCH AS SHOULDERS, MEDIANS, SIDEWALKS, PAVEMENT, ETC. SHALL BE REPLACED IN KIND. ALL DAMAGE TO MOWED LAWNS SHALL BE REPLACED WITH AN APPROVED SOD, AND ALL DAMAGE TO UNMOWED FIELDS SHALL BE SEED IN ACCORDANCE WITH STANDARD SPECIFICATIONS 252 AND 250 RESPECTIVELY.



- NOTE:
- ① DISABLE FAR BACK VIDEO DETECTION ZONES ON APTAKISIC ROAD.
 - ② INSTALL TWO NEW DETECTOR LOOPS, TYPE I, WITH 6 TURNS OF LOOP DETECTOR CABLE APPROXIMATELY 482 FT WEST OF THE STOP BAR. THE COST ASSOCIATED WITH INSTALLING THE EXTRA DETECTOR LOOP TURNS SHALL BE INCLUDED IN THE COST OF LOOP DETECTOR, TYPE I. THE CONTRACTOR SHALL THEN DRILL THE EXISTING HANDHOLE, AND INSTALL NEW LEAD-IN CABLE, NO. 14 1 PAIR, IN EXISTING CONDUITS AND HANDHOLES. THE COST FOR LABOR AND EQUIPMENT ASSOCIATED WITH ENSURING PROPER OPERATION OF THE DETECTOR LOOPS SHALL BE INCLUDED IN THE LEAD-IN CABLE UNIT PRICE.
 - ③ INSTALL TWO NEW DETECTOR LOOPS, TYPE I, WITH 6 TURNS OF LOOP DETECTOR CABLE APPROXIMATELY 406 FT EAST OF THE STOP BAR. THE COST ASSOCIATED WITH INSTALLING THE EXTRA DETECTOR LOOP TURNS SHALL BE INCLUDED IN THE COST OF LOOP DETECTOR, TYPE I. THE CONTRACTOR SHALL THEN INSTALL A NEW HANDHOLE WITH NEW ELECTRIC CABLE IN CONDUIT, LEAD-IN CABLE, NO. 14 1 PAIR, IN EXISTING AND PROPOSED CONDUITS AND HANDHOLES. THE COST ASSOCIATED WITH ENSURING PROPER OPERATION OF THE DETECTOR LOOPS SHALL BE INCLUDED IN THE LEAD-IN CABLE UNIT PRICE.



- GENERAL NOTES
1. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL DIMENSIONS AND CONDITIONS EXISTING IN THE FIELD PRIOR TO ORDERING MATERIALS AND BEGINNING CONSTRUCTION. THIS SHALL INCLUDE LOCATING THE MAST ARM FOUNDATIONS AND VERIFYING THE MAST ARMS LENGTHS.
 2. THE EXACT LOCATION OF ALL UTILITES SHALL BE FIELD VERIFIED BY THE CONTRACTOR BEFORE ORDERING ANY MATERIALS AND STARTING ANY WORK. FOR LOCATIONS OF UTILITIES, LOCALLY OWNED EQUIPMENT, LEASED ENFORCEMENT CAMERA SYSTEM FACILITIES AND IDOT UNDERGROUND FACILITIES, CONTACT THE LOCAL COUNTIES, MUNICIPALITIES AND IDOT FOR LOCATES. THE CONTRACTOR SHALL CALL 'JULIE' AT (800) 892-0123 OR 811, IN THE CITY OF CHICAGO CONTACT DIGGER AT (312) 744-7000 FOR FIELD LOCATIONS OF BURIED UTILITIES (48 HOURS NOTIFICATION REQUIRED).
 3. THE CONTRACTOR SHALL CHECKED THE PROPOSED TRAFFIC SIGNAL EQUIPMENT LOCATIONS FOR OVERHEAD UTILITY CONFLICTS. THE CONTRACTOR SHALL COORDINATED ANY CONFLICTS WITH THE UTILITY COMPANIES AND THE RESIDENT ENGINEER BEFORE ORDERING MATERIALS.
 4. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH UTILITY COMPANIES, LOCAL GOVERNMENT AGENCIES AND IDOT.

TRAFFIC SIGNAL EQUIPMENT DATA

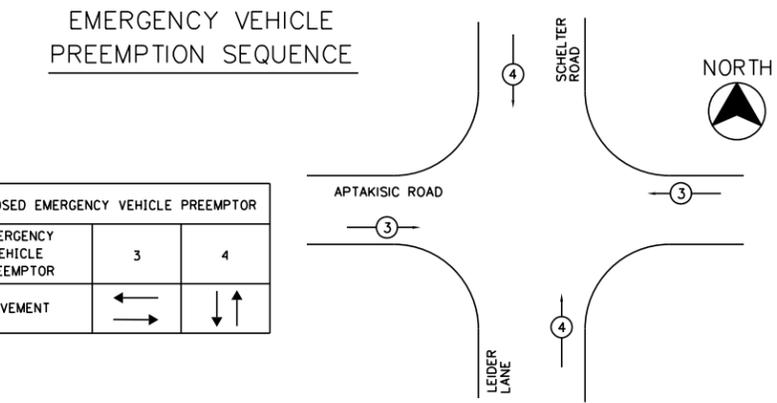
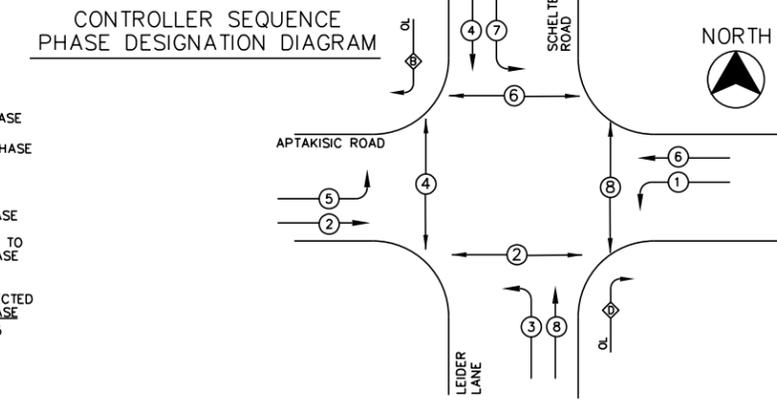
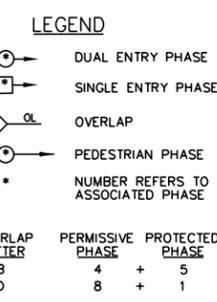
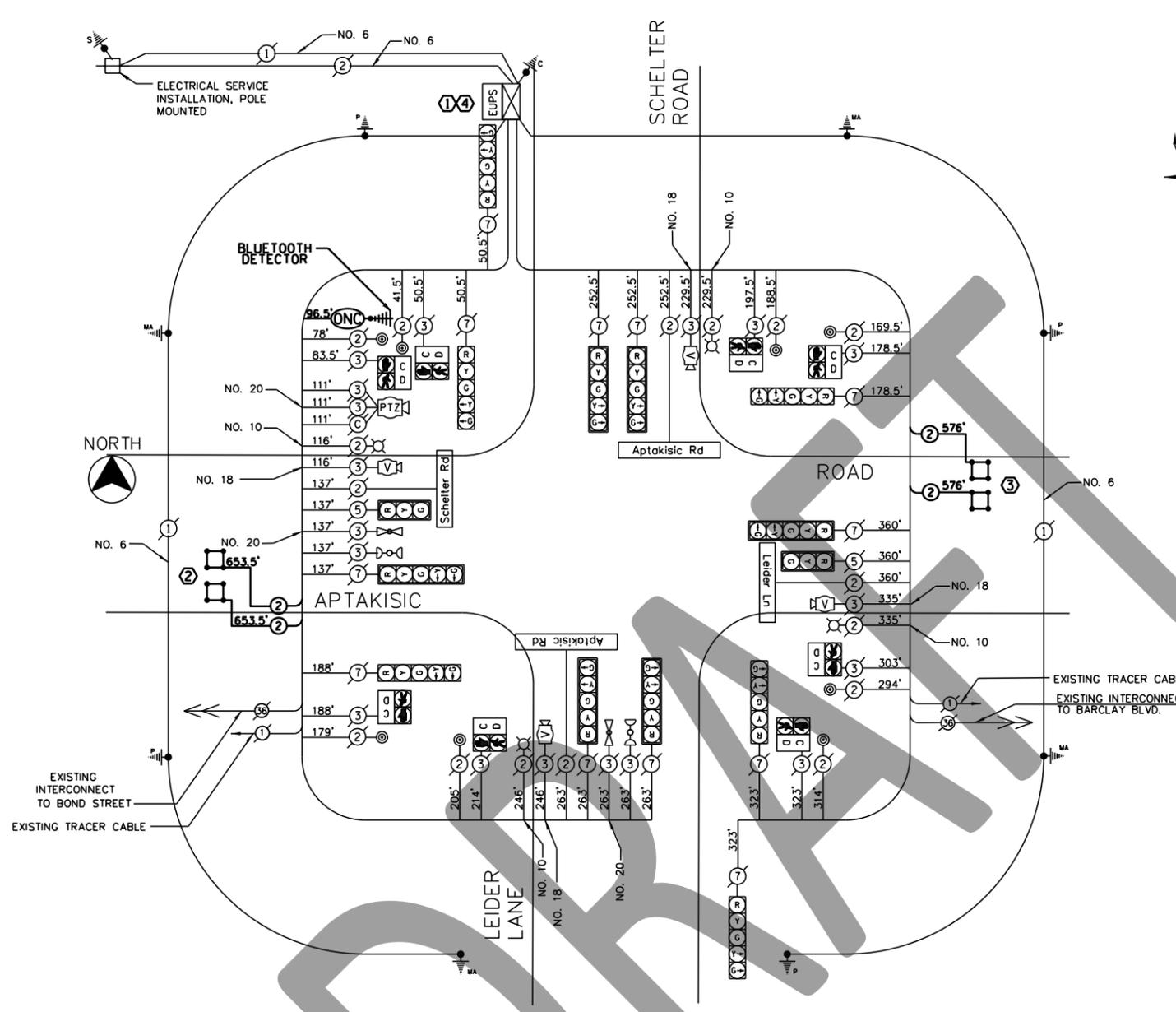
APTAKISIC ROAD			
ITEM	STATIONING	OFFSET	POSSIBLE UTILITY CONFLICT
HI	138+58	33.0' LT.	

FILE NAME = N:\LCD007\120226V2 - Aptakasic Adaptive Traffic\MOD_LEIDER.2.dgn	USER NAME = ejensen	DESIGNED - FN	REVISED -
PLLOT SCALE = 48'		DRAWN - EAJ	REVISED -
PLLOT DATE = 4/19/2013		CHECKED - GMZ	REVISED -
		DATE - 8/15/2012	REVISED -



TRAFFIC SIGNAL MODIFICATION PLANS		F.A.U. RTÉ.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
APTAKISIC ROAD AND LEIDER LANE		1258	11-00088-19-TL	LAKE	39	25
SHEET 2 OF 2		CONTRACT NO.				
SCALE:	SHEET NO. OF SHEETS	STA. TO STA.	FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			

BY: _____ DATE: _____
 SURVEYED _____
 ALIGNED _____
 RT. OF WAY CHECKED _____
 SADDY FILE NAME _____
 PLAN NO. _____
 NOTE BOOK NO. _____
CHRISTOPHER B. BURKE ENGINEERING LTD.
 3575 West Higgins Road, Suite 600
 Rosemont, Illinois 60018
 (617) 623-5500
 PROFILE SURVEYED _____
 GRADES CHECKED _____
 E.I.M. NOTED _____
 STRUCTURE NOTATIONS OK/NO



PROPOSED EMERGENCY VEHICLE PREEMPTOR

EMERGENCY VEHICLE PREEMPTOR	3	4
MOVEMENT	← →	↑ ↓

- NOTE:**
- DISABLE FAR BACK VIDEO DETECTION ZONES ON APTAKASIC ROAD.
 - INSTALL TWO NEW DETECTOR LOOPS, TYPE I, WITH 6 TURNS OF LOOP DETECTOR CABLE APPROXIMATELY 482 FT WEST OF THE STOP BAR. THE COST ASSOCIATED WITH INSTALLING THE EXTRA DETECTOR LOOP TURNS SHALL BE INCLUDED IN THE COST OF LOOP DETECTOR, TYPE I. THE CONTRACTOR SHALL THEN DRILL THE EXISTING HANDHOLE, AND INSTALL NEW LEAD-IN CABLE, NO. 14 1 PAIR, IN EXISTING CONDUITS AND HANDHOLES. THE COST FOR LABOR AND EQUIPMENT ASSOCIATED WITH ENSURING PROPER OPERATION OF THE DETECTOR LOOPS SHALL BE INCLUDED IN THE LEAD-IN CABLE UNIT PRICE.
 - INSTALL TWO NEW DETECTOR LOOPS, TYPE I, WITH 6 TURNS OF LOOP DETECTOR CABLE APPROXIMATELY 406 FT EAST OF THE STOP BAR. THE COST ASSOCIATED WITH INSTALLING THE EXTRA DETECTOR LOOP TURNS SHALL BE INCLUDED IN THE COST OF LOOP DETECTOR, TYPE I. THE CONTRACTOR SHALL THEN INSTALL A NEW HANDHOLE WITH NEW ELECTRIC CABLE IN CONDUIT, LEAD-IN CABLE, NO. 14 1 PAIR, IN EXISTING AND PROPOSED CONDUITS AND HANDHOLES. THE COST ASSOCIATED WITH ENSURING PROPER OPERATION OF THE DETECTOR LOOPS SHALL BE INCLUDED IN THE LEAD-IN CABLE UNIT PRICE.
 - MODIFY EXISTING CONTROLLER CABINET AND UPGRADE THE NTCIP CONTROLLER SOFTWARE. THE BLUETOOTH DETECTOR SHALL BE INSTALLED ON THE MAST ARM AND THE POWER OVER ETHERNET (POE) MODULE SHALL BE INSTALLED IN THE EXISTING CONTROLLER CABINET.

SCHEDULE OF QUANTITIES

ITEM	UNIT	QUANTITY
UNDERGROUND CONDUIT, GALVANIZED STEEL, 2" DIA.	FOOT	409
HANDHOLE	EACH	1
MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	1
ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR	FOOT	2460
DRILL EXISTING HANDHOLE	EACH	3
INDUCTIVE LOOP DETECTOR	EACH	4
DETECTOR LOOP, TYPE I	FOOT	131
MODIFY EXISTING CONTROLLER CABINET	EACH	1
UPGRADE EXISTING CONTROLLER TO NTCIP SPECIAL	EACH	1
OUTDOOR RATED NETWORK CABLE	FOOT	97
BLUETOOTH DETECTOR	EACH	1

LAKE COUNTY DIVISION OF TRANSPORTATION
 TRAFFIC SIGNAL INSTALLATION
 ELECTRICAL SERVICE REQUIREMENTS

TYPE	NO. OF LAMPS	WATTAGE		% OPERATION	TOTAL WATTAGE
		X INCAND.	L.E.D.		
CONTROLLER	1	100		1.00	100
SIGNAL (RED)	14		10	0.67	94
SIGNAL (YELLOW)	14		19	0.03	8
SIGNAL (GREEN)	14		11	0.30	46
SIGNAL (ARROW)	24		9	0.11	24
VIDEO SYSTEMS	1	150		1.00	150
ILLUM. ST. NAME SIGN	4		64	0.50	128
PEDESTRIAN SIGNAL	8		9	1.00	72
LUMINAIRE	4	250		0.50	500
BATTERY BACK UP	1	25		1.00	25
PTZ CAMERA	1		80	1.00	80
TOTAL =					1227

ENERGY COSTS TO: _____
 COMPANY: BRIDGE DEVELOPMENT PARTNERS, LLC
 ADDRESS: 700 COMMERCE DRIVE, SUITE 160
 ADDRESS: OAK BROOK, ILLINOIS 60523

ENERGY SUPPLY: _____
 CONTACT: DOROTHY PROSEN
 PHONE: (847) 816-5323
 COMPANY: COMED

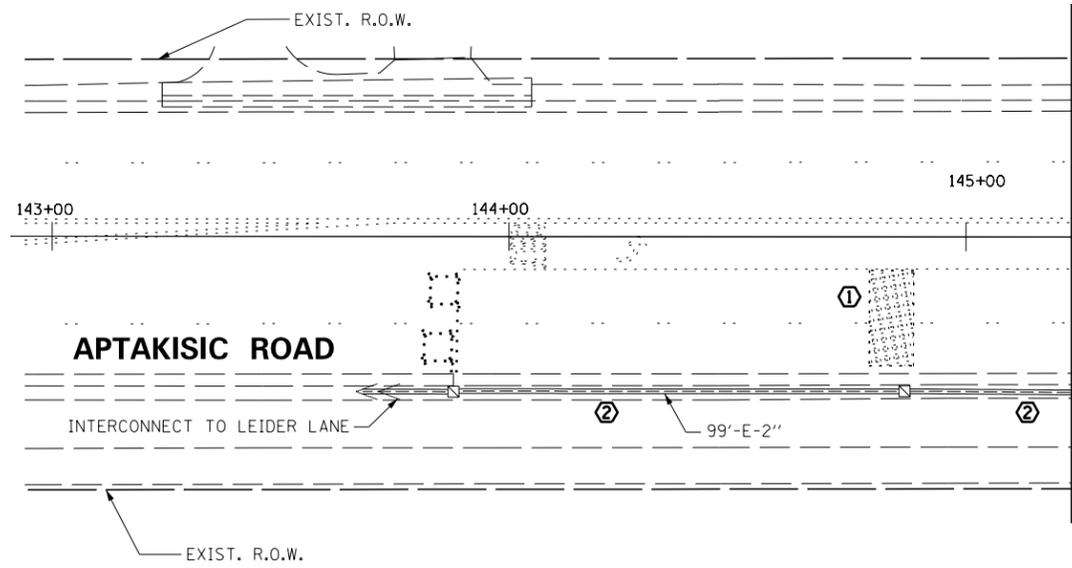
NOTE:
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RESTORATION OF WORK AREA. RESTORATION OF THE TRAFFIC SIGNAL WORK AREA SHALL BE INCLUDED IN THE COST FOR THE RELATED PAY ITEM SUCH AS FOUNDATION, CONDUIT, HANDHOLE, TRENCH AND BACKFILL ETC., AND NO EXTRA COMPENSATION SHALL BE ALLOWED. ALL ROADWAY SURFACES SUCH AS SHOULDERS, MEDIANS, SIDEWALKS, PAVEMENT, ETC. SHALL BE REPLACED IN KIND. ALL DAMAGE TO MOWED LAWNS SHALL BE REPLACED WITH AN APPROVED SOD, AND ALL DAMAGE TO UNMOWED FIELDS SHALL BE SEEDED IN ACCORDANCE WITH STANDARD SPECIFICATIONS 252 AND 250 RESPECTIVELY.

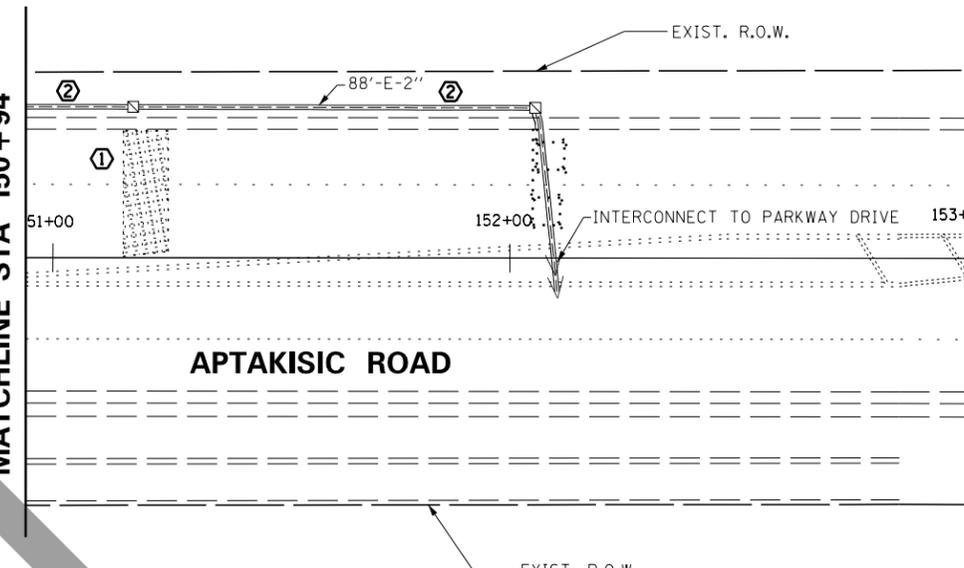
DATE	BY	DATE	BY
DATE	BY	DATE	BY
DATE	BY	DATE	BY
DATE	BY	DATE	BY
DATE	BY	DATE	BY

ENGINEERING LTD.
CHRISTOPHER B. BURKE
 8575 West Higgins Road, Suite 600
 Rosemont, Illinois 60018
 (617) 623-5500

PROFILE SURVEYED
 GRADES CHECKED
 ELEM. NOTED
 STRUCTURE NOTATIONS OKWD



MATCHLINE STA 145 + 23



MATCHLINE STA 150 + 94

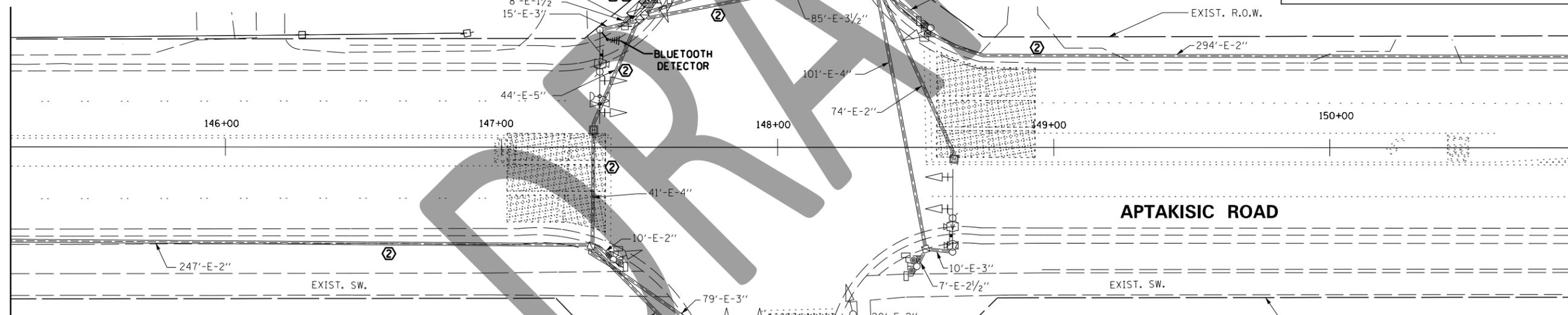
THE FOLLOWING EXISTING TRAFFIC SIGNAL EQUIPMENT SHALL BE REMOVED BY THE CONTRACTOR AND SHALL BE RETURNED TO LAKE COUNTY D.O.T.

1 EACH TRAFFIC SIGNAL CONTROLLER

NOTE:
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MATCHLINE STA 145 + 23



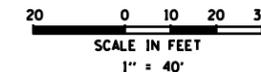
MATCHLINE STA 150 + 94

GENERAL NOTES

- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL DIMENSIONS AND CONDITIONS EXISTING IN THE FIELD PRIOR TO ORDERING MATERIALS AND BEGINNING CONSTRUCTION. THIS SHALL INCLUDE LOCATING THE MAST ARM FOUNDATIONS AND VERIFYING THE MAST ARMS LENGTHS.
- THE EXACT LOCATION OF ALL UTILITIES SHALL BE FIELD VERIFIED BY THE CONTRACTOR BEFORE ORDERING ANY MATERIALS AND STARTING ANY WORK. FOR LOCATIONS OF UTILITIES, LOCALLY OWNED EQUIPMENT, LEASED ENFORCEMENT CAMERA SYSTEM FACILITIES AND IDOT UNDERGROUND FACILITIES, CONTACT THE LOCAL COUNTIES, MUNICIPALITIES AND IDOT FOR LOCATES. THE CONTRACTOR SHALL CALL 'JULIE' AT (800) 892-0123 OR 811, IN THE CITY OF CHICAGO CONTACT DIGGER AT (312) 744-7000 FOR FIELD LOCATIONS OF BURIED UTILITIES (48 HOURS NOTIFICATION REQUIRED).
- THE CONTRACTOR SHALL CHECKED THE PROPOSED TRAFFIC SIGNAL EQUIPMENT LOCATIONS FOR OVERHEAD UTILITY CONFLICTS, THE CONTRACTOR SHALL COORDINATED ANY CONFLICTS WITH THE UTILITY COMPANIES AND THE RESIDENT ENGINEER BEFORE ORDERING MATERIALS.
- THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH UTILITY COMPANIES, LOCAL GOVERNMENT AGENCIES AND IDOT.

NOTE:

- DISABLE FAR BACK VIDEO DETECTION ZONES ON APTAKISIC ROAD.
- THE CONTRACTOR SHALL CUT THE EXISTING LEAD-IN SPLICE AND INSTALL NEW LEAD-IN CABLE. THEN SPLICE THE EXISTING DETECTOR LOOPS TO THE EXISTING AND PROPOSED LEAD-IN CABLES. ALL NECESSARY SPLICE RELATED WORK SHALL BE INCLUDED IN THE COST OF THE LEAD-IN CABLE.
- REMOVE EXISTING CONTROLLER FROM CABINET AND INSTALL NEW NTCIP COMPLIANT CONTROLLER IN EXISTING CABINET. RETURN EXISTING CONTROLLER TO LAKE COUNTY D.O.T. THE BLUETOOTH DETECTOR SHALL BE INSTALLED ON THE MAST ARM AND THE POWER OVER ETHERNET (POE) MODULE SHALL BE INSTALLED IN THE EXISTING CONTROLLER CABINET.



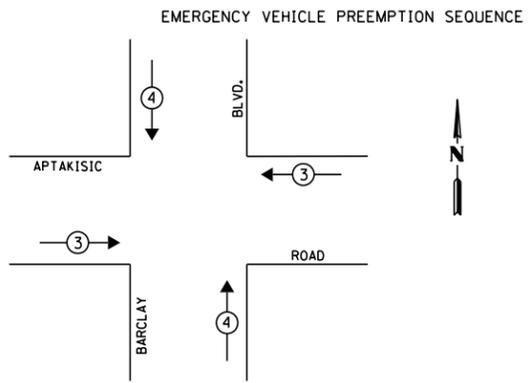
FILE NAME = N:\LCD001\120226V2 - Aptakisic Adaptive\Traffic\MOD_BARCLAY.dgn	USER NAME = ejensen	DESIGNED - FN	REVISED -
PLOT SCALE = 48"	CHECKED - GMZ	DRAWN - EAJ	REVISED -
PLOT DATE = 4/19/2013	DATE - 8/15/2012		REVISED -



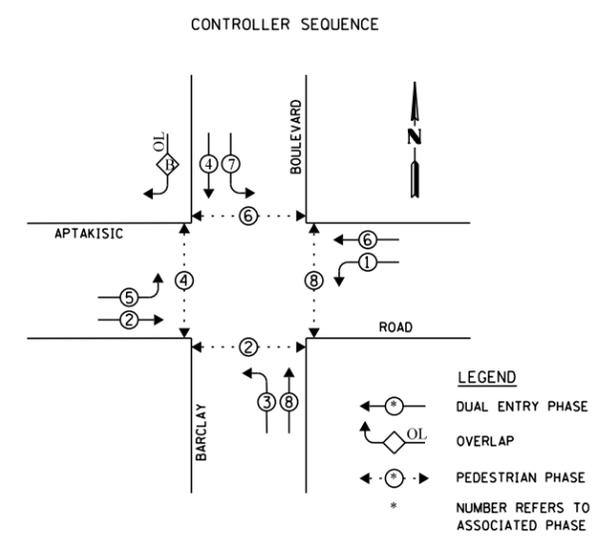
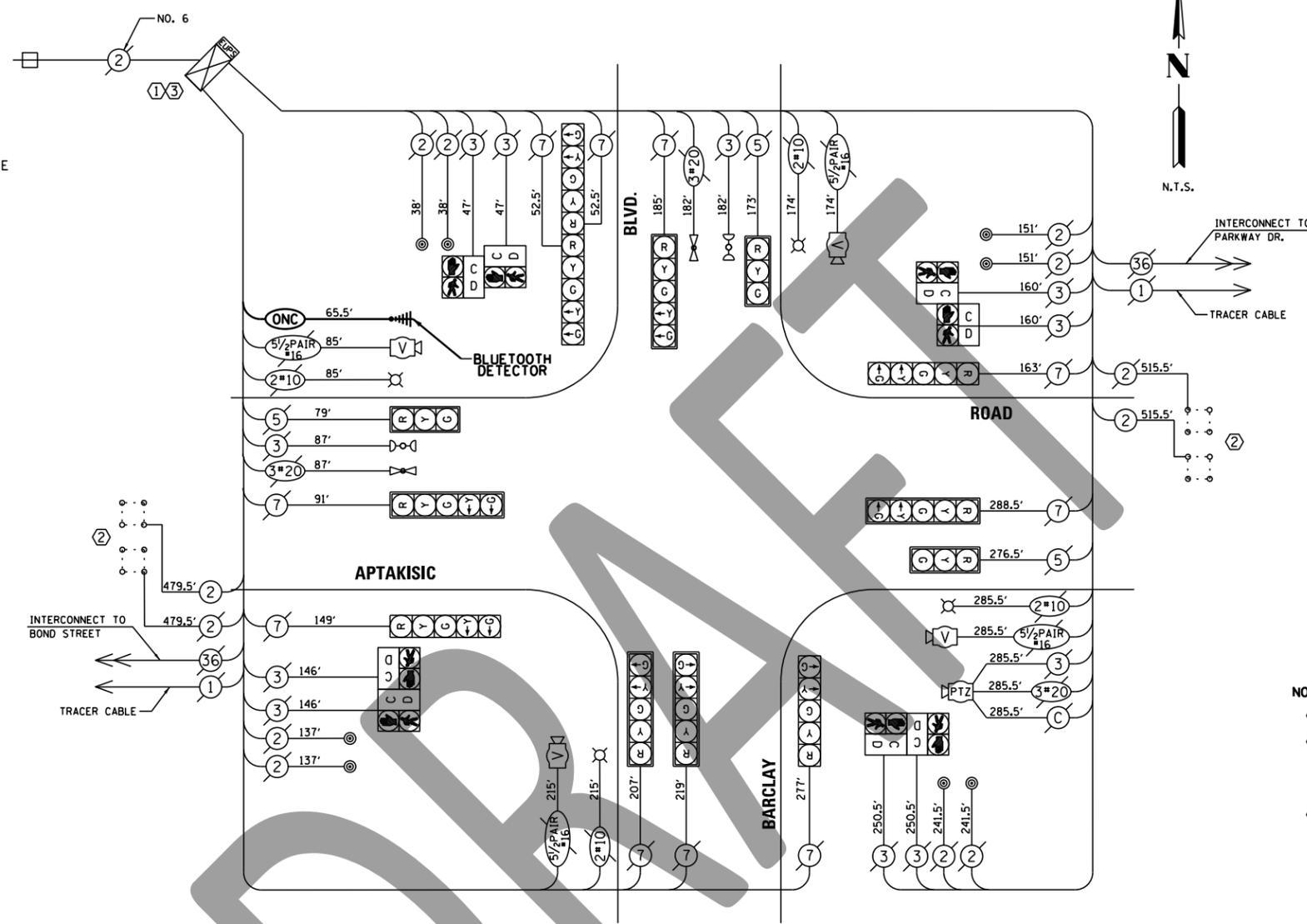
TRAFFIC SIGNAL MODIFICATION PLAN APTAKISIC ROAD AND BARCLAY BLVD				
SCALE:	SHEET NO.	OF SHEETS	STA.	TO STA.

F.A.U. RT.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1258	11-00088-19-TL	LAKE	39	27
CONTRACT NO.				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

BY: _____ DATE: _____
 SURVEYED _____
 ALIGNED _____
 RT. OF WAY CHECKED _____
 CAD FILE NAME: _____
 PLAN NO. _____
 NOTE BOOK NO. _____
CHRISTOPHER B. BURKE ENGINEERING LTD.
 3575 West Higgins Road, Suite 600
 Rosemont, Illinois 60018
 (630) 923-5500
 PROFILE SURVEYED _____
 GRADES CHECKED _____
 E.M. NOTED _____
 STRUCTURE NOTATIONS OKWD
 NOTE BOOK NO. _____



PROPOSED EMERGENCY VEHICLE PREEMPTOR		
EMERGENCY VEHICLE PREEMPTOR	3	4
MOVEMENT	← →	↑ ↓



RIGHT TURN OVERLAP PHASE DESIGNATION

OVERLAP LETTER	PERMISSIVE PHASE	PROTECTED PHASE
B	= 4	+ 5

- NOTE:**
- DISABLE FAR BACK VIDEO DETECTION ZONES ON APTAKISIC ROAD.
 - THE CONTRACTOR SHALL CUT THE EXISTING LEAD-IN SPLICE AND INSTALL NEW LEAD-IN CABLE. THEN SPLICE THE EXISTING DETECTOR LOOPS TO THE EXISTING AND PROPOSED LEAD-IN CABLES. ALL NECESSARY SPLICE RELATED WORK SHALL BE INCLUDED IN THE COST OF THE LEAD-IN CABLE.
 - REMOVE EXISTING CONTROLLER FROM CABINET AND INSTALL NEW NTCP COMPLIANT CONTROLLER IN EXISTING CABINET. RETURN EXISTING CONTROLLER TO LAKE COUNTY D.O.T. THE BLUE TOOTH DETECTOR SHALL BE INSTALLED ON THE MAST ARM AND THE POWER OVER ETHERNET (POE) MODULE SHALL BE INSTALLED IN THE EXISTING CONTROLLER CABINET.

L.C.D.O.T.
TRAFFIC SIGNAL INSTALLATION
ELECTRICAL SERVICE REQUIREMENTS

TYPE	NO. OF LAMPS	WATTAGE X INCAND. LED	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	13	- 17	0.50	110.5
(YELLOW)	13	- 25	0.25	81.3
(GREEN)	13	- 15	0.25	48.8
ARROW	20	- 12	0.10	24.0
PED. SIGNAL	8	- 25	1.00	200.0
CONTROLLER	1	- 100	1.00	100.0
LUMINAIRES	4	- 250	0.50	500.0
VIDEO DET.	4	- 150	1.00	600.0
BATT BACK-UP	1	- 25	1.00	25.0
PTZ CAMERA	1	- 80	1.00	80.0

ENERGY COSTS TO: TOTAL = **1769.6**
LAKE COUNTY DIVISION OF TRANSPORTATION
 600 WEST WINCHESTER ROAD
 LIBERTYVILLE, ILLINOIS 60048-1381
 ENERGY SUPPLY: CONTACT: DOROTHY PROSEN
 PHONE: (847) 816-5323
 COMPANY: COMED

NOTE:
 THE TRAFFIC SIGNAL CONTROLLER EQUIPMENT FOR THIS PROJECT SHALL BE "ECONOLITE" TO MATCH THE EXISTING ADJACENT SYSTEM.

RESTORATION OF WORK AREA, RESTORATION OF THE TRAFFIC SIGNAL WORK AREA SHALL BE INCLUDED IN THE COST FOR THE RELATED PAY ITEM SUCH AS FOUNDATION, CONDUIT, HANDHOLE, TRENCH AND BACKFILL ETC., AND NO EXTRA COMPENSATION SHALL BE ALLOWED. ALL ROADWAY SURFACES SUCH AS SHOULDERS, MEDIANS, SIDEWALKS, PAVEMENT, ETC. SHALL BE REPLACED IN KIND. ALL DAMAGE TO MOWED LAWNS SHALL BE REPLACED WITH AN APPROVED SOD, AND ALL DAMAGE TO UNMOWED FIELDS SHALL BE SEEDED IN ACCORDANCE WITH STANDARD SPECIFICATIONS 252 AND 250 RESPECTIVELY.

SCHEDULE OF QUANTITIES

ITEM	UNIT	QUANTITY
MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	1
ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR	FOOT	996
INDUCTIVE LOOP DETECTOR	EACH	2
MODIFY EXISTING CONTROLLER CABINET	EACH	1
FULL-ACTUATED CONTROLLER IN EXISTING CABINET	EACH	1
OUTDOOR RATED NETWORK CABLE	FOOT	66
BLUE TOOTH DETECTOR	EACH	1

FILE NAME = N:\LCDOT\120226\2 - Aptakisic Adaptive\Traffic\CAB_BARCLAY.dgn	USER NAME = ejensen	DESIGNED - FN	REVISED -
PLOT SCALE = 41'		DRAWN - EAJ	REVISED -
PLOT DATE = 4/19/2013		CHECKED - GMZ	REVISED -
		DATE - 8/15/2012	REVISED -



**CABLE PLAN
APTAKISIC ROAD AND BARCLAY BLVD**

SCALE: SHEET NO. OF SHEETS STA. TO STA.

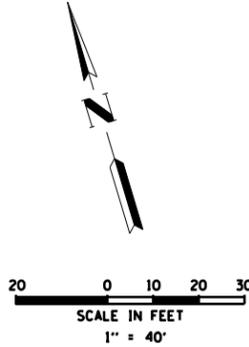
F.A.U. RTE. 1258	SECTION 11-00088-19-TL	COUNTY LAKE	TOTAL SHEETS 39	SHEET NO. 28
CONTRACT NO.				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

GENERAL NOTES

1. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL DIMENSIONS AND CONDITIONS EXISTING IN THE FIELD PRIOR TO ORDERING MATERIALS AND BEGINNING CONSTRUCTION. THIS SHALL INCLUDE LOCATING THE MAST ARM FOUNDATIONS AND VERIFYING THE MAST ARMS LENGTHS.
2. THE EXACT LOCATION OF ALL UTILITES SHALL BE FIELD VERIFIED BY THE CONTRACTOR BEFORE ORDERING ANY MATERIALS AND STARTING ANY WORK. FOR LOCATIONS OF UTILITIES, LOCALLY OWNED EQUIPMENT, LEASED ENFORCEMENT CAMERA SYSTEM FACILITIES AND IDOT UNDERGROUND FACILITIES, CONTACT THE LOCAL COUNTIES, MUNICIPALITIES AND IDOT FOR LOCATES. THE CONTRACTOR SHALL CALL 'JULIE' AT (800) 892-0123 OR 811. IN THE CITY OF CHICAGO CONTACT DIGGER AT (312) 744-7000 FOR FIELD LOCATIONS OF BURIED UTILITIES (48 HOURS NOTIFICATION REQUIRED).
3. THE CONTRACTOR SHALL CHECKED THE PROPOSED TRAFFIC SIGNAL EQUIPMENT LOCATIONS FOR OVERHEAD UTILITY CONFLICTS. THE CONTRACTOR SHALL COORDINATED ANY CONFLICTS WITH THE UTILITY COMPANIES AND THE RESIDENT ENGINEER BEFORE ORDERING MATERIALS.
4. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH UTILITY COMPANIES, LOCAL GOVERNMENT AGENCIES AND IDOT.

NOTE:
THE TRAFFIC SIGNAL CONTROLLER EQUIPMENT FOR THIS PROJECT SHALL BE "ECONOLITE" TO MATCH THE EXISTING ADJACENT SYSTEM.

RESTORATION OF WORK AREA, RESTORATION OF THE TRAFFIC SIGNAL WORK AREA SHALL BE INCLUDED IN THE COST FOR THE RELATED PAY ITEM SUCH AS FOUNDATION, CONDUIT, HANDHOLE, TRENCH AND BACKFILL ETC., AND NO EXTRA COMPENSATION SHALL BE ALLOWED. ALL ROADWAY SURFACES SUCH AS SHOULDERS, MEDIANS, SIDEWALKS, PAVEMENT, ETC. SHALL BE REPLACED IN KIND. ALL DAMAGE TO MOWED LAWNS SHALL BE REPLACED WITH AN APPROVED SOD, AND ALL DAMAGE TO UNMOWED FIELDS SHALL BE SEEDED IN ACCORDANCE WITH STANDARD SPECIFICATIONS 252 AND 250 RESPECTIVELY.

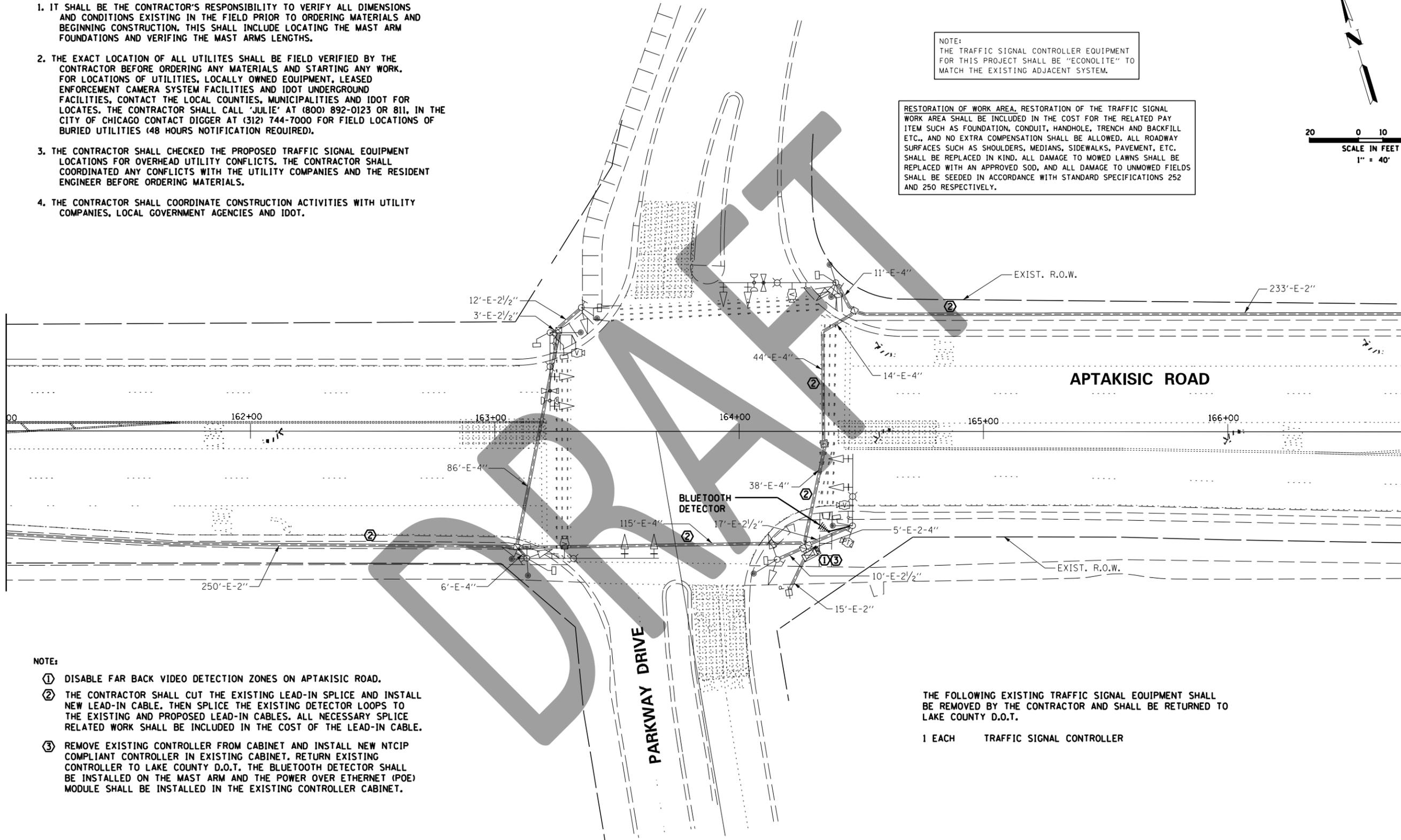


DATE	BY	DATE	BY
DATE	BY	DATE	BY
DATE	BY	DATE	BY

CHRISTOPHER B. BURKE ENGINEERING LTD.
3575 West Higgins Road, Suite 600
Rosemont, Illinois 60018
(647) 923-9500

MATCHLINE STA 161+00

MATCHLINE STA 166+71



NOTE:

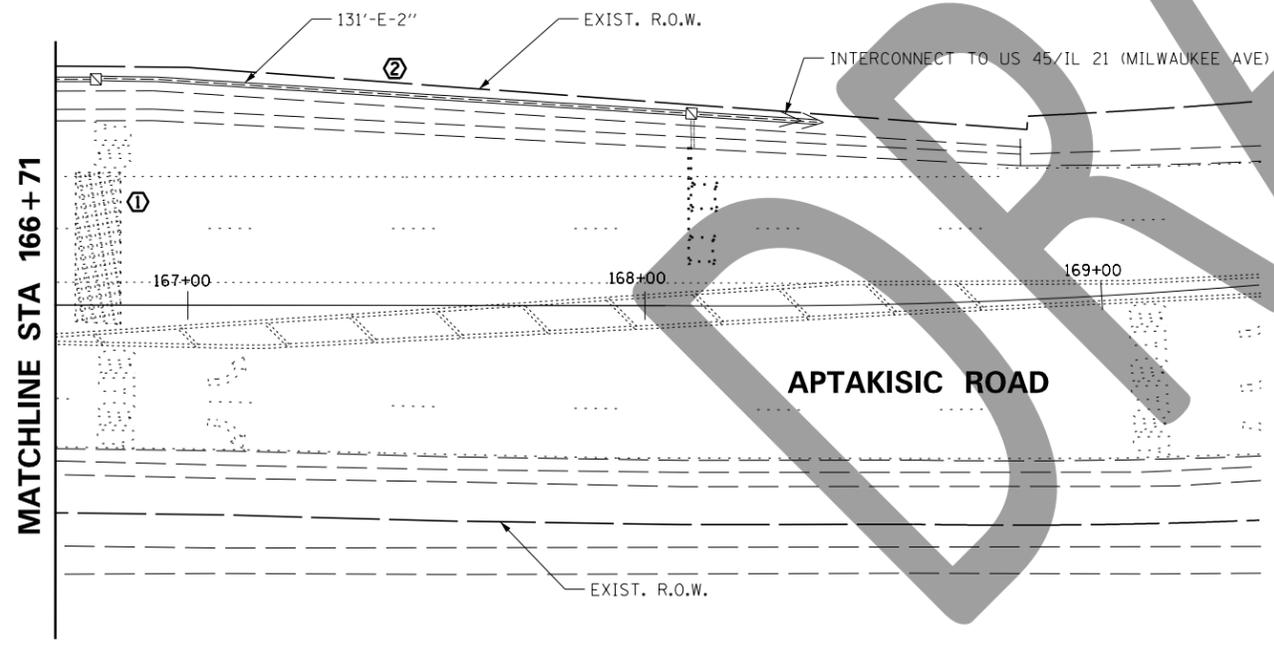
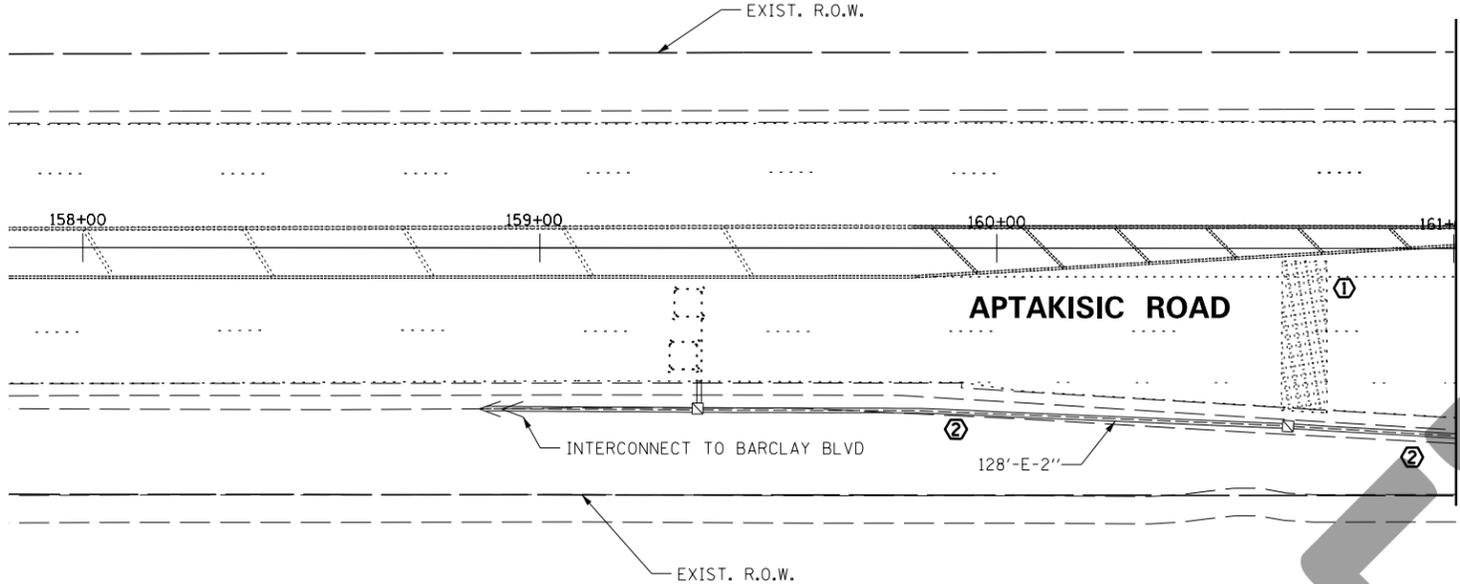
- ① DISABLE FAR BACK VIDEO DETECTION ZONES ON APTAKISIC ROAD.
- ② THE CONTRACTOR SHALL CUT THE EXISTING LEAD-IN SPLICE AND INSTALL NEW LEAD-IN CABLE. THEN SPLICE THE EXISTING DETECTOR LOOPS TO THE EXISTING AND PROPOSED LEAD-IN CABLES. ALL NECESSARY SPLICE RELATED WORK SHALL BE INCLUDED IN THE COST OF THE LEAD-IN CABLE.
- ③ REMOVE EXISTING CONTROLLER FROM CABINET AND INSTALL NEW NTCIP COMPLIANT CONTROLLER IN EXISTING CABINET. RETURN EXISTING CONTROLLER TO LAKE COUNTY D.O.T. THE BLUETOOTH DETECTOR SHALL BE INSTALLED ON THE MAST ARM AND THE POWER OVER ETHERNET (POE) MODULE SHALL BE INSTALLED IN THE EXISTING CONTROLLER CABINET.

THE FOLLOWING EXISTING TRAFFIC SIGNAL EQUIPMENT SHALL BE REMOVED BY THE CONTRACTOR AND SHALL BE RETURNED TO LAKE COUNTY D.O.T.

1 EACH TRAFFIC SIGNAL CONTROLLER

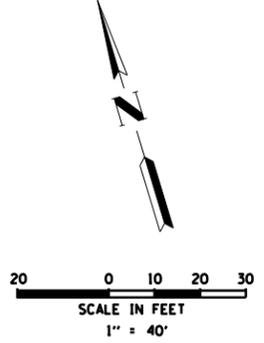
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N:\LC00T\120226\2 - Aptakisic Adaptive\Traffic\MOD_Parkway.dgn		DRAWN - EAJ	REVISED -					1258	11-00088-19-TL	LAKE	39	29
PLOT SCALE = 48'		CHECKED - GMZ	REVISED -					CONTRACT NO.				
PLOT DATE = 4/19/2013		DATE - 8/15/2012	REVISED -					FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				
				SCALE:	SHEET NO.	OF SHEETS	STA.	TO STA.				

DATE	BY	SURVEYED	DATE	BY
		ALIGNED		
		RT. OF WAY CHECKED		
		ADD. FILE NAME		
PLAN	NO.	NO.	NO.	NO.
CHRISTOPHER B. BURKE ENGINEERING LTD. 9575 West Higgins Road, Suite 600 Rosemont, Illinois 60018 (647) 823-5938				
PROFILE	DATE	BY	DATE	BY



NOTE:
THE TRAFFIC SIGNAL CONTROLLER EQUIPMENT FOR THIS PROJECT SHALL BE "ECONOLITE" TO MATCH THE EXISTING ADJACENT SYSTEM.

RESTORATION OF WORK AREA, RESTORATION OF THE TRAFFIC SIGNAL WORK AREA SHALL BE INCLUDED IN THE COST FOR THE RELATED PAY ITEM SUCH AS FOUNDATION, CONDUIT, HANDHOLE, TRENCH AND BACKFILL ETC., AND NO EXTRA COMPENSATION SHALL BE ALLOWED. ALL ROADWAY SURFACES SUCH AS SHOULDERS, MEDIANS, SIDEWALKS, PAVEMENT, ETC. SHALL BE REPLACED IN KIND. ALL DAMAGE TO MOWED LAWNS SHALL BE REPLACED WITH AN APPROVED SOD, AND ALL DAMAGE TO UNMOWED FIELDS SHALL BE SEEDED IN ACCORDANCE WITH STANDARD SPECIFICATIONS 252 AND 250 RESPECTIVELY.



- NOTE:
- ① DISABLE FAR BACK VIDEO DETECTION ZONES ON APTAKISIC ROAD.
 - ② THE CONTRACTOR SHALL CUT THE EXISTING LEAD-IN SPLICE AND INSTALL NEW LEAD-IN CABLE. THEN SPLICE THE EXISTING DETECTOR LOOPS TO THE EXISTING AND PROPOSED LEAD-IN CABLES. ALL NECESSARY SPLICE RELATED WORK SHALL BE INCLUDED IN THE COST OF THE LEAD-IN CABLE.

- GENERAL NOTES
1. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL DIMENSIONS AND CONDITIONS EXISTING IN THE FIELD PRIOR TO ORDERING MATERIALS AND BEGINNING CONSTRUCTION. THIS SHALL INCLUDE LOCATING THE MAST ARM FOUNDATIONS AND VERIFYING THE MAST ARMS LENGTHS.
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 4. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH UTILITY COMPANIES, LOCAL GOVERNMENT AGENCIES AND IDOT.

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N:\LCD007\120226V2 - Aptakisic Adaptive	Traffic\MOD_Parkway_02.dgn	DRAWN - EAJ	REVISED -
	PLOT SCALE = 48'	CHECKED - GMZ	REVISED -
	PLOT DATE = 4/19/2013	DATE - 8/15/2012	REVISED -



TRAFFIC SIGNAL MODIFICATION PLAN			
APTAKISIC ROAD AND PARKWAY DRIVE			
SHEET 2 OF 2			
SCALE:	SHEET NO.	OF SHEETS	STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1258	11-00088-19-TL	LAKE	39	30
CONTRACT NO.				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

DATE: _____ BY: _____
 SURVEYED: _____ ALIGNED: _____
 GRADES CHECKED: _____ RT. OF WAY CHECKED: _____
 ELEM. NOTED: _____ ROAD FILE NAME: _____
 STRUCTURE NOTATIONS: OKWD

PROFILE: _____
 NOTE BOOK NO. _____

DATE: _____ BY: _____
 SURVEYED: _____ ALIGNED: _____
 GRADES CHECKED: _____ RT. OF WAY CHECKED: _____
 ELEM. NOTED: _____ ROAD FILE NAME: _____
 STRUCTURE NOTATIONS: OKWD

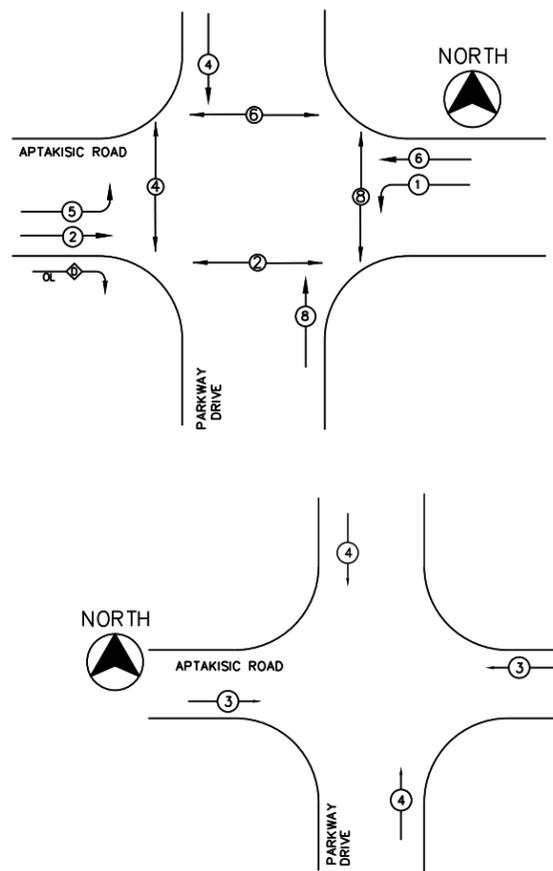
PLAN: _____
 NOTE BOOK NO. _____

DATE: _____ BY: _____
 SURVEYED: _____ ALIGNED: _____
 GRADES CHECKED: _____ RT. OF WAY CHECKED: _____
 ELEM. NOTED: _____ ROAD FILE NAME: _____
 STRUCTURE NOTATIONS: OKWD

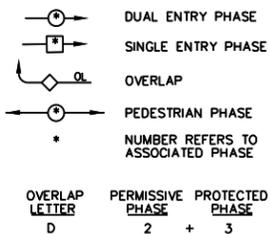
CHRISTOPHER B. BURKE
 ENGINEERING LTD.
 3575 West Higgins Road, Suite 600
 Rosemont, Illinois 60018
 (647) 923-9300

CONTROLLER SEQUENCE

PHASE DESIGNATION DIAGRAM



LEGEND



NOTE:
 THE TRAFFIC SIGNAL CONTROLLER EQUIPMENT FOR THIS PROJECT SHALL BE "ECONOLITE" TO MATCH THE EXISTING ADJACENT SYSTEM.

RESTORATION OF WORK AREA, RESTORATION OF THE TRAFFIC SIGNAL WORK AREA SHALL BE INCLUDED IN THE COST FOR THE RELATED PAY ITEM SUCH AS FOUNDATION, CONDUIT, HANDHOLE, TRENCH AND BACKFILL ETC., AND NO EXTRA COMPENSATION SHALL BE ALLOWED. ALL ROADWAY SURFACES SUCH AS SHOULDERS, MEDIANS, SIDEWALKS, PAVEMENT, ETC. SHALL BE REPLACED IN KIND. ALL DAMAGE TO MOWED LAWNS SHALL BE REPLACED WITH AN APPROVED SOD, AND ALL DAMAGE TO UNMOWED FIELDS SHALL BE SEEDED IN ACCORDANCE WITH STANDARD SPECIFICATIONS 252 AND 250 RESPECTIVELY.

EMERGENCY VEHICLE PREEMPTION SEQUENCE

PROPOSED EMERGENCY VEHICLE PREEMPTOR		
EMERGENCY VEHICLE PREEMPTOR	3	4
MOVEMENT	← →	↑ ↓

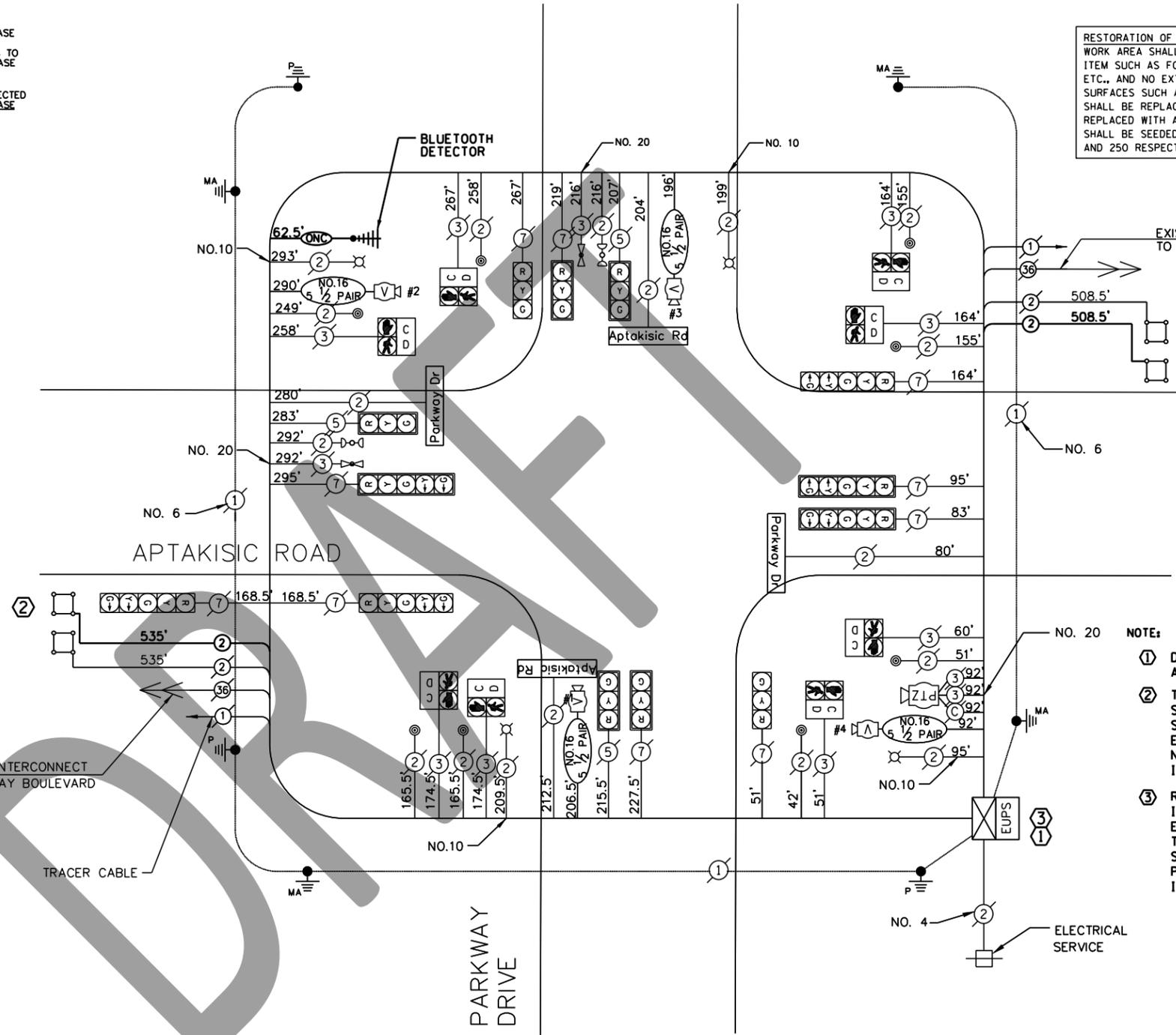
LAKE COUNTY DIVISION OF TRANSPORTATION
 TRAFFIC SIGNAL INSTALLATION
 ELECTRICAL SERVICE REQUIREMENTS

TYPE	NO. OF LAMPS	WATTAGE			TOTAL WATTAGE
		X INCAND.	L.E.D.	% OPERATION	
CONTROLLER	1	100		1.00	100
SIGNAL (RED)	13		10	0.50	65
SIGNAL (YELLOW)	13		19	0.25	61.75
SIGNAL (GREEN)	13		11	0.25	35.75
SIGNAL (YELLOW ARROW)	6		9	0.10	5.4
SIGNAL (GREEN ARROW)	6		9	0.10	5.4
VIDEO SYSTEMS	1	150		1.00	150
ILLUM. ST. NAME SIGN	4		84	0.50	168
PEDESTRIAN SIGNAL	8		9	1.00	72
LUMINAIRE	4	250		0.50	500
BATTERY BACK UP	1	25		1.00	25
PTZ CAMERA	1	80		1.00	80
TOTAL =					1268.3

ENERGY COSTS TO:
 COMPANY: ECD, INC.
 ADDRESS: 250 PARKWAY DRIVE, SUITE 120
 ADDRESS: LINCOLNSHIRE, ILLINOIS 60059

ENERGY SUPPLY:
 CONTACT: DOROTHY PROSEN
 PHONE: (847) 816-5323
 COMPANY: COMED

FILE NAME = N:\LCD001\120226V2 - Aptakisic Adaptive\Traffic\CAB_Parkway.dgn	USER NAME = ejensen	DESIGNED - FN	REVISED -
PLOT SCALE = 48"		DRAWN - EAJ	REVISED -
PLOT DATE = 4/19/2013		CHECKED - GMZ	REVISED -
		DATE - 8/15/2012	REVISED -



- NOTE:
- ① DISABLE FAR BACK VIDEO DETECTION ZONES ON APTAKISIC ROAD.
 - ② THE CONTRACTOR SHALL CUT THE EXISTING LEAD-IN SPLICE AND INSTALL NEW LEAD-IN CABLE. THEN SPLICE THE EXISTING DETECTOR LOOPS TO THE EXISTING AND PROPOSED LEAD-IN CABLES. ALL NECESSARY SPLICE RELATED WORK SHALL BE INCLUDED IN THE COST OF THE LEAD-IN CABLE.
 - ③ REMOVE EXISTING CONTROLLER FROM CABINET AND INSTALL NEW NTCIP COMPLIANT CONTROLLER IN EXISTING CABINET. RETURN EXISTING CONTROLLER TO LAKE COUNTY D.O.T. THE BLUETOOTH DETECTOR SHALL BE INSTALLED ON THE MAST ARM AND THE POWER OVER ETHERNET (POE) MODULE SHALL BE INSTALLED IN THE EXISTING CONTROLLER CABINET.

CABLE PLAN
 N.T.S.

SCHEDULE OF QUANTITIES

ITEM	UNIT	QUANTITY
MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	1
ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR	FOOT	1044
INDUCTIVE LOOP DETECTOR	EACH	2
MODIFY EXISTING CONTROLLER CABINET	EACH	1
FULL-ACTUATED CONTROLLER IN EXISTING CABINET	EACH	1
OUTDOOR RATED NETWORK CABLE	FOOT	68
BLUETOOTH DETECTOR	EACH	1



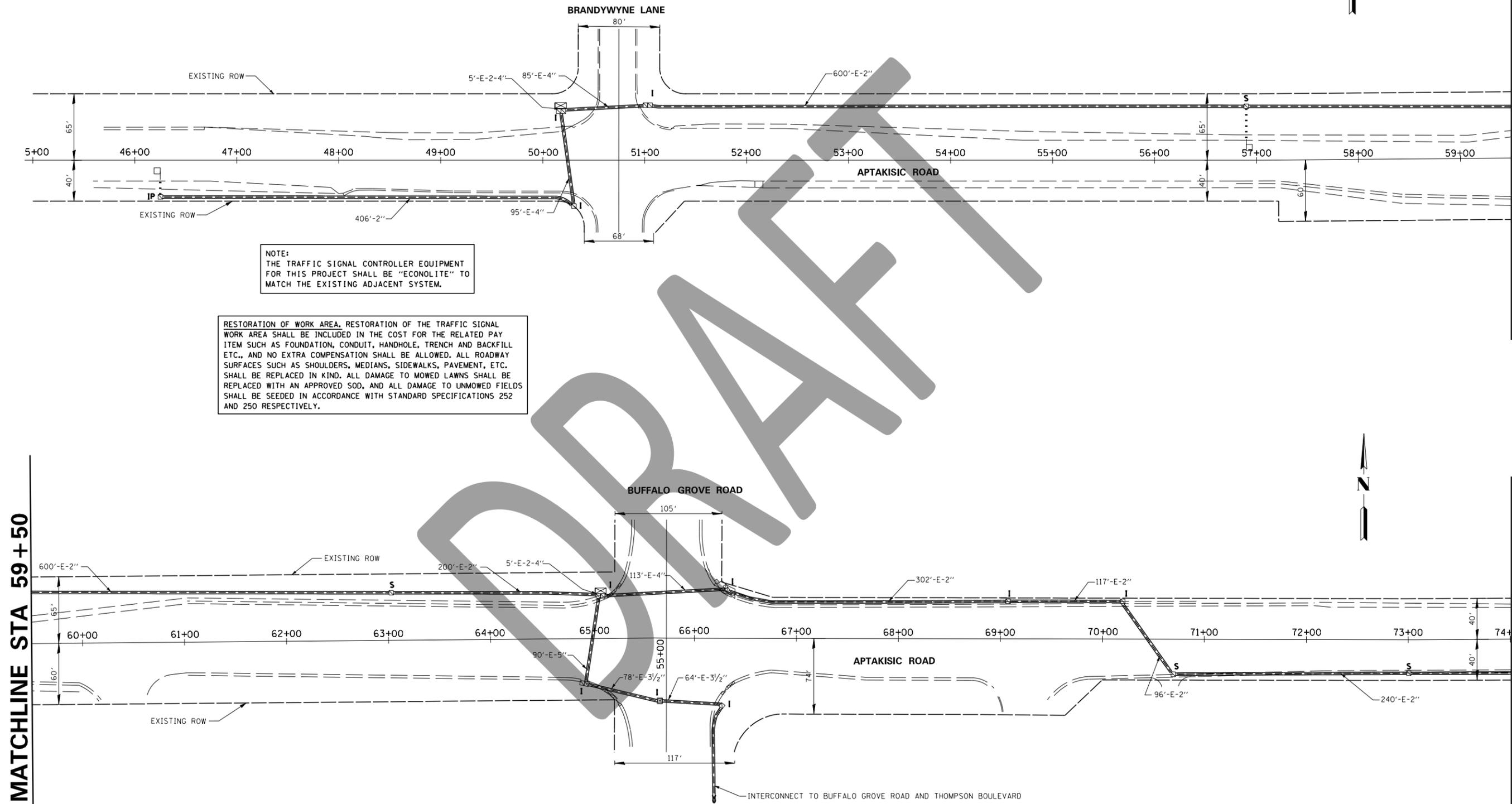
CABLE PLAN
 APTAKISIC ROAD AND PARKWAY DRIVE

SCALE: SHEET NO. OF SHEETS STA. TO STA.

F.A.U. RTE. 1258	SECTION 11-00088-19-TL	COUNTY LAKE	TOTAL SHEETS 39	SHEET NO. 31
CONTRACT NO.				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

DATE	BY	DATE	BY
PROF. FILE	SURVEYED	PLAN	DATE
NO.	GRADES CHECKED	NOTE BOOK NO.	
	ELM. NOTED		
	STRUCTURE NOTATIONS OKWD		

CHRISTOPHER B. BURKE
ENGINEERING LTD.
3575 West Higgins Road, Suite 600
Rosemont, Illinois 60018
(647) 923-5930



NOTE:
THE TRAFFIC SIGNAL CONTROLLER EQUIPMENT FOR THIS PROJECT SHALL BE "ECONOLITE" TO MATCH THE EXISTING ADJACENT SYSTEM.

RESTORATION OF WORK AREA. RESTORATION OF THE TRAFFIC SIGNAL WORK AREA SHALL BE INCLUDED IN THE COST FOR THE RELATED PAY ITEM SUCH AS FOUNDATION, CONDUIT, HANDHOLE, TRENCH AND BACKFILL ETC., AND NO EXTRA COMPENSATION SHALL BE ALLOWED. ALL ROADWAY SURFACES SUCH AS SHOULDERS, MEDIANS, SIDEWALKS, PAVEMENT, ETC. SHALL BE REPLACED IN KIND. ALL DAMAGE TO MOWED LAWNS SHALL BE REPLACED WITH AN APPROVED SOD, AND ALL DAMAGE TO UNMOWED FIELDS SHALL BE SEEDED IN ACCORDANCE WITH STANDARD SPECIFICATIONS 252 AND 250 RESPECTIVELY.

MATCHLINE STA 59+50

MATCHLINE STA 59+50

MATCHLINE STA 74+00

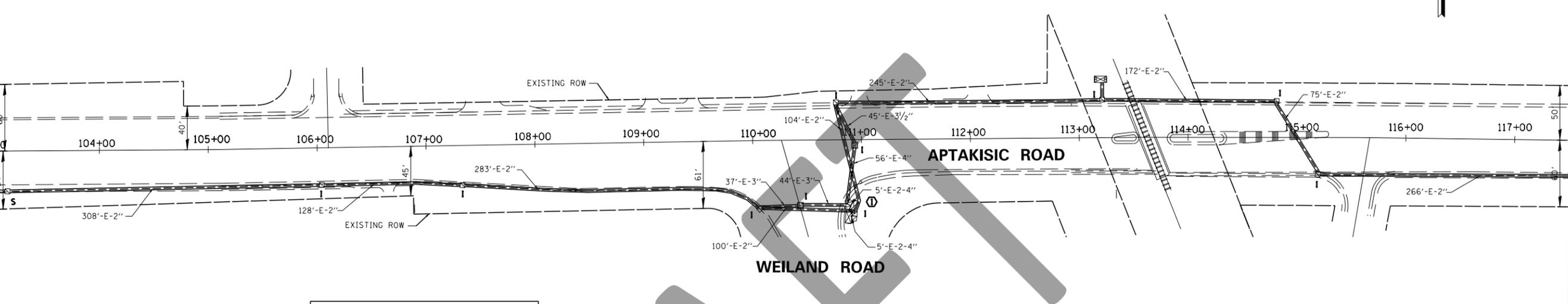


FILE NAME = N:\LCCDOT\120226\2 - Aptakisic Adaptive\Traffic\INT_Aptakisic_01.dgn	USER NAME = ejensen	DESIGNED - FN	REVISED -		INTERCONNECT PLAN APTAKISIC ROAD FROM PARKWAY DRIVE TO BRANDYWYN LANE SHEET 1 OF 5			F.A.U. RTE. = 1258	SECTION = 11-00088-19-TL	COUNTY = LAKE	TOTAL SHEETS = 39	SHEET NO. = 32
PLOT SCALE = 1/8" = 1'-0"	DRAWN - EAJ	CHECKED - GMZ	REVISED -					CONTRACT NO.			FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT
PLOT DATE = 4/19/2013	DATE = 8/15/2012	REVISOR -	REVISOR -		SCALE:	SHEET NO. OF SHEETS	STA. TO STA.					

DATE	BY	DATE	BY
PROF. FILE	SURVEYED	PLAN	SURVEYED
NOTE BOOK NO.	GRADES CHECKED	NOTE BOOK NO.	ALIGNMENT CHECKED
	BLM. NOTED		RT. OF WAY CHECKED
	STRUCTURE NOTATIONS OK'D		ADD. FILE NAME

CHRISTOPHER B. BURKE
ENGINEERING LTD.
9575 West Higgins Road, Suite 600
Rosemont, Illinois 60018
(617) 923-9500

MATCHLINE 103+00



MATCHLINE 117+50

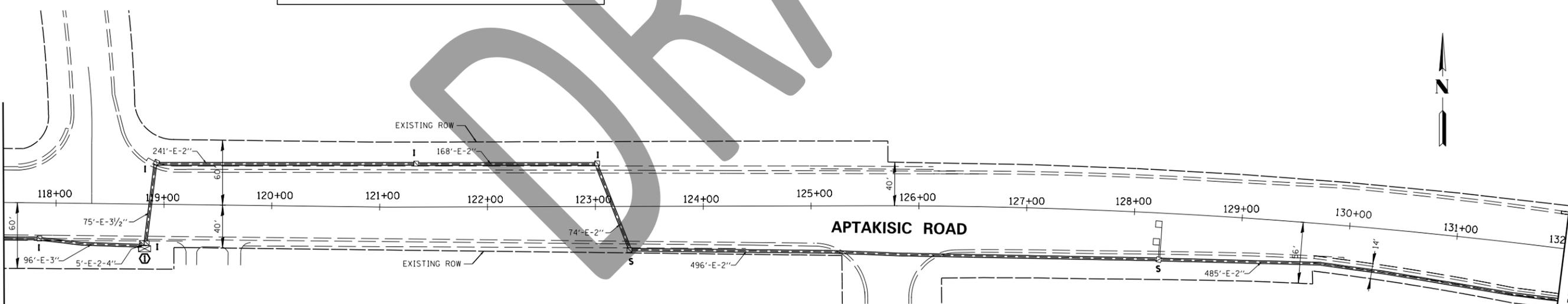
NOTE:
THE TRAFFIC SIGNAL CONTROLLER EQUIPMENT FOR THIS PROJECT SHALL BE "ECONOLITE" TO MATCH THE EXISTING ADJACENT SYSTEM.

RESTORATION OF WORK AREA, RESTORATION OF THE TRAFFIC SIGNAL WORK AREA SHALL BE INCLUDED IN THE COST FOR THE RELATED PAY ITEM SUCH AS FOUNDATION, CONDUIT, HANDHOLE, TRENCH AND BACKFILL ETC., AND NO EXTRA COMPENSATION SHALL BE ALLOWED. ALL ROADWAY SURFACES SUCH AS SHOULDERS, MEDIANS, SIDEWALKS, PAVEMENT, ETC. SHALL BE REPLACED IN KIND. ALL DAMAGE TO MOWED LAWNS SHALL BE REPLACED WITH AN APPROVED SOD, AND ALL DAMAGE TO UNMOWED FIELDS SHALL BE SEEDED IN ACCORDANCE WITH STANDARD SPECIFICATIONS 252 AND 250 RESPECTIVELY.

NOTE:
CONTACT CLOSURE CARDS INSTALLED IN EXISTING CABINET AT WEILAND AND AT BOND SHALL BE CONFIGURED TO COMMUNICATE QUEUE DETECTOR INPUT AND RELEASE OF RAILROAD PREEMPTION SENT OVER EXISTING MULTIMODE FIBERS FROM WEILAND TO BOND. SEE SHEETS 18-23 FOR DETAILS.

BOND STREET

MATCHLINE 117+50



MATCHLINE 132+00

FILE NAME = N:\LC007\120226\2 - Aptakisic Adaptive\Traffic\INT_Aptakisic_03.dgn	USER NAME = ejensen	DESIGNED - FN	REVISED -
		DRAWN - EAJ	REVISED -
		CHECKED - GMZ	REVISED -
		DATE - 8/15/2012	REVISED -



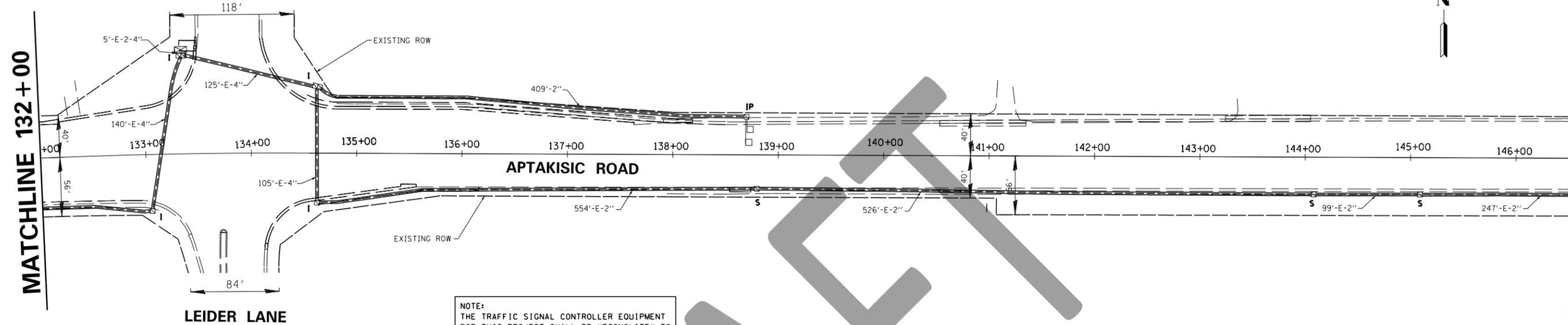
INTERCONNECT PLAN
APTAKISIC ROAD FROM PARKWAY DRIVE TO BRANDYWYN LANE
SHEET 3 OF 5

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1258	11-00088-19-TL	LAKE	39	34
CONTRACT NO.				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

SCALE: SHEET NO. OF SHEETS STA. TO STA.

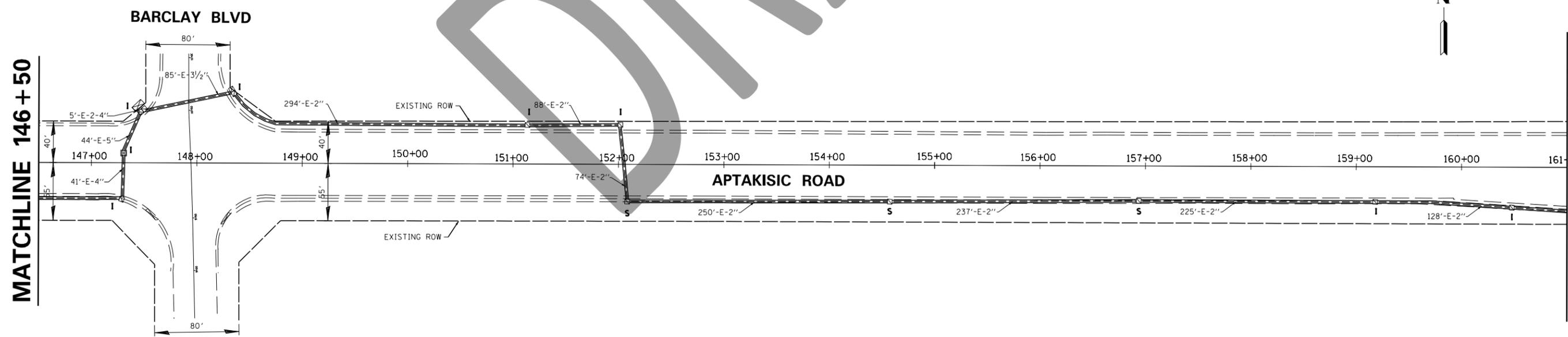
PROFILE	SURVEYED	DATE
GRADES CHECKED	BY	
E.I.M. NOTED		
STRUCTURE NOTATIONS OK'D		
NOTE BOOK NO.	PLAN	DATE
	NOTE BOOK NO.	
	SURVEYED	DATE
	ALIGNED	
	CHECKED	
	BY	
	RT. OF WAY CHECKED	
	DATE	
	ADD. FILE NAME	

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3575 West Higgins Road, Suite 600
Rosemont, Illinois 60018
(647) 823-5500



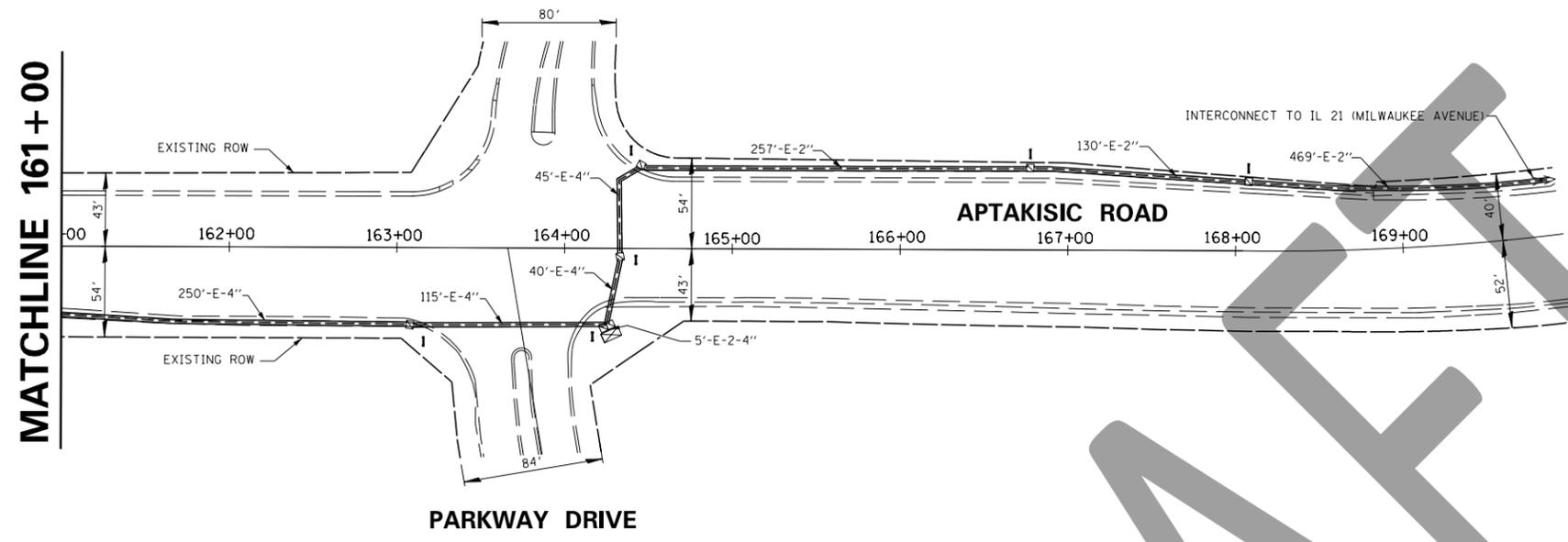
NOTE:
THE TRAFFIC SIGNAL CONTROLLER EQUIPMENT FOR THIS PROJECT SHALL BE "ECONOLITE" TO MATCH THE EXISTING ADJACENT SYSTEM.

RESTORATION OF WORK AREA, RESTORATION OF THE TRAFFIC SIGNAL WORK AREA SHALL BE INCLUDED IN THE COST FOR THE RELATED PAY ITEM SUCH AS FOUNDATION, CONDUIT, HANDHOLE, TRENCH AND BACKFILL ETC., AND NO EXTRA COMPENSATION SHALL BE ALLOWED. ALL ROADWAY SURFACES SUCH AS SHOULDERS, MEDIANS, SIDEWALKS, PAVEMENT, ETC. SHALL BE REPLACED IN KIND. ALL DAMAGE TO MOWED LAWNS SHALL BE REPLACED WITH AN APPROVED SOD, AND ALL DAMAGE TO UNMOWED FIELDS SHALL BE SEEDED IN ACCORDANCE WITH STANDARD SPECIFICATIONS 252 AND 250 RESPECTIVELY.



FILE NAME = N:\L\CDOT\120226\2 - Aptakisic Adaptive\Traffic\INT_Aptakisic_04.dgn	USER NAME = ejensen	DESIGNED - FN	REVISED -		INTERCONNECT PLAN APTAKISIC ROAD FROM PARKWAY DRIVE TO BRANDYWYN LANE SHEET 4 OF 5			F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
PLOT SCALE = 1/8" = 1'-0"	PLOT DATE = 4/19/2013	DRAWN - EAJ	REVISED -					1258	11-00088-19-TL	LAKE	39	35
		CHECKED - GMZ	REVISED -		SCALE:			SHEET NO. OF SHEETS STA. TO STA.		CONTRACT NO.		
		DATE - 8/15/2012	REVISED -		FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT				

PROFILE	SURVEYED	DATE
NOTE BOOK	GRADES CHECKED	BY
NO.	ELM. NOTED	
	STRUCTURE NOTATIONS	
	CHKD	
PLAN	SURVEYED	DATE
NOTE BOOK	ALIGNMENT CHECKED	BY
NO.	RT. OF WAY CHECKED	
	ADD. FILE NAME	
CHRISTOPHER B. BURKE ENGINEERING LTD. 3575 West Higgins Road, Suite 600 Rosemont, Illinois 60018 (617) 823-5500		



NOTE:
 THE TRAFFIC SIGNAL CONTROLLER EQUIPMENT
 FOR THIS PROJECT SHALL BE "ECONOLITE" TO
 MATCH THE EXISTING ADJACENT SYSTEM.

RESTORATION OF WORK AREA, RESTORATION OF THE TRAFFIC SIGNAL
 WORK AREA SHALL BE INCLUDED IN THE COST FOR THE RELATED PAY
 ITEM SUCH AS FOUNDATION, CONDUIT, HANDHOLE, TRENCH AND BACKFILL
 ETC., AND NO EXTRA COMPENSATION SHALL BE ALLOWED. ALL ROADWAY
 SURFACES SUCH AS SHOULDERS, MEDIANS, SIDEWALKS, PAVEMENT, ETC.
 SHALL BE REPLACED IN KIND. ALL DAMAGE TO MOWED LAWNS SHALL BE
 REPLACED WITH AN APPROVED SOD, AND ALL DAMAGE TO UNMOWED FIELDS
 SHALL BE SEEDED IN ACCORDANCE WITH STANDARD SPECIFICATIONS 252
 AND 250 RESPECTIVELY.



FILE NAME =	USER NAME = ejensen	DESIGNED - FN	REVISED -
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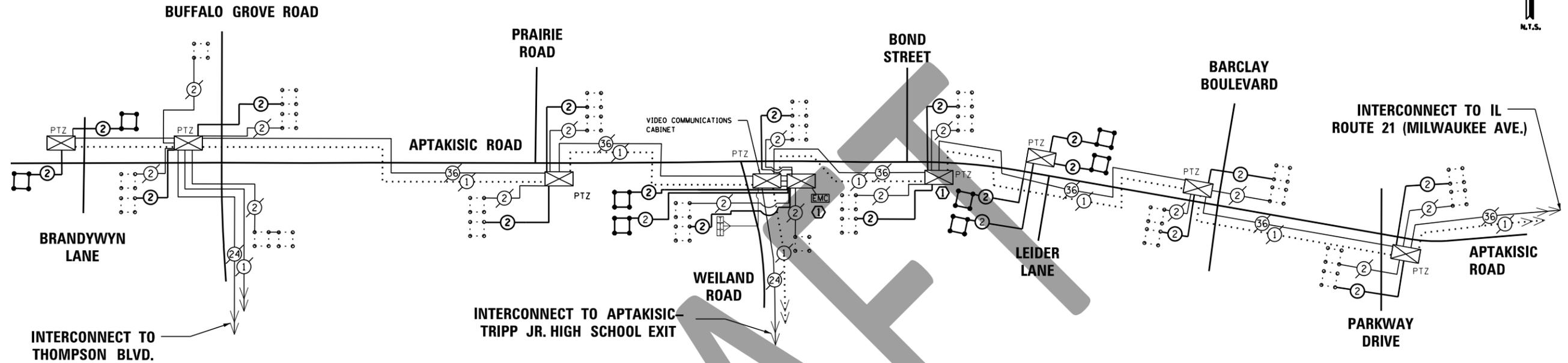


INTERCONNECT PLAN
APTAKISIC ROAD FROM PARKWAY DRIVE TO BRANDYWYN LANE
SHEET 5 OF 5

SCALE: SHEET NO. OF SHEETS STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1258	11-00088-19-TL	LAKE	39	36
CONTRACT NO.				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

PROFILE SURVEYED _____ DATE _____
 GRADES CHECKED _____
 E.M. NOTED _____
 STRUCTURE NOTATIONS OKWD
 NOTE BOOK _____
 NO. _____
 PLAN SURVEYED _____ DATE _____
 NOTE BOOK _____
 NO. _____
 CHECKED _____
 RT. OF WAY CHECKED _____
 ADD. FILE NAME _____
CHRISTOPHER B. BURKE ENGINEERING LTD.
 3575 West Higgins Road, Suite 600
 Rosemont, Illinois 60018
 (631) 923-5500



NOTE:
 ① INSTALL CONTACT CLOSURE FIBER TRANSCEIVER IN EXISTING CABINET CAPABLE OF TRANSMITTING ONE-WAY CONTACT CLOSURES OVER EXISTING FIBER FROM THE QUEUE DETECTORS TO THE SIGNAL CONTROLLER AT BOND STREET.

LEGEND

- INTERSECTION CONTROLLER
- VIDEO COMMUNICATIONS CABINET
- EXISTING INTERSECTION CONTROLLER
- MASTER CONTROLLER
- EXISTING MASTER CONTROLLER
- PROPOSED INTERSECTION AND SAMPLING (SYSTEM) DETECTOR
- SAMPLING (SYSTEM) DETECTOR
- PROPOSED INTERCONNECT CABLE NO. 62.5/125 24F MULTIMODE AND 12F SINGLE MODE
- PROPOSED INTERCONNECT CABLE NO. 62.5/125 12F MULTIMODE AND 12F SINGLE MODE
- EXISTING INTERCONNECT CABLE NO. 62.5/125 12C FIBER OPTIC CABLE
- PROPOSED INTERCONNECT CABLE NO. 18, 3 PAIR TWISTED, SHIELDED
- EXISTING INTERCONNECT CABLE NO. 18, 3 PAIR TWISTED, SHIELDED
- PROPOSED LOOP DETECTOR CABLE 2/C TWISTED, SHIELDED
- EXISTING LOOP DETECTOR CABLE 2/C TWISTED, SHIELDED
- PROPOSED TRACER CABLE NO. 14 1/C
- EXISTING TRACER CABLE NO. 14 1/C
- EXISTING TELEPHONE CONNECTION
- PROPOSED TELEPHONE CONNECTION
- PROPOSED ISDN CONNECTION

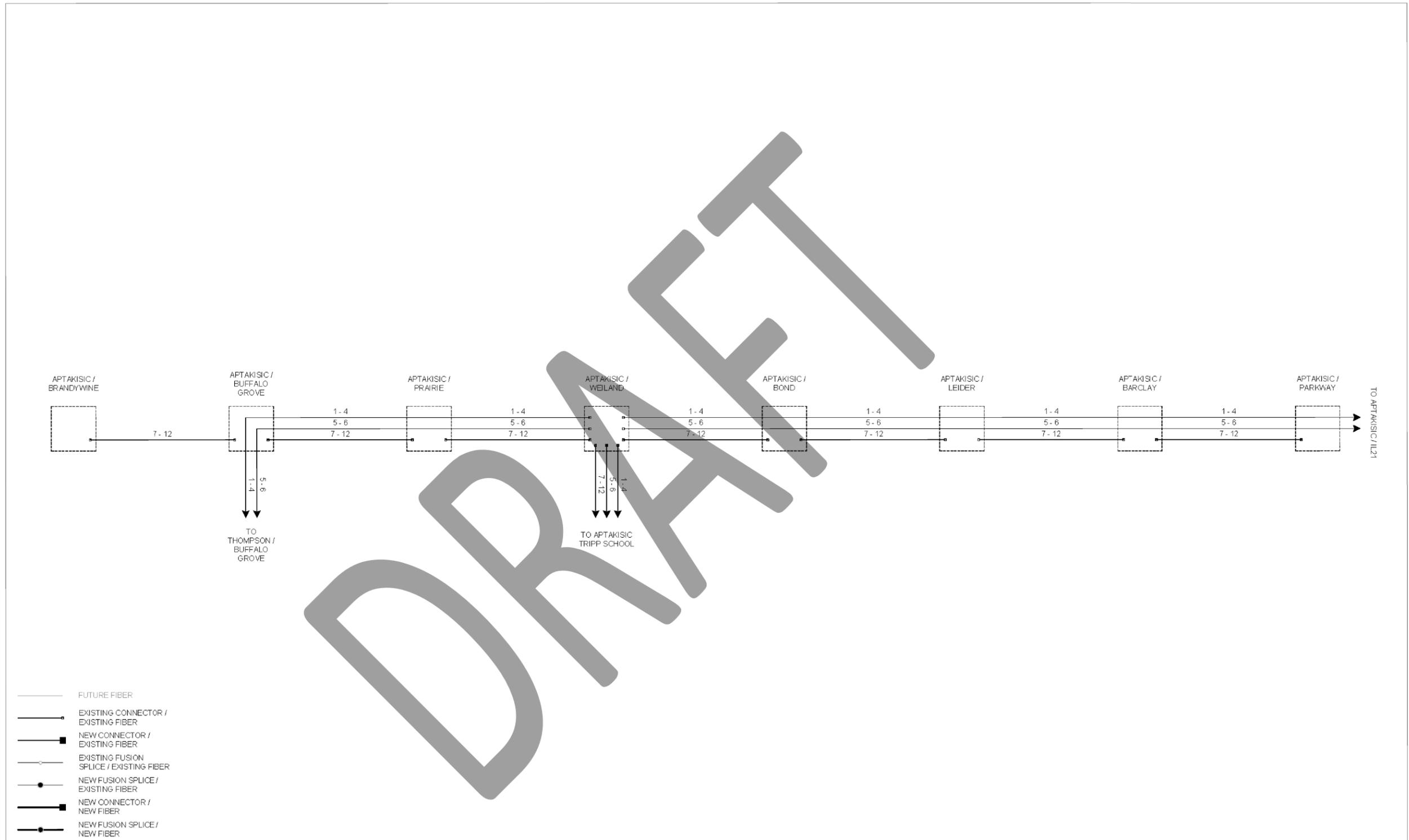
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PLT SCALE = 48"		DRAWN - EAJ	REVISED -
PLOT DATE = 4/19/2013		CHECKED - GMZ	REVISED -
		DATE - 8/15/2012	REVISED -



INTERCONNECT SCHEMATIC
APTAKISIC ROAD FROM PARKWAY DRIVE TO BRANDYWYN LANE
 SCALE: SHEET NO. OF SHEETS STA. TO STA.

F.A.U. RTE. 1258	SECTION 11-00088-19-TL	COUNTY LAKE	TOTAL SHEETS 39	SHEET NO. 37
CONTRACT NO.				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

PROFILE	SURVEYED	DATE
NOTE BOOK	GRADES CHECKED	BY
NO.	ELM. NOTED	
	STRUCTURE NOTATIONS OKWD	
PLAN	SURVEYED	DATE
NO.	ALIGNMENT CHECKED	
	RT. OF WAY CHECKED	
	ADD. FILE NAME	
CHRISTOPHER B. BURKE ENGINEERING LTD. 9575 West Higgins Road, Suite 600 Rosemont, Illinois 60018 (647) 923-9500		



- FUTURE FIBER
- EXISTING CONNECTOR / EXISTING FIBER
- NEW CONNECTOR / EXISTING FIBER
- EXISTING FUSION SPLICE / EXISTING FIBER
- NEW FUSION SPLICE / EXISTING FIBER
- NEW CONNECTOR / NEW FIBER
- NEW FUSION SPLICE / NEW FIBER



CLIENT: Lake County
Division of Transportation

DESIGN	DJG	9/12
DRAWN	DJG	9/12
CHECKED	DJG	9/12
SCALE	NOT TO SCALE	
DATE	10/4/2012	

TITLE: LAKE COUNTY ATMS FINAL DESIGN AND INTEGRATION	PROJECT NO.
FIBER SPLICING DIAGRAM APTAKISIC / LEIDER	SHEET OF DRAWING NO.

FILE NAME =	USER NAME = ejensen	DESIGNED - FN	REVISED -
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		CHECKED - GMZ	REVISED -
		DATE - 8/15/2012	REVISED -

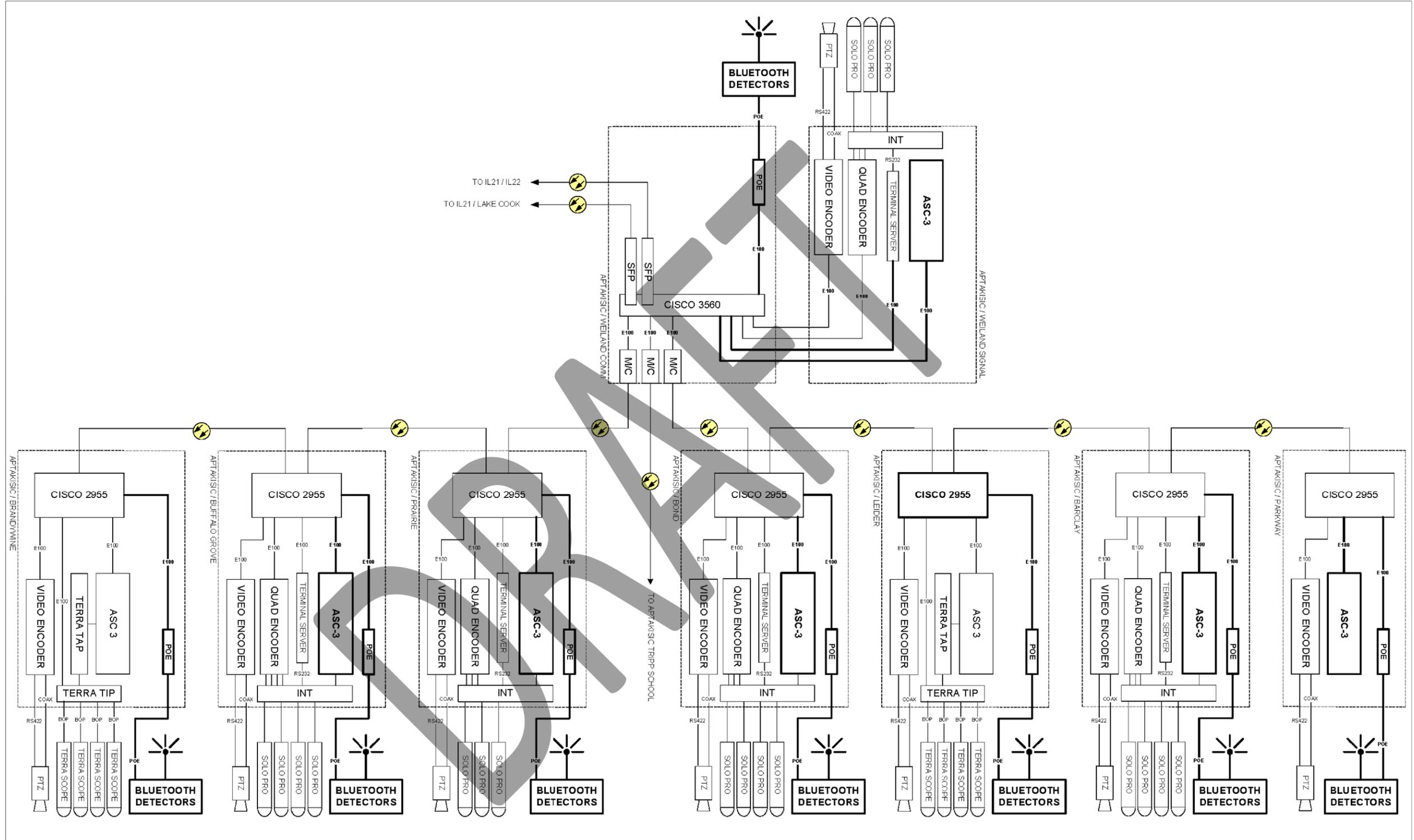


FIBER SPLICING DIAGRAM			
SCALE:	SHEET NO.	OF SHEETS	STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1258	11-00088-19-TL	LAKE	39	38
CONTRACT NO.				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

PROFILE	SURVEYED	DATE	BY
NOTE BOOK	GRADES CHECKED		
	BLM. NOTED		
	STRUCTURE NOTATIONS OK'D		
PLAN	SURVEYED	DATE	BY
NOTE BOOK	ALIGNMENT		
	RT. OF WAY CHECKED		
	ADD. FILE NAME		

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ENGINEERING LTD.
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Rosemont, Illinois 60018
(647) 823-5500



DESIGN	DJG	9/12
DRAWN	DJG	9/12
CHECKED	DJG	9/12
SCALE	NOT TO SCALE	
DATE	10/4/2012	

TITLE: LAKE COUNTY ATMS FINAL DESIGN AND INTEGRATION	PROJECT NO.
CABINET DETAIL - APTAKISIC	SHEET OF
	DRAWING NO.

FILE NAME =	USER NAME = ejensen	DESIGNED - FN	REVISED -
N:\LCD001\120226V2 - Aptakasic Adaptive	Traffic\CABINET DETAIL SHEET.dgn	DRAWN - EAJ	REVISED -
	PLOT SCALE = 48"	CHECKED - GMZ	REVISED -
	PLOT DATE = 4/19/2013	DATE - 8/15/2012	REVISED -



CABINET DETAIL SHEET			
APTAKISIC ROAD AND WELAND ROAD			
SCALE:	SHEET NO.	OF SHEETS	STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1258	11-00088-19-TL	LAKE	39	39
CONTRACT NO.				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				