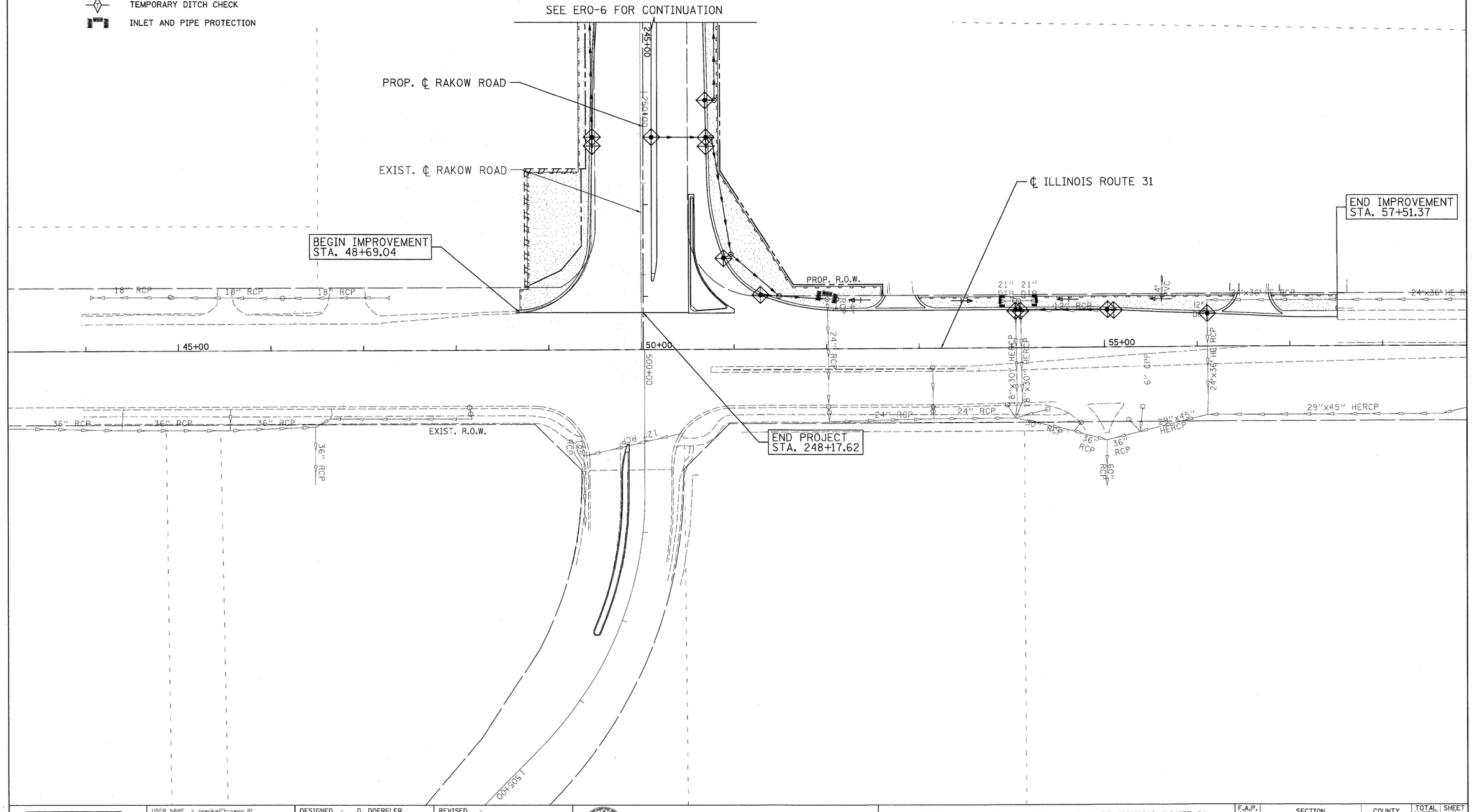
LEGEND:

- TEMPORARY EROSION CONTROL SEEDING W/HEAVY DUTY EROSION CONTROL BLANKET
- PERIMETER EROSION BARRIER
- INLET FILTERS
- TEMPORARY DITCH CHECK
- INLET AND PIPE PROTECTION

N



PATRICK ENGINEERING INC. LISLE, ILLINOIS	USER NAME = jmacke\Chicago_R\	DESIGNED - D. DOERFLER	REVISED -	
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	PLOT DATE = 7/29/2010	DATE - 8/2/2010	REVISED -	

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

RAKOW ROAD FROM ACKMAN ROAD TO ILLINOIS ROUTE 31
IL RTE 31 EROSION AND SEDIMENT CONTROL

SCALE: 1"=50' | SHEET NO. ERO 13 OF 19 | STA. 48+69.04 TO STA. 57+51.37

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-00-WR	MCHENRY	606	301
		CONTRACT NO. 63398		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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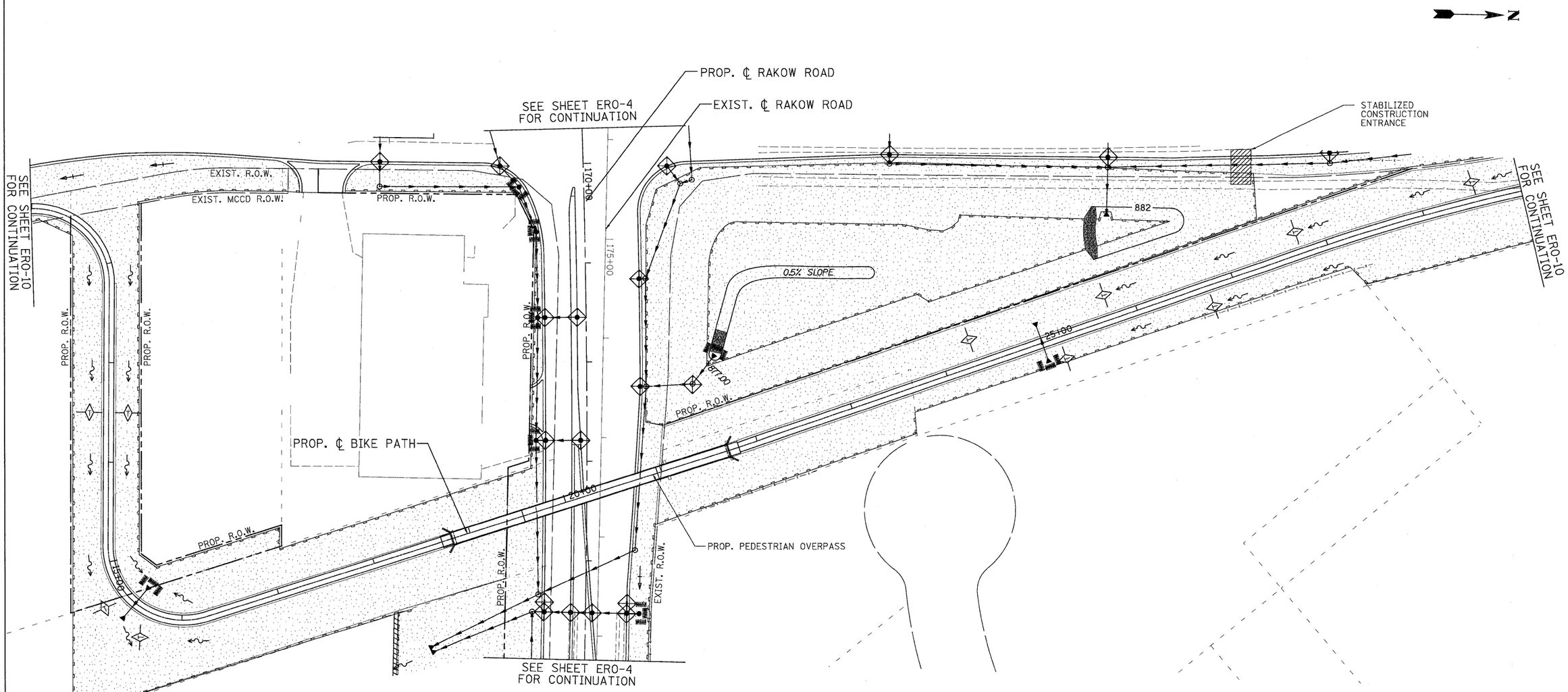

PATRICK ENGINEERING INC. LISLE, ILLINOIS	USER NAME = jmacke\Chicago_R\	DESIGNED - MJP	REVISED -	MCHENRY COUNTY DIVISION OF TRANSPORTATION	RAKOW ROAD FROM ACKMAN ROAD TO ILLINOIS ROUTE 31 BIKE PATH EROSION AND SEDIMENT CONTROL
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	PLOT DATE = 7/29/2010	DATE - 8/2/2010	REVISED -		SCALE: 1"=50' SHEET NO. ERO 14 OF 19 STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-00-WR	MCHENRY	606	302
		CONTRACT NO. 63398		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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N

LEGEND:

- TEMPORARY EROSION CONTROL SEEDING W/HEAVY DUTY EROSION CONTROL BLANKET
- PERIMETER EROSION BARRIER
- INLET FILTERS
- TEMPORARY DITCH CHECK
- INLET AND PIPE PROTECTION
- TEMPORARY SEDIMENT TRAP
- STABILIZED CONSTRUCTION ENTRANCE

STABILIZED CONSTRUCTION ENTRANCE

EXIST. ℄ RAKOW ROAD

PROP. ℄ RAKOW ROAD

EXIST. ROW

TEMPORARY SEDIMENTATION BASIN

867

866

BASIN 1

871

PROP. ℄ MCHENRY AVENUE

STABILIZED CONSTRUCTION ENTRANCE

PROP. R.O.W.

WETLAND A

115+00

110+00

20+00

N

STABILIZED CONSTRUCTION ENTRANCE

882

155+00

8" PVC

PROP. ℄ PYOTT ROAD

BASIN 2

876

0.5% SLOPE

TEMPORARY SEDIMENTATION BASIN

167+00

PROP. ℄ RAKOW ROAD

EXIST. R.O.W.

EXIST. ℄ RAKOW ROAD

175+00

170+00

175+00

PROP. R.O.W.

USER NAME = jmaake(Chicago_R)	DESIGNED - D.DOERFLER	REVISED -	
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PLOT SCALE = 1:50	CHECKED - E.CHOW	REVISED -	
PLOT DATE = 7/29/2010	DATE - 8/2/2010	REVISED -	

PATRICK ENGINEERING INC. LISLE, ILLINOIS

DIVISION OF TRANSPORTATION

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

RAKOW ROAD FROM ACKMAN ROAD TO ILLINOIS ROUTE 31
DETENTION BASIN EROSION AND SEDIMENT CONTROL

SCALE: 1"=50' | SHEET NO. ERO 15 OF 19 | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-00-WR	MCHENRY	606	303
		CONTRACT NO. 63398		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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EROSION CONTROL NOTES:

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE MCHENRY COUNTY, CITY OF CRYSTAL LAKE, AND VILLAGE OF LAKE IN THE HILLS STORMWATER ORDINANACES. ALL CONSTRUCTION ACTIVITIES WILL BE IN ACCORDANCE WITH THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM STORM WATER PERMIT ILR40.

2. EROSION CONTROL SHALL BE PROVIDED IN ACCORDANCE WITH THE SEQUENCE OF STAGE CONSTRUCTION. THE CONTRACTOR SHALL SUBMIT A DETAILED SCHEDULE FOR APPROVAL.

3. SEDIMENT AND EROSION CONTROL DEVICES SHALL BE FUNCTIONAL BEFORE THE PROJECT SITE IS OTHERWISE DISTURBED.

4. ALL DISTURBED AREAS SHALL BE SEEDED OR SODDED AS SOON AS PRACTICAL AFTER CONSTRUCTION ACTIVITIES IN THAT AREA HAVE CONCLUDED. THE SURFACE OF STRIPPED AREAS SHALL BE PERMANENTLY OR TEMPORARILY PROTECTED FROM SOIL EROSION WITHIN 14 DAYS AFTER FINAL GRADE IS REACHED. STRIPPED AREAS THAT WILL REMAIN UNDISTURBED FOR MORE THAN 15 DAYS AFTER INITIAL DISTURBANCE SHALL BE PROTECTED FROM EROSION. TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES SHALL BE MAINTAINED CONTINUOUSLY UNTIL PERMANENT COVER IS ESTABLISHED.

5. IF A TOPSOIL STOCKPILE IS TO REMAIN IN PLACE FOR MORE THAN 3 DAYS, EROSION CONTROL MEASURES WILL BE PROVIDED. SOIL STOCKPILES MUST NOT BE LOCATED WITHIN ANY SPECIAL MANAGEMENT AREAS. SPECIAL MANAGEMENT AREAS INCLUDE JURISDICTIONAL WETLANDS AND ADJACENT OFF-SITE WETLANDS.

6. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS TO PROTECT WETLANDS TO REMAIN FROM DAMAGE BY SEDIMENT, CONSTRUCTION EQUIPMENT OR BY HIS WORK CREWS. THE CONTRACTOR SHALL ASSURE THAT DEBRIS OR ANY CONSTRUCTION MATERIAL IS NOT DISPOSED OF IN WETLANDS.

7. WATER PUMPED OR OTHERWISE DISCHARGED FROM THE SITE DURING CONSTRUCTION DEWATERING SHALL BE FILTERED.

8. WHEN TEMPORARY DRAINAGE IS ESTABLISHED, EROSION CONTROL MEASURES MAY BE REQUIRED BY THE ENGINEER.

9. GRAVEL ROADS, ACCESS DRIVES, PARKING AREAS OF SUFFICIENT WIDTH AND LENGTH, AND VEHICLE WASH DOWN FACILITIES IF NECESSARY, SHALL BE PROVIDED TO PREVENT SOIL FROM BEING TRACKED ONTO PUBLIC OR PRIVATE ROADWAYS. ANY SOIL REACHING A PUBLIC OR PRIVATE ROADWAY SHALL BE REMOVED BEFORE THE END OF EACH WORKDAY AND AS NEEDED.

10. CLEANING OF VEHICLES AND EQUIPMENT, INCLUDING CONCRETE MIXERS, SHALL BE PERFORMED IN A MANNER TO REDUCE THE AMOUNT OF POLLUTANTS TRIBUTARY TO STORM SEWERS AND OPEN WATERS TO THE MAXIMUM EXTENT PRACTICAL.

11. ALL NECESSARY MEASURES SHALL BE TAKEN TO CONTAIN ANY FUEL OR POLLUTION RUNOFF. LEAKING EQUIPMENT OR SUPPLIES SHALL BE IMMEDIATELY REPAIRED OR REMOVED FROM THE SITE.

12. SEDIMENT COLLECTED DURING CONSTRUCTION BY THE VARIOUS TEMPORARY EROSION CONTROL SYSTEMS SHALL BE DISPOSED OF ON THE SITE ON A REGULAR BASIS. SEDIMENT SHALL BE REMOVED FROM EROSION CONTROL SYSTEMS WHEN THE HEIGHT OF THE SEDIMENT EXCEEDS ONE-HALF OF THE HEIGHT OF THE FILTER DEVICE.

13. THE ENGINEER SHALL INSPECT EROSION CONTROL MEASURES PERIODICALLY AND WITHIN 24 HOURS OF ANY STORM EXCEEDING 1/2 INCH PRECIPITATION. DAMAGED AND INEFFECTIVE EROSION CONTROL MEASURES SHALL BE REPAIRED OR REPLACED WITHIN 72 HOURS. EROSION CONTROL SYSTEMS REPLACED DUE TO SEDIMENT LOADING WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR THE APPLICABLE EROSION CONTROL ITEM.

14. ALL SEDIMENT AND EROSION CONTROL MEASURES WILL BE PAID FOR IN ACCORDANCE WITH SECTION 280 OF THE STANDARD SPECIFICATIONS, EXCEPT WHERE OTHERWISE NOTED IN THE CONTRACT SPECIAL PROVISIONS.

15. THE COST OF REPAIRING OR REMOVING SEDIMENT FROM EROSION CONTROL SYSTEMS SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR THE APPLICABLE EROSION CONTROL ITEM.

16. ALL EROSION CONTROL MEASURES SHALL BE KEPT OPERATIONAL AND MAINTAINED CONTINUOUSLY THROUGHOUT THE PERIOD OF LAND DISTURBANCE UNTIL PERMANENT SEDIMENT AND EROSION CONTROL MEASURES ARE OPERATIONAL.

17. STRAW OR HAY BALES SHALL NOT BE USED FOR INLET AND PIPE PROTECTION.

BOX CULVERT CONSTRUCTION

1. APPROPRIATE SOIL EROSION AND SEDIMENT CONTROL METHODS WILL BE INCLUDED FOR EACH STEP OF THE BOX CULVERT CONSTRUCTION BY THE CONTRACTOR AND RESIDENT ENGINEER. WORK IN THE WATERWAY SHALL BE TIMED TO TAKE PLACE DURING LOW OR NO-FLOW CONDITIONS. THIS SHOULD BE DONE BY EITHER BY-PASS PUMPING OR BY-PASS PIPING THE FLOW AROUND THE WORK AREA. PROTECTION MUST BE PROVIDED UP TO THE EXISTING 10 YEAR HIGHWATER ELEVATION. ROCK CHECK DAMS ARE SPECIFIED, BUT OTHER METHODS INCLUDING BUT NOT LIMITED TO SANDBAGS, STEEL SHEETS, AND WATER INFLATED DAMS MAY BE USED UPON APPROVAL BY THE RESIDENT ENGINEER.

2. WORK MAY NOT BE PERFORMED IN THE WATER, EXCEPT FOR THE PLACEMENT OF THE MATERIALS NECESSARY FOR THE CONSTRUCTION OF THE COFFERDAM. THE COFFERDAM MUST BE CONSTRUCTED FROM THE UPLAND AREA AND NO EQUIPMENT MAY ENTER THE WATER AT ANY TIME. IF THE INSTALLATION OF THE COFFERDAM CANNOT BE COMPLETED FROM SHORE AND ACCESS IS NEEDED TO REACH THE AREA TO BE COFFERED, OTHER MEASURES WILL BE NECESSARY TO ENSURE THAT EQUIPMENT DOES NOT ENTER THE WATER. ONCE THE COFFERDAM IS IN PLACE AND THE ISOLATED AREA IS DEWATERED, EQUIPMENT MAY ENTER THE COFFERED AREA TO PERFORM THE REQUIRED WORK.

3. A SUMP PIT SHALL BE USED DURING DEWATERING OPERATIONS OF THE WORK AREA AS SHOWN ON THE PLAN AND SHALL BE DISCHARGED TO A SEDIMENT BAG OF ADEQUATE SIZE TO PROVIDE FOR SEDIMENT COLLECTION PRIOR TO DISCHARGE TO THE DRAINAGE SYSTEM. WATER SHALL HAVE SEDIMENT REMOVED PRIOR TO BEING RE-INTRODUCED TO THE DOWNSTREAM WATERWAY. DISCHARGE WATER IS CONSIDERED CLEAN IF IT DOES NOT RESULT IN A VISUALLY IDENTIFIABLE DEGRADATION OF WATER CLARITY.

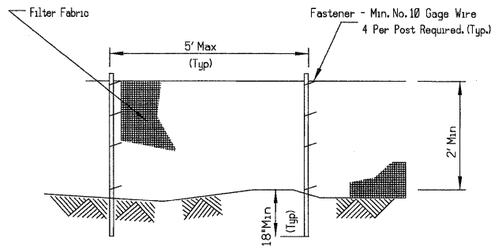
4. WATER CAPTURED UPSTREAM OF THE COFFERDAM MAY BE DISCHARGED DIRECTLY BACK INTO THE DRAINAGE SYSTEM AS LONG AS NO SCOURING OCCURS FROM THE DRAINAGE OPERATION.

5. THE MCHENRY COUNTY SOIL AND WATER CONSERVATION DISTRICT WILL BE CONTACTED SEVEN (7) DAYS BEFORE ANY IN-STREAM WORK BEGINS TO ENSURE ADEQUATE SESC PRACTICES ARE IN PLACE BEFORE CONSTRUCTION BEGINS. THE MCSWCD HAS PERMISSION TO ACCESS THE SITE TO VERIFY THAT SEDIMENT AND EROSION CONTROL PRACTICES ARE WORKING PROPERLY AND TO DETERMINE IF ADDITIONAL PRACTICES ARE NEEDED. IF ADDITIONAL PRACTICES ARE DEEMED NECESSARY BY THE MCSWCD THE CONTRACTOR SHALL IMPLEMENT THE PRACTICES IN A TIMELY MANNER.

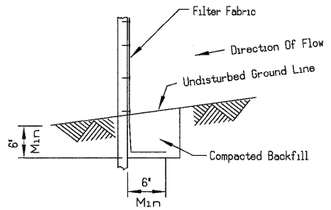
6. IF BYPASS PUMPING IS NECESSARY, THE PUMP SHALL BE PLACED ON A STABLE SURFACE OR FLOATED TO PREVENT SEDIMENT FROM BEING SUCKED INTO THE HOSE. THE BYPASS DISCHARGE SHALL BE PLACED ON A NON-ERODIBLE, ENERGY-DISSIPATING SURFACE PRIOR TO REJOINING THE STREAM FLOW AND SHALL NOT CAUSE EROSION OF DOWNSTREAM AREAS. CLEANING OR FILTERING OF BYPASS WATER IS NOT NECESSARY UNLESS OTHERWISE REQUIRED.

7. THE SIDE SLOPES SHALL BE RESEEDED AND STABILIZED WITH AN APPROPRIATE EROSION CONTROL BLANKET AND PROPOSED FILTER FABRIC AND RIP RAP (SEE DRAINAGE SHEETS) SHALL BE PLACED PRIOR TO ACCEPTING FLOWS. THE SUBSTRATE SHALL BE RESTORED TO PRE-CONSTRUCTION CONDITIONS AND STABLE ENOUGH TO ACCEPT FLOWS. RIP RAP SHALL BE PLACED ALONG THE BANKS OF THE CREEK DOWNSTREAM OF THE CULVERT.

PERIMETER EROSION BARRIER PLAN



ELEVATION

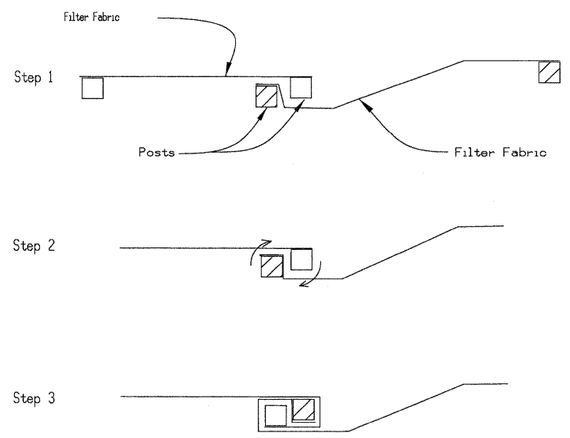


FABRIC ANCHOR DETAIL

NOTES:
1. Temporary sediment fence shall be installed prior to any grading work in the area to be protected. They shall be maintained throughout the construction period and removed in conjunction with the final grading and site stabilization.
2. Filter fabric shall meet the requirements of material specification 592 Geotextile Table 1 or 2, Class with equivalent opening size of at least 30 for nonwoven and 50 for woven.
3. Fence posts shall be either standard steel post or wood post with a minimum cross-sectional area of 3.0 sq. in.

REFERENCE		NRCS	STANDARD DWG. NO.
Project			IL-620
Designed	Date	Natural Resources Conservation Service	SHEET 1 OF 2
Checked	Date		
Approved	Date		DATE 11-28-01

PERIMETER EROSION BARRIER PLAN

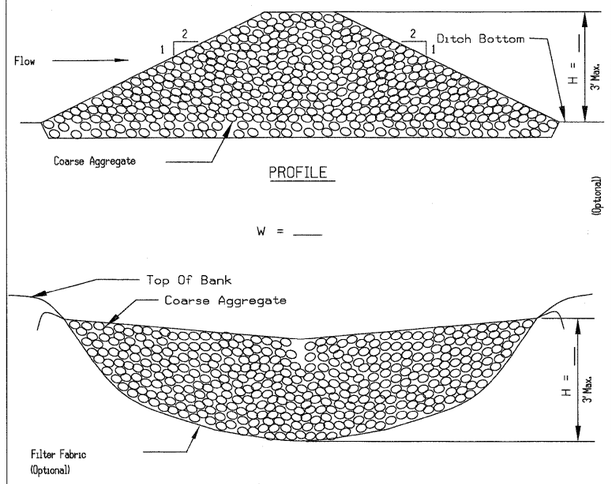


ATTACHING TWO SILT FENCES

NOTES:
1. Place the end post of the second fence inside the end post of the first fence.
2. Rotate both posts at least 180 degrees in a clockwise direction to create a tight seal with the fabric material.
3. Drive both posts a minimum of 18 inches into the ground and bury the flap.

REFERENCE		NRCS	STANDARD DWG. NO.
Project			IL-620
Designed	Date	Natural Resources Conservation Service	SHEET 2 OF 2
Checked	Date		
Approved	Date		DATE 11-28-01

ROCK CHECK DAM - COARSE AGGREGATE

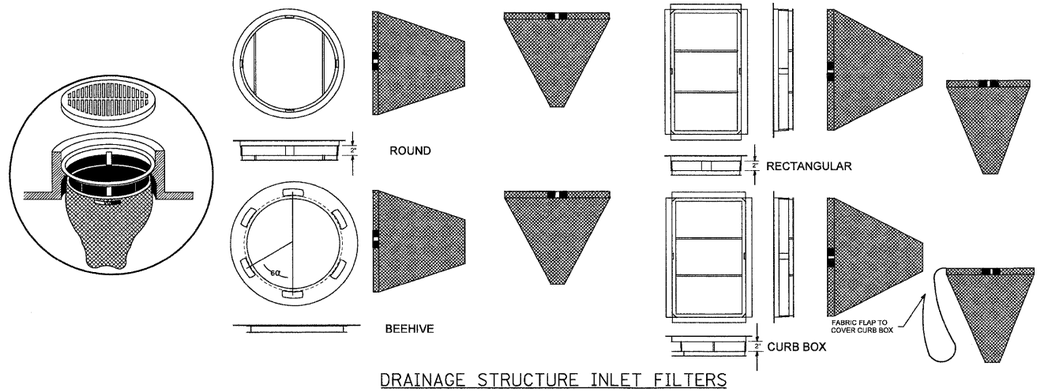


PROFILE

CROSS SECTION

NOTES:
1. Filter fabric shall meet the requirements of material specification 592 GEOTEXTILE, Table 1 or 2, Class I, II, or IV and shall be placed over the cleared area prior to the placing of rock.
2. Coarse aggregate shall meet one of the following IDOT gradations, CA-1, CA-2, CA-3, or CA-4 and be placed according to construction specification 25 ROCKFILL using placement Method 1 and Class III compaction.
3. For added stability, the base of the dam may be keyed 6 inches into the
4. soil.
5. See plans for spacing of dams and H dimensions.
6. Drainage area to each dam shall be less than 2 acres.
   Use ROCK CHECK DAM-RIPRAP IL-605R for drainage areas of 2 to 10 acres.

REFERENCE		NRCS	STANDARD DWG. NO.
Project			IL-605CA
Designed	Date	Natural Resources Conservation Service	SHEET 1 OF 1
Checked	Date		
Approved	Date		DATE 11-28-01



DRAINAGE STRUCTURE INLET FILTERS

PATRICK ENGINEERING INC. LISLE, ILLINOIS	USER NAME = jmacke(Chicago_R)	DESIGNED - D.DOERFLER	REVISED -	DIVISION OF TRANSPORTATION	MCHENRY COUNTY DIVISION OF TRANSPORTATION	RAKOW ROAD FROM ACKMAN ROAD TO ILLINOIS ROUTE 31 EROSION AND SEDIMENT CONTROL DETAILS		F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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	PLOT DATE = 7/29/2010	DATE - 8/2/2010	REVISED -			SCALE: NONE	SHEET NO. ERO 17 OF 19 STA. TO STA.	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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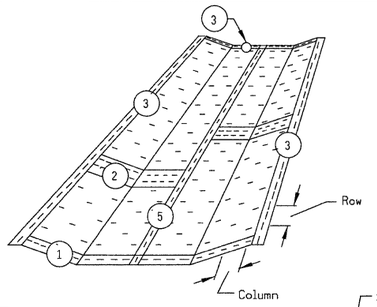
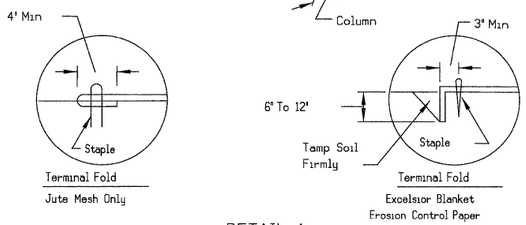
EROSION BLANKET PLAN





DETAIL 1

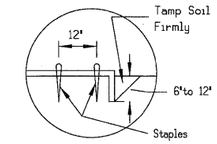
DETAIL 2

REFFERENCE
Project
Designed — Date
Checked — Date
Approved — Date

NRCS
Natural Resources Conservation Service

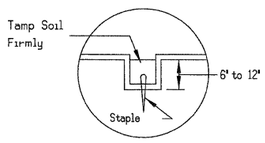
STANDARD DWG. NO.
IL-530
SEEET 1 OF 2
DATE 5-24-94

EROSION BLANKET PLAN



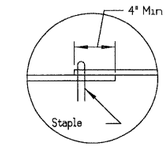
Anchor Slot
Jute Mesh
Excelsior Blanket
Erosion Control Paper

DETAIL 3



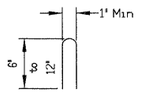
Check Slot
Erosion Control Paper

DETAIL 4



Lap Joint
Jute Mesh
Erosion Control Paper
Excelsior Blanket Shall
Be Butted Together.

DETAIL 5



STAPLE DETAIL

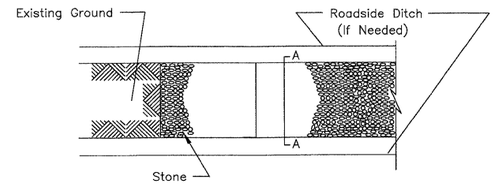
NOTES:
1. On erosion control paper, check slots, in ditch channel shall be spaced so that one occurs within each 50' on slopes of more than 4% and less than 6%. On slopes of 6% or more, they shall be spaced so that one occurs within each 25'.
2. Staples are to be placed alternately, in columns approximately 2' apart and in rows approximately 3' apart. Approximately 175 staples are required per 4'x 225' roll of material and 125 staples are required per 4'x 150' roll of material.
3. Erosion control material shall be placed loosely over ground surface. Do not stretch.
4. All terminal ends and transverse laps shall be stapled at approximately 12" intervals.

REFFERENCE
Project
Designed — Date
Checked — Date
Approved — Date

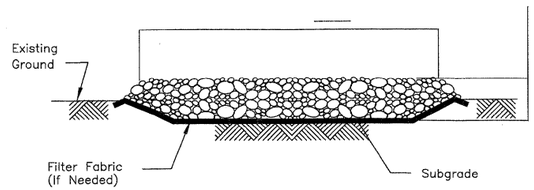
NRCS
Natural Resources Conservation Service

STANDARD DWG. NO.
IL-530
SHEET 2 OF 2
DATE 3-1-95

CONSTRUCTION ROAD STABILIZATION



PLAN VIEW



SECTION A–A

NOTES:
1. Filter fabric shall meet the requirements of material specification 592 GEOTEXTILE, Table 1 or 2, Class I, II or IV and shall be placed over the cleared area prior to the placing of rock.
2. Stone shall meet one of the following IDOT coarse aggregate gradations, CA–1, CA–2, CA–3, or CA–4 and be placed according to construction specification 25 ROCKFILL using placement Method 1 and Class III compaction.
3. See plans for construction road location, D and W dimensions.
4. Minimum width is 14 feet for one–way traffic and 20 feet for two–way traffic. Two–way traffic widths shall be increased a minimum of 4 feet for trailer traffic. Depending on the type of vehicle or equipment, speed, loads, climatic and other conditions under which vehicles and equipment operate an increase in the minimum widths may be required.
5. Roadway shall follow the contour of the natural terrain to the extent possible.

REFERENCE
Project
Designed — Date
Checked — Date
Approved — Date

NRCS
Natural Resources Conservation Service

STANDARD DWG. NO.
IL-506
SHEET 1 OF 1
DATE 1-29-99

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

USER NAME = jmacket(Chicago_R)	DESIGNED - D. DOERFLER	REVISED -	
PLOT CONFIG= PDF(Grey_Large).plt	DRAWN - D. DOERFLER	REVISED -	
PLOT SCALE = 1:50	CHECKED - E. CHOW	REVISED -	
PLOT DATE = 7/29/2010	DATE - 8/2/2010	REVISED -	

DIVISION OF TRANSPORTATION

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

RAKOW ROAD FROM ACKMAN ROAD TO ILLINOIS ROUTE 31
EROSION AND SEDIMENT CONTROL DETAILS

SCALE: NONE | SHEET NO. ERO 18 OF 19 | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-00-WR	MCHENRY	606	306
		CONTRACT NO. 63398		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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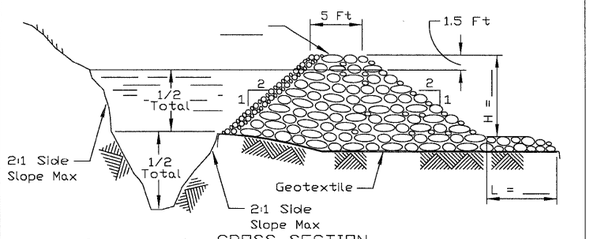
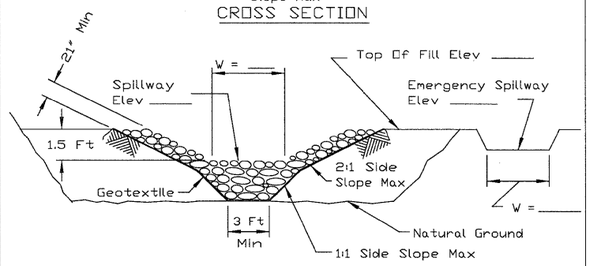
TEMPORARY SEDIMENT TRAP



CROSS SECTION

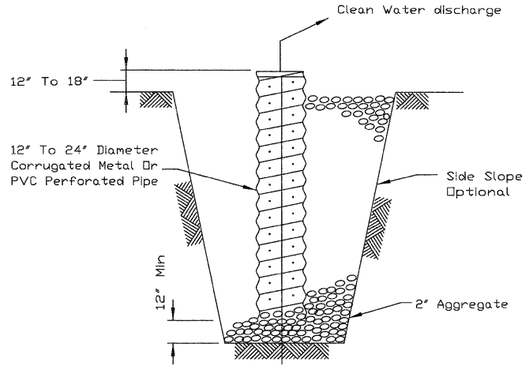


STONE SECTION

NOTES:
1. If the sediment pool is formed or enlarged the side slope will be 2:1 or flatter.
2. The fill shall be constructed using IDOT RR-4 stone size. A 1'layer of IDOT CA-2 should be placed on the inside face to reduce the flow rate.
3. The rock will be placed according to construction specification 25 ROCKFILL. Placement will be by Method 1 and compaction will be class III.
4. The geotextile shall meet the requirements in material specification 592 GEOTEXTILE table 1 or 2, class I, II or IV.

REFERENCE		STANDARD DWG. NO.
Project	NRCS Natural Resources Conservation Service	IL-660
Designed ____ Date ____		SHEET 1 OF 1
Checked ____ Date ____		DATE 11-20-01
Approved ____ Date ____		

SUMP PIT PLAN



SECTION

NOTES:
1. Pit dimensions are optional.
2. The standpipe will be constructed by perforating a 12"-24" diameter corrugated metal or PVC pipe.
3. A base of 2" aggregate will be placed in the pit to a minimum depth of 12". After installing the standpipe, the pit surrounding the standpipe will then be backfilled with 2" aggregate.
4. The standpipe will extend 12" to 18" above the lip of the pit.
5. If discharge will be pumped directly to a storm drainage system, the standpipe will be wrapped with filter fabric before installation.
6. If desired, 1/4"-1/2" hardware cloth may be placed around the standpipe prior to attaching the filter fabric. This will increase the rate of water seepage into the pipe.

REFERENCE		STANDARD DWG. NO.
Project	NRCS Natural Resources Conservation Service	IL-650
Designed ____ Date ____		SHEET 1 OF 1
Checked ____ Date ____		DATE 8-11-94
Approved ____ Date ____		

PATRICK ENGINEERING INC. LISLE, ILLINOIS

USER NAME = jmacke(Chicago_R)	DESIGNED - D. DOERFLER	REVISED -
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PLOT SCALE = 1:50	CHECKED - E. CHOW	REVISED -
PLOT DATE = 7/29/2010	DATE - 8/2/2010	REVISED -

MCHENRY COUNTY DIVISION OF TRANSPORTATION

RAKOW ROAD FROM ACKMAN ROAD TO ILLINOIS ROUTE 31
EROSION AND SEDIMENT CONTROL DETAILS

SCALE: NONE | SHEET NO. ERO 19 OF 19 | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-00-WR	MCHENRY	606	307
		CONTRACT NO. 63398		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-00-WR	MCHENRY	606	308
FED. ROAD DIST. NO.	ILLINOIS	CONTRACT NO. 63398		

FOR INDEX OF SHEETS SEE SHEET NO. 2

STATE OF ILLINOIS

DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

PROPOSED HIGHWAY PLANS

FAP 0336 (RAKOW ROAD)
FAU 3873 (ACKMAN ROAD) TO FAP 0336 (ILLINOIS ROUTE 31)
ROADWAY RECONSTRUCTION AND WIDENING

PROJECT #HPP-TCSP-RS-CMF-0336(031)
JOB #C-91-191-05
SECTION #05-00308-00-WR
MCHENRY COUNTY

VOLUME 2

HIGHWAY CLASSIFICATION

PRINCIPAL ARTERIAL

RAKOW ROAD TRAFFIC DATA

2005 ADT = 16,500 TO 39,400
2030 ADT = 29,000 TO 66,000
POSTED SPEED LIMIT = 45 MPH
DESIGN SPEED LIMIT = 45 MPH

PROJECT DESCRIPTION

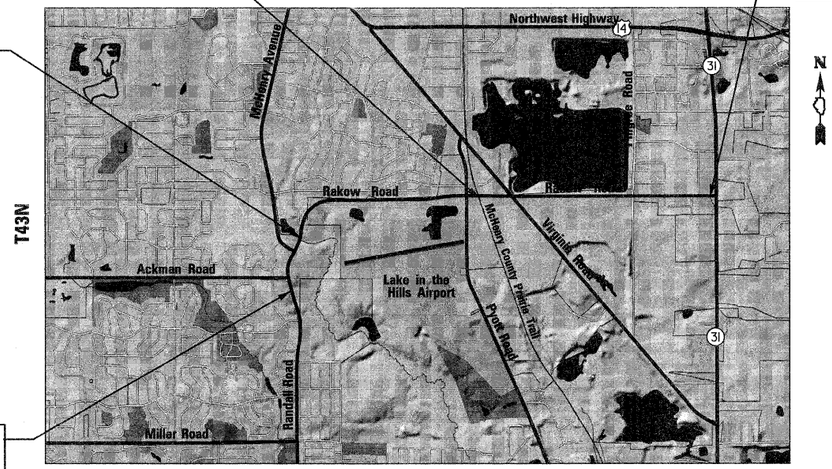
THE PROPOSED IMPROVEMENT CONSISTS OF THE WIDENING AND RECONSTRUCTION OF RAKOW ROAD FROM ACKMAN ROAD TO ILLINOIS ROUTE 31 INCLUDING A NEW STORM SEWER SYSTEM, EXTENSION OF THE CRYSTAL CREEK DOUBLE BOX CULVERT, AND TRAFFIC SIGNAL MODERNIZATION

PROJECT LOCATED IN CITY OF CRYSTAL LAKE AND VILLAGE OF LAKE IN THE HILLS

PRAIRIE TRAIL BRIDGE
S.N. 056-9921
STA. 173 + 34.67

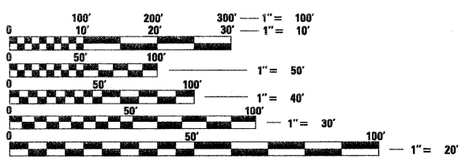
END PROJECT
STA. 248 + 17.62

CRYSTAL CREEK CULVERT
S.N. 056-3157
STA. 112 + 94.31



BEGIN PROJECT
STA. 86 + 42.45

ALGONQUIN TOWNSHIP R8E
LOCATION MAP
SCALE: 1" = 2500' GROSS & NET LENGTH OF PROJECT = 16,175 FEET (3.06 MILES)



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. 63398

IDOT FIELD ENGINEER: ALEX HOUSEH (847) 705-4410

LOCATION OF SECTION INDICATED THUS: –

McHENRY COUNTY DIVISION OF TRANSPORTATION

APPROVED: _____ 2010

_____
DIRECTOR OF TRANSPORTATION /COUNTY ENGINEER

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PASSED _____ 20 _____

_____
DISTRICT I ENGINEER OF LOCAL ROADS AND STREETS

RELEASING FOR BID BASED ON LIMITED REVIEW

_____ 20 _____

_____
DEPUTY DIRECTOR OF HIGHWAYS, REGION I ENGINEER

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

PLANS PREPARED BY: PATRICK ENGINEERING, INC.

FINAL

INDEX OF SHEETS – VOLUME 1

INDEX OF SHEETS – VOLUME 2

LIST OF STATE STANDARDS

STANDARD NO.	ITEM DESCRIPTION
000001-05	STANDARD SYMBOLS. ABBREVIATIONS. AND PATTERNS
280001-05	TEMPORARY EROSION CONTROL SYSTEM
353001-04	PCC BASE COURSE WITH HMA BINDER AND SURFACE COURSES
420001-07	PAVEMENT JOINTS
420401-08	BRIDGE APPROACH PAVEMENT
424001-05	CURB RAMPS FOR SIDEWALKS
482001-02	HMA SHOULDER ADJACENT TO FLEXIBLE PAVEMENT
515001-03	NAME PLATE FOR BRIDGES
542101-02	REINFORCED CONCRETE END SECTIONS FOR PIPE CULVERT 375 MM (15") THRU 900 MM (36") DIA AT RIGHT ANGLE WITH ROADWAY
542106-02	REINFORCED CONCRETE END SECTIONS FOR PIPE CULVERT 1050 MM (42") THRU 1500 MM (60") DIA AT RIGHT ANGLE WITH ROADWAY
542301-02	PRECAST REINFORCED CONCRETE FLARED END SECTION
542311-01	GRATING FOR CONCRETE FLARED END SECTION FOR 600 MM (24") THRU 1300 MM (54") PIPE
601001-03	SUB-SURFACE DRAINS
601101-01	CONCRETE HEADWALL FOR PIPE DRAIN
602001-01	CATCH BASIN. TYPE A
602011-01	CATCH BASIN. TYPE C
602301-02	INLET. TYPE A
602306-02	INLET. TYPE B
602401-02	MANHOLE. TYPE A
602406-03	MANHOLE. TYPE A 6'
602411-01	MANHOLE. TYPE A 7'
602601-02	PRECAST REINFORCED CONCRETE FLAT SLAB TOP
604001-03	FRAME AND LIDS. TYPE 1
604036-02	GRATE. TYPE 8
604056-03	FRAME AND GRATE. TYPE 11V
604091-02	FRAME AND GRATE. TYPE 24
606001-04	CONCRETE CURB AND COMBINATION CONCRETE CURB AND GUTTER
606006-02	OUTLET FOR CONCRETE CURB AND GUTTER. TYPE B-15.60 (B-6.24)
606301-04	PC CONCRETE ISLANDS AND MEDIANS
630001-08	STEEL PLATE BEAM GUARDRAIL
630201-06	PCC/BITUMINOUS STABILIZATION AT STEEL PLATE BEAM GUARDRAIL
630301-05	SHOULDER WIDENING FOR TYPE I GUARDRAIL TERMINALS
631011-06	TRAFFIC BARRIER TERMINAL. TYPE 2
631026-05	TRAFFIC BARRIER TERMINAL. TYPE 5 & 5A
631031-08	TRAFFIC BARRIER TERMINAL. TYPE 6
635006-03	REFLECTOR AND TERMINAL MARKER PLACEMENT
635011-02	REFLECTOR MARKER AND MOUNTING DETAILS
664001-02	CHAIN LINK FENCE
666001-01	RIGHT-OF-WAY MARKERS
667101-01	PERMANENT SURVEY MARKERS
701001-02	OFF-ROAD OPERATIONS. 2L 2W. 4.5 M (15') MIN. AWAY. FOR SPEEDS > OR = 45 MPH
701006-03	OFF-ROAD OPERATIONS. 2L 2W. 4.5 M (15') TO PAVEMENT EDGE. FOR SPEEDS > OR = 45 MPH
701011-02	OFF-ROAD MOVING OPERATIONS.2L 2W. DAY ONLY. FOR SPEEDS > OR = 45 MPH
701101-02	OFF-ROAD OPERATIONS. MULTILANE. LESS THAN 4.5 M (15') AWAY. FOR SPEEDS > OR = 45 MPH
701106-02	OFF-ROAD OPERATIONS. MULTILANE. MORE THAN 4.5 M (15') AWAY. FOR SPEEDS > OR = 45 MPH
701201-03	LANE CLOSURE. 2L 2W. DAY ONLY. ON-ROAD TO 600 MM (24") OFF-ROAD. FOR SPEEDS > OR = 45 MPH
701301-03	LANE CLOSURE. 2L. 2W. SHORT TIME OPERATIONS
701306-02	LANE CLOSURE. 2L 2W. SLOW MOVING DAY ONLY OPERATIONS. FOR SPEEDS > OR = 45 MPH
701311-03	LANE CLOSURE. 2L 2W. MOVING DAY ONLY OPERATIONS. FOR SPEEDS > OR = 45 MPH
701606-06	LANE CLOSURE. MULTILANE. 2W. WITH MOUNTABLE MEDIAN. FOR SPEEDS < 45 MPH
701701-06	LANE CLOSURE. MULTILANE. INTERSECTION. FOR SPEEDS < 45 MPH
701801-04	LANE CLOSURE. MULTILANE. 1W OR 2W. CROSSWALK OR SIDEWALK CLOSURE. FOR SPEEDS < 45 MPH
701901-01	TRAFFIC CONTROL DEVICES
704001-06	TEMPORARY CONCRETE BARRIER
720001-01	SIGN PANEL MOUNTING DETAILS
720006-02	SIGN PANEL ERECTION DETAILS
720011-01	METAL POSTS (SIGNS. MARKERS AND DELINEATORS)
728001-01	TELESCOPING STEEL SIGN SUPPORT
731001-01	BASE FOR TELESCOPING STEEL SIGN SUPPORT
780001-02	TYPICAL PAVEMENT MARKINGS
781001-03	TYPICAL APPLICATIONS RAISED REFLECTIVE PAVEMENT MARKERS
805001-01	ELECTRICAL SERVICE INSTALLATION DETAILS
814001-02	HANDHOLES
814006-02	DOUBLE HANDHOLES
857001-01	STANDARD PHASE DESIGNATION DIAGRAMS AND PHASE SEQUENCES
862001-01	UNINTERRUPTABLE POWER SUPPLY (UPS)
873001-02	TRAFFIC SIGNAL GROUNDING AND BONDING
877001-04	STEEL MAST ARM ASSEMBLY AND POLE 16' THROUGH 55'
877002-01	STEEL MAST ARM ASSEMBLY AND POLE 56' THROUGH 75'
877011-04	STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 16' THROUGH 55'
877012-01	STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 56' THROUGH 75'
878001-08	CONCRETE FOUNDATION DETAILS
880001-01	SPAN WIRE MOUNTED SIGNALS AND FLASHING BEACON INSTALLATION
880006-01	TRAFFIC SIGNAL MOUNTING DETAILS
886001-01	DETECTOR LOOP INSTALLATIONS
886006-01	TYPICAL LAYOUT FOR DETECTION LOOPS
BD01	DRIVEWAY DETAILS DISTANCE BETWEEN R.O.W. AND FACE OF CURB & EDGE OF SHOULDER >= 15' (4.5 m)
BD02	DRIVEWAY DETAILS DISTANCE BETWEEN R.O.W. AND FACE OF CURB < 15' (4.5 m)
BD08	FRAMES AND LIDS ADJUSTMENT WITH MILLING
BD22	PAVEMENT PATCHING FOR HMA SURFACED PAVEMENT
BD32	BUTT JOINTS AND BITUMINOUS TAPER
BD34	DETAILS FOR DEPRESSED CURB & GUTTER AND SHOULDER TREATMENT AT TBT TY 1 SPL
BD51	BENCHING DETAIL FOR EMBANKMENT WIDENING
TC10	TRAFFIC CONTROL AND PROTECTION FOR SIDE ROADS.INTERSECTIONS AND DRIVEWAYS
TC11	RAISED REFLECTIVE PAVEMENT MARKERS (SNOW PLOW RESISTANT)
TC13	TYPICAL PAVEMENT MARKINGS
TC14	TRAFFIC CONTROL AND PROTECTION AT TURN BAYS (TO REMAIN OPEN TO TRAFFIC)
TC16	PAVEMENT MARKING LETTERS AND SYMBOLS FOR TRAFFIC STAGING
TC26	DRIVEWAY ENTRANCE SIGNING

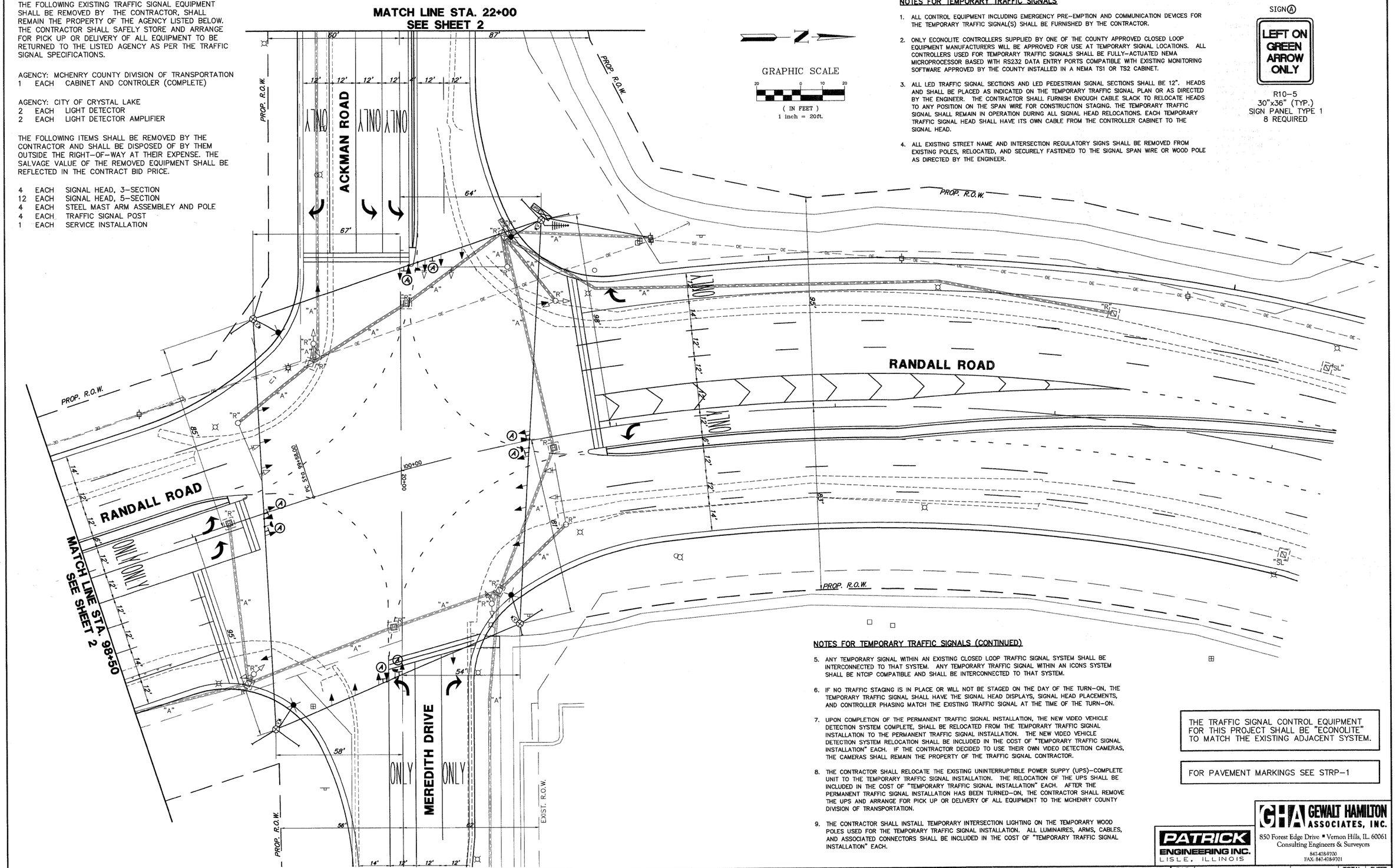
THE FOLLOWING EXISTING TRAFFIC SIGNAL EQUIPMENT SHALL BE REMOVED BY THE CONTRACTOR, SHALL REMAIN THE PROPERTY OF THE AGENCY LISTED BELOW. THE CONTRACTOR SHALL SAFELY STORE AND ARRANGE FOR PICK UP OR DELIVERY OF ALL EQUIPMENT TO BE RETURNED TO THE LISTED AGENCY AS PER THE TRAFFIC SIGNAL SPECIFICATIONS.

AGENCY: MCHENRY COUNTY DIVISION OF TRANSPORTATION
1 EACH CABINET AND CONTROLER (COMPLETE)

AGENCY: CITY OF CRYSTAL LAKE
2 EACH LIGHT DETECTOR
2 EACH LIGHT DETECTOR AMPLIFIER

THE FOLLOWING ITEMS SHALL BE REMOVED BY THE CONTRACTOR AND SHALL BE DISPOSED OF BY THEM OUTSIDE THE RIGHT-OF-WAY AT THEIR EXPENSE. THE SALVAGE VALUE OF THE REMOVED EQUIPMENT SHALL BE REFLECTED IN THE CONTRACT BID PRICE.

4 EACH SIGNAL HEAD, 3-SECTION
12 EACH SIGNAL HEAD, 5-SECTION
4 EACH STEEL MAST ARM ASSEMBLEY AND POLE
4 EACH TRAFFIC SIGNAL POST
1 EACH SERVICE INSTALLATION



GRAPHIC SCALE
20 0 10 20
(IN FEET)
1 inch = 20ft.

NOTES FOR TEMPORARY TRAFFIC SIGNALS

1. ALL CONTROL EQUIPMENT INCLUDING EMERGENCY PRE-EMPTION AND COMMUNICATION DEVICES FOR THE TEMPORARY TRAFFIC SIGNAL(S) SHALL BE FURNISHED BY THE CONTRACTOR.
2. ONLY ECONOLITE CONTROLLERS SUPPLIED BY ONE OF THE COUNTY APPROVED CLOSED LOOP EQUIPMENT MANUFACTURERS WILL BE APPROVED FOR USE AT TEMPORARY SIGNAL LOCATIONS. ALL CONTROLLERS USED FOR TEMPORARY TRAFFIC SIGNALS SHALL BE FULLY-ACTUATED NEMA MICROPROCESSOR BASED WITH RS232 DATA ENTRY PORTS COMPATIBLE WITH EXISTING MONITORING SOFTWARE APPROVED BY THE COUNTY INSTALLED IN A NEMA TS1 OR TS2 CABINET.
3. ALL LED TRAFFIC SIGNAL SECTIONS AND LED PEDESTRIAN SIGNAL SECTIONS SHALL BE 12". HEADS AND SHALL BE PLACED AS INDICATED ON THE TEMPORARY TRAFFIC SIGNAL PLAN OR AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL FURNISH ENOUGH CABLE SLACK TO RELOCATE HEADS TO ANY POSITION ON THE SPAN WIRE FOR CONSTRUCTION STAGING. THE TEMPORARY TRAFFIC SIGNAL SHALL REMAIN IN OPERATION DURING ALL SIGNAL HEAD RELOCATIONS. EACH TEMPORARY TRAFFIC SIGNAL HEAD SHALL HAVE ITS OWN CABLE FROM THE CONTROLLER CABINET TO THE SIGNAL HEAD.
4. ALL EXISTING STREET NAME AND INTERSECTION REGULATORY SIGNS SHALL BE REMOVED FROM EXISTING POLES, RELOCATED, AND SECURELY FASTENED TO THE SIGNAL SPAN WIRE OR WOOD POLE AS DIRECTED BY THE ENGINEER.

SIGN (A)

R10-5
30"x36" (TYP.)
SIGN PANEL TYPE 1
8 REQUIRED

NOTES FOR TEMPORARY TRAFFIC SIGNALS (CONTINUED)

5. ANY TEMPORARY SIGNAL WITHIN AN EXISTING CLOSED LOOP TRAFFIC SIGNAL SYSTEM SHALL BE INTERCONNECTED TO THAT SYSTEM. ANY TEMPORARY TRAFFIC SIGNAL WITHIN AN ICONS SYSTEM SHALL BE NTCIP COMPATIBLE AND SHALL BE INTERCONNECTED TO THAT SYSTEM.
6. IF NO TRAFFIC STAGING IS IN PLACE OR WILL NOT BE STAGED ON THE DAY OF THE TURN-ON, THE TEMPORARY TRAFFIC SIGNAL SHALL HAVE THE SIGNAL HEAD DISPLAYS, SIGNAL HEAD PLACEMENTS, AND CONTROLLER PHASING MATCH THE EXISTING TRAFFIC SIGNAL AT THE TIME OF THE TURN-ON.
7. UPON COMPLETION OF THE PERMANENT TRAFFIC SIGNAL INSTALLATION, THE NEW VIDEO VEHICLE DETECTION SYSTEM COMPLETE, SHALL BE RELOCATED FROM THE TEMPORARY TRAFFIC SIGNAL INSTALLATION TO THE PERMANENT TRAFFIC SIGNAL INSTALLATION. THE NEW VIDEO VEHICLE DETECTION SYSTEM RELOCATION SHALL BE INCLUDED IN THE COST OF "TEMPORARY TRAFFIC SIGNAL INSTALLATION" EACH. IF THE CONTRACTOR DECIDED TO USE THEIR OWN VIDEO DETECTION CAMERAS, THE CAMERAS SHALL REMAIN THE PROPERTY OF THE TRAFFIC SIGNAL CONTRACTOR.
8. THE CONTRACTOR SHALL RELOCATE THE EXISTING UNINTERRUPTIBLE POWER SUPPY (UPS)-COMPLETE UNIT TO THE TEMPORARY TRAFFIC SIGNAL INSTALLATION. THE RELOCATION OF THE UPS SHALL BE INCLUDED IN THE COST OF "TEMPORARY TRAFFIC SIGNAL INSTALLATION" EACH. AFTER THE PERMANENT TRAFFIC SIGNAL INSTALLATION HAS BEEN TURNED-ON, THE CONTRACTOR SHALL REMOVE THE UPS AND ARRANGE FOR PICK UP OR DELIVERY OF ALL EQUIPMENT TO THE MCHENRY COUNTY DIVISION OF TRANSPORTATION.
9. THE CONTRACTOR SHALL INSTALL TEMPORARY INTERSECTION LIGHTING ON THE TEMPORARY WOOD POLES USED FOR THE TEMPORARY TRAFFIC SIGNAL INSTALLATION. ALL LUMINAIRES, ARMS, CABLES, AND ASSOCIATED CONNECTORS SHALL BE INCLUDED IN THE COST OF "TEMPORARY TRAFFIC SIGNAL INSTALLATION" EACH.

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

FOR PAVEMENT MARKINGS SEE STRP-1

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

GHA GEWALT HAMILTON ASSOCIATES, INC.
850 Forest Edge Drive ▪ Vernon Hills, IL 60061
Consulting Engineers & Surveyors
847-478-9700
FAX: 847-478-9701

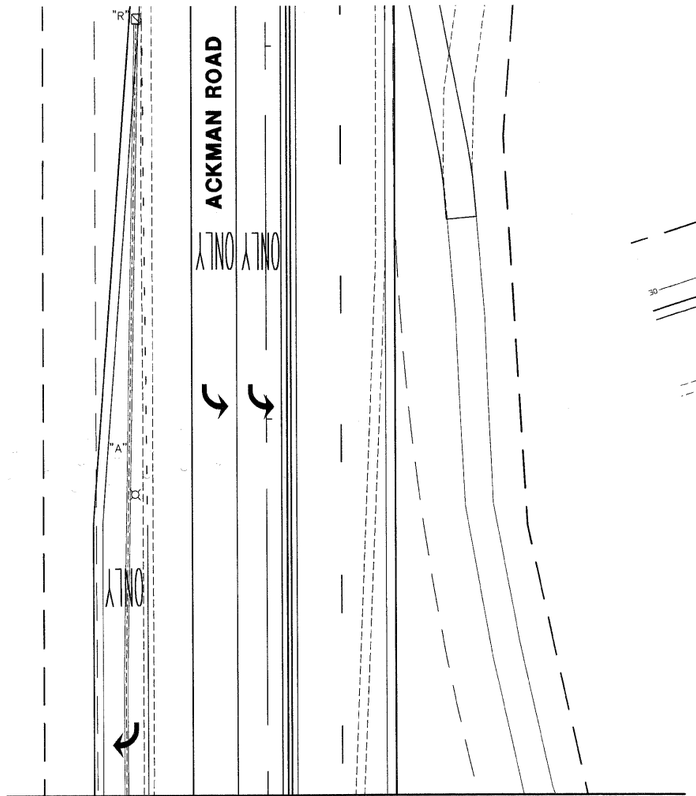
FILE NAME = 4153.800-tr1.dwg	USER NAME = GHA	DESIGNED - DPB	REVISED -
		DRAWN - ZCW	REVISED -
	PLOT SCALE = N.T.S.	CHECKED - DPB	REVISED -
	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

TEMPORARY TRAFFIC SIGNAL INSTALLATION AND REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT RANDALL ROAD AND ACKMAN ROAD/MEREDITH DRIVE

SCALE: 1"=20' | SGNL. SHEET # 1 OF 65 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	310
		CONTRACT #: 63398		
	ILLINOIS FED. AID PROJECT			



MATCH LINE STA. 22+00
SEE SHEET 1

GRAPHIC SCALE

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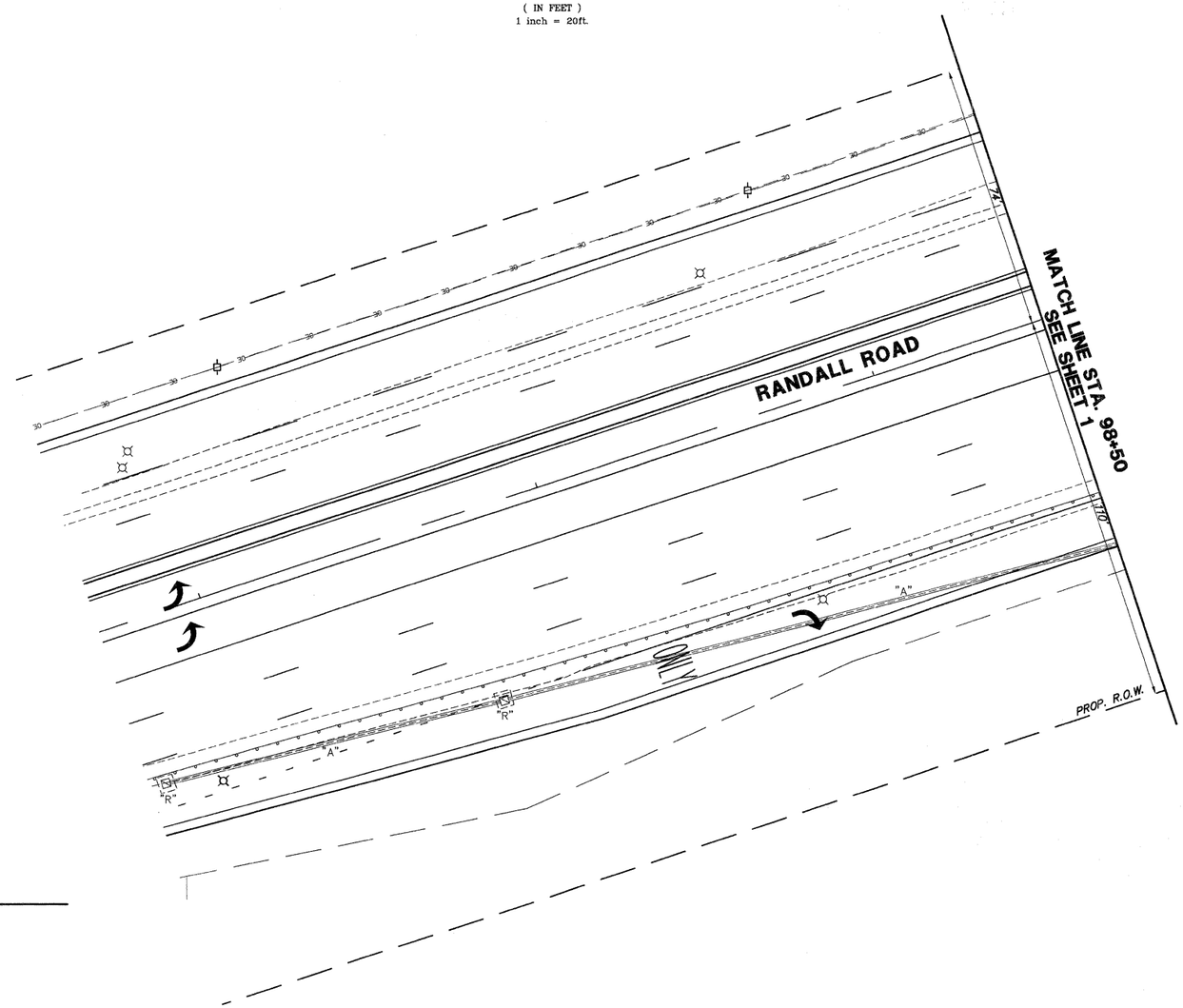
(IN FEET)
1 inch = 20ft.



MATCH LINE STA. 98+50
SEE SHEET 1

NOTES FOR TEMPORARY TRAFFIC SIGNALS

1. ALL CONTROL EQUIPMENT INCLUDING EMERGENCY PRE-EMPTION AND COMMUNICATION DEVICES FOR THE TEMPORARY TRAFFIC SIGNAL(S) SHALL BE FURNISHED BY THE CONTRACTOR.
2. ONLY ECONOLITE CONTROLLERS SUPPLIED BY ONE OF THE COUNTY APPROVED CLOSED LOOP EQUIPMENT MANUFACTURERS WILL BE APPROVED FOR USE AT TEMPORARY SIGNAL LOCATIONS. ALL CONTROLLERS USED FOR TEMPORARY TRAFFIC SIGNALS SHALL BE FULLY-ACTUATED NEMA MICROPROCESSOR BASED WITH RS232 DATA ENTRY PORTS COMPATIBLE WITH EXISTING MONITORING SOFTWARE APPROVED BY THE COUNTY INSTALLED IN A NEMA TS1 OR TS2 CABINET.
3. ALL LED TRAFFIC SIGNAL SECTIONS AND LED PEDESTRIAN SIGNAL SECTIONS SHALL BE 12". HEADS AND SHALL BE PLACED AS INDICATED ON THE TEMPORARY TRAFFIC SIGNAL PLAN OR AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL FURNISH ENOUGH CABLE SLACK TO RELOCATE HEADS TO ANY POSITION ON THE SPAN WIRE FOR CONSTRUCTION STAGING. THE TEMPORARY TRAFFIC SIGNAL SHALL REMAIN IN OPERATION DURING ALL SIGNAL HEAD RELOCATIONS. EACH TEMPORARY TRAFFIC SIGNAL HEAD SHALL HAVE ITS OWN CABLE FROM THE CONTROLLER CABINET TO THE SIGNAL HEAD.
4. ALL EXISTING STREET NAME AND INTERSECTION REGULATORY SIGNS SHALL BE REMOVED FROM EXISTING POLES, RELOCATED, AND SECURELY FASTENED TO THE SIGNAL SPAN WIRE OR WOOD POLE AS DIRECTED BY THE ENGINEER.
5. ANY TEMPORARY SIGNAL WITHIN AN EXISTING CLOSED LOOP TRAFFIC SIGNAL SYSTEM SHALL BE INTERCONNECTED TO THAT SYSTEM. ANY TEMPORARY TRAFFIC SIGNAL WITHIN AN ICONS SYSTEM SHALL BE NTCIP COMPATIBLE AND SHALL BE INTERCONNECTED TO THAT SYSTEM.
6. IF NO TRAFFIC STAGING IS IN PLACE OR WILL NOT BE STAGED ON THE DAY OF THE TURN-ON, THE TEMPORARY TRAFFIC SIGNAL SHALL HAVE THE SIGNAL HEAD DISPLAYS, SIGNAL HEAD PLACEMENTS, AND CONTROLLER PHASING MATCH THE EXISTING TRAFFIC SIGNAL AT THE TIME OF THE TURN-ON.
7. UPON COMPLETION OF THE PERMANENT TRAFFIC SIGNAL INSTALLATION, THE NEW VIDEO VEHICLE DETECTION SYSTEM COMPLETE, SHALL BE RELOCATED FROM THE TEMPORARY TRAFFIC SIGNAL INSTALLATION TO THE PERMANENT TRAFFIC SIGNAL INSTALLATION. THE NEW VIDEO VEHICLE DETECTION SYSTEM RELOCATION SHALL BE INCLUDED IN THE COST OF "TEMPORARY TRAFFIC SIGNAL INSTALLATION" EACH. IF THE CONTRACTOR DECIDED TO USE THEIR OWN VIDEO DETECTION CAMERAS, THE CAMERAS SHALL REMAIN THE PROPERTY OF THE TRAFFIC SIGNAL CONTRACTOR.
8. THE CONTRACTOR SHALL RELOCATE THE EXISTING UNINTERRUPTIBLE POWER SUPPY (UPS)-COMPLETE UNIT TO THE TEMPORARY TRAFFIC SIGNAL INSTALLATION. THE RELOCATION OF THE UPS SHALL BE INCLUDED IN THE COST OF "TEMPORARY TRAFFIC SIGNAL INSTALLATION" EACH. AFTER THE PERMANENT TRAFFIC SIGNAL INSTALLATION HAS BEEN TURNED-ON, THE CONTRACTOR SHALL REMOVE THE UPS AND ARRANGE FOR PICK UP OR DELIVERY OF ALL EQUIPMENT TO THE MCHENRY COUNTY DIVISION OF TRANSPORTATION.
9. THE CONTRACTOR SHALL INSTALL TEMPORARY INTERSECTION LIGHTING ON THE TEMPORARY WOOD POLES USED FOR THE TEMPORARY TRAFFIC SIGNAL INSTALLATION. ALL LUMINAIRES, ARMS, CABLES, AND ASSOCIATED CONNECTORS SHALL BE INCLUDED IN THE COST OF "TEMPORARY TRAFFIC SIGNAL INSTALLATION" EACH.

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

FOR PAVEMENT MARKINGS SEE STRP-1

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

GHA GEWALT HAMILTON ASSOCIATES, INC.
850 Forest Edge Drive ■ Vernon Hills, IL 60061
Consulting Engineers & Surveyors
847-478-9700
FAX: 847-478-9701

FILE NAME = 4153.800-tr1.dwg	USER NAME = GHA	DESIGNED - DPB	REVISED -	
		DRAWN - ZCW	REVISED -	
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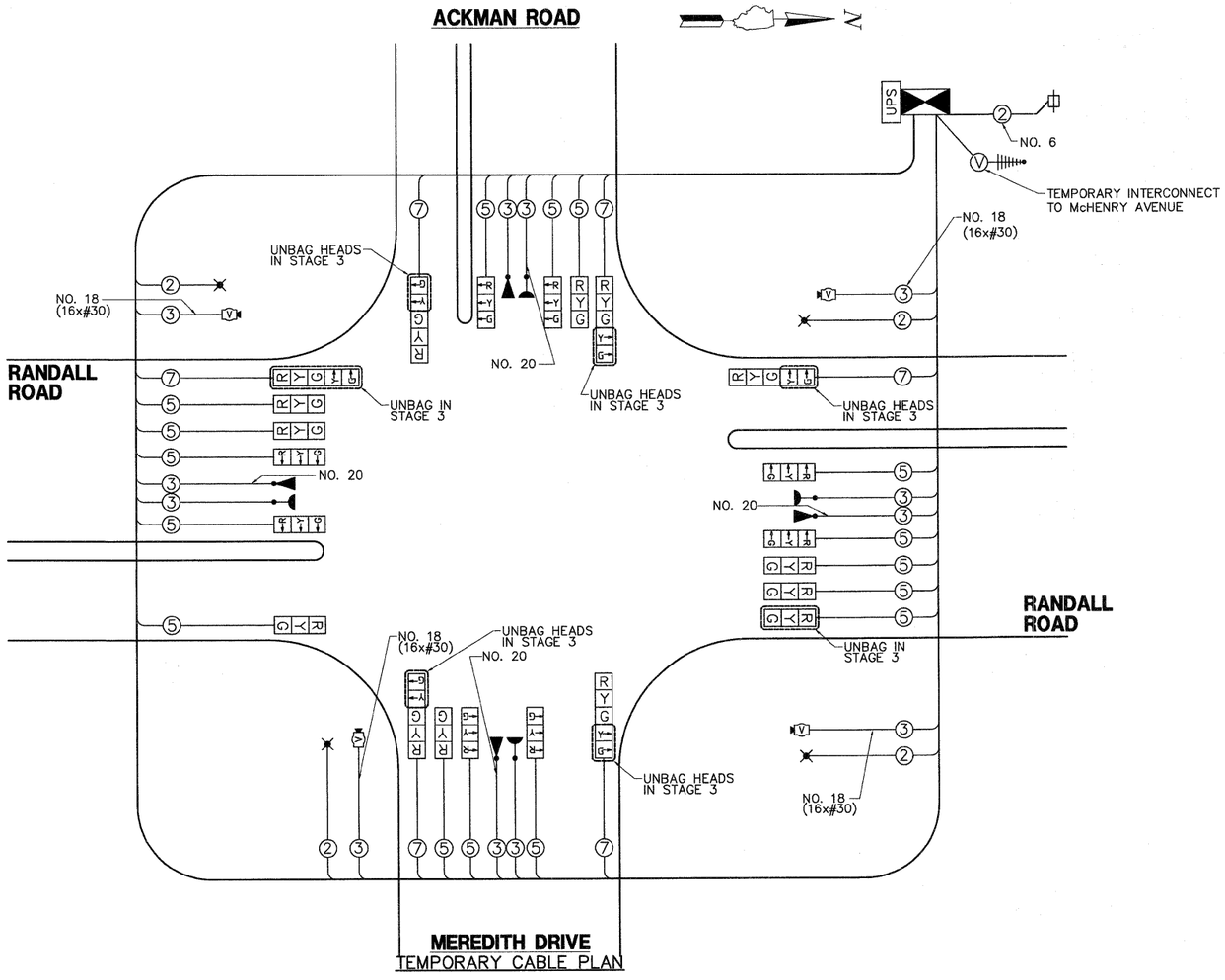
	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -	

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

TEMPORARY TRAFFIC SIGNAL INSTALLATION AND REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT RANDALL ROAD AND ACKMAN ROAD/MEREDITH DRIVE

SCALE: 1"=20' | SGNL. SHEET # 2 OF 65 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	311
		CONTRACT #: 63398		
	ILLINOIS FED. AID PROJECT			



TEMPORARY CABLE PLAN

GHA GEWALT HAMILTON ASSOCIATES, INC.
850 Forest Edge Drive ▪ Vernon Hills, IL 60061
Consulting Engineers & Surveyors
847-478-9700
FAX: 847-478-9701

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

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

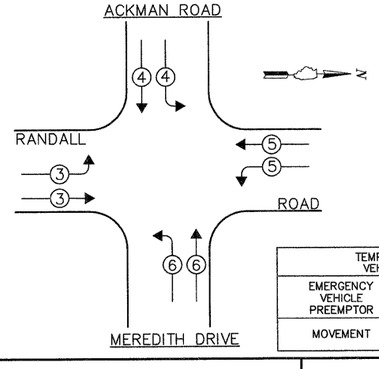
McHENRY COUNTY DIVISION OF TRANSPORTATION
TRAFFIC SIGNAL INSTALLATION
ELECTRICAL SERVICE REQUIREMENTS

TYPE	NO LAMPS	WATTAGE INCAND.	WATTAGE L.E.D.	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	21	135	17	0.50	178.5
SIGNAL (YELLOW)	21	135	25	0.25	131.25
SIGNAL (GREEN)	21	135	15	0.25	78.75
ARROW	10	135	12	0.10	12.0
PED.SIGNAL		90	25	1.00	
CONTROLLER	1	100	100	1.00	100.0
BATTERY BACKUP	1		25	1.00	25.0
VIDEO SYSTEMS	1		150	1.00	150.0
LUMINAIRE	4	400		0.50	800.0
FLASHER				0.05	
				TOTAL =	1,475.5

ENERGY COSTS – BILLED TO: CITY OF CRYSTAL LAKE
(ADDRESS) 100 WEST MUNICIPAL COMPLEX

ENERGY SUPPLY – CONTACT: MS. AUDREY HELGESEN
PHONE: (847) 816-5225
COMPANY: COMED-LIBERTYVILLE

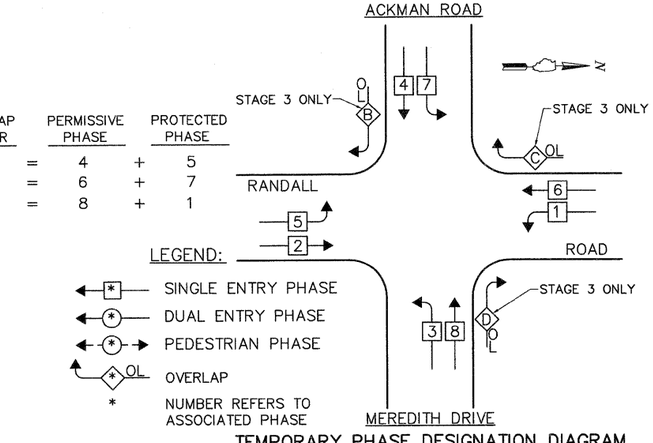
TEMPORARY EMERGENCY VEHICLE PREEMPTION SEQUENCE



TEMPORARY EMERGENCY VEHICLE PREEMPTORS				
EMERGENCY VEHICLE PREEMPTOR	3	4	5	6
MOVEMENT				

TEMPORARY CONTROLLER SEQUENCE

OVERLAP LETTER		PERMISSIVE PHASE		PROTECTED PHASE
B	=	4	+	5
C	=	6	+	7
D	=	8	+	1



TEMPORARY PHASE DESIGNATION DIAGRAM

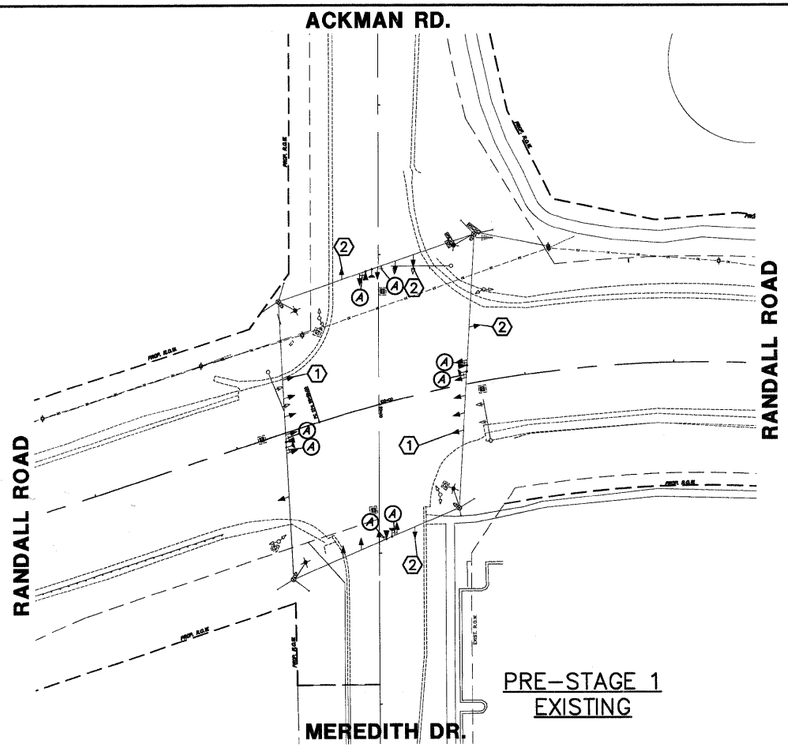
FILE NAME =	USER NAME = GHA	DESIGNED - DPB	REVISED -
4153.800-tr1.dwg		DRAWN - ZCW	REVISED -
	PLOT SCALE = N.T.S.	CHECKED - DPB	REVISED -
	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

TEMPORARY CABLE PLAN AND TEMPORARY PHASE DESIGNATION DIAGRAM
RANDALL ROAD AND ACKMAN ROAD/MEREDITH DRIVE

SCALE: N.A. | SGNL SHEET # 3 OF 65 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	312
		CONTRACT #:	63398	
	ILLINOIS FED. AID PROJECT			



PRE-STAGE 1
EXISTING

GRAPHIC SCALE

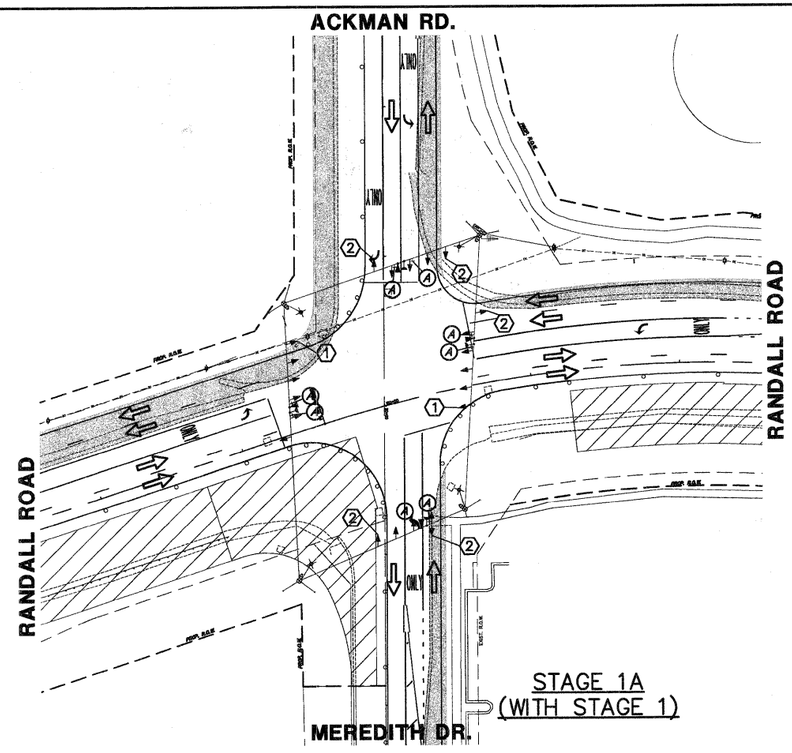
50 0 25 50

(IN FEET)
1 inch = 50ft.

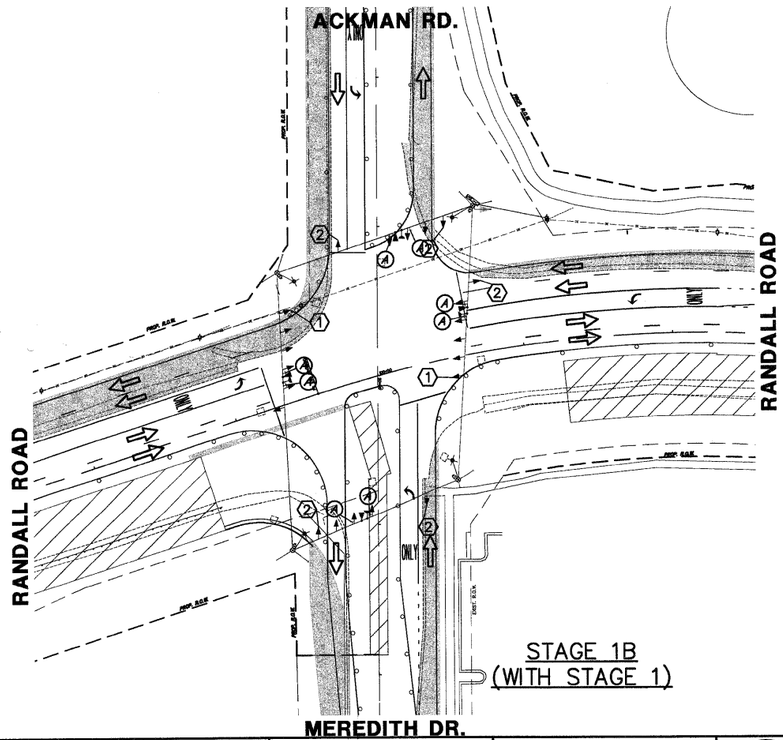
SIGN (A)

LEFT ON GREEN ARROW ONLY

R10-5
30"x36" (TYP.)
SIGN PANEL TYPE I
8 REQUIRED



STAGE 1A
(WITH STAGE 1)



STAGE 1B
(WITH STAGE 1)

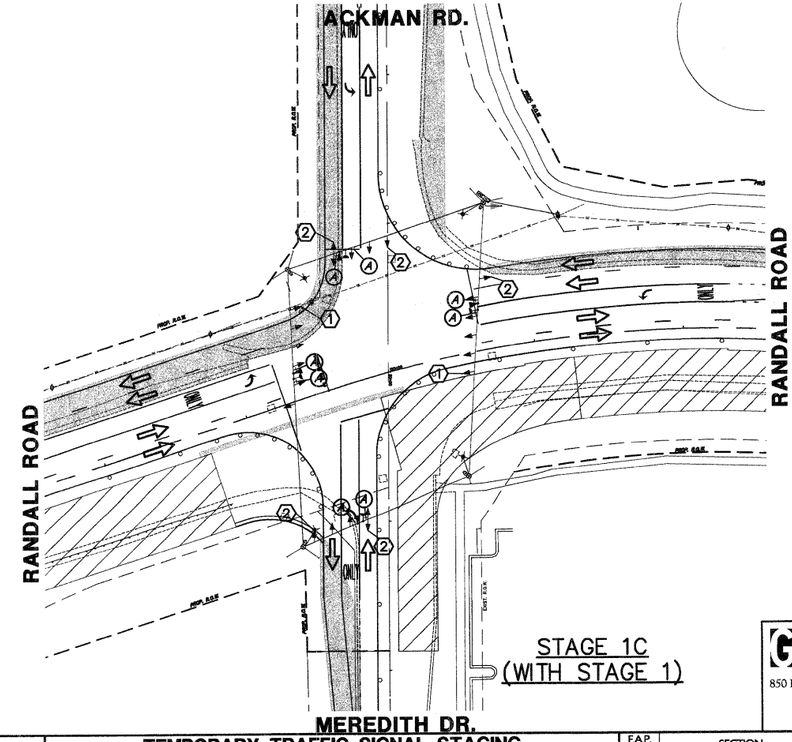
LEGEND

- TEMPORARY PAVEMENT
- WORK ZONE
- DIRECTION OF TRAFFIC

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

CONSTRUCTION NOTES:

1. BAG ENTIRE HEAD
2. BAG RIGHT TURN ARROWS ONLY



STAGE 1C
(WITH STAGE 1)

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

GHA GEWALT HAMILTON ASSOCIATES, INC.
850 Forest Edge Drive ▪ Vernon Hills, IL 60061
Consulting Engineers & Surveyors
847/478-9700
FAX: 847/478-9701

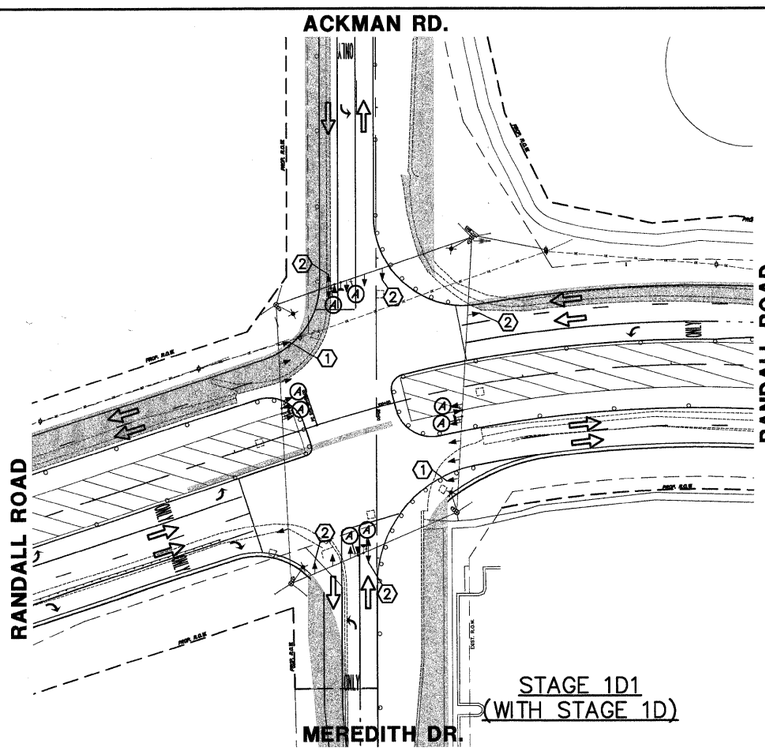
FILE NAME = 4153.800-tr1.dwg	USER NAME = GHA	DESIGNED - DPB	REVISED -
		DRAWN - ZCW	REVISED -
	PLOT SCALE = N.T.S.	CHECKED - DPB	REVISED -
	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

TEMPORARY TRAFFIC SIGNAL STAGING
STAGES PRE-1,1A,1B, & 1C
RANDALL ROAD AND ACKMAN ROAD/MEREDITH DRIVE

SCALE: 1"=50' | SGNL. SHEET # 4 OF 65 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	313
		CONTRACT #:	63398	
	ILLINOIS FED. AID PROJECT			



STAGE 1D1
(WITH STAGE 1D)

GRAPHIC SCALE

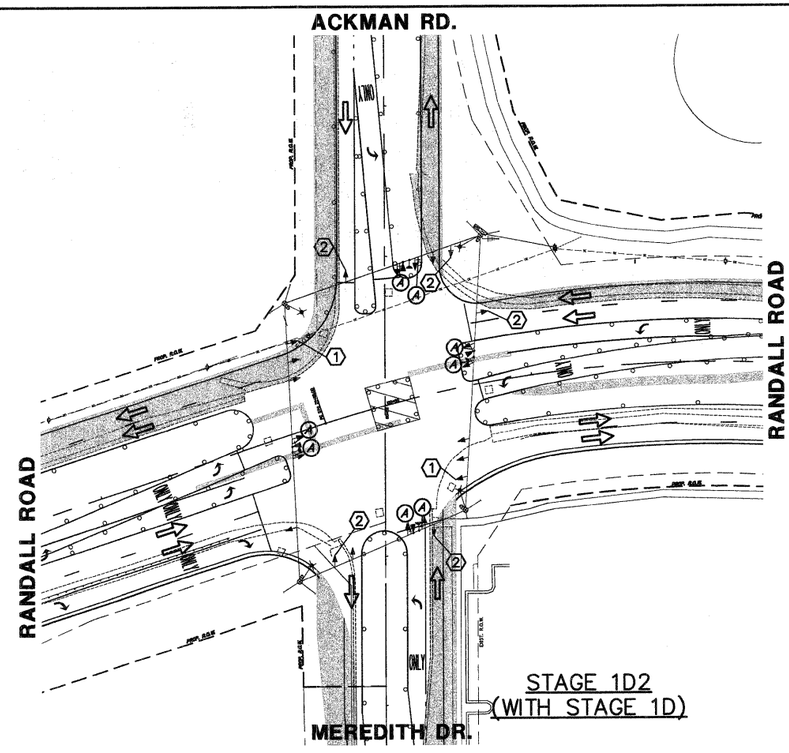
50 0 25 50

(IN FEET)
1 inch = 50ft.

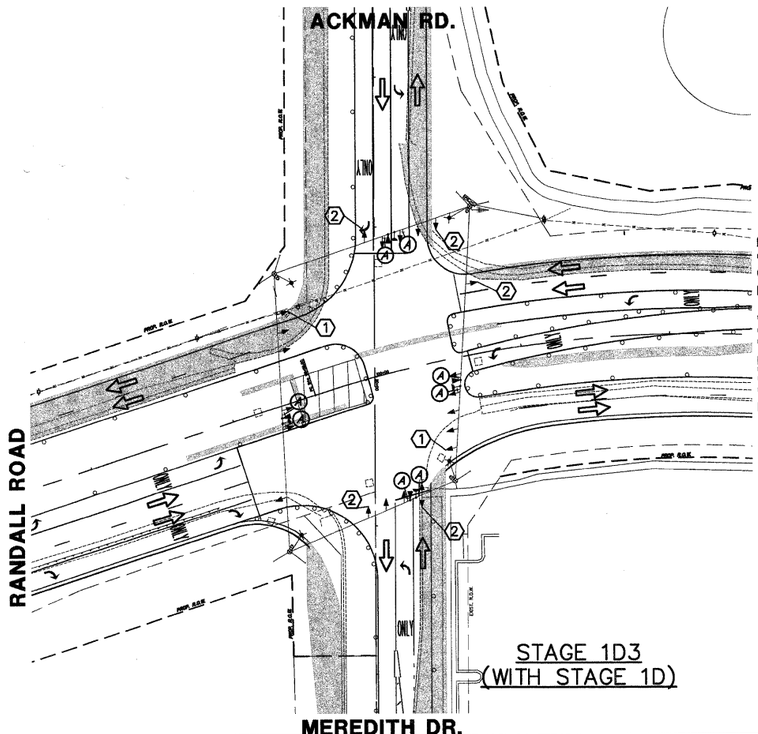
SIGN Ⓐ

LEFT ON GREEN ARROW ONLY

R10-5
30"x36" (TYP.)
SIGN PANEL TYPE I
8 REQUIRED



STAGE 1D2
(WITH STAGE 1D)



STAGE 1D3
(WITH STAGE 1D)

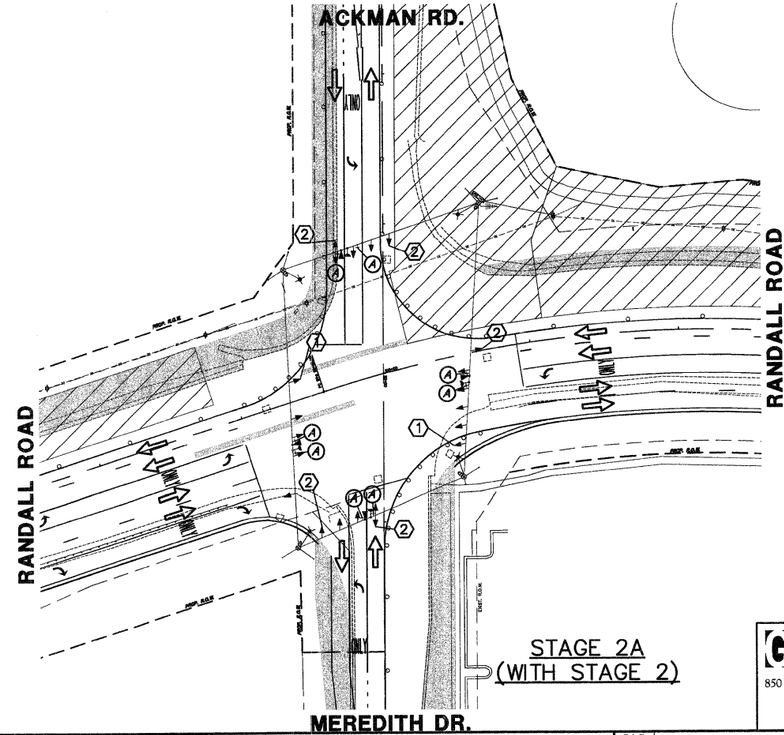
LEGEND

- TEMPORARY PAVEMENT
- WORK ZONE
- DIRECTION OF TRAFFIC

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

CONSTRUCTION NOTES:

1. BAG ENTIRE HEAD
2. BAG RIGHT TURN ARROWS ONLY



STAGE 2A
(WITH STAGE 2)

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

GHA GEWALT HAMILTON ASSOCIATES, INC.
850 Forest Edge Drive ■ Vernon Hills, IL 60061
Consulting Engineers & Surveyors
847.478.9700
FAX: 847.478.9701

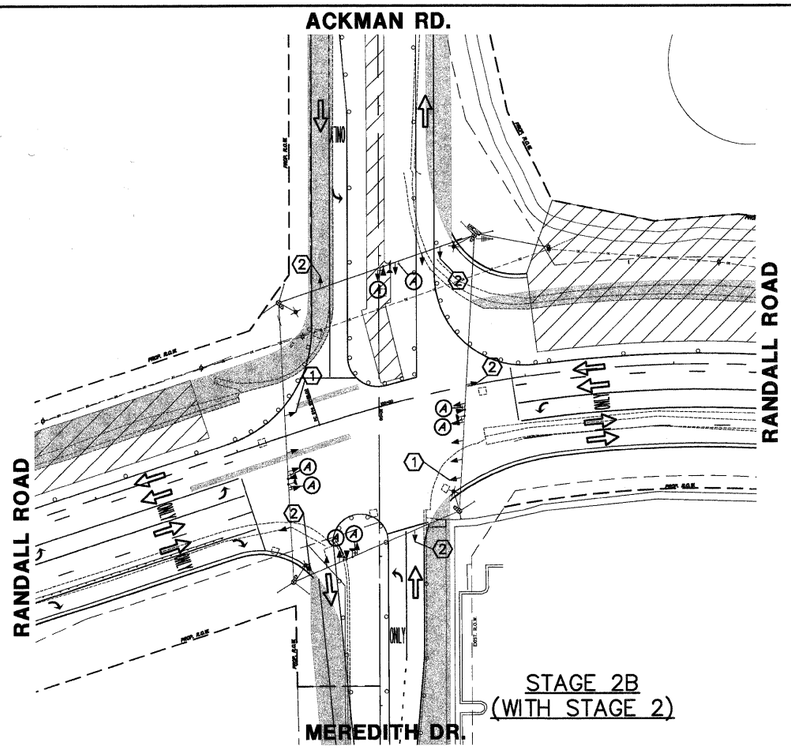
FILE NAME = 4153.800-tr1.dwg	USER NAME = GHA	DESIGNED - DPB	REVISED -
		DRAWN - ZCW	REVISED -
	PLOT SCALE = N.T.S.	CHECKED - DPB	REVISED -
	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

TEMPORARY TRAFFIC SIGNAL STAGING
STAGES 1D1, 1D2, 1D3, & 2A
RANDALL ROAD AND ACKMAN ROAD/MEREDITH DRIVE

SCALE: 1"=50' | SGNL. SHEET # 5 OF 65 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	314
		CONTRACT #:	63398	
	ILLINOIS | FED. AID PROJECT			



STAGE 2B
(WITH STAGE 2)

GRAPHIC SCALE

50 0 25 50

(IN FEET)
1 inch = 50ft.

SIGN (A)

LEFT ON GREEN ARROW ONLY

R10-5
30"x36" (TYP.)
SIGN PANEL TYPE I
8 REQUIRED

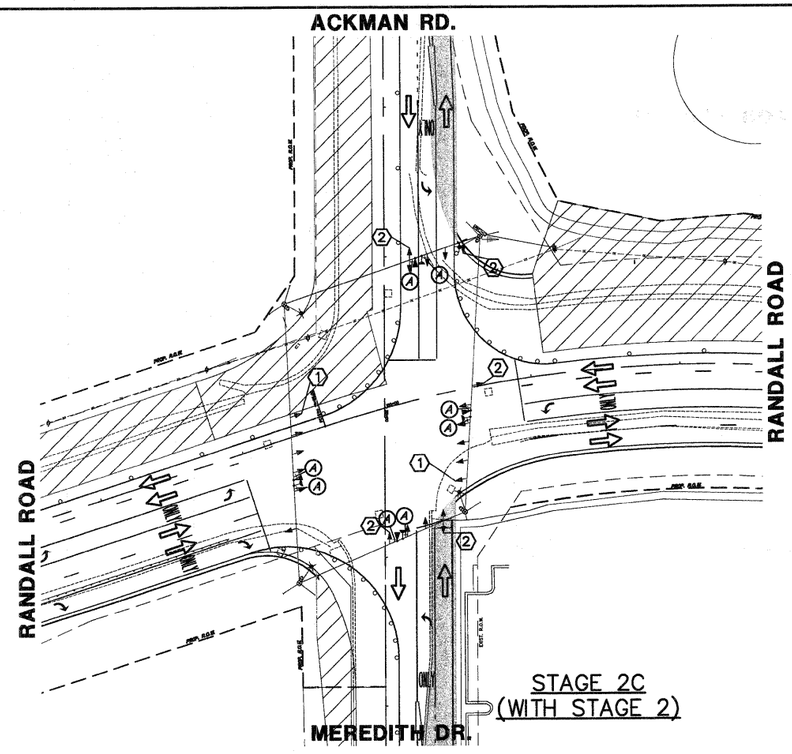
LEGEND

- TEMPORARY PAVEMENT
- WORK ZONE
- DIRECTION OF TRAFFIC

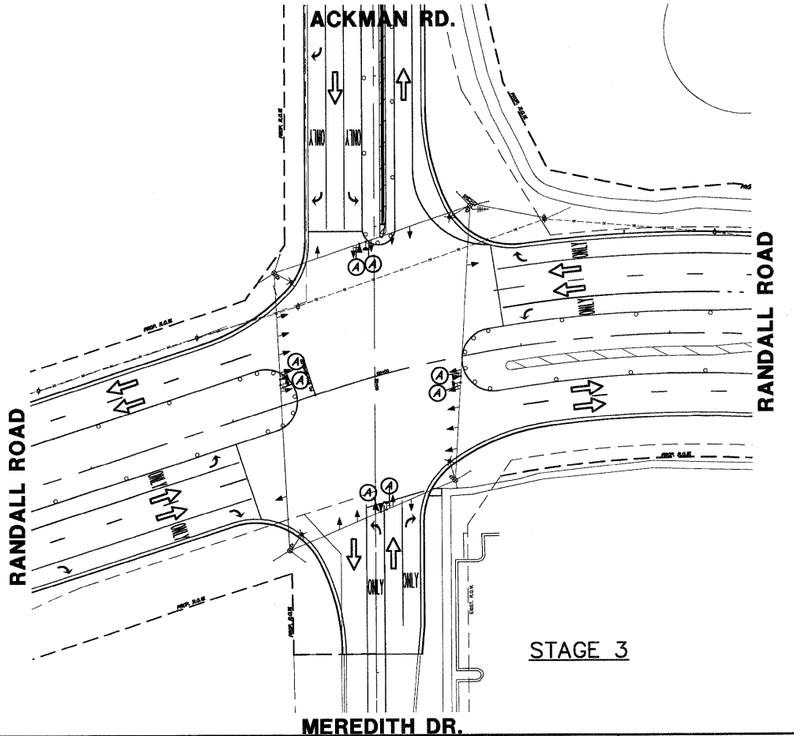
THE TRAFFIC SIGNAL CONTROL EQUIPMENT FOR THIS PROJECT SHALL BE "ECONOLITE" TO MATCH THE EXISTING ADJACENT SYSTEM.

CONSTRUCTION NOTES:

1. BAG ENTIRE HEAD
2. BAG RIGHT TURN ARROWS ONLY



STAGE 2C
(WITH STAGE 2)



STAGE 3

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

GHA GEWALT HAMILTON ASSOCIATES, INC.
850 Forest Edge Drive ▪ Vernon Hills, IL 60061
Consulting Engineers & Surveyors
847-478-9700
FAX: 847-478-9701

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		DRAWN - ZCW	REVISED -
	PLOT SCALE = N.T.S.	CHECKED - DPB	REVISED -
	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

TEMPORARY TRAFFIC SIGNAL STAGING
STAGES 2B, 2C, & 3
RANDALL ROAD AND ACKMAN ROAD/MEREDITH DRIVE

SCALE: 1"=50' | SGNL. SHEET # 6 OF 65 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	315
		CONTRACT #:	63398	
	ILLINOIS	FED. AID PROJECT		

GRAPHIC SCALE

20 0 10 20

(IN FEET)
1 inch = 20ft.

SIGN Ⓐ

LEFT ON GREEN ARROW ONLY

R10-5
30"x36" (TYP.)
SIGN PANEL TYPE 1
10 REQUIRED

ACKMAN ROAD

RANDALL ROAD

MEREDITH DRIVE

PROP. R.O.W.

EXIST. R.O.W.

58' COMBINATION MAST ARM W/ 42" DIA. FOUND. – 21' DEPTH

16' POST

36'-T 2 ½"

37'-T 3"

58' COMBINATION MAST ARM W/ 42" DIA. FOUND. – 21' DEPTH

137'-P (2)4"

PROPOSED FUTURE COMMUNICATIONS NETWORK CONDUIT (SEE INTERCONNECT PLAN)

5'-C.T. (4)4"

22'-T 3"

39'-T 2"

5'-T 2" STUB & CAPPED

SERVICE INSTALLATION POLE MOUNT

6'-T 3"

PROPOSED INTERCONNECT TO MCHENRY AVE. (SEE INTERCONNECT PLAN)

28' COMBINATION MAST ARM W/ 36" DIA. FOUND. – 15' DEPTH

158'-P 4"

167'-P 4"

26' COMBINATION MAST ARM 36" DIA. FOUND. – 15' DEPTH

12'-T 3"

14'-T 3"

50' COMBINATION MAST ARM W/ 36" DIA. FOUND. – 15' DEPTH

30'-T 2-½"

56' COMBINATION MAST ARM W/ 42" DIA. FOUND. – 21' DEPTH

MATCH LINE STA. 97+00
SEE SHEET 8

MATCH LINE STA. 103+00
SEE SHEET 8

ONLY

CONSTRUCTION NOTES:

1. APPROVED CAMERA DETECTION SYSTEM FOR THIS PROJECT INCLUDE THE AUTOSCOPE TERRA SYSTEM, OR APPROVED EQUAL.
2. ALL COMBINATION MAST ARM ASSEMBLY AND POLES SHALL HAVE A 20' ARM TO MOUNT THE VIDEO DETECTION CAMERA AND LUMINAIRE. THE ARM SHALL BE ALIGNED DIRECTLY ABOVE AND PARALLEL TO THE MAST ARM.
3. MAST ARMS AND POSTS SHALL BE GALVANIZED FINISH.
4. PROVIDE 2-2" CONDUIT STUBS IN EACH FOUNDATION FOR MAST ARM ASSEMBLY AND POLE WITH LUMINAIRE.
5. ALL INDICATIONS SHALL BE L.E.D.

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

FOR PAVEMENT MARKINGS SEE STRP-1

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

GHA GEWALT HAMILTON ASSOCIATES, INC.
850 Forest Edge Drive ▪ Vernon Hills, IL 60061
Consulting Engineers & Surveyors
847-478-9700
FAX: 847-478-9701

FILE NAME = 4153.800-tr1.dwg	USER NAME = GHA	DESIGNED - DPB	REVISED -
		DRAWN - ZCW	REVISED -
	PLOT SCALE = N.T.S.	CHECKED - DPB	REVISED -
	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

TRAFFIC SIGNAL MODIFICATION PLAN
RANDALL ROAD AND ACKMAN ROAD/MEREDITH DRIVE

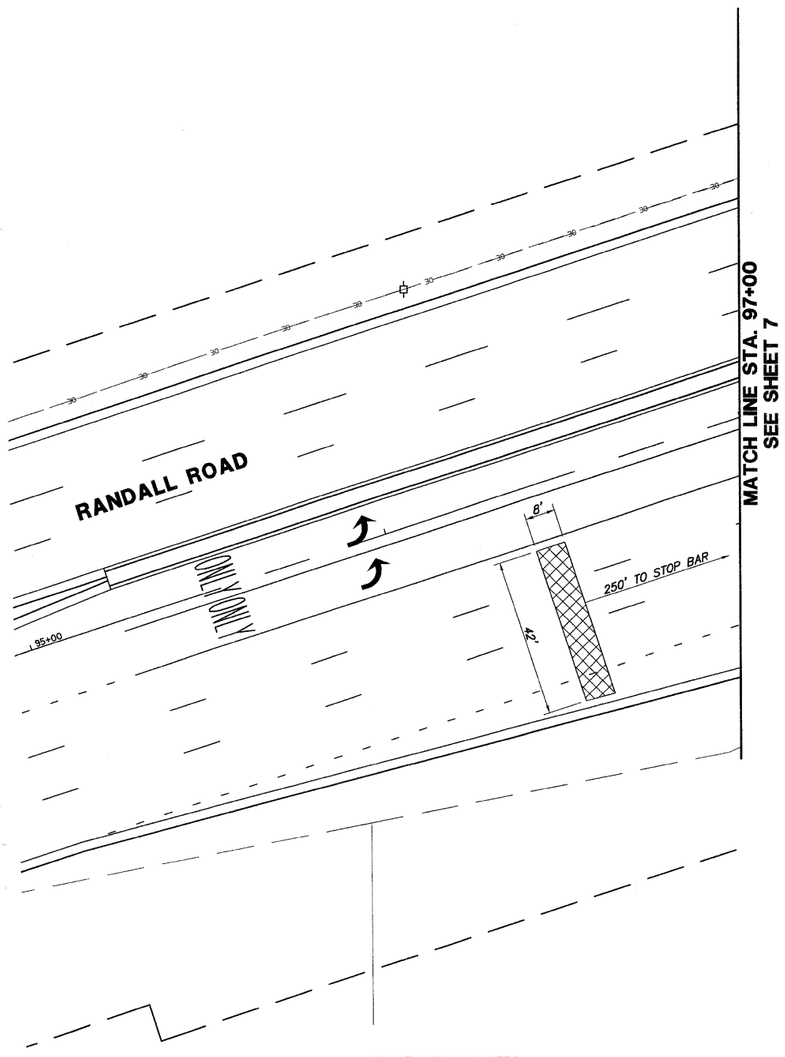
SCALE: 1"=20' | SGNL. SHEET # 7 OF 65 SHEETS | STA. | TO STA.

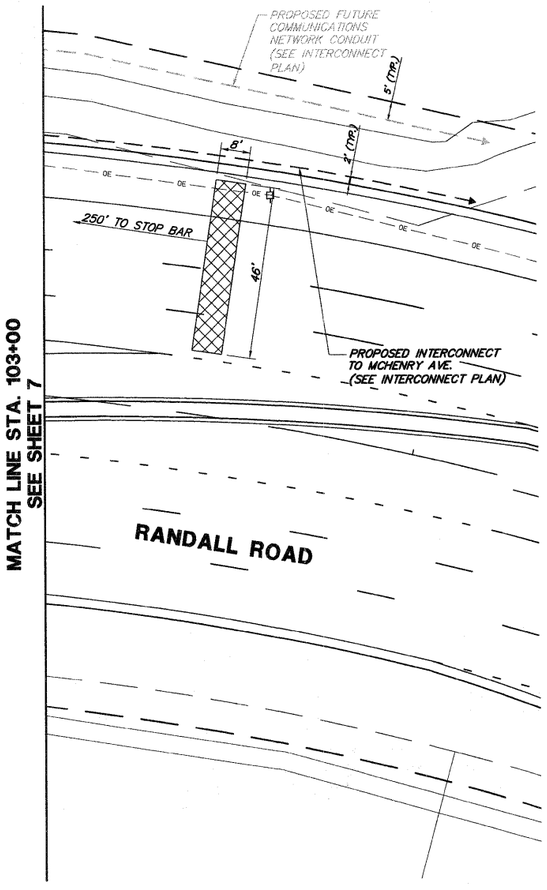
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	316
		CONTRACT #: 63398		
	ILLINOIS FED. AID PROJECT			

GRAPHIC SCALE

20 0 10 20

(IN FEET)
1 inch = 20ft.





CONSTRUCTION NOTES:

1. APPROVED CAMERA DETECTION SYSTEM FOR THIS PROJECT INCLUDE THE AUTOSCOPE TERRA SYSTEM, OR APPROVED EQUAL.
2. ALL COMBINATION MAST ARM ASSEMBLY AND POLES SHALL HAVE A 20' ARM TO MOUNT THE VIDEO DETECTION CAMERA AND LUMINAIRE. THE ARM SHALL BE ALIGNED DIRECTLY ABOVE AND PARALLEL TO THE MAST ARM.
3. MAST ARMS AND POSTS SHALL BE GALVANIZED FINISH.
4. PROVIDE 2–2" CONDUIT STUBS IN EACH FOUNDATION FOR MAST ARM ASSEMBLY AND POLE WITH LUMINAIRE.
5. ALL INDICATIONS SHALL BE L.E.D.

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

FOR PAVEMENT MARKINGS SEE STRP-1

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

GHA GEWALT HAMILTON ASSOCIATES, INC.
850 Forest Edge Drive ▪ Vernon Hills, IL 60061
Consulting Engineers & Surveyors
847.478.9700
FAX: 847.478.9701

FILE NAME = 4153.800-tr1.dwg	USER NAME = GHA	DESIGNED - DPB	REVISED -	MCHENRY COUNTY DIVISION OF TRANSPORTATION
		DRAWN - ZCW	REVISED -	
	PLOT SCALE = N.T.S.	CHECKED - DPB	REVISED -	
	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -	

TRAFFIC SIGNAL MODERNIZATION PLAN
RANDALL ROAD AND ACKMAN ROAD/MEREDITH DRIVE

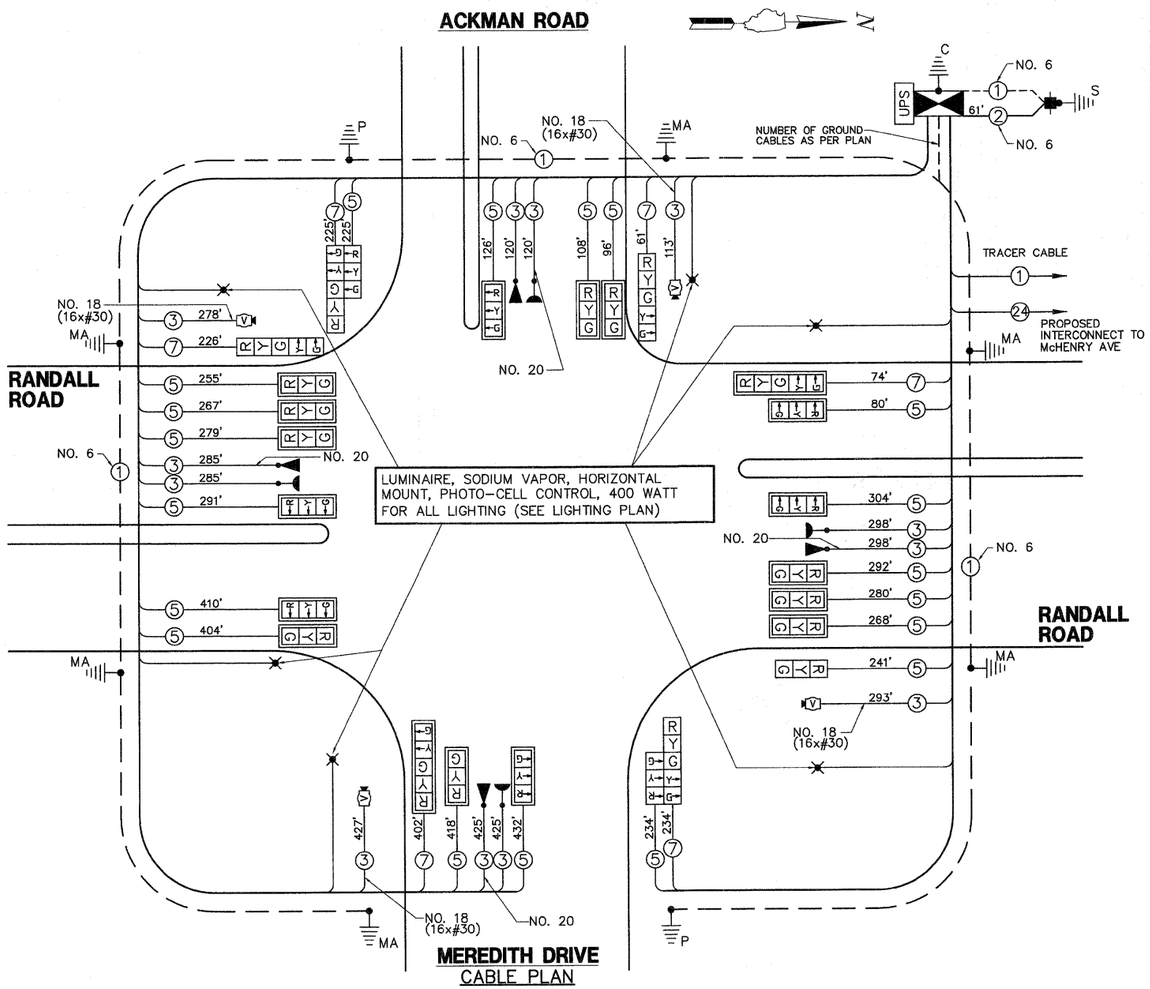
SCALE: 1"=20' | SGNL. SHEET # 8 OF 65 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	317
		CONTRACT #:	63398	
	ILLINOIS FED. AID PROJECT			

SCHEDULE OF QUANTITIES

JAMES R. RAKOW ROAD AT ACKMAN ROAD TRAFFIC SIGNAL MODERNIZATION

NO.	QUANT.	UNIT	
1.	75.00	SQ FT	SIGN PANEL - TYPE 1
2.	39	FOOT	CONDUIT IN TRENCH, 2" DIA., GALVANIZED STEEL
3.	66	FOOT	CONDUIT IN TRENCH, 2 1/2" DIA., GALVANIZED STEEL
4.	128	FOOT	CONDUIT IN TRENCH, 3" DIA., GALVANIZED STEEL
5.	25	FOOT	CONDUIT IN TRENCH, 4" DIA., GALVANIZED STEEL
6.	599	FOOT	CONDUIT PUSHED, 4" DIA., GALVANIZED STEEL
7.	2	EACH	HANDHOLE
8.	2	EACH	DOUBLE HANDHOLE
9.	243	FOOT	TRENCH AND BACKFILL FOR ELECTRICAL WORK
10.	1	EACH	FULL-ACTUATED CONTROLLER AND TYPE IV CABINET, SPECIAL
11.	1	EACH	TRANSCEIVER - FIBER OPTIC
12.	1,128	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 3C
13.	5,010	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 5C
14.	1,195	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 7C
15.	1,111	FOOT	ELECTRIC CABLE IN CONDUIT, COMMUNICATION NO. 18 3 PAIR
16.	61	FOOT	ELECTRIC CABLE IN CONDUIT, SERVICE, NO. 6 2 C
17.	2	EACH	TRAFFIC SIGNAL POST, GALVANIZED STEEL 16 FT.
18.	1	EACH	STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 26 FT.
19.	1	EACH	STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 28 FT.
20.	1	EACH	STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 50 FT.
21.	1	EACH	STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 56 FT.
22.	2	EACH	STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 58 FT.
23.	8	FOOT	CONCRETE FOUNDATION, TYPE A
24.	4	FOOT	CONCRETE FOUNDATION, TYPE C
25.	45	FOOT	CONCRETE FOUNDATION, TYPE E 36-INCH DIAMETER
26.	63	FOOT	CONCRETE FOUNDATION, TYPE E 42-INCH DIAMETER
27.	16	EACH	SIGNAL HEAD, LED, 1-FACE, 3-SECTION, MAST-ARM MOUNTED
28.	1	EACH	SIGNAL HEAD, LED, 1-FACE, 3-SECTION, BRACKET MOUNTED
29.	2	EACH	SIGNAL HEAD, LED, 1-FACE, 5-SECTION, BRACKET MOUNTED
30.	2	EACH	SIGNAL HEAD, LED, 1-FACE, 5-SECTION, MAST-ARM MOUNTED
31.	2	EACH	SIGNAL HEAD, LED, 2-FACE, 1-3 SECTION, 1-5 SECTION, BRACKET MOUNTED
32.	18	EACH	TRAFFIC SIGNAL BACKPLATE, LOUVERED, ALUMINUM
33.	4	EACH	LIGHT DETECTOR
34.	1	EACH	LIGHT DETECTOR AMPLIFIER
35.	1	EACH	TEMPORARY TRAFFIC SIGNAL INSTALLATION
36.	1	EACH	REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT
37.	13	EACH	REMOVE EXISTING HANDHOLE
38.	13	EACH	REMOVE EXISTING CONCRETE FOUNDATION
39.	1	EACH	TEMPORARY TRAFFIC SIGNAL TIMING
40.	1	EACH	SERVICE INSTALLATION - POLE MOUNTED
41.	1	EACH	UNINTERRUPTIBLE POWER SUPPLY
42.	1,128	FOOT	ELECTRIC CABLE IN CONDUIT NO. 20 3/C, TWISTED, SHIELDED
43.	1	EACH	VIDEO DETECTION SYSTEM COMPLETE INTERSECTION
44.	4	EACH	LED INTERNALLY ILLUMINATED STREET NAME SIGN



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FAX: 847-478-9701

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

McHENRY COUNTY DIVISION OF TRANSPORTATION
TRAFFIC SIGNAL INSTALLATION
ELECTRICAL SERVICE REQUIREMENTS

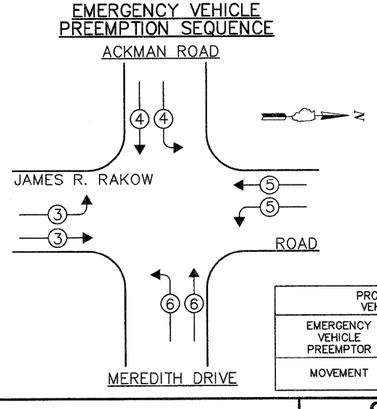
TYPE	NO LAMPS	WATTAGE INCAND.	WATTAGE L.E.D.	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	25	135	17	0.50	212.5
SIGNAL (YELLOW)	25	135	25	0.25	156.25
SIGNAL (GREEN)	25	135	15	0.25	93.75
ARROW	12	135	12	0.10	14.4
PED.SIGNAL		90	25	1.00	
CONTROLLER	1	100	100	1.00	100.0
BATTERY BACKUP	1		25	1.00	25.0
VIDEO SYSTEMS	1		150	1.00	150.0
LUMINAIRE	6	400		0.50	1200.0
L.E.D. ST. NAME SIGN	4		64	0.50	128.0
FLASHER				0.05	
				TOTAL =	2,079.9

ENERGY COSTS – BILLED TO: CITY OF CRYSTAL LAKE
(ADDRESS) 100 WEST MUNCIPAL COMPLEX

ENERGY SUPPLY – CONTACT: MS. AUDREY HELGESEN
PHONE: (847) 816-5225
COMPANY: COMED-LIBERTYVILLE

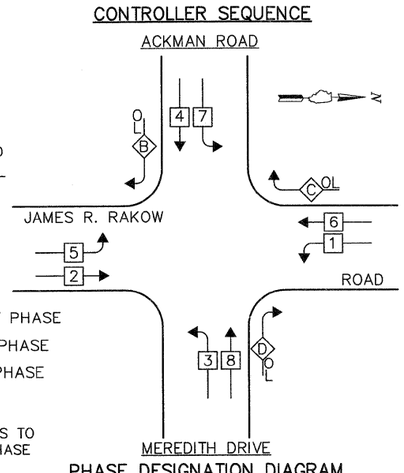
THE TRAFFIC SIGNAL CONTROL EQUIPMENT FOR THIS PROJECT SHALL BE "ECONOLITE" TO MATCH THE EXISTING ADJACENT SYSTEM.

EMERGENCY VEHICLE PREEMPTION SEQUENCE



PROPOSED EMERGENCY VEHICLE PREEMPTORS				
EMERGENCY VEHICLE PREEMPTOR	3	4	5	6
MOVEMENT				

CONTROLLER SEQUENCE



OVERLAP LETTER		PERMISSIVE PHASE		PROTECTED PHASE
B	=	4	+	5
C	=	6	+	7
D	=	8	+	1

LEGEND:
- SINGLE ENTRY PHASE
- DUAL ENTRY PHASE
- PEDESTRIAN PHASE
- OVERLAP
- * NUMBER REFERS TO ASSOCIATED PHASE

PHASE DESIGNATION DIAGRAM

FILE NAME = 4153.800-tr1.dwg	USER NAME = GHA	DESIGNED - DPB	REVISED -	MCHENRY COUNTY DIVISION OF TRANSPORTATION	CABLE PLAN, PHASE DESIGNATION DIAGRAM, AND SCHEDULE OF QUANTITIES RANDALL ROAD AND ACKMAN ROAD/MEREDITH DRIVE
		DRAWN - ZCW	REVISED -		
	PLOT SCALE = N.T.S.	CHECKED - DPB	REVISED -		SCALE: N.A. SGNL. SHEET # 9 OF 65 SHEETS STA. TO STA.
	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -		

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	318
		CONTRACT #:	63398	
		ILLINOIS FED. AID PROJECT		

THE FOLLOWING EXISTING TRAFFIC SIGNAL EQUIPMENT SHALL BE REMOVED BY THE CONTRACTOR, SHALL REMAIN THE PROPERTY OF THE AGENCY LISTED BELOW. THE CONTRACTOR SHALL SAFELY STORE AND ARRANGE FOR PICK UP OR DELIVERY OF ALL EQUIPMENT TO BE RETURNED TO THE LISTED AGENCY AS PER THE TRAFFIC SIGNAL SPECIFICATIONS.

AGENCY: MCHENRY COUNTY DIVISION OF TRANSPORTATION
1 EACH CABINET AND CONTROLER (COMPLETE)

AGENCY: CITY OF CRYSTAL LAKE
2 EACH LIGHT DETECTOR
2 EACH LIGHT DETECTOR AMPLIFIER

THE FOLLOWING ITEMS SHALL BE REMOVED BY THE CONTRACTOR AND SHALL BE DISPOSED OF BY THEM OUTSIDE THE RIGHT-OF-WAY AT THEIR EXPENSE. THE SALVAGE VALUE OF THE REMOVED EQUIPMENT SHALL BE REFLECTED IN THE CONTRACT BID PRICE.

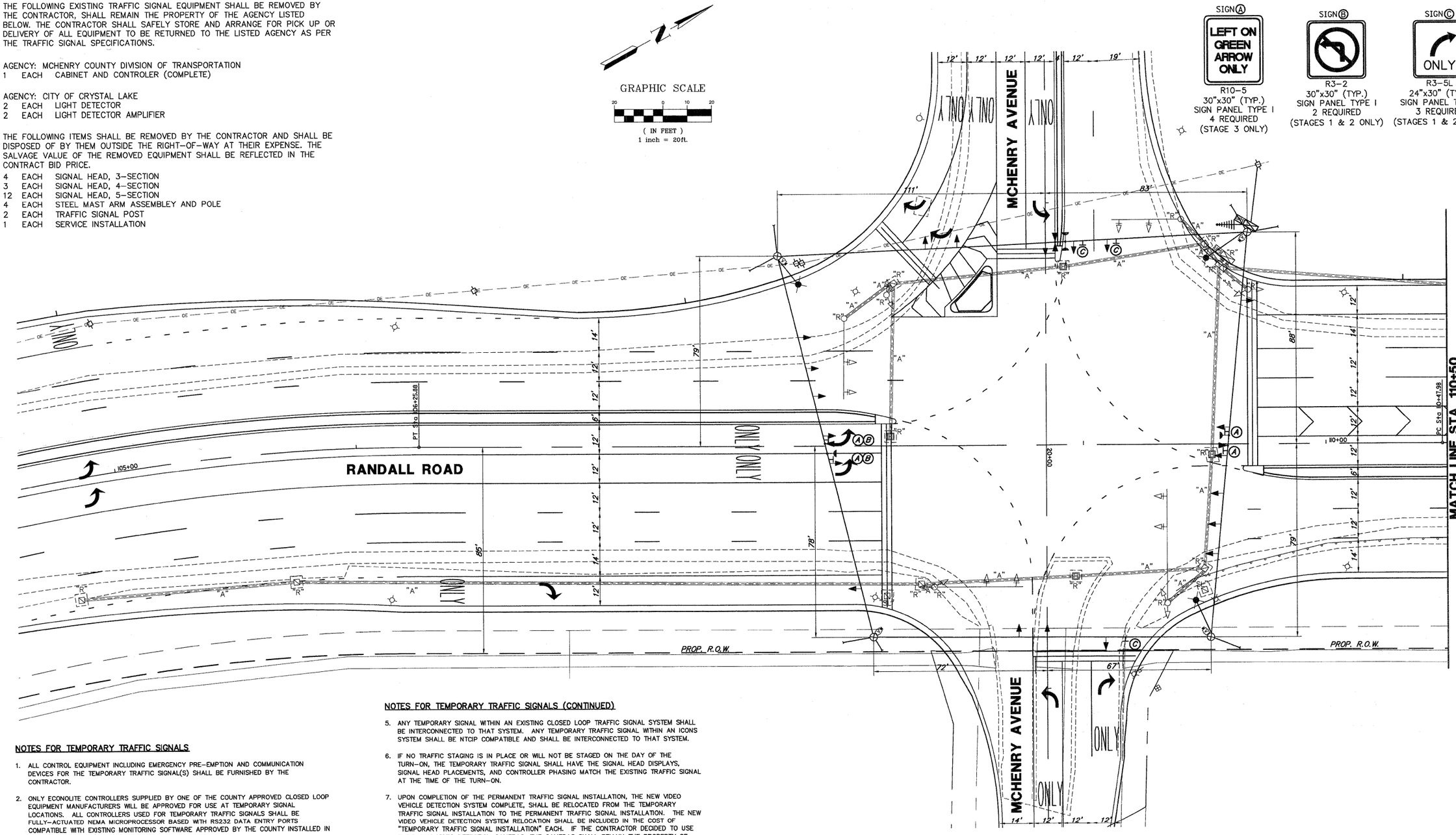
4 EACH SIGNAL HEAD, 3-SECTION
3 EACH SIGNAL HEAD, 4-SECTION
12 EACH SIGNAL HEAD, 5-SECTION
4 EACH STEEL MAST ARM ASSEMBLEY AND POLE
2 EACH TRAFFIC SIGNAL POST
1 EACH SERVICE INSTALLATION

GRAPHIC SCALE
20 0 10 20
(IN FEET)
1 inch = 20ft.

SIGN (A)
LEFT ON GREEN ARROW ONLY
R10-5
30"x30" (TYP.)
SIGN PANEL TYPE I
4 REQUIRED
(STAGE 3 ONLY)

SIGN (B)
R3-2
30"x30" (TYP.)
SIGN PANEL TYPE I
2 REQUIRED
(STAGES 1 & 2 ONLY)

SIGN (C)
ONLY
R3-5L
24"x30" (TYP.)
SIGN PANEL TYPE I
3 REQUIRED
(STAGES 1 & 2 ONLY)



NOTES FOR TEMPORARY TRAFFIC SIGNALS

1. ALL CONTROL EQUIPMENT INCLUDING EMERGENCY PRE-EMPTION AND COMMUNICATION DEVICES FOR THE TEMPORARY TRAFFIC SIGNAL(S) SHALL BE FURNISHED BY THE CONTRACTOR.
2. ONLY ECONOLITE CONTROLLERS SUPPLIED BY ONE OF THE COUNTY APPROVED CLOSED LOOP EQUIPMENT MANUFACTURERS WILL BE APPROVED FOR USE AT TEMPORARY SIGNAL LOCATIONS. ALL CONTROLLERS USED FOR TEMPORARY TRAFFIC SIGNALS SHALL BE FULLY-ACTUATED NEMA MICROPROCESSOR BASED WITH RS232 DATA ENTRY PORTS COMPATIBLE WITH EXISTING MONITORING SOFTWARE APPROVED BY THE COUNTY INSTALLED IN A NEMA TS1 OR TS2 CABINET.
3. ALL LED TRAFFIC SIGNAL SECTIONS AND LED PEDESTRIAN SIGNAL SECTIONS SHALL BE 12". HEADS AND SHALL BE PLACED AS INDICATED ON THE TEMPORARY TRAFFIC SIGNAL PLAN OR AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL FURNISH ENOUGH CABLE SLACK TO RELOCATE HEADS TO ANY POSITION ON THE SPAN WIRE FOR CONSTRUCTION STAGING. THE TEMPORARY TRAFFIC SIGNAL SHALL REMAIN IN OPERATION DURING ALL SIGNAL HEAD RELOCATIONS. EACH TEMPORARY TRAFFIC SIGNAL HEAD SHALL HAVE ITS OWN CABLE FROM THE CONTROLLER CABINET TO THE SIGNAL HEAD.
4. ALL EXISTING STREET NAME AND INTERSECTION REGULATORY SIGNS SHALL BE REMOVED FROM EXISTING POLES, RELOCATED, AND SECURELY FASTENED TO THE SIGNAL SPAN WIRE OR WOOD POLE AS DIRECTED BY THE ENGINEER.

NOTES FOR TEMPORARY TRAFFIC SIGNALS (CONTINUED)

5. ANY TEMPORARY SIGNAL WITHIN AN EXISTING CLOSED LOOP TRAFFIC SIGNAL SYSTEM SHALL BE INTERCONNECTED TO THAT SYSTEM. ANY TEMPORARY TRAFFIC SIGNAL WITHIN AN ICONS SYSTEM SHALL BE NTCIP COMPATIBLE AND SHALL BE INTERCONNECTED TO THAT SYSTEM.
6. IF NO TRAFFIC STAGING IS IN PLACE OR WILL NOT BE STAGED ON THE DAY OF THE TURN-ON, THE TEMPORARY TRAFFIC SIGNAL SHALL HAVE THE SIGNAL HEAD DISPLAYS, SIGNAL HEAD PLACEMENTS, AND CONTROLLER PHASING MATCH THE EXISTING TRAFFIC SIGNAL AT THE TIME OF THE TURN-ON.
7. UPON COMPLETION OF THE PERMANENT TRAFFIC SIGNAL INSTALLATION, THE NEW VIDEO VEHICLE DETECTION SYSTEM COMPLETE, SHALL BE RELOCATED FROM THE TEMPORARY TRAFFIC SIGNAL INSTALLATION TO THE PERMANENT TRAFFIC SIGNAL INSTALLATION. THE NEW VIDEO VEHICLE DETECTION SYSTEM RELOCATION SHALL BE INCLUDED IN THE COST OF "TEMPORARY TRAFFIC SIGNAL INSTALLATION" EACH. IF THE CONTRACTOR DECIDED TO USE THEIR OWN VIDEO DETECTION CAMERAS, THE CAMERAS SHALL REMAIN THE PROPERTY OF THE TRAFFIC SIGNAL CONTRACTOR.
8. THE CONTRACTOR SHALL RELOCATE THE EXISTING UNINTERRUPTIBLE POWER SUPPY (UPS)-COMPLETE UNIT TO THE TEMPORARY TRAFFIC SIGNAL INSTALLATION. THE RELOCATION OF THE UPS SHALL BE INCLUDED IN THE COST OF "TEMPORARY TRAFFIC SIGNAL INSTALLATION" EACH. AFTER THE PERMANENT TRAFFIC SIGNAL INSTALLATION HAS BEEN TURNED-ON, THE CONTRACTOR SHALL REMOVE THE UPS AND ARRANGE FOR PICK UP OR DELIVERY OF ALL EQUIPMENT TO THE MCHENRY COUNTY DIVISION OF TRANSPORTATION.
9. THE CONTRACTOR SHALL INSTALL TEMPORARY INTERSECTION LIGHTING ON THE TEMPORARY WOOD POLES USED FOR THE TEMPORARY TRAFFIC SIGNAL INSTALLATION. ALL LUMINAIRES, ARMS, CABLES, AND ASSOCIATED CONNECTORS SHALL BE INCLUDED IN THE COST OF "TEMPORARY TRAFFIC SIGNAL INSTALLATION" EACH.

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

FOR PAVEMENT MARKINGS SEE STRP-2

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

GHA GEWALT HAMILTON ASSOCIATES, INC.
850 Forest Edge Drive ▪ Vernon Hills, IL 60061
Consulting Engineers & Surveyors
847-478-9700
FAX: 847-478-9701

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		DRAWN - ZCW	REVISED -
	PLOT SCALE = N.T.S.	CHECKED - DPB	REVISED -
	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

TEMPORARY TRAFFIC SIGNAL INSTALLATION AND REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT RANDALL RD./JAMES R. RAKOW RD. AND MCHENRY AVE.

SCALE: 1"=20' | SGNL SHEET # 10 OF 65 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	319
		CONTRACT #: 63398		
	ILLINOIS FED. AID PROJECT			

NOTES FOR TEMPORARY TRAFFIC SIGNALS

1. ALL CONTROL EQUIPMENT INCLUDING EMERGENCY PRE-EMPTION AND COMMUNICATION DEVICES FOR THE TEMPORARY TRAFFIC SIGNAL(S) SHALL BE FURNISHED BY THE CONTRACTOR.

2. ONLY ECONOLITE CONTROLLERS SUPPLIED BY ONE OF THE COUNTY APPROVED CLOSED LOOP EQUIPMENT MANUFACTURERS WILL BE APPROVED FOR USE AT TEMPORARY SIGNAL LOCATIONS. ALL CONTROLLERS USED FOR TEMPORARY TRAFFIC SIGNALS SHALL BE FULLY-ACTUATED NEMA MICROPROCESSOR BASED WITH RS232 DATA ENTRY PORTS COMPATIBLE WITH EXISTING MONITORING SOFTWARE APPROVED BY THE COUNTY INSTALLED IN A NEMA TS1 OR TS2 CABINET.

3. ALL LED TRAFFIC SIGNAL SECTIONS AND LED PEDESTRIAN SIGNAL SECTIONS SHALL BE 12". HEADS AND SHALL BE PLACED AS INDICATED ON THE TEMPORARY TRAFFIC SIGNAL PLAN OR AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL FURNISH ENOUGH CABLE SLACK TO RELOCATE HEADS TO ANY POSITION ON THE SPAN WIRE FOR CONSTRUCTION STAGING. THE TEMPORARY TRAFFIC SIGNAL SHALL REMAIN IN OPERATION DURING ALL SIGNAL HEAD RELOCATIONS. EACH TEMPORARY TRAFFIC SIGNAL HEAD SHALL HAVE ITS OWN CABLE FROM THE CONTROLLER CABINET TO THE SIGNAL HEAD.

4. ALL EXISTING STREET NAME AND INTERSECTION REGULATORY SIGNS SHALL BE REMOVED FROM EXISTING POLES, RELOCATED, AND SECURELY FASTENED TO THE SIGNAL SPAN WIRE OR WOOD POLE AS DIRECTED BY THE ENGINEER.

5. ANY TEMPORARY SIGNAL WITHIN AN EXISTING CLOSED LOOP TRAFFIC SIGNAL SYSTEM SHALL BE INTERCONNECTED TO THAT SYSTEM. ANY TEMPORARY TRAFFIC SIGNAL WITHIN AN ICONS SYSTEM SHALL BE NTCIP COMPATIBLE AND SHALL BE INTERCONNECTED TO THAT SYSTEM.

6. IF NO TRAFFIC STAGING IS IN PLACE OR WILL NOT BE STAGED ON THE DAY OF THE TURN-ON, THE TEMPORARY TRAFFIC SIGNAL SHALL HAVE THE SIGNAL HEAD DISPLAYS, SIGNAL HEAD PLACEMENTS, AND CONTROLLER PHASING MATCH THE EXISTING TRAFFIC SIGNAL AT THE TIME OF THE TURN-ON.

7. UPON COMPLETION OF THE PERMANENT TRAFFIC SIGNAL INSTALLATION, THE NEW VIDEO VEHICLE DETECTION SYSTEM COMPLETE, SHALL BE RELOCATED FROM THE TEMPORARY TRAFFIC SIGNAL INSTALLATION TO THE PERMANENT TRAFFIC SIGNAL INSTALLATION. THE NEW VIDEO VEHICLE DETECTION SYSTEM RELOCATION SHALL BE INCLUDED IN THE COST OF "TEMPORARY TRAFFIC SIGNAL INSTALLATION" EACH. IF THE CONTRACTOR DECIDED TO USE THEIR OWN VIDEO DETECTION CAMERAS, THE CAMERAS SHALL REMAIN THE PROPERTY OF THE TRAFFIC SIGNAL CONTRACTOR.

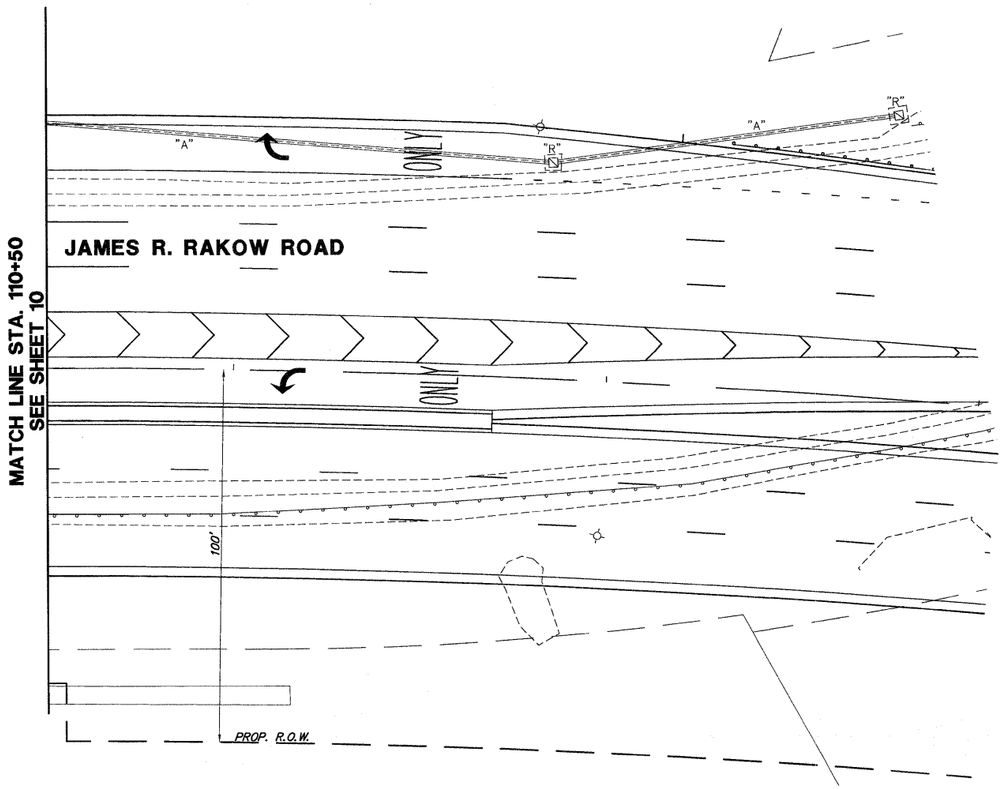
8. THE CONTRACTOR SHALL RELOCATE THE EXISTING UNINTERRUPTIBLE POWER SUPPY (UPS)-COMPLETE UNIT TO THE TEMPORARY TRAFFIC SIGNAL INSTALLATION. THE RELOCATION OF THE UPS SHALL BE INCLUDED IN THE COST OF "TEMPORARY TRAFFIC SIGNAL INSTALLATION" EACH. AFTER THE PERMANENT TRAFFIC SIGNAL INSTALLATION HAS BEEN TURNED-ON, THE CONTRACTOR SHALL REMOVE THE UPS AND ARRANGE FOR PICK UP OR DELIVERY OF ALL EQUIPMENT TO THE MCHENRY COUNTY DIVISION OF TRANSPORTATION.

9. THE CONTRACTOR SHALL INSTALL TEMPORARY INTERSECTION LIGHTING ON THE TEMPORARY WOOD POLES USED FOR THE TEMPORARY TRAFFIC SIGNAL INSTALLATION. ALL LUMINAIRES, ARMS, CABLES, AND ASSOCIATED CONNECTORS SHALL BE INCLUDED IN THE COST OF "TEMPORARY TRAFFIC SIGNAL INSTALLATION" EACH.

GRAPHIC SCALE

20 0 10 20

(IN FEET)
1 inch = 20ft.



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

FOR PAVEMENT MARKINGS SEE STRP-2

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

GHA GEWALT HAMILTON ASSOCIATES, INC.
850 Forest Edge Drive ▪ Vernon Hills, IL 60061
Consulting Engineers & Surveyors
847-478-9700
FAX: 847-478-9701

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		DRAWN - ZCW	REVISED -
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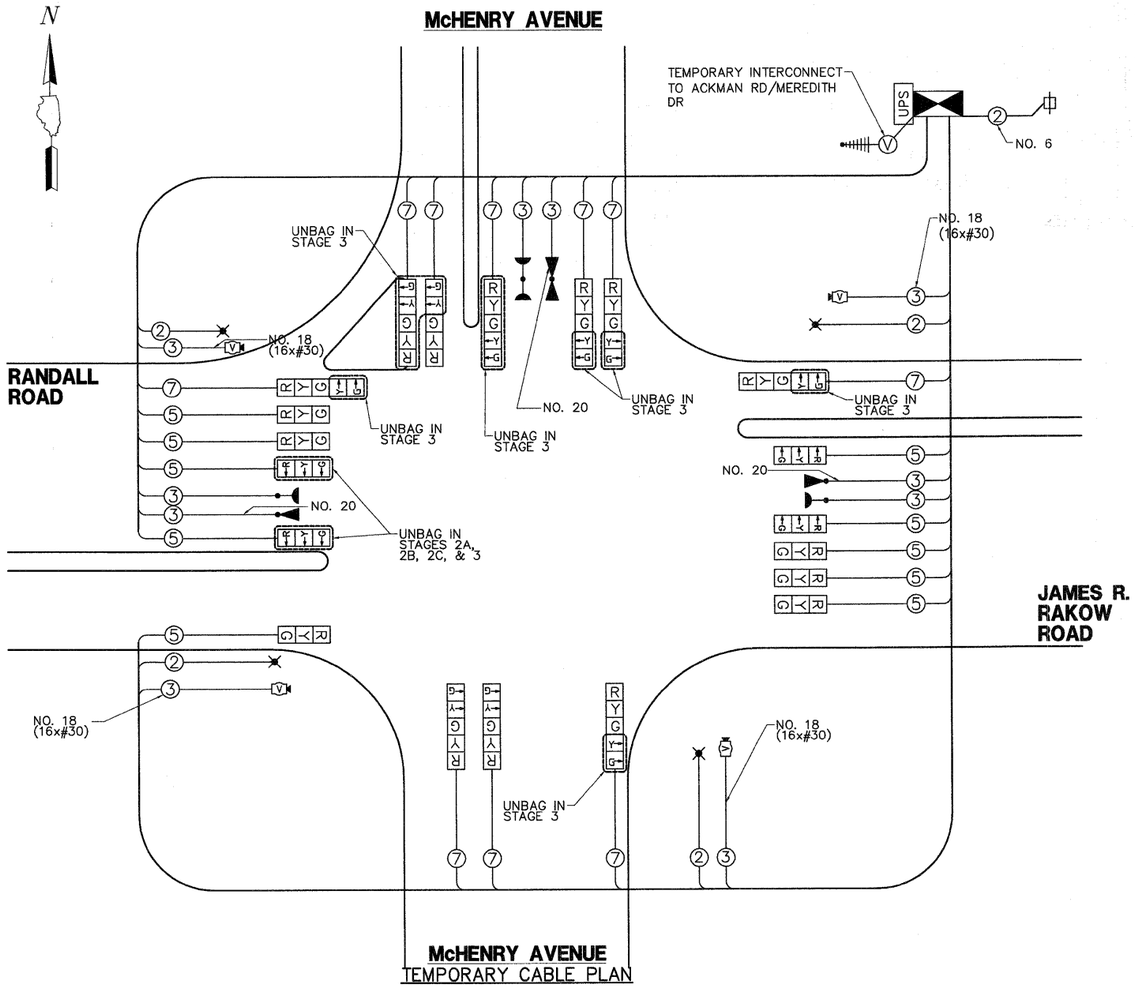
	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

TEMPORARY TRAFFIC SIGNAL INSTALLATION AND REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT RANDALL RD./JAMES R. RAKOW RD. AND MCHENRY AVE.

SCALE: 1"=20' | SGNL. SHEET # 11 OF 65 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	320
		CONTRACT #:	63398	
	ILLINOIS FED. AID PROJECT			



McHENRY AVENUE
TEMPORARY CABLE PLAN

GHA GEWALT HAMILTON ASSOCIATES, INC.
850 Forest Edge Drive ▪ Vernon Hills, IL. 60061
Consulting Engineers & Surveyors
847.478.9700
FAX: 847.478.9701

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

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

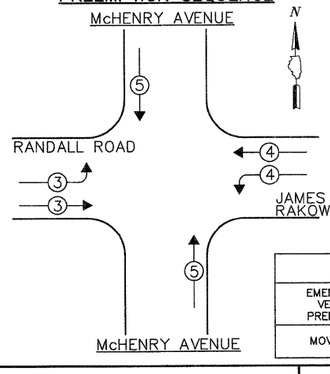
McHENRY COUNTY DIVISION OF TRANSPORTATION
TRAFFIC SIGNAL INSTALLATION
ELECTRICAL SERVICE REQUIREMENTS

TYPE	NO LAMPS	WATTAGE INCAND.	WATTAGE L.E.D.	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	20	135	17	0.50	170.0
SIGNAL (YELLOW)	20	135	25	0.25	125.0
SIGNAL (GREEN)	20	135	15	0.25	75.0
ARROW	20	135	12	0.10	24.0
PED.SIGNAL		90	25	1.00	
CONTROLLER	1	100	100	1.00	100.0
BATTERY BACKUP	1		25	1.00	25.0
VIDEO SYSTEMS	1		150	1.00	150.0
LUMINAIRE	4	400		0.50	800.0
FLASHER				0.05	
				TOTAL =	1,469.0

ENERGY COSTS – BILLED TO: CITY OF CRYSTAL LAKE
(ADDRESS) 100 WEST MUNICIPAL COMPLEX

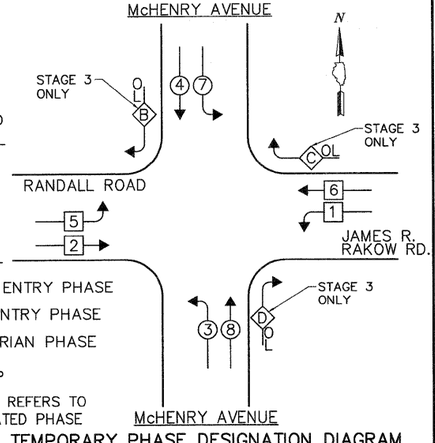
ENERGY SUPPLY – CONTACT: MS. AUDREY HELGESEN
PHONE: (847) 816-5225
COMPANY: COMED-LIBERTYVILLE

TEMPORARY EMERGENCY VEHICLE PREEMPTION SEQUENCE



TEMPORARY EMERGENCY VEHICLE PREEMPTORS			
EMERGENCY VEHICLE PREEMPTOR	3	4	5
MOVEMENT			

TEMPORARY CONTROLLER SEQUENCE



OVERLAP LETTER		PERMISSIVE PHASE		PROTECTED PHASE
B	=	4	+	5
C	=	6	+	7
D	=	8	+	1

TEMPORARY PHASE DESIGNATION DIAGRAM

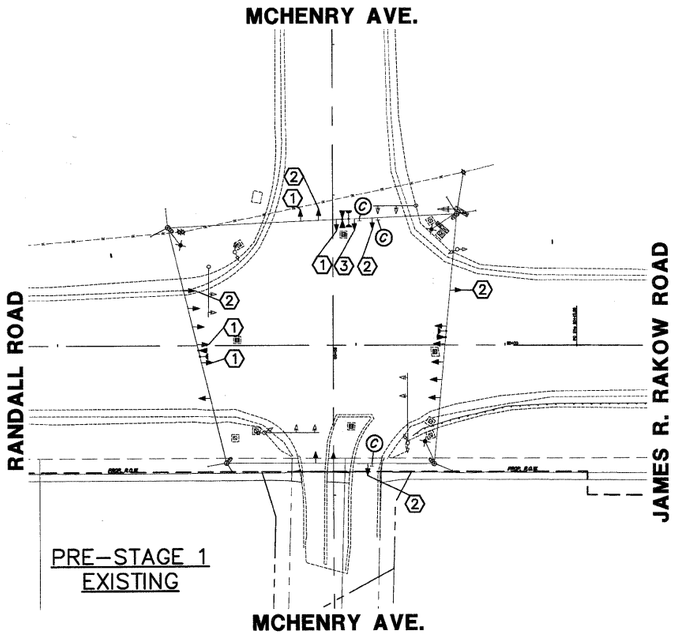
FILE NAME =	USER NAME = GHA	DESIGNED - DPB	REVISED -
4153.800-tr1.dwg		DRAWN - ZCW	REVISED -
	PLOT SCALE = N.T.S.	CHECKED - DPB	REVISED -
	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

TEMPORARY CABLE PLAN AND TEMPORARY PHASE DESIGNATION DIAGRAM JAMES R. RAKOW RD. AND MCHENRY AVE.

SCALE: N.A. | SGNL. SHEET # 12 OF 65 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	321
		CONTRACT #:	63398	
	ILLINOIS FED. AID PROJECT			



PRE-STAGE 1
EXISTING

GRAPHIC SCALE

20 0 10 20

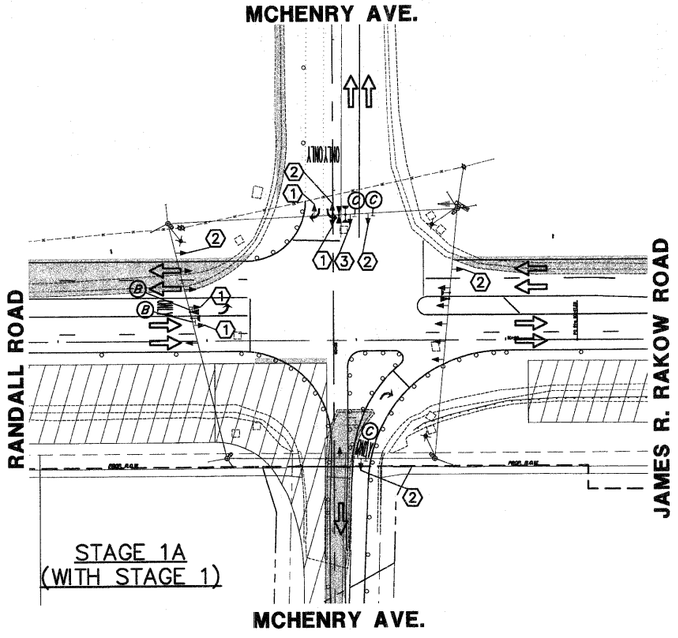
(IN FEET)
1 inch = 20ft.

SIGN Ⓑ

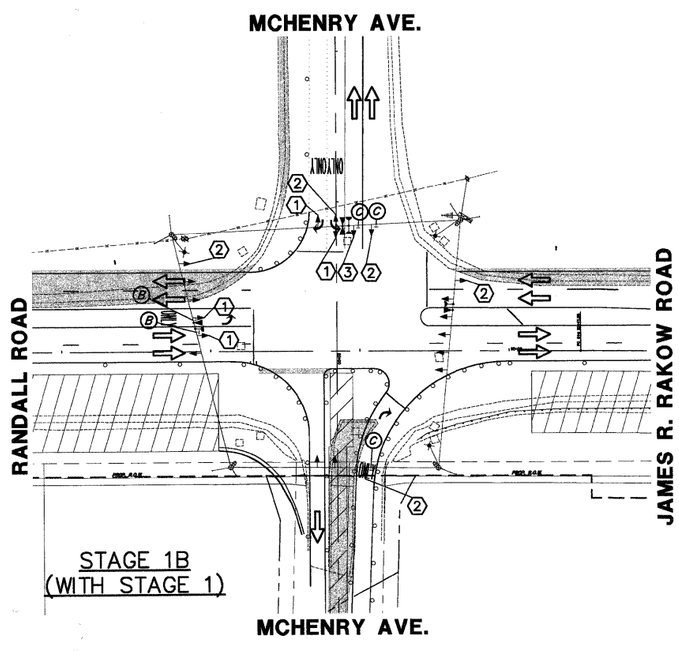
R3-2
30"x30" (TYP.)
SIGN PANEL TYPE I
2 REQUIRED
(STAGES 1 & 2 ONLY)

SIGN Ⓒ

R3-5L
24"x30" (TYP.)
SIGN PANEL TYPE I
3 REQUIRED
(STAGES 1 & 2 ONLY)



STAGE 1A
(WITH STAGE 1)



STAGE 1B
(WITH STAGE 1)

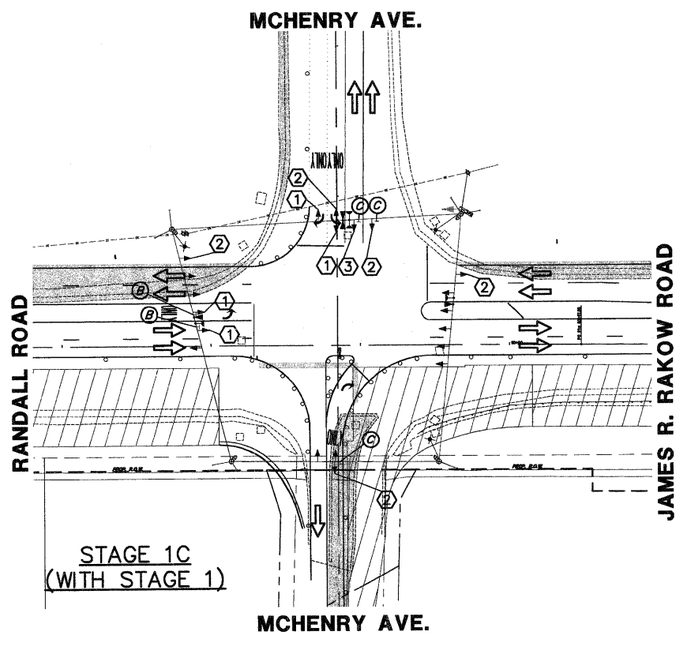
LEGEND

- TEMPORARY PAVEMENT
- WORK ZONE
- DIRECTION OF TRAFFIC

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

CONSTRUCTION NOTES:

1. BAG ENTIRE HEAD
2. BAG RIGHT TURN ARROWS ONLY
3. BAG LEFT TURN ARROWS ONLY



STAGE 1C
(WITH STAGE 1)

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LISLE, ILLINOIS

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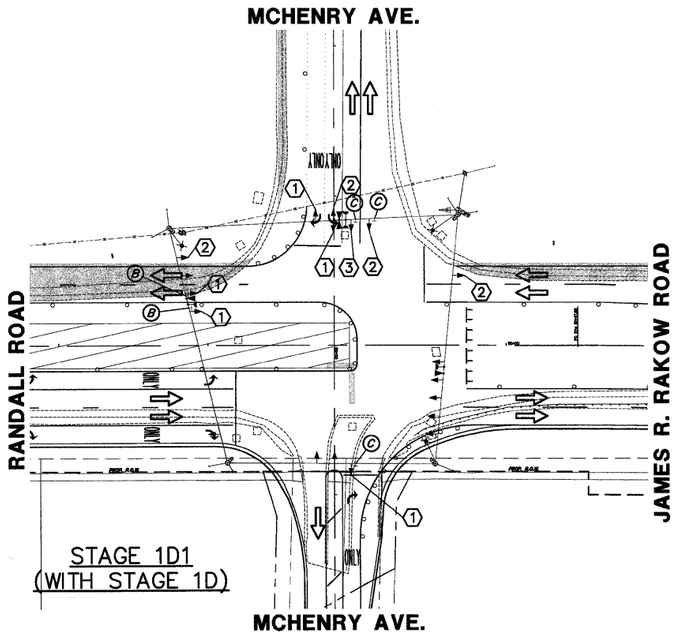
	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

TEMPORARY TRAFFIC SIGNAL STAGING
STAGES PRE-1, 1A, 1B, & 1C
RANDALL RD./JAMES R. RAKOW RD. AND MCHENRY AVE.

SCALE: 1"=50' | SGNL. SHEET # 13 OF 65 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	322
		CONTRACT #:	63398	
		ILLINOIS	FED. AID PROJECT	



GRAPHIC SCALE

20 0 10 20

(IN FEET)
1 inch = 20ft.

SIGN (A)

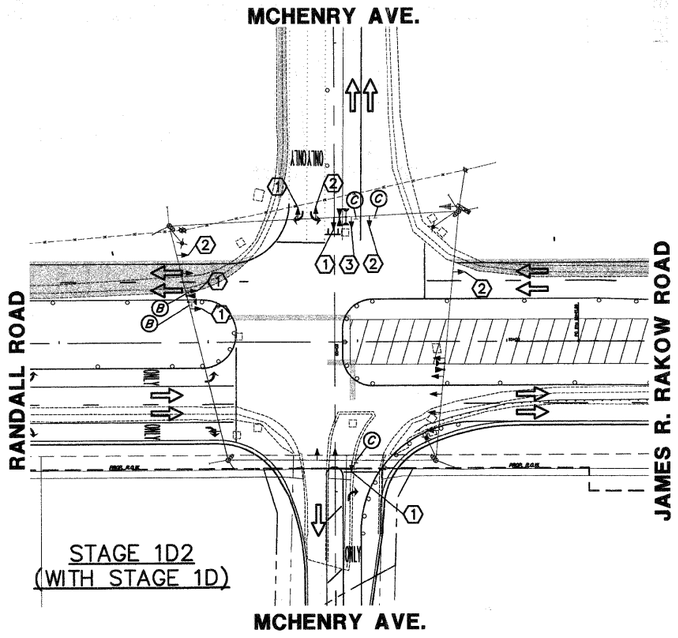
R10-5
30"x36" (TYP.)
SIGN PANEL TYPE I
2 REQUIRED
(STAGE 2 ONLY)

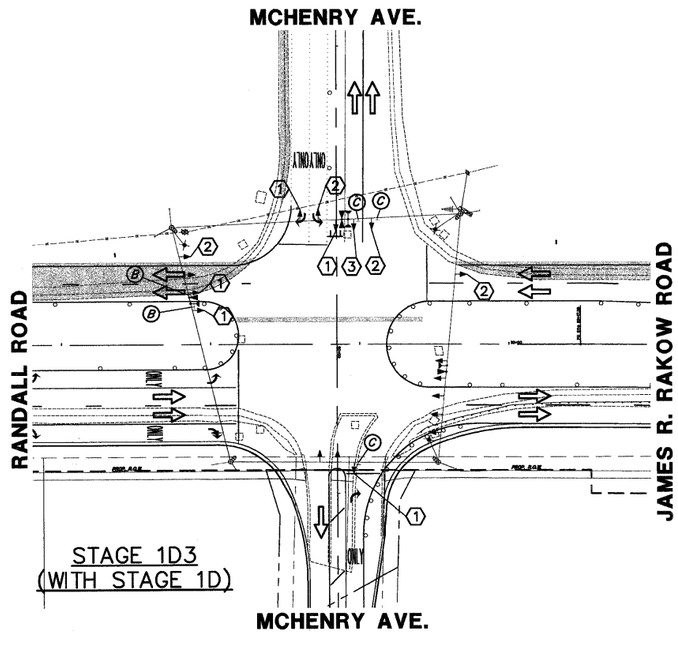
SIGN (B)

R3-2
30"x30" (TYP.)
SIGN PANEL TYPE I
2 REQUIRED
(STAGES 1 & 2 ONLY)

SIGN (C)

R3-5L
24"x30" (TYP.)
SIGN PANEL TYPE I
3 REQUIRED
(STAGES 1 & 2 ONLY)





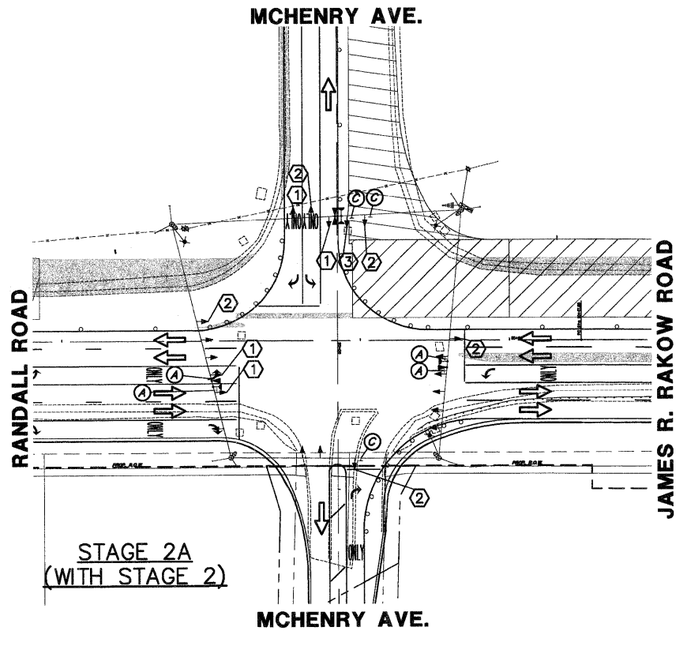
LEGEND

- TEMPORARY PAVEMENT
- WORK ZONE
- DIRECTION OF TRAFFIC

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

CONSTRUCTION NOTES:

1. BAG ENTIRE HEAD
2. BAG RIGHT TURN ARROWS ONLY
3. BAG LEFT TURN ARROWS ONLY



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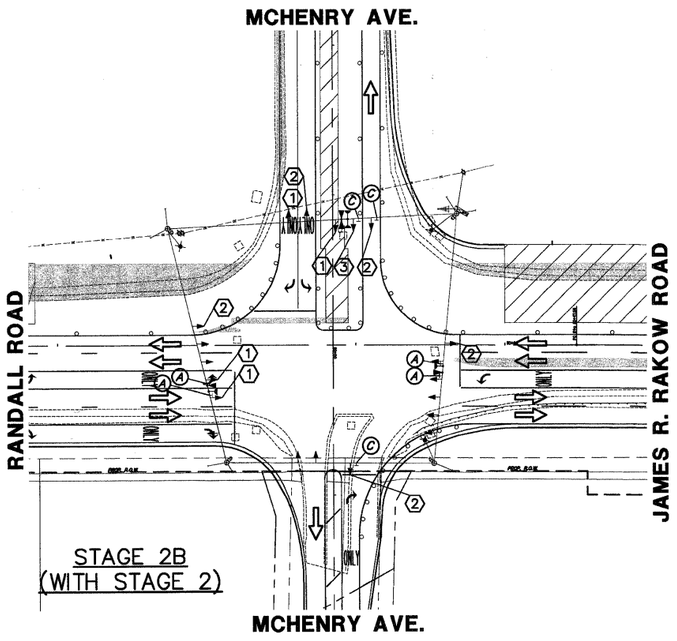
	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

TEMPORARY TRAFFIC SIGNAL STAGING
STAGES 1D1, 1D2, 1D3, & 2A
RANDALL RD./JAMES R. RAKOW RD. AND MCHENRY AVE.

SCALE: 1"=50' | SGNL. SHEET # 14 OF 65 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	323
		CONTRACT #:	63398	
	ILLINOIS FED. AID PROJECT			



STAGE 2B
(WITH STAGE 2)

GRAPHIC SCALE

20 0 10 20

(IN FEET)
1 inch = 20ft.

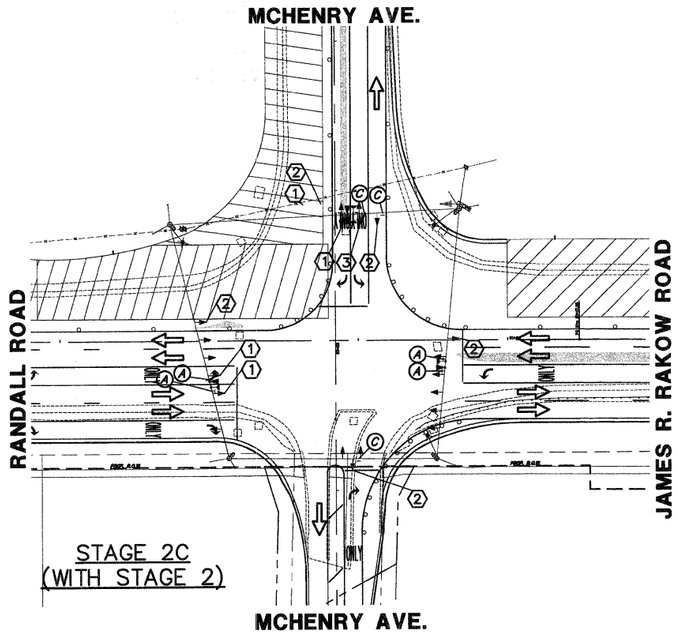
LEGEND

- TEMPORARY PAVEMENT
- WORK ZONE
- DIRECTION OF TRAFFIC

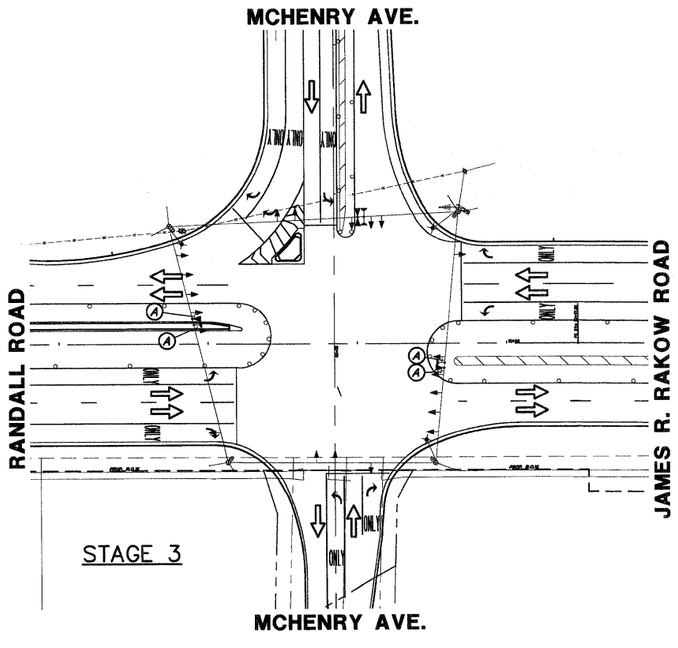
THE TRAFFIC SIGNAL CONTROL EQUIPMENT FOR THIS PROJECT SHALL BE "ECONOLITE" TO MATCH THE EXISTING ADJACENT SYSTEM.

CONSTRUCTION NOTES:

1. BAG ENTIRE HEAD
2. BAG RIGHT TURN ARROWS ONLY
3. BAG LEFT TURN ARROWS ONLY



STAGE 2C
(WITH STAGE 2)



STAGE 3

SIGN (A)

LEFT ON GREEN ARROW ONLY

R10-5
30"x36" (TYP.)
SIGN PANEL TYPE I
2 REQUIRED

SIGN (C)

ONLY

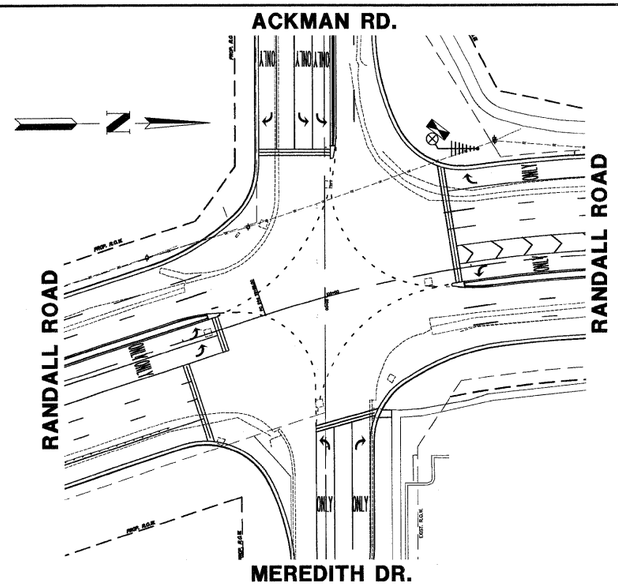
R3-5L
24"x30" (TYP.)
SIGN PANEL TYPE I
3 REQUIRED
(STAGES 1 & 2 ONLY)

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

GHA GEWALT HAMILTON ASSOCIATES, INC.
850 Forest Edge Drive • Vernon Hills, IL. 60061
Consulting Engineers & Surveyors
847.478.9700
FAX: 847.478.9701

FILE NAME = 4153.800-tr1.dwg	USER NAME = GHA	DESIGNED - DPB	REVISED -	MCHENRY COUNTY DIVISION OF TRANSPORTATION	TEMPORARY TRAFFIC SIGNAL STAGING STAGES 2B, 2C, & 3 RANDALL RD./JAMES R. RAKOW RD. AND MCHENRY AVE.
		DRAWN - ZCW	REVISED -		SCALE: 1"=50' SGNL SHEET # 15 OF 65 SHEETS STA. TO STA.
	PLOT SCALE = N.T.S.	CHECKED - DPB	REVISED -		
	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -		

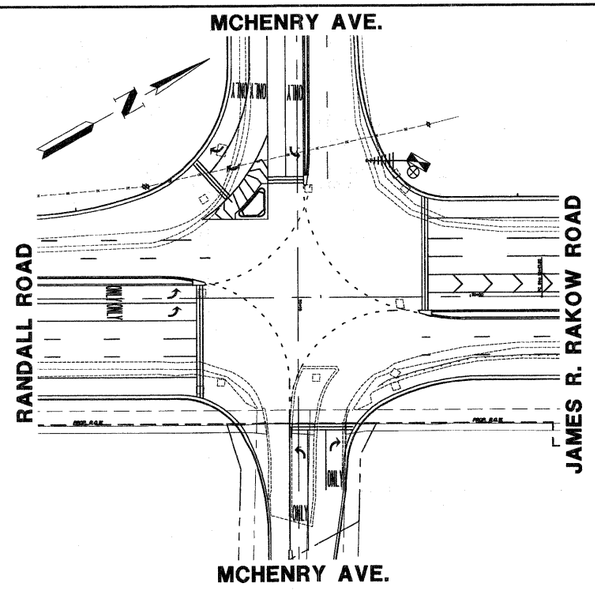
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	324
		CONTRACT #:	63398	
	ILLINOIS FED. AID PROJECT			

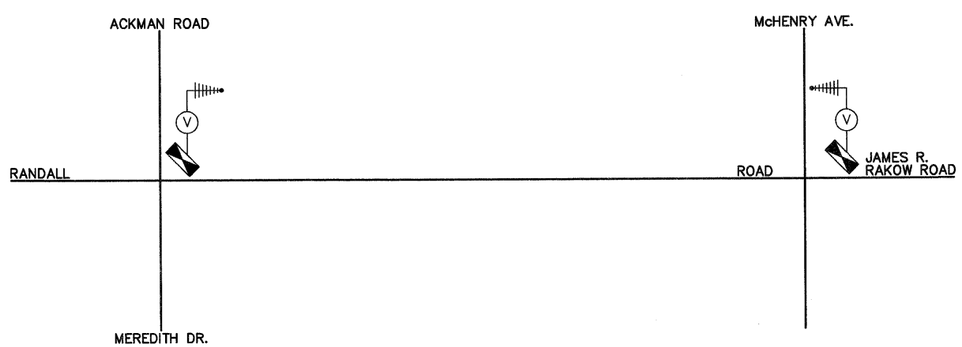


GRAPHIC SCALE

50 0 25 50

(IN FEET)
1 inch = 50ft.





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

CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL INSTALL A TEMPORARY RADIO INTERCONNECT SYSTEM TO MAINTAIN THE EXISTING INTERCONNECT BETWEEN ACKMAN RD./MEREDITH DR. AND McHENRY AVE. DURING CONTSTRUCTION. THE TEMPORARY MASTER CONTROLLER SHALL BE LOCATED AT ACKMAN RD/MEREDITH DR. THE COST OF THE TEMPORARY RADIO INTERCONNECT SHALL BE INCIDENTAL TO THE COST OF THE TEMPORARY TRAFFIC SIGNAL INSTALLATION.

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LISLE, ILLINOIS

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	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -	

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

TEMPORARY RADIO INTERCONNECT PLAN AND SCHEMATIC
RANDALL ROAD/JAMES R. RAKOW ROAD - ACKMAN ROAD TO MCHENRY AVENUE

SCALE: 1"=50' | SGNL. SHEET # 16 OF 65 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	325
		CONTRACT #:	63398	
	ILLINOIS FED. AID PROJECT			

GRAPHIC SCALE

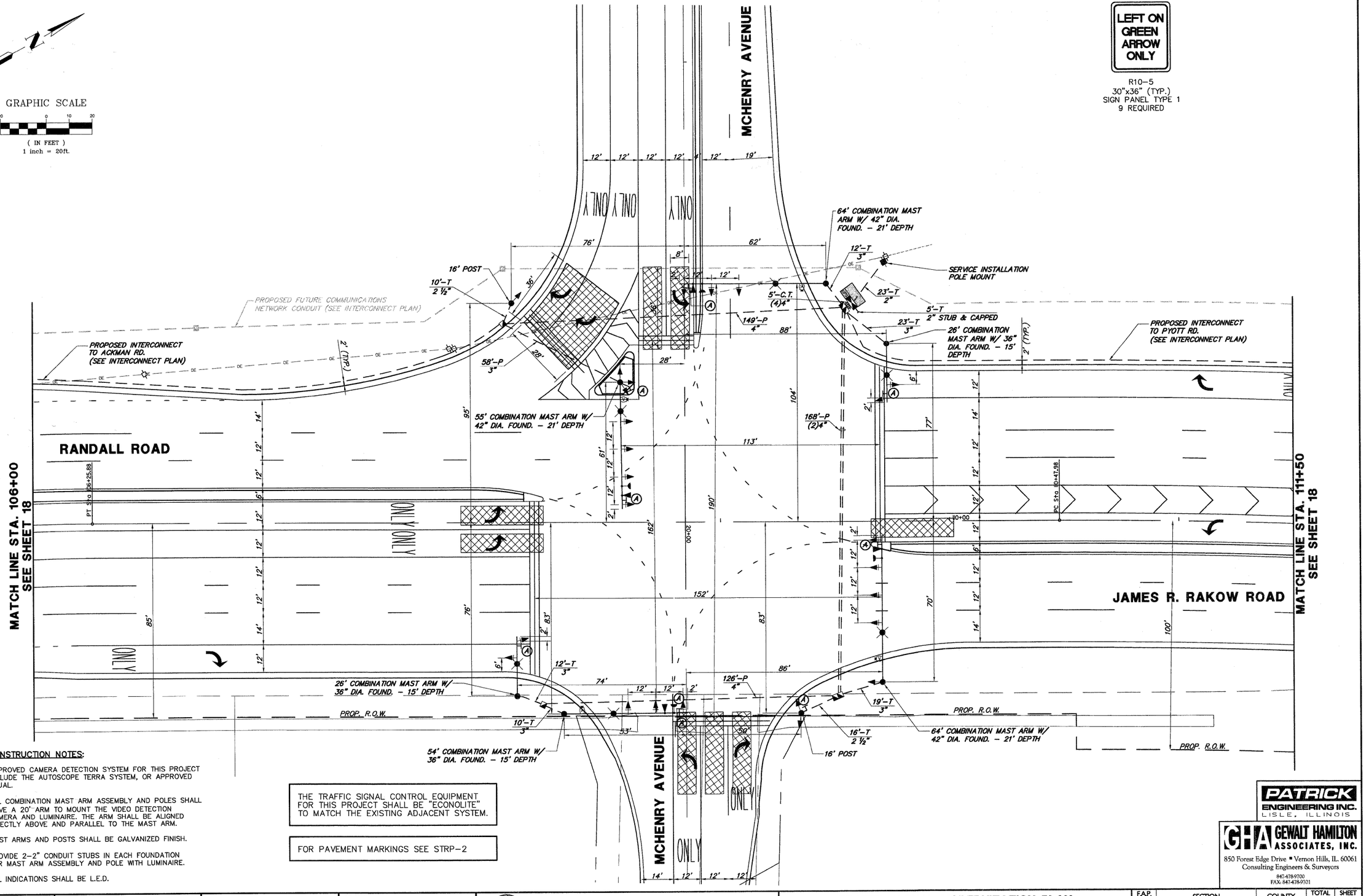
20 0 10 20

(IN FEET)
1 inch = 20ft.

SIGN Ⓐ

LEFT ON GREEN ARROW ONLY

R10-5
30"x36" (TYP.)
SIGN PANEL TYPE 1
9 REQUIRED



CONSTRUCTION NOTES:

1. APPROVED CAMERA DETECTION SYSTEM FOR THIS PROJECT INCLUDE THE AUTOSCOPE TERRA SYSTEM, OR APPROVED EQUAL.
2. ALL COMBINATION MAST ARM ASSEMBLY AND POLES SHALL HAVE A 20' ARM TO MOUNT THE VIDEO DETECTION CAMERA AND LUMINAIRE. THE ARM SHALL BE ALIGNED DIRECTLY ABOVE AND PARALLEL TO THE MAST ARM.
3. MAST ARMS AND POSTS SHALL BE GALVANIZED FINISH.
4. PROVIDE 2-2" CONDUIT STUBS IN EACH FOUNDATION FOR MAST ARM ASSEMBLY AND POLE WITH LUMINAIRE.
5. ALL INDICATIONS SHALL BE L.E.D.

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

FOR PAVEMENT MARKINGS SEE STRP-2

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

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MCHENRY COUNTY
DIVISION OF TRANSPORTATION

TRAFFIC SIGNAL MODERNIZATION PLAN
RANDALL RD./JAMES R. RAKOW RD. AND MCHENRY AVE.

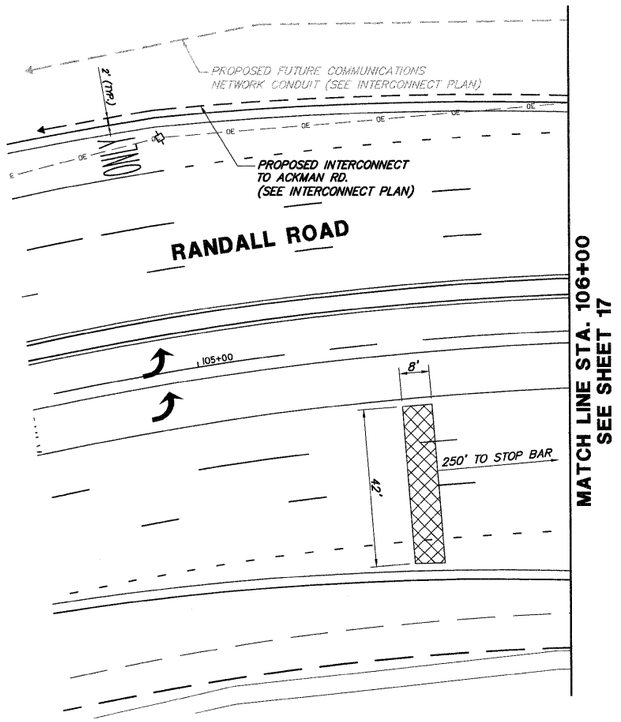
SCALE: 1"=20' | SGNL. SHEET # 17 OF 65 SHEETS | STA. | TO STA.

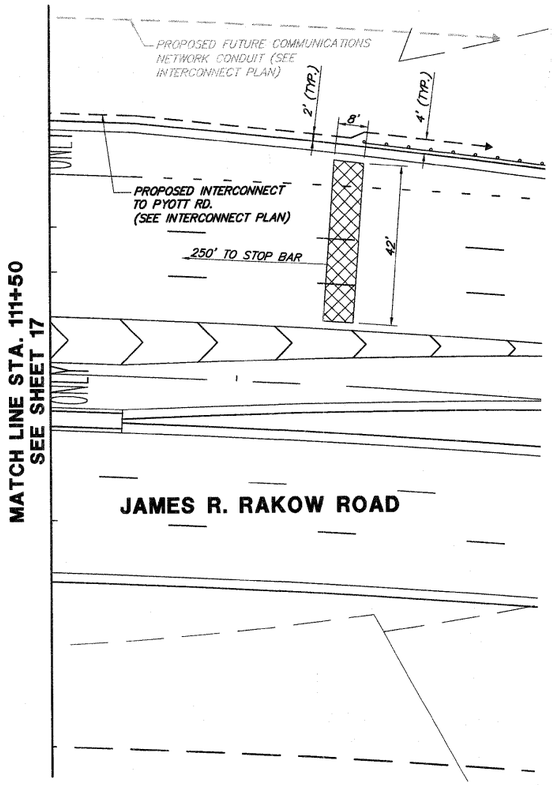
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	326
		CONTRACT #:	63398	
	ILLINOIS FED. AID PROJECT			

GRAPHIC SCALE

20 0 10 20

(IN FEET)
1 inch = 20ft.





CONSTRUCTION NOTES:

1. APPROVED CAMERA DETECTION SYSTEM FOR THIS PROJECT INCLUDE THE AUTOSCOPE TERRA SYSTEM, OR APPROVED EQUAL.
2. ALL COMBINATION MAST ARM ASSEMBLY AND POLES SHALL HAVE A 20' ARM TO MOUNT THE VIDEO DETECTION CAMERA AND LUMINAIRE. THE ARM SHALL BE ALIGNED DIRECTLY ABOVE AND PARALLEL TO THE MAST ARM.
3. MAST ARMS AND POSTS SHALL BE GALVANIZED FINISH.
4. PROVIDE 2–2" CONDUIT STUBS IN EACH FOUNDATION FOR MAST ARM ASSEMBLY AND POLE WITH LUMINAIRE.
5. ALL INDICATIONS SHALL BE L.E.D.

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

FOR PAVEMENT MARKINGS SEE STRP–2

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

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		DRAWN - ZCW	REVISED -	
	PLOT SCALE = N.T.S.	CHECKED - DPB	REVISED -	
	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -	

TRAFFIC SIGNAL MODERNIZATION PLAN
RANDALL RD./JAMES R. RAKOW RD. AND MCHENRY AVE.

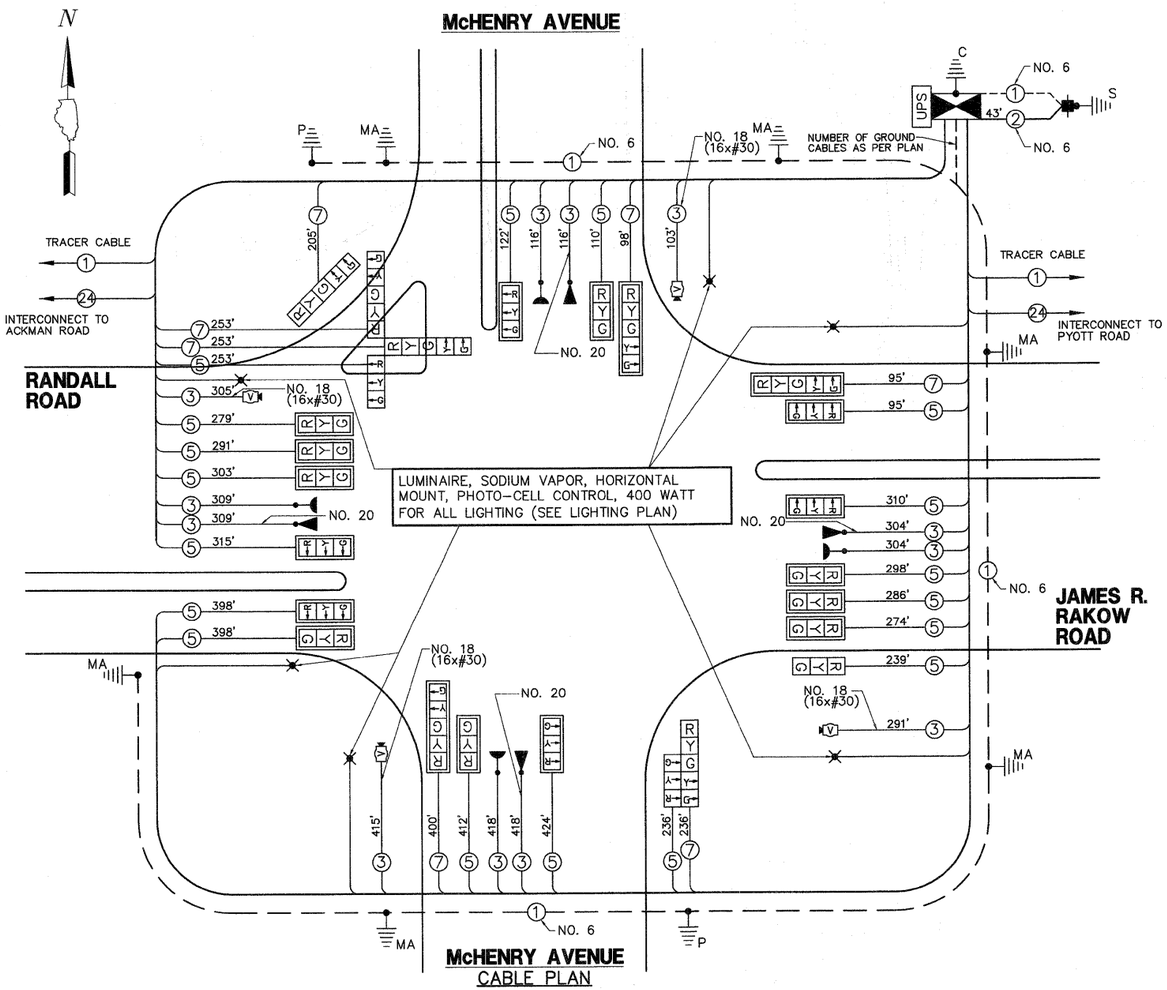
SCALE: 1"=20' | SGNL. SHEET # 18 OF 65 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05–00308–WR	McHENRY	606	327
		CONTRACT #:	63398	
	ILLINOIS FED. AID PROJECT			

SCHEDULE OF QUANTITIES

JAMES R. RAKOW ROAD AT McHENRY AVENUE TRAFFIC SIGNAL MODERNIZATION

NO.	QUANT.	UNIT	
1.	67.50	SQ FT	SIGN PANEL - TYPE 1
2.	23	FOOT	CONDUIT IN TRENCH, 2" DIA., GALVANIZED STEEL
3.	26	FOOT	CONDUIT IN TRENCH, 2 1/2" DIA., GALVANIZED STEEL
4.	76	FOOT	CONDUIT IN TRENCH, 3" DIA., GALVANIZED STEEL
5.	25	FOOT	CONDUIT IN TRENCH, 4" DIA., GALVANIZED STEEL
6.	58	FOOT	CONDUIT PUSHED, 3" DIA., GALVANIZED STEEL
7.	611	FOOT	CONDUIT PUSHED, 4" DIA., GALVANIZED STEEL
8.	2	EACH	HANDHOLE
9.	2	EACH	DOUBLE HANDHOLE
10.	135	FOOT	TRENCH AND BACKFILL FOR ELECTRICAL WORK
11.	1	EACH	FULL-ACTUATED CONTROLLER AND TYPE IV CABINET, SPECIAL
12.	1	EACH	TRANSCEIVER - FIBER OPTIC
13.	1,147	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 3C
14.	5,043	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 5C
15.	1,540	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 7C
16.	1,114	FOOT	ELECTRIC CABLE IN CONDUIT, COMMUNICATION NO. 18 3 PAIR
17.	43	FOOT	ELECTRIC CABLE IN CONDUIT, SERVICE, NO. 6 2 C
18.	2	EACH	TRAFFIC SIGNAL POST, GALVANIZED STEEL 16 FT.
19.	2	EACH	STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 26 FT.
20.	1	EACH	STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 54 FT.
21.	1	EACH	STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 55 FT.
22.	2	EACH	STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 64 FT.
23.	8	FOOT	CONCRETE FOUNDATION, TYPE A
24.	4	FOOT	CONCRETE FOUNDATION, TYPE C
25.	45	FOOT	CONCRETE FOUNDATION, TYPE E 36-INCH DIAMETER
26.	63	FOOT	CONCRETE FOUNDATION, TYPE E 42-INCH DIAMETER
27.	15	EACH	SIGNAL HEAD, LED, 1-FACE, 3-SECTION, MAST-ARM MOUNTED
28.	1	EACH	SIGNAL HEAD, LED, 1-FACE, 3-SECTION, BRACKET MOUNTED
29.	1	EACH	SIGNAL HEAD, LED, 1-FACE, 5-SECTION, BRACKET MOUNTED
30.	3	EACH	SIGNAL HEAD, LED, 1-FACE, 5-SECTION, MAST-ARM MOUNTED
31.	1	EACH	SIGNAL HEAD, LED, 2-FACE, 1-3 SECTION, 1-5 SECTION, BRACKET MOUNTED
32.	1	EACH	SIGNAL HEAD, LED, 3-FACE, 1-3 SECTION, 2-5 SECTION BRACKET MOUNTED
33.	18	EACH	TRAFFIC SIGNAL BACKPLATE, LOUVERED, ALUMINUM
34.	4	EACH	LIGHT DETECTOR
35.	1	EACH	LIGHT DETECTOR AMPLIFIER
36.	1	EACH	TEMPORARY TRAFFIC SIGNAL INSTALLATION
37.	1	EACH	REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT
38.	15	EACH	REMOVE EXISTING HANDHOLE
39.	12	EACH	REMOVE EXISTING CONCRETE FOUNDATION
40.	1	EACH	TEMPORARY TRAFFIC SIGNAL TIMING
41.	1	EACH	SERVICE INSTALLATION - POLE MOUNTED
42.	1	EACH	UNINTERRUPTIBLE POWER SUPPLY
43.	720	FOOT	ELECTRIC CABLE IN CONDUIT, GROUNDING, NO. 6 1C
44.	1,147	FOOT	ELECTRIC CABLE IN CONDUIT NO. 20 3/C, TWISTED, SHIELDED
45.	1	EACH	VIDEO DETECTION SYSTEM COMPLETE INTERSECTION
46.	4	EACH	LED INTERNALLY ILLUMINATED STREET NAME SIGN



McHENRY AVENUE
CABLE PLAN

GHA GEWALT HAMILTON ASSOCIATES, INC.
850 Forest Edge Drive ▪ Vernon Hills, IL 60061
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847-478-9700
FAX: 847-478-9701

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

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

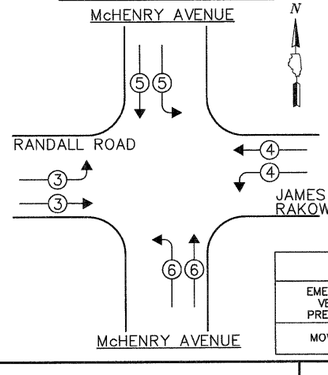
McHENRY COUNTY DIVISION OF TRANSPORTATION
TRAFFIC SIGNAL INSTALLATION
ELECTRICAL SERVICE REQUIREMENTS

TYPE	NO LAMPS	WATTAGE INCAND.	WATTAGE L.E.D.	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	24	135	17	0.50	204.0
SIGNAL (YELLOW)	24	135	25	0.25	150.0
SIGNAL (GREEN)	24	135	15	0.25	90.0
ARROW	24	135	12	0.10	26.4
PED.SIGNAL		90	25	1.00	
CONTROLLER	1	100	100	1.00	100.0
BATTERY BACKUP	1		25	1.00	25.0
VIDEO SYSTEMS	1		150	1.00	150.0
LUMINAIRE	6	400		0.50	1200.0
L.E.D. ST. NAME SIGN	4		64	0.50	128.0
FLASHER				0.05	
				TOTAL =	2,073.4

ENERGY COSTS – BILLED TO: CITY OF CRYSTAL LAKE
(ADDRESS) 100 WEST MUNICIPAL COMPLEX

ENERGY SUPPLY – CONTACT: MS. AUDREY HELGESEN
PHONE: (847) 816-5225
COMPANY: COMED-LIBERTYVILLE

EMERGENCY VEHICLE PREEMPTION SEQUENCE

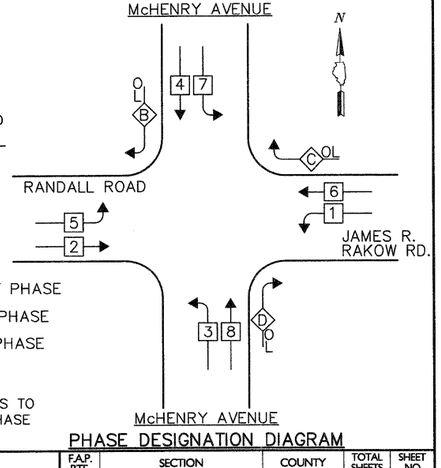


PROPOSED EMERGENCY VEHICLE PREEMPTORS				
EMERGENCY VEHICLE PREEMPTOR	3	4	5	6
MOVEMENT				

CONTROLLER SEQUENCE

OVERLAP LETTER		PERMISSIVE PHASE		PROTECTED PHASE
B	=	4	+	5
C	=	6	+	7
D	=	8	+	1

LEGEND:
- SINGLE ENTRY PHASE
- DUAL ENTRY PHASE
- PEDESTRIAN PHASE
- OL OVERLAP
- * NUMBER REFERS TO ASSOCIATED PHASE



PHASE DESIGNATION DIAGRAM

FILE NAME = 4153.800-tr1.dwg	USER NAME = GHA	DESIGNED - DPB	REVISED -
		DRAWN - ZCW	REVISED -
	PLOT SCALE = N.T.S.	CHECKED - DPB	REVISED -
	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -

MCHENRY COUNTY DIVISION OF TRANSPORTATION

CABLE PLAN, PHASE DESIGNATION DIAGRAM, AND SCHEDULE OF QUANTITIES
RANDALL RD./JAMES R. RAKOW RD. AND MCHENRY AVE.

SCALE: N.A. | SGNL SHEET # 19 OF 65 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	328
		CONTRACT #:	63398	
	ILLINOIS FED. AID PROJECT			

THE FOLLOWING EXISTING TRAFFIC SIGNAL EQUIPMENT SHALL BE REMOVED BY THE CONTRACTOR, SHALL REMAIN THE PROPERTY OF THE AGENCY LISTED BELOW. THE CONTRACTOR SHALL SAFELY STORE AND ARRANGE FOR PICK UP OR DELIVERY OF ALL EQUIPMENT TO BE RETURNED TO THE LISTED AGENCY AS PER THE TRAFFIC SIGNAL SPECIFICATIONS.

AGENCY: MCHENRY COUNTY DIVISION OF TRANSPORTATION
1 EACH CABINET AND CONTROLER (COMPLETE)

AGENCY: CITY OF CRYSTAL LAKE
2 EACH LIGHT DETECTOR
1 EACH LIGHT DETECTOR AMPLIFIER

THE FOLLOWING ITEMS SHALL BE REMOVED BY THE CONTRACTOR AND SHALL BE DISPOSED OF BY THEM OUTSIDE THE RIGHT-OF-WAY AT THEIR EXPENSE. THE SALVAGE VALUE OF THE REMOVED EQUIPMENT SHALL BE REFLECTED IN THE CONTRACT BID PRICE.

2 EACH SIGNAL HEAD, 3-SECTION
12 EACH SIGNAL HEAD, 5-SECTION
2 EACH PEDESTRIAN SIGNAL HEAD
2 EACH PEDESTRIAN PUSH BUTTON
4 EACH STEEL MAST ARM ASSEMBLEY AND POLE
4 EACH TRAFFIC SIGNAL POST
1 EACH SERVICE INSTALLATION

SIGN (A)

R10-5
30"x36" (TYP.)
SIGN PANEL TYPE 1
8 REQUIRED

NOTES FOR TEMPORARY TRAFFIC SIGNALS

1. ALL CONTROL EQUIPMENT INCLUDING EMERGENCY PRE-EMPTION AND COMMUNICATION DEVICES FOR THE TEMPORARY TRAFFIC SIGNAL(S) SHALL BE FURNISHED BY THE CONTRACTOR.
2. ONLY ECONOLITE CONTROLLERS SUPPLIED BY ONE OF THE COUNTY APPROVED CLOSED LOOP EQUIPMENT MANUFACTURERS WILL BE APPROVED FOR USE AT TEMPORARY SIGNAL LOCATIONS. ALL CONTROLLERS USED FOR TEMPORARY TRAFFIC SIGNALS SHALL BE FULLY-ACTUATED NEMA MICROPROCESSOR BASED WITH RS232 DATA ENTRY PORTS COMPATIBLE WITH EXISTING MONITORING SOFTWARE APPROVED BY THE COUNTY INSTALLED IN A NEMA TS1 OR TS2 CABINET.
3. ALL LED TRAFFIC SIGNAL SECTIONS AND LED PEDESTRIAN SIGNAL SECTIONS SHALL BE 12". HEADS AND SHALL BE PLACED AS INDICATED ON THE TEMPORARY TRAFFIC SIGNAL PLAN OR AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL FURNISH ENOUGH CABLE SLACK TO RELOCATE HEADS TO ANY POSITION ON THE SPAN WIRE FOR CONSTRUCTION STAGING. THE TEMPORARY TRAFFIC SIGNAL SHALL REMAIN IN OPERATION DURING ALL SIGNAL HEAD RELOCATIONS. EACH TEMPORARY TRAFFIC SIGNAL HEAD SHALL HAVE ITS OWN CABLE FROM THE CONTROLLER CABINET TO THE SIGNAL HEAD.
4. ALL EXISTING STREET NAME AND INTERSECTION REGULATORY SIGNS SHALL BE REMOVED FROM EXISTING POLES, RELOCATED, AND SECURELY FASTENED TO THE SIGNAL SPAN WIRE OR WOOD POLE AS DIRECTED BY THE ENGINEER.

NOTES FOR TEMPORARY TRAFFIC SIGNALS (CONTINUED)

5. ANY TEMPORARY SIGNAL WITHIN AN EXISTING CLOSED LOOP TRAFFIC SIGNAL SYSTEM SHALL BE INTERCONNECTED TO THAT SYSTEM. ANY TEMPORARY TRAFFIC SIGNAL WITHIN AN ICONS SYSTEM SHALL BE NTCIP COMPATIBLE AND SHALL BE INTERCONNECTED TO THAT SYSTEM.
6. IF NO TRAFFIC STAGING IS IN PLACE OR WILL NOT BE STAGED ON THE DAY OF THE TURN-ON, THE TEMPORARY TRAFFIC SIGNAL SHALL HAVE THE SIGNAL HEAD DISPLAYS, SIGNAL HEAD PLACEMENTS, AND CONTROLLER PHASING MATCH THE EXISTING TRAFFIC SIGNAL AT THE TIME OF THE TURN-ON.
7. UPON COMPLETION OF THE PERMANENT TRAFFIC SIGNAL INSTALLATION, THE NEW VIDEO VEHICLE DETECTION SYSTEM COMPLETE SHALL BE RELOCATED FROM THE TEMPORARY TRAFFIC SIGNAL INSTALLATION TO THE PERMANENT TRAFFIC SIGNAL INSTALLATION. THE NEW VIDEO VEHICLE DETECTION SYSTEM RELOCATION SHALL BE INCLUDED IN THE COST OF "TEMPORARY TRAFFIC SIGNAL INSTALLATION" EACH. IF THE CONTRACTOR DECIDED TO USE THEIR OWN VIDEO DETECTION CAMERAS, THE CAMERAS SHALL REMAIN THE PROPERTY OF THE TRAFFIC SIGNAL CONTRACTOR.
8. THE CONTRACTOR SHALL RELOCATE THE EXISTING UNINTERRUPTIBLE POWER SUPPY (UPS)-COMPLETE UNIT TO THE TEMPORARY TRAFFIC SIGNAL INSTALLATION. THE RELOCATION OF THE UPS SHALL BE INCLUDED IN THE COST OF "TEMPORARY TRAFFIC SIGNAL INSTALLATION" EACH. AFTER THE PERMANENT TRAFFIC SIGNAL INSTALLATION HAS BEEN TURNED-ON, THE CONTRACTOR SHALL REMOVE THE UPS AND ARRANGE FOR PICK UP OR DELIVERY OF ALL EQUIPMENT TO THE MCHENRY COUNTY DIVISION OF TRANSPORTATION.
9. THE CONTRACTOR SHALL INSTALL TEMPORARY INTERSECTION LIGHTING ON THE TEMPORARY WOOD POLES USED FOR THE TEMPORARY TRAFFIC SIGNAL INSTALLATION. ALL LUMINAIRES, ARMS, CABLES, AND ASSOCIATED CONNECTORS SHALL BE INCLUDED IN THE COST OF "TEMPORARY TRAFFIC SIGNAL INSTALLATION" EACH.

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

FOR PAVEMENT MARKINGS SEE STRP-5

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LISLE, ILLINOIS

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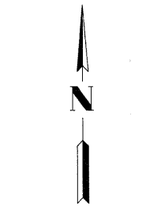
MCHENRY COUNTY
DIVISION OF TRANSPORTATION

TEMPORARY TRAFFIC SIGNAL INSTALLATION AND REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT JAMES R. RAKOW RD. AND PYOTT RD.

SCALE: 1"=20' | SGNL SHEET # 20 OF 65 SHEETS | STA. | TO STA.

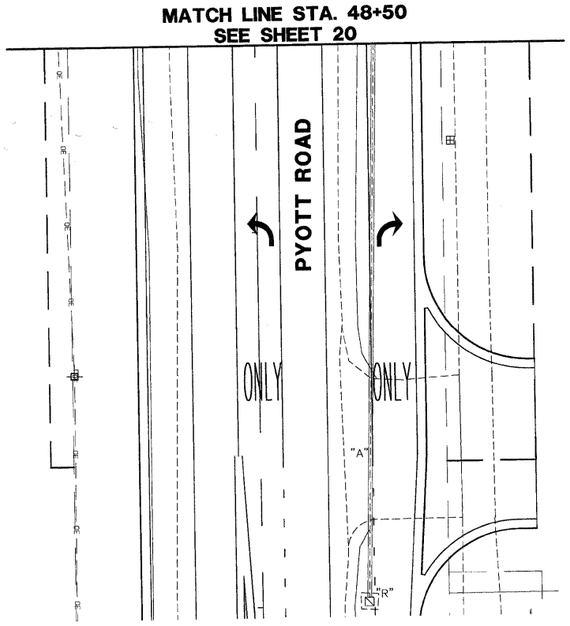
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	329
		CONTRACT #: 63398		
	ILLINOIS FED. AID PROJECT			

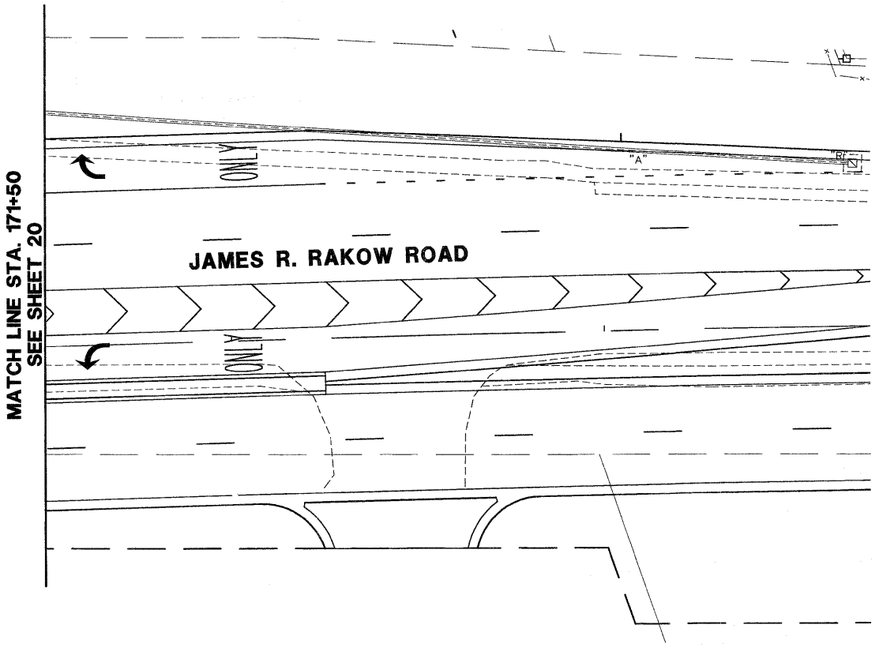


GRAPHIC SCALE

20 0 10 20

(IN FEET)
1 inch = 20ft.





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

FOR PAVEMENT MARKINGS SEE STRP-5

NOTES FOR TEMPORARY TRAFFIC SIGNALS

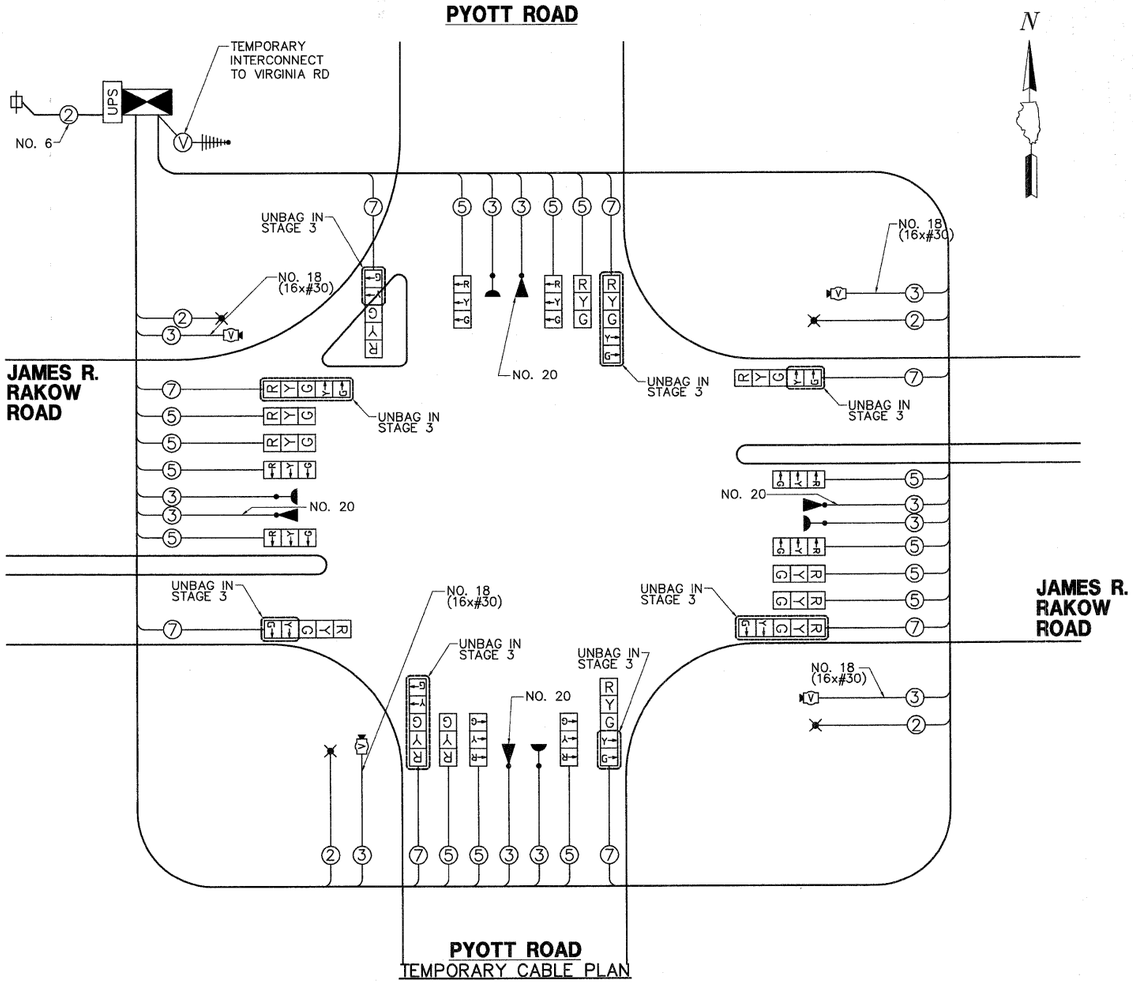
1. ALL CONTROL EQUIPMENT INCLUDING EMERGENCY PRE-EMPTION AND COMMUNICATION DEVICES FOR THE TEMPORARY TRAFFIC SIGNAL(S) SHALL BE FURNISHED BY THE CONTRACTOR.
2. ONLY ECONOLITE CONTROLLERS SUPPLIED BY ONE OF THE COUNTY APPROVED CLOSED LOOP EQUIPMENT MANUFACTURERS WILL BE APPROVED FOR USE AT TEMPORARY SIGNAL LOCATIONS. ALL CONTROLLERS USED FOR TEMPORARY TRAFFIC SIGNALS SHALL BE FULLY-ACTUATED NEMA MICROPROCESSOR BASED WITH RS232 DATA ENTRY PORTS COMPATIBLE WITH EXISTING MONITORING SOFTWARE APPROVED BY THE COUNTY INSTALLED IN A NEMA TS1 OR TS2 CABINET.
3. ALL LED TRAFFIC SIGNAL SECTIONS AND LED PEDESTRIAN SIGNAL SECTIONS SHALL BE 12". HEADS AND SHALL BE PLACED AS INDICATED ON THE TEMPORARY TRAFFIC SIGNAL PLAN OR AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL FURNISH ENOUGH CABLE SLACK TO RELOCATE HEADS TO ANY POSITION ON THE SPAN WIRE FOR CONSTRUCTION STAGING. THE TEMPORARY TRAFFIC SIGNAL SHALL REMAIN IN OPERATION DURING ALL SIGNAL HEAD RELOCATIONS. EACH TEMPORARY TRAFFIC SIGNAL HEAD SHALL HAVE ITS OWN CABLE FROM THE CONTROLLER CABINET TO THE SIGNAL HEAD.
4. ALL EXISTING STREET NAME AND INTERSECTION REGULATORY SIGNS SHALL BE REMOVED FROM EXISTING POLES, RELOCATED, AND SECURELY FASTENED TO THE SIGNAL SPAN WIRE OR WOOD POLE AS DIRECTED BY THE ENGINEER.
5. ANY TEMPORARY SIGNAL WITHIN AN EXISTING CLOSED LOOP TRAFFIC SIGNAL SYSTEM SHALL BE INTERCONNECTED TO THAT SYSTEM. ANY TEMPORARY TRAFFIC SIGNAL WITHIN AN ICONS SYSTEM SHALL BE NTCIP COMPATIBLE AND SHALL BE INTERCONNECTED TO THAT SYSTEM.
6. IF NO TRAFFIC STAGING IS IN PLACE OR WILL NOT BE STAGED ON THE DAY OF THE TURN-ON, THE TEMPORARY TRAFFIC SIGNAL SHALL HAVE THE SIGNAL HEAD DISPLAYS, SIGNAL HEAD PLACEMENTS, AND CONTROLLER PHASING MATCH THE EXISTING TRAFFIC SIGNAL AT THE TIME OF THE TURN-ON.
7. UPON COMPLETION OF THE PERMANENT TRAFFIC SIGNAL INSTALLATION, THE NEW VIDEO VEHICLE DETECTION SYSTEM COMPLETE, SHALL BE RELOCATED FROM THE TEMPORARY TRAFFIC SIGNAL INSTALLATION TO THE PERMANENT TRAFFIC SIGNAL INSTALLATION. THE NEW VIDEO VEHICLE DETECTION SYSTEM RELOCATION SHALL BE INCLUDED IN THE COST OF "TEMPORARY TRAFFIC SIGNAL INSTALLATION" EACH. IF THE CONTRACTOR DECIDED TO USE THEIR OWN VIDEO DETECTION CAMERAS, THE CAMERAS SHALL REMAIN THE PROPERTY OF THE TRAFFIC SIGNAL CONTRACTOR.
8. THE CONTRACTOR SHALL RELOCATE THE EXISTING UNINTERRUPTIBLE POWER SUPPY (UPS)-COMPLETE UNIT TO THE TEMPORARY TRAFFIC SIGNAL INSTALLATION. THE RELOCATION OF THE UPS SHALL BE INCLUDED IN THE COST OF "TEMPORARY TRAFFIC SIGNAL INSTALLATION" EACH. AFTER THE PERMANENT TRAFFIC SIGNAL INSTALLATION HAS BEEN TURNED-ON, THE CONTRACTOR SHALL REMOVE THE UPS AND ARRANGE FOR PICK UP OR DELIVERY OF ALL EQUIPMENT TO THE MCHENRY COUNTY DIVISION OF TRANSPORTATION.
9. THE CONTRACTOR SHALL INSTALL TEMPORARY INTERSECTION LIGHTING ON THE TEMPORARY WOOD POLES USED FOR THE TEMPORARY TRAFFIC SIGNAL INSTALLATION. ALL LUMINAIRES, ARMS, CABLES, AND ASSOCIATED CONNECTORS SHALL BE INCLUDED IN THE COST OF "TEMPORARY TRAFFIC SIGNAL INSTALLATION" EACH.

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

GHA GEWALT HAMILTON ASSOCIATES, INC.
850 Forest Edge Drive ▪ Vernon Hills, IL 60061
Consulting Engineers & Surveyors
847-478-9700
FAX: 847-478-9701

FILE NAME = 4153.800-tr1.dwg	USER NAME = GHA	DESIGNED - DPB	REVISED -	MCHENRY COUNTY DIVISION OF TRANSPORTATION	TEMPORARY TRAFFIC SIGNAL INSTALLATION AND REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT JAMES R. RAKOW RD. AND PYOTT RD.
		DRAWN - ZCW	REVISED -		
	PLOT SCALE = N.T.S.	CHECKED - DPB	REVISED -		SCALE: 1"=20' SGNL. SHEET # 21 OF 65 SHEETS STA. TO STA.
	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -		

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	330
		CONTRACT #: 63398		
	ILLINOIS FED. AID PROJECT			



PYOTT ROAD
TEMPORARY CABLE PLAN

GHA GEWALT HAMILTON ASSOCIATES, INC.
850 Forest Edge Drive ▪ Vernon Hills, IL. 60061
Consulting Engineers & Surveyors
847-478-9700
FAX: 847-478-9701

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

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

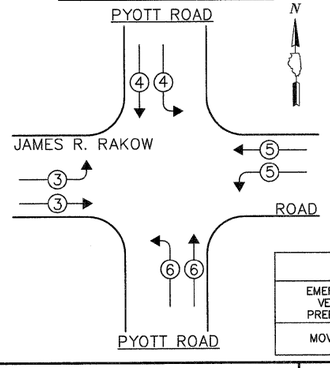
McHENRY COUNTY DIVISION OF TRANSPORTATION
TRAFFIC SIGNAL INSTALLATION
ELECTRICAL SERVICE REQUIREMENTS

TYPE	NO LAMPS	WATTAGE INCAND.	WATTAGE L.E.D.	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	22	135	17	0.50	187.0
SIGNAL (YELLOW)	22	135	25	0.25	137.5
SIGNAL (GREEN)	22	135	15	0.25	82.5
ARROW	16	135	12	0.10	19.2
PED.SIGNAL		90	25	1.00	
CONTROLLER	1	100	100	1.00	100.0
BATTERY BACKUP	1		25	1.00	25.0
VIDEO SYSTEMS	1		150	1.00	150.0
LUMINAIRE	4	400		0.50	800.0
FLASHER				0.05	
				TOTAL =	1501.2

ENERGY COSTS – BILLED TO: CITY OF CRYSTAL LAKE
(ADDRESS) 100 WEST MUNICIPAL COMPLEX

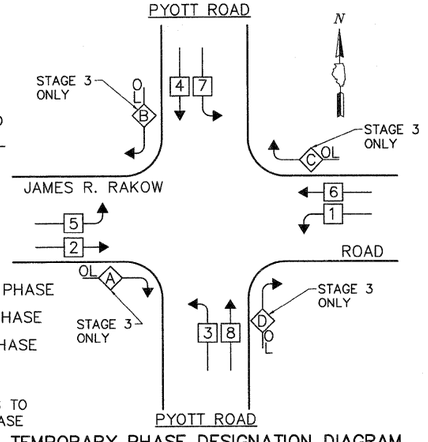
ENERGY SUPPLY – CONTACT: MS. AUDREY HELGESEN
PHONE: (847) 816-5225
COMPANY: COMED–LIBERTYVILLE

TEMPORARY EMERGENCY VEHICLE EMERGENCY VEHICLE PREEMPTION SEQUENCE



TEMPORARY EMERGENCY VEHICLE PREEMPTORS				
EMERGENCY VEHICLE PREEMPTOR	3	4	5	6
MOVEMENT				

TEMPORARY CONTROLLER SEQUENCE



OVERLAP LETTER		PERMISSIVE PHASE		PROTECTED PHASE
A	=	2	+	3
B	=	4	+	5
C	=	6	+	7
D	=	8	+	1

LEGEND:
- SINGLE ENTRY PHASE
- DUAL ENTRY PHASE
- PEDESTRIAN PHASE
- OL OVERLAP
- * NUMBER REFERS TO ASSOCIATED PHASE

TEMPORARY PHASE DESIGNATION DIAGRAM

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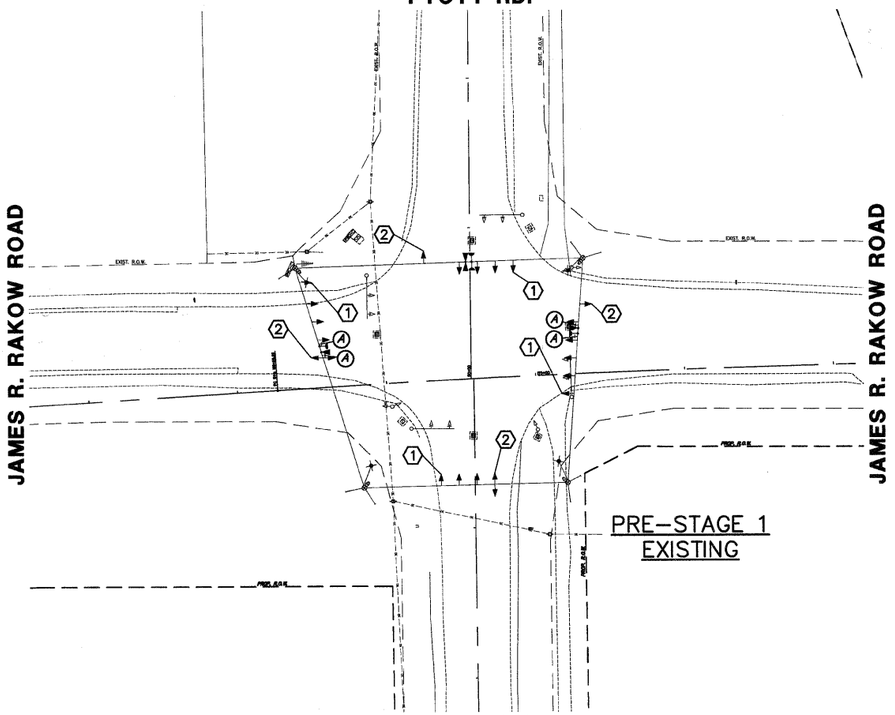
	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -	

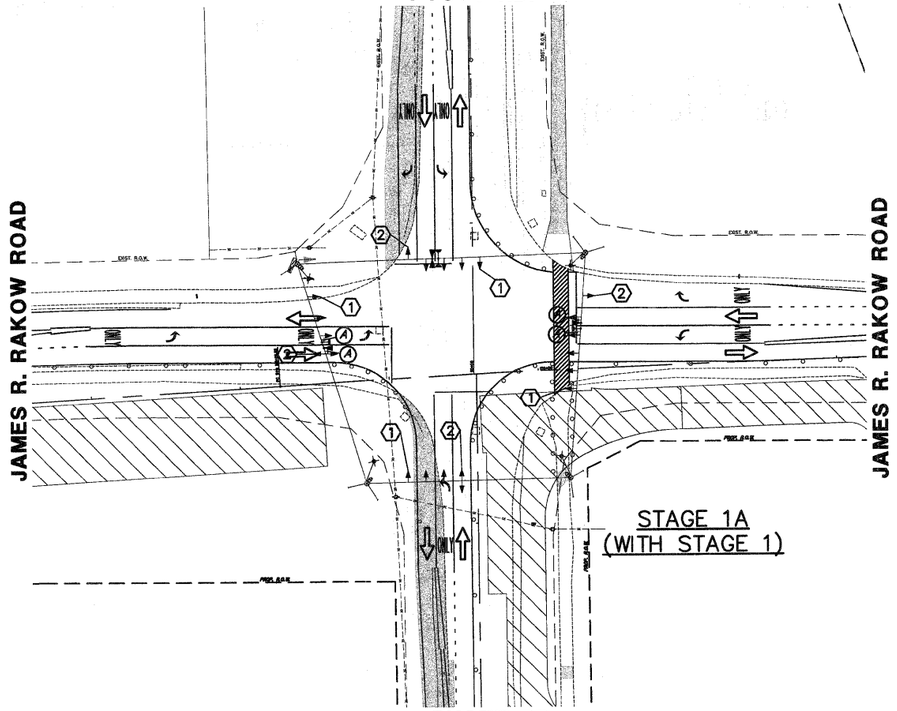
MCHENRY COUNTY
DIVISION OF TRANSPORTATION

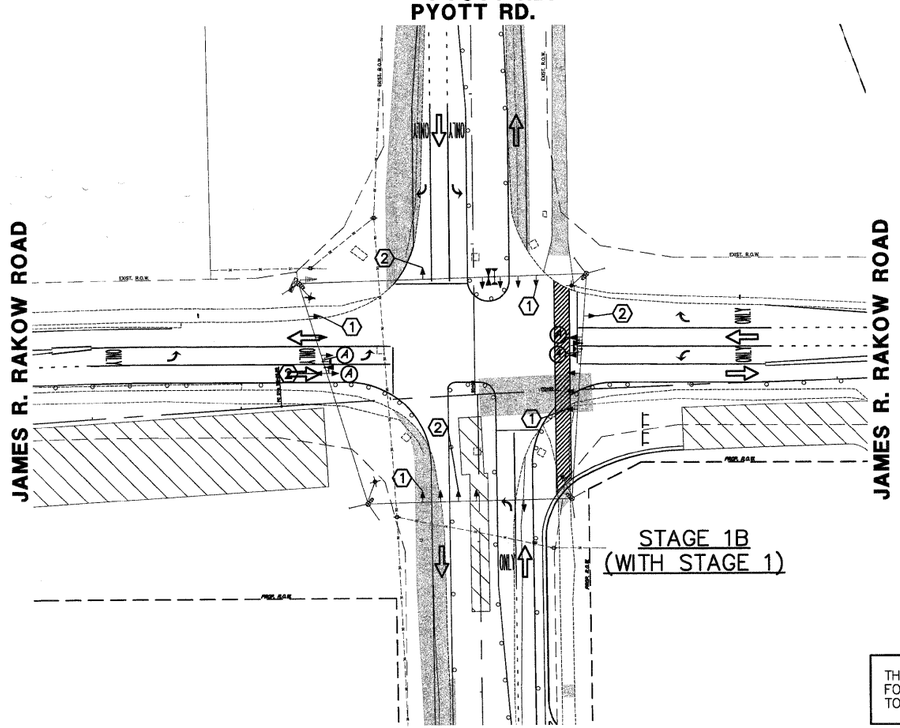
TEMPORARY CABLE PLAN AND TEMPORARY PHASE DESIGNATION DIAGRAM JAMES R. RAKOW RD. AND PYOTT RD.

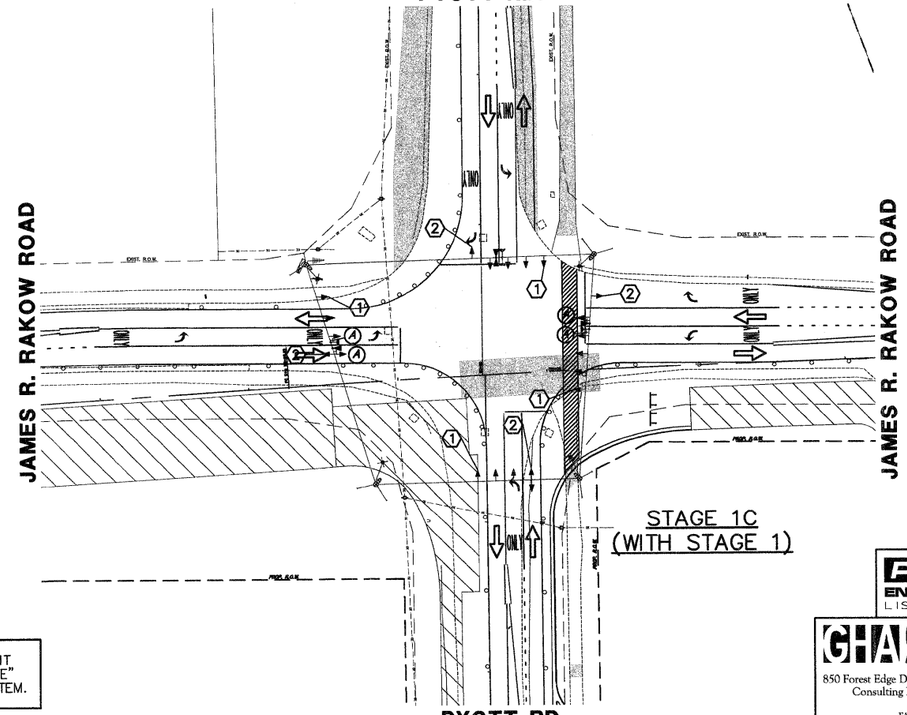
SCALE: N.A. | SGNL. SHEET # 22 OF 65 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	331
		CONTRACT #:	63398	
		ILLINOIS FED. AID PROJECT		









N

GRAPHIC SCALE

50 0 25 50

(IN FEET)
1 inch = 50ft.

SIGN (A)

LEFT ON GREEN ARROW ONLY

R10-5
30"x36" (TYP.)
SIGN PANEL TYPE I
4 REQUIRED

LEGEND

- TEMPORARY PAVEMENT
- WORK ZONE
- DIRECTION OF TRAFFIC

CONSTRUCTION NOTES:

1. BAG ENTIRE HEAD
2. BAG RIGHT TURN ARROWS ONLY

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

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

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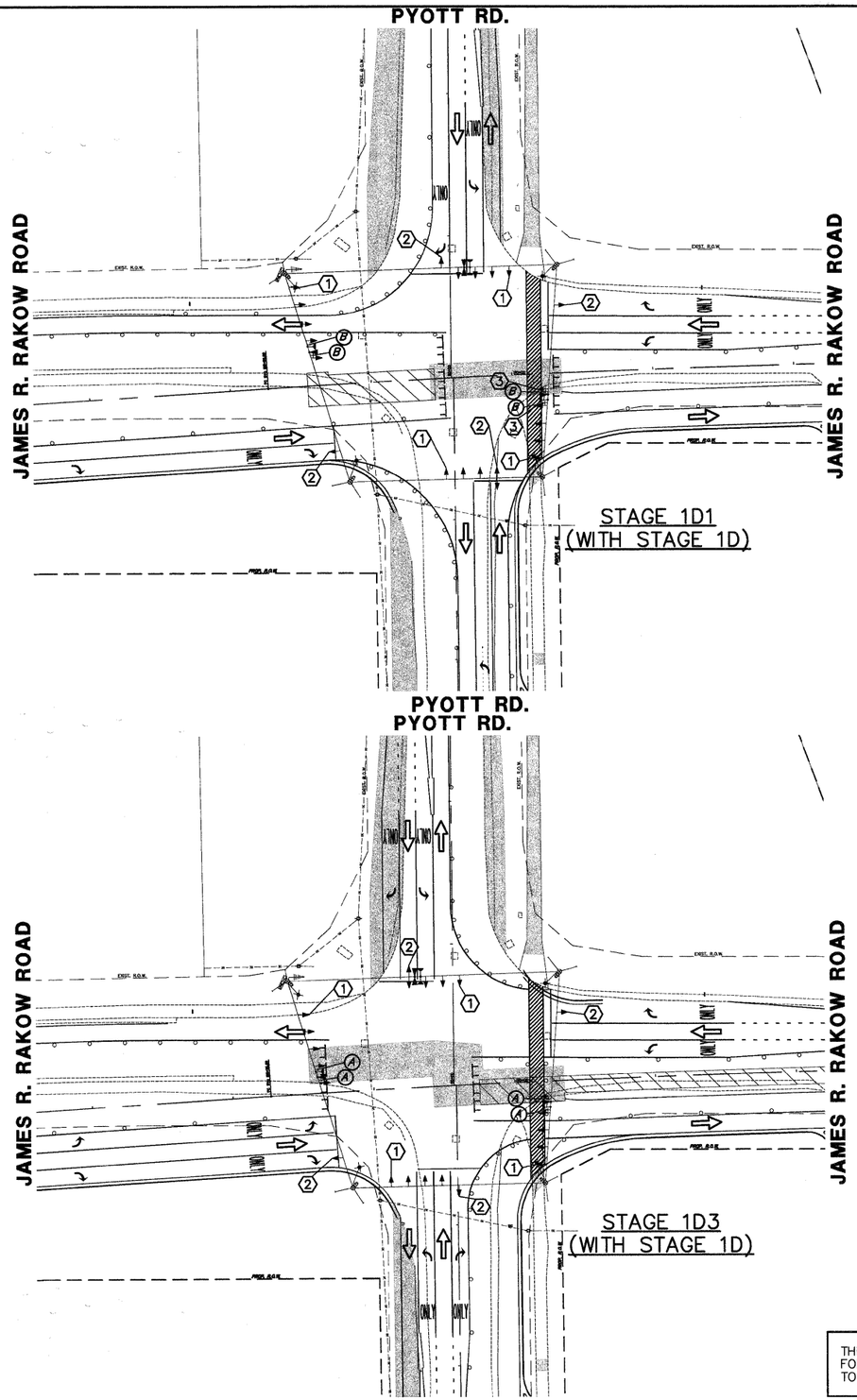
	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -

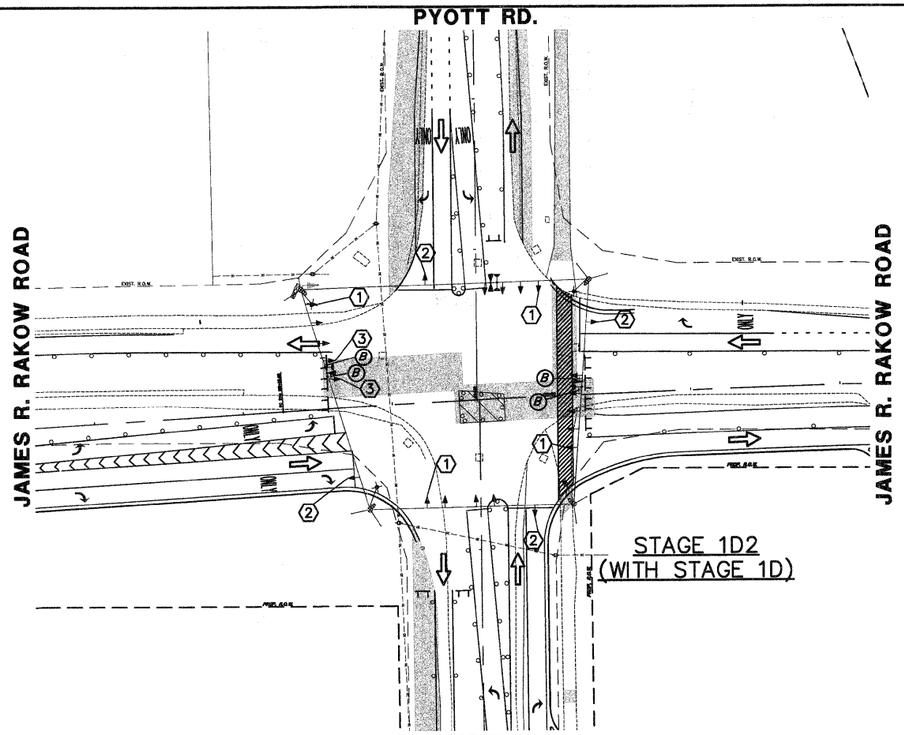
MCHENRY COUNTY
DIVISION OF TRANSPORTATION

TEMPORARY TRAFFIC SIGNAL STAGING
STAGES PRE-1, 1A, 1B, & 1C
JAMES R. RAKOW RD. AND PYOTT RD.

SCALE: 1"=50' | SGNL. SHEET # 23 OF 65 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	332
		CONTRACT #: 63398		
	ILLINOIS FED. AID PROJECT			





N

GRAPHIC SCALE

50 0 25 50

(IN FEET)
1 inch = 50ft.

SIGN (A)

LEFT ON GREEN ARROW ONLY

R10-5
30"x36" (TYP.)
SIGN PANEL TYPE I
4 REQUIRED

LEGEND

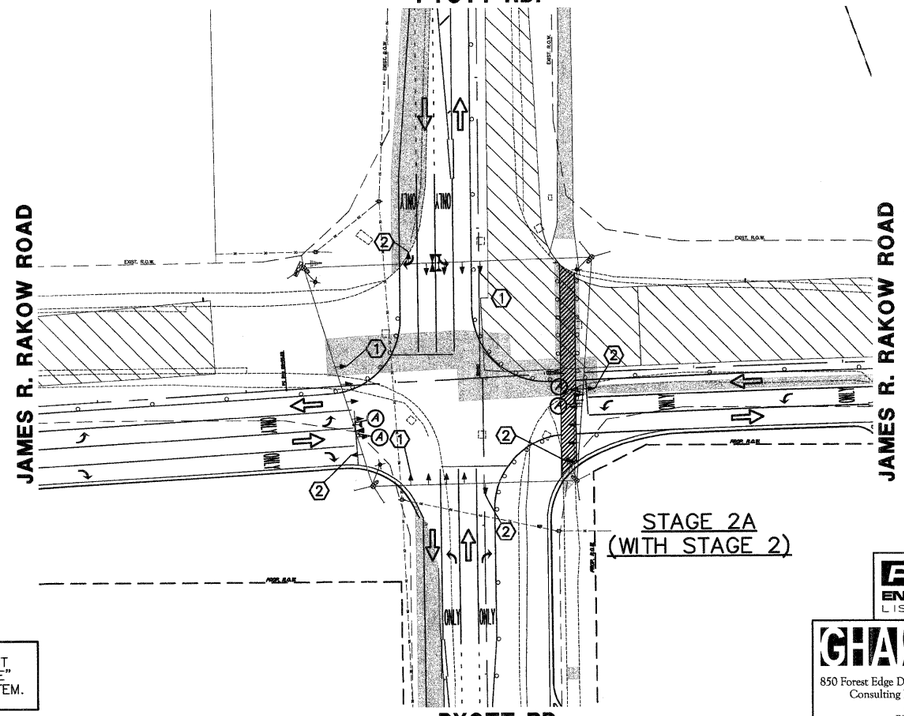
- TEMPORARY PAVEMENT
- WORK ZONE
- DIRECTION OF TRAFFIC

CONSTRUCTION NOTES:

1. BAG ENTIRE HEAD
2. BAG RIGHT TURN ARROWS ONLY
3. BAG ENTIRE LEFT TURN HEAD

SIGN (B)

R3-2
30"x30" (TYP.)
SIGN PANEL TYPE I
4 REQUIRED
(STAGES 1D1 & 1D2 ONLY)



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

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

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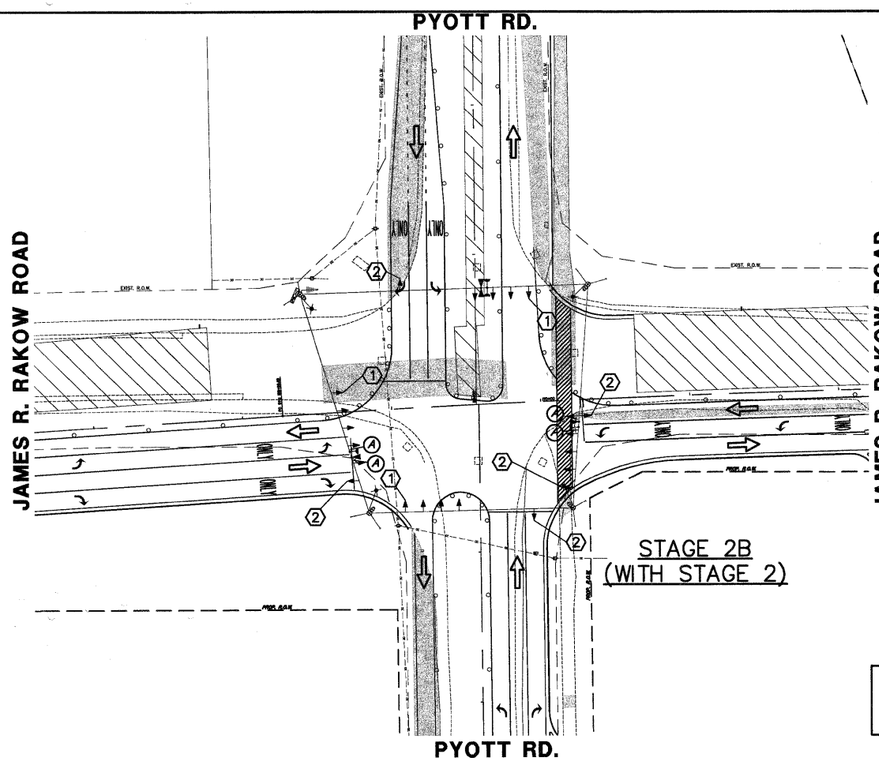
MCHENRY COUNTY
DIVISION OF TRANSPORTATION

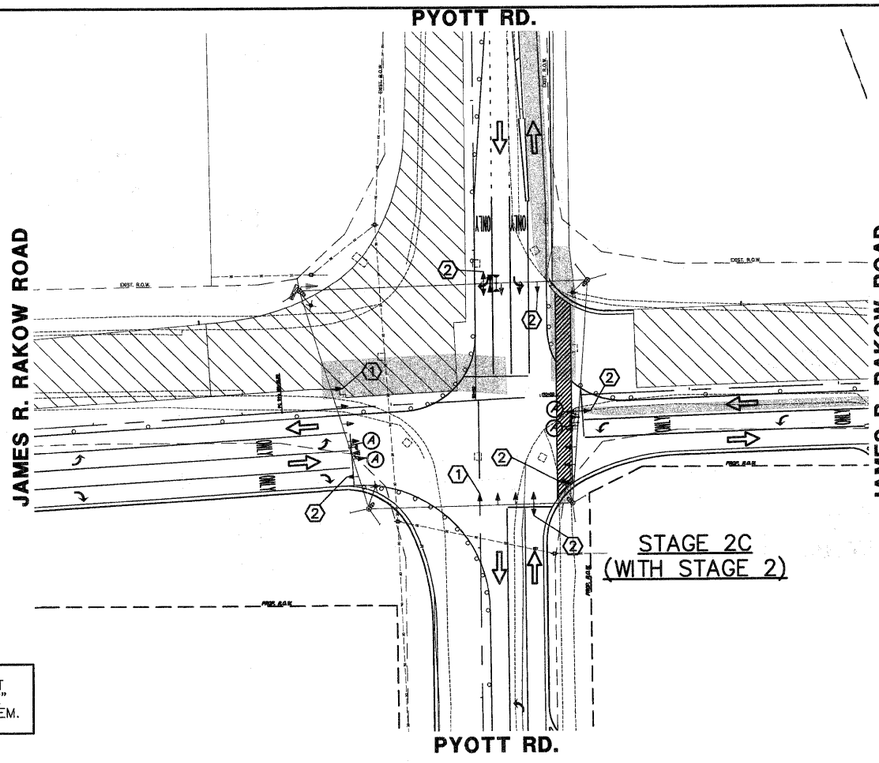
TEMPORARY TRAFFIC SIGNAL STAGING STAGES 1D1, 1D2, 1D3, & 2A JAMES R. RAKOW RD. AND PYOTT RD.

SCALE: 1"=50' | SGNL. SHEET # 24 OF 65 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	333
		CONTRACT #:	63398	
	ILLINOIS FED. AID PROJECT			



STAGE 2B
(WITH STAGE 2)



STAGE 2C
(WITH STAGE 2)

N

GRAPHIC SCALE

50 0 25 50

(IN FEET)
1 inch = 50ft.

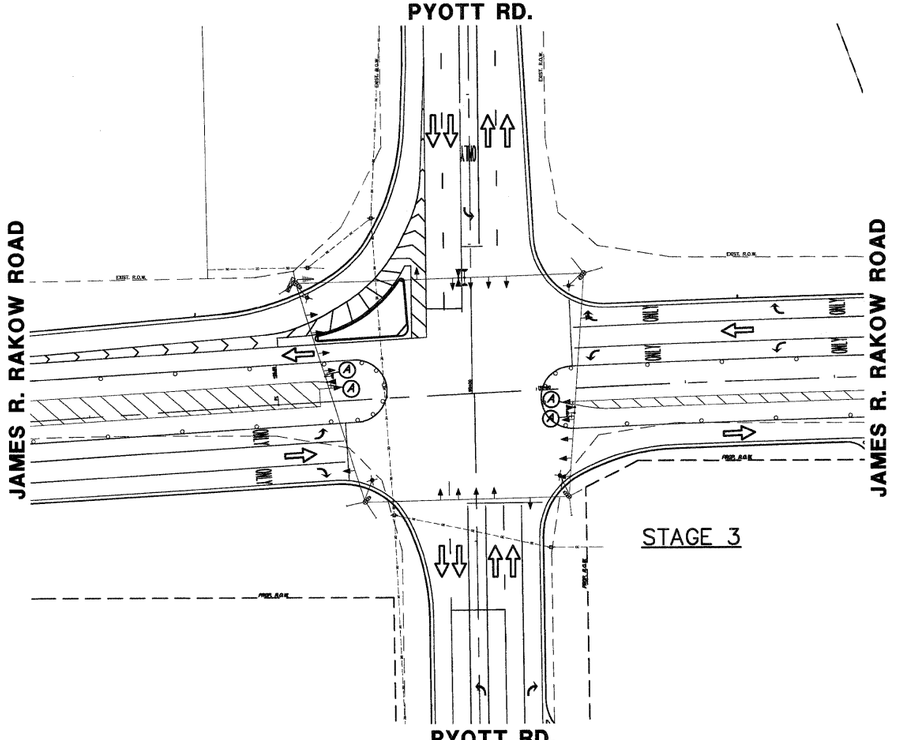
LEGEND

- TEMPORARY PAVEMENT
- WORK ZONE
- DIRECTION OF TRAFFIC

CONSTRUCTION NOTES:

1. BAG ENTIRE HEAD
2. BAG RIGHT TURN ARROWS ONLY

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



STAGE 3

SIGN Ⓐ

LEFT ON GREEN ARROW ONLY

R10-5
30"x36" (TYP.)
SIGN PANEL TYPE I
4 REQUIRED

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

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	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

TEMPORARY TRAFFIC SIGNAL STAGING
STAGES 2B, 2C, & 3
JAMES R. RAKOW RD. AND PYOTT RD.

SCALE 1"=50' | SGNL. SHEET # 25 OF 65 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	334
		CONTRACT #:	63398	
	ILLINOIS FED. AID PROJECT			

N

GRAPHIC SCALE

20 0 10 20

(IN FEET)
1 inch = 20ft.

SIGN (A)

LEFT ON GREEN ARROW ONLY

R10-5
30"x36" (TYP.)
SIGN PANEL TYPE 1
4 REQUIRED

PYOTT ROAD

JAMES R. RAKOW ROAD

EXIST. R.O.W.

PROP. R.O.W.

PROPOSED FUTURE COMMUNICATIONS NETWORK CONDUIT (SEE INTERCONNECT PLAN)

PROPOSED INTERCONNECT TO MCHENRY RD. (SEE INTERCONNECT PLAN)

PROPOSED INTERCONNECT TO VIRGINIA RD. (SEE INTERCONNECT PLAN)

5'-T 2" STUB & CAPPED

5'-C.T. (4)4"

2.5' (TYP.)

SERVICE INSTALLATION POLE MOUNT

47'-T 2 ½"

58'-P 4"

34'-T 2"

16' POST

16'-T 3"

13'-T 2 ½"

40' COMBINATION MAST ARM W/ 36" DIA. FOUND. – 15' DEPTH

178'-P 4"

50' COMBINATION MAST ARM W/ 36" DIA. FOUND. – 15' DEPTH

15'-T 3"

134'-P (2)4"

32' COMBINATION MAST ARM W/ 36" DIA. FOUND. – 15' DEPTH

14'-T 3"

148'-P 4"

26'-T 3"

54' COMBINATION MAST ARM W/ 36" DIA. FOUND. – 15' DEPTH

7'-T 3"

28' COMBINATION MAST ARM W/ 36" DIA. FOUND. – 15' DEPTH

12'-T 3"

26' COMBINATION MAST ARM W/ 36" DIA. FOUND. – 15' DEPTH

60' COMBINATION MAST ARM W/ 42" DIA. FOUND. – 21' DEPTH

ONLY

PC Sta 168+26.89

170+00

MATCH LINE STA. 167+50
SEE SHEET 27

MATCH LINE STA. 172+30
SEE SHEET 27

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

FOR PAVEMENT MARKINGS SEE STRP-5

CONSTRUCTION NOTES:

1. APPROVED CAMERA DETECTION SYSTEM FOR THIS PROJECT INCLUDE THE AUTOSCOPE TERRA SYSTEM, OR APPROVED EQUAL.
2. ALL COMBINATION MAST ARM ASSEMBLY AND POLES SHALL HAVE A 20' ARM TO MOUNT THE VIDEO DETECTION CAMERA AND LUMINAIRE. THE ARM SHALL BE ALIGNED DIRECTLY ABOVE AND PARALLEL TO THE MAST ARM.
3. MAST ARMS AND POSTS SHALL BE GALVANIZED FINISH.
4. PROVIDE 2-2" CONDUIT STUBS IN EACH FOUNDATION FOR MAST ARM ASSEMBLY AND POLE WITH LUMINAIRE.
5. ALL INDICATIONS SHALL BE L.E.D.

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MCHENRY COUNTY
DIVISION OF TRANSPORTATION

TRAFFIC SIGNAL MODERNIZATION PLAN
JAMES R. RAKOW RD. AND PYOTT RD.

SCALE: 1"=20' | SGNL. SHEET # 26 OF 65 SHEETS | STA. | TO STA.

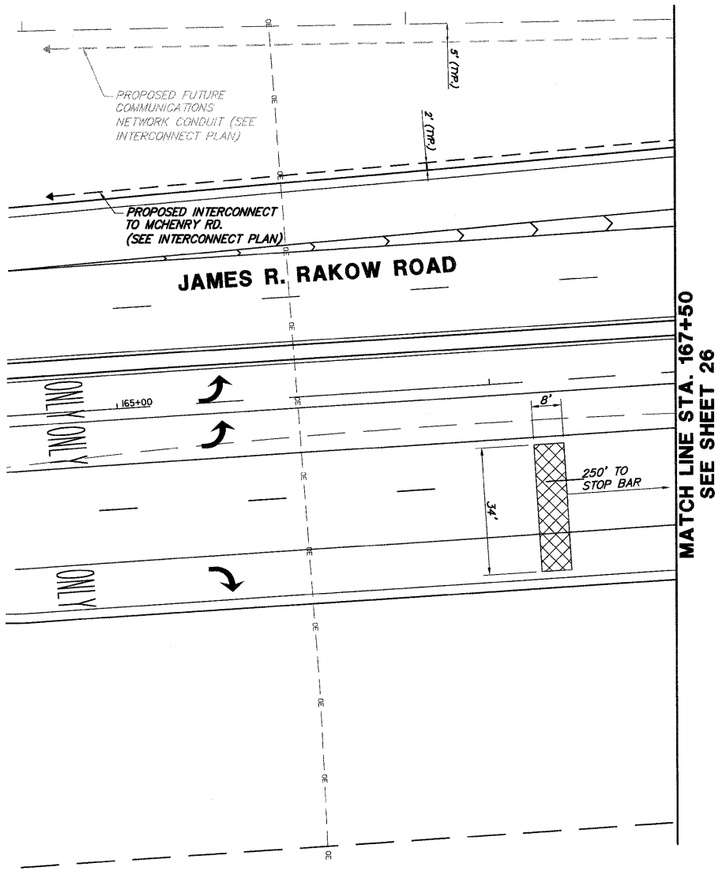
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	335
		CONTRACT #:	63398	
	ILLINOIS | FED. AID PROJECT			

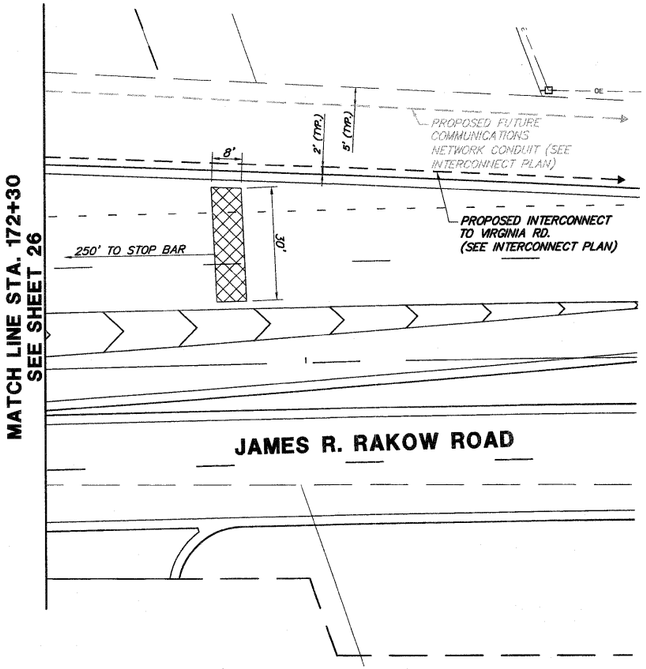
N

GRAPHIC SCALE

20 0 10 20

(IN FEET)
1 inch = 20ft.





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

FOR PAVEMENT MARKINGS SEE STRP-5

CONSTRUCTION NOTES:

1. APPROVED CAMERA DETECTION SYSTEM FOR THIS PROJECT INCLUDE THE AUTOSCOPE TERRA SYSTEM, OR APPROVED EQUAL.
2. ALL COMBINATION MAST ARM ASSEMBLY AND POLES SHALL HAVE A 20' ARM TO MOUNT THE VIDEO DETECTION CAMERA AND LUMINAIRE. THE ARM SHALL BE ALIGNED DIRECTLY ABOVE AND PARALLEL TO THE MAST ARM.
3. MAST ARMS AND POSTS SHALL BE GALVANIZED FINISH.
4. PROVIDE 2-2" CONDUIT STUBS IN EACH FOUNDATION FOR MAST ARM ASSEMBLY AND POLE WITH LUMINAIRE.
5. ALL INDICATIONS SHALL BE L.E.D.

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MCHENRY COUNTY
DIVISION OF TRANSPORTATION

TRAFFIC SIGNAL MODERNIZATION PLAN
JAMES R. RAKOW RD. AND PYOTT RD.

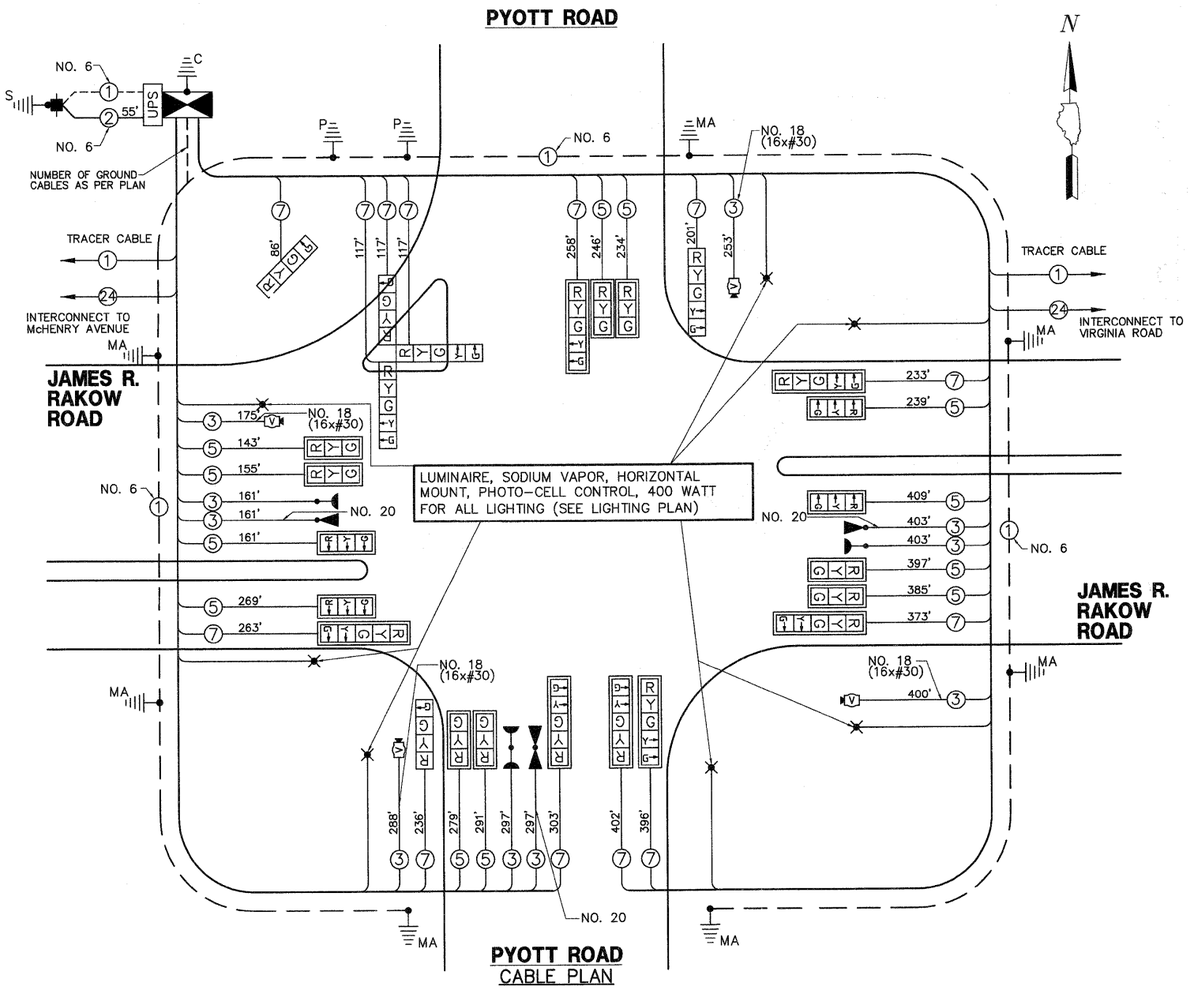
SCALE 1"=20' | SGNL. SHEET # 27 OF 65 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	336
		CONTRACT #: 63398		
	ILLINOIS FED. AID PROJECT			

SCHEDULE OF QUANTITIES

JAMES R. RAKOW ROAD AT PYOTT ROAD TRAFFIC SIGNAL MODERNIZATION

NO.	QUANT.	UNIT	
1.	30.00	SQ FT	SIGN PANEL - TYPE 1
2.	34	FOOT	CONDUIT IN TRENCH, 2" DIA., GALVANIZED STEEL
3.	60	FOOT	CONDUIT IN TRENCH, 2 1/2" DIA., GALVANIZED STEEL
4.	102	FOOT	CONDUIT IN TRENCH, 3" DIA., GALVANIZED STEEL
5.	25	FOOT	CONDUIT IN TRENCH, 4" DIA., GALVANIZED STEEL
6.	652	FOOT	CONDUIT PUSHED, 4" DIA., GALVANIZED STEEL
7.	3	EACH	HANDHOLE
8.	2	EACH	DOUBLE HANDHOLE
9.	206	FOOT	TRENCH AND BACKFILL FOR ELECTRICAL WORK
10.	1	EACH	FULL-ACTUATED CONTROLLER AND TYPE IV CABINET, SPECIAL
11.	1	EACH	TRANSCEIVER - FIBER OPTIC
12.	861	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 3C
13.	3,214	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 5C
14.	3,102	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 7C
15.	1,116	FOOT	ELECTRIC CABLE IN CONDUIT, COMMUNICATION NO. 18 3 PAIR
16.	55	FOOT	ELECTRIC CABLE IN CONDUIT, SERVICE, NO. 6 2 C
17.	2	EACH	TRAFFIC SIGNAL POST, GALVANIZED STEEL 16 FT.
18.	1	EACH	STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 26 FT.
19.	1	EACH	STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 28 FT.
20.	1	EACH	STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 32 FT.
21.	1	EACH	STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 40 FT.
22.	1	EACH	STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 50 FT.
23.	1	EACH	STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 54 FT.
24.	1	EACH	STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 60 FT.
25.	8	FOOT	CONCRETE FOUNDATION, TYPE A
26.	4	FOOT	CONCRETE FOUNDATION, TYPE C
27.	90	FOOT	CONCRETE FOUNDATION, TYPE E 36-INCH DIAMETER
28.	21	FOOT	CONCRETE FOUNDATION, TYPE E 42-INCH DIAMETER
29.	12	EACH	SIGNAL HEAD, LED, 1-FACE, 3-SECTION, MAST-ARM MOUNTED
30.	2	EACH	SIGNAL HEAD, L.E.D., 1-FACE, 4-SECTION, BRACKET MOUNTED
31.	1	EACH	SIGNAL HEAD, LED, 1-FACE, 5-SECTION, BRACKET MOUNTED
32.	7	EACH	SIGNAL HEAD, LED, 1-FACE, 5-SECTION, MAST-ARM MOUNTED
33.	1	EACH	SIGNAL HEAD, LED, 3-FACE, 1-4 SECTION, 2-5 SECTION, BRACKET MOUNTED
34.	19	EACH	TRAFFIC SIGNAL BACKPLATE, LOUVERED, ALUMINUM
35.	3	EACH	LIGHT DETECTOR
36.	1	EACH	LIGHT DETECTOR AMPLIFIER
37.	1	EACH	TEMPORARY TRAFFIC SIGNAL INSTALLATION
38.	1	EACH	REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT
39.	11	EACH	REMOVE EXISTING HANDHOLE
40.	12	EACH	REMOVE EXISTING CONCRETE FOUNDATION
41.	1	EACH	TEMPORARY TRAFFIC SIGNAL TIMING
42.	1	EACH	SERVICE INSTALLATION - POLE MOUNTED
43.	1	EACH	UNINTERRUPTIBLE POWER SUPPLY
44.	861	FOOT	ELECTRIC CABLE IN CONDUIT NO. 20 3/C, TWISTED, SHIELDED
45.	1	EACH	VIDEO DETECTION SYSTEM COMPLETE INTERSECTION
46.	4	EACH	LED INTERNALLY ILLUMINATED STREET NAME SIGN



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

GHA GEWALT HAMILTON ASSOCIATES, INC.
850 Forest Edge Drive • Vernon Hills, IL. 60061
Consulting Engineers & Surveyors
847-478-9700
FAX: 847-478-9701

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

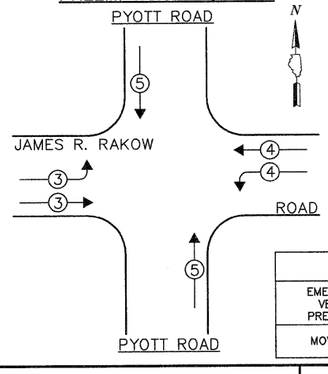
McHENRY COUNTY DIVISION OF TRANSPORTATION
TRAFFIC SIGNAL INSTALLATION
ELECTRICAL SERVICE REQUIREMENTS

TYPE	NO LAMPS	WATTAGE INCAND.	WATTAGE L.E.D.	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	24	135	17	0.50	204.0
SIGNAL (YELLOW)	24	135	25	0.25	150.0
SIGNAL (GREEN)	24	135	15	0.25	90.0
ARROW	22	135	12	0.10	19.2
PED.SIGNAL		90	25	1.00	
CONTROLLER	1	100	100	1.00	100.0
BATTERY BACKUP	1		25	1.00	25.0
VIDEO SYSTEMS	1		150	1.00	150.0
LUMINAIRE	6	400		0.50	1200.0
L.E.D. ST. NAME SIGN	4		64	0.50	128.0
FLASHER				0.05	
				TOTAL =	2,066.2

ENERGY COSTS – BILLED TO: CITY OF CRYSTAL LAKE
(ADDRESS) 100 WEST MUNICIPAL COMPLEX

ENERGY SUPPLY – CONTACT: MS. AUDREY HELGESEN
PHONE: (847) 816-5225
COMPANY: COMED-LIBERTYVILLE

EMERGENCY VEHICLE PREEMPTION SEQUENCE



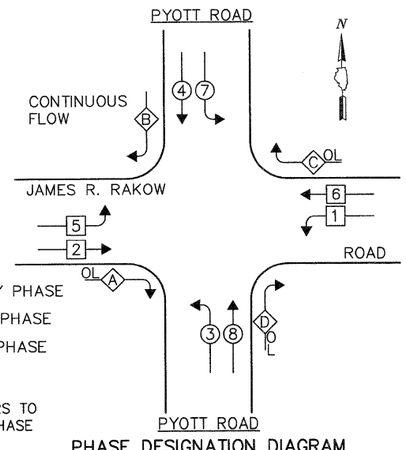
PROPOSED EMERGENCY VEHICLE PREEMPTORS			
EMERGENCY VEHICLE PREEMPTOR	3	4	5
MOVEMENT			

OVERLAP LETTER		PERMISSIVE PHASE		PROTECTED PHASE
A	=	2	+	3
B	=	CONTINUOUS FLOW		
C	=	6	+	7
D	=	8	+	1

LEGEND:

- SINGLE ENTRY PHASE
- DUAL ENTRY PHASE
- PEDESTRIAN PHASE
- OVERLAP
- * NUMBER REFERS TO ASSOCIATED PHASE

CONTROLLER SEQUENCE



PHASE DESIGNATION DIAGRAM

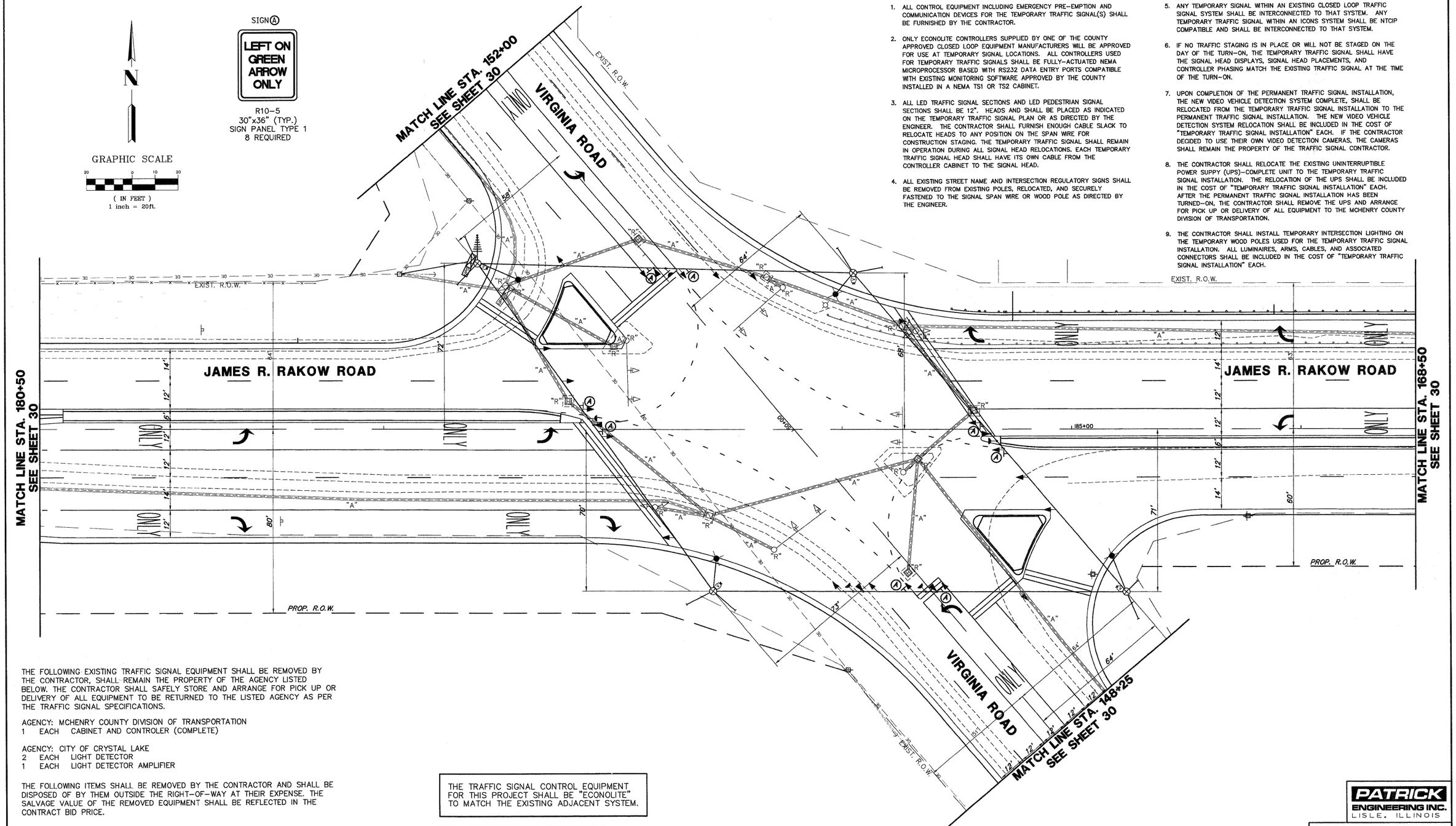
FILE NAME =	USER NAME = GHA	DESIGNED - DPB	REVISED -
4153.800-tr1.dwg		DRAWN - ZCW	REVISED -
	PLOT SCALE = N.T.S.	CHECKED - DPB	REVISED -
	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -

MCHENRY COUNTY DIVISION OF TRANSPORTATION

CABLE PLAN, PHASE DESIGNATION DIAGRAM, AND SCHEDULE OF QUANTITIES
JAMES R. RAKOW RD. AND PYOTT RD.

SCALE: N.A. | SGNL. SHEET # 28 OF 65 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	337
		CONTRACT #:	63398	
	ILLINOIS FED. AID PROJECT			



NOTES FOR TEMPORARY TRAFFIC SIGNALS

1. ALL CONTROL EQUIPMENT INCLUDING EMERGENCY PRE-EMPTION AND COMMUNICATION DEVICES FOR THE TEMPORARY TRAFFIC SIGNAL(S) SHALL BE FURNISHED BY THE CONTRACTOR.
2. ONLY ECONOLITE CONTROLLERS SUPPLIED BY ONE OF THE COUNTY APPROVED CLOSED LOOP EQUIPMENT MANUFACTURERS WILL BE APPROVED FOR USE AT TEMPORARY SIGNAL LOCATIONS. ALL CONTROLLERS USED FOR TEMPORARY TRAFFIC SIGNALS SHALL BE FULLY-ACTUATED NEMA MICROPROCESSOR BASED WITH RS232 DATA ENTRY PORTS COMPATIBLE WITH EXISTING MONITORING SOFTWARE APPROVED BY THE COUNTY INSTALLED IN A NEMA TS1 OR TS2 CABINET.
3. ALL LED TRAFFIC SIGNAL SECTIONS AND LED PEDESTRIAN SIGNAL SECTIONS SHALL BE 12". HEADS AND SHALL BE PLACED AS INDICATED ON THE TEMPORARY TRAFFIC SIGNAL PLAN OR AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL FURNISH ENOUGH CABLE SLACK TO RELOCATE HEADS TO ANY POSITION ON THE SPAN WIRE FOR CONSTRUCTION STAGING. THE TEMPORARY TRAFFIC SIGNAL SHALL REMAIN IN OPERATION DURING ALL SIGNAL HEAD RELOCATIONS. EACH TEMPORARY TRAFFIC SIGNAL HEAD SHALL HAVE ITS OWN CABLE FROM THE CONTROLLER CABINET TO THE SIGNAL HEAD.
4. ALL EXISTING STREET NAME AND INTERSECTION REGULATORY SIGNS SHALL BE REMOVED FROM EXISTING POLES, RELOCATED, AND SECURELY FASTENED TO THE SIGNAL SPAN WIRE OR WOOD POLE AS DIRECTED BY THE ENGINEER.

NOTES FOR TEMPORARY TRAFFIC SIGNALS (CONTINUED)

5. ANY TEMPORARY SIGNAL WITHIN AN EXISTING CLOSED LOOP TRAFFIC SIGNAL SYSTEM SHALL BE INTERCONNECTED TO THAT SYSTEM. ANY TEMPORARY TRAFFIC SIGNAL WITHIN AN ICONS SYSTEM SHALL BE NTCIP COMPATIBLE AND SHALL BE INTERCONNECTED TO THAT SYSTEM.
6. IF NO TRAFFIC STAGING IS IN PLACE OR WILL NOT BE STAGED ON THE DAY OF THE TURN-ON, THE TEMPORARY TRAFFIC SIGNAL SHALL HAVE THE SIGNAL HEAD DISPLAYS, SIGNAL HEAD PLACEMENTS, AND CONTROLLER PHASING MATCH THE EXISTING TRAFFIC SIGNAL AT THE TIME OF THE TURN-ON.
7. UPON COMPLETION OF THE PERMANENT TRAFFIC SIGNAL INSTALLATION, THE NEW VIDEO VEHICLE DETECTION SYSTEM COMPLETE, SHALL BE RELOCATED FROM THE TEMPORARY TRAFFIC SIGNAL INSTALLATION TO THE PERMANENT TRAFFIC SIGNAL INSTALLATION. THE NEW VIDEO VEHICLE DETECTION SYSTEM RELOCATION SHALL BE INCLUDED IN THE COST OF "TEMPORARY TRAFFIC SIGNAL INSTALLATION" EACH. IF THE CONTRACTOR DECIDED TO USE THEIR OWN VIDEO DETECTION CAMERAS, THE CAMERAS SHALL REMAIN THE PROPERTY OF THE TRAFFIC SIGNAL CONTRACTOR.
8. THE CONTRACTOR SHALL RELOCATE THE EXISTING UNINTERRUPTIBLE POWER SUPPY (UPS)-COMPLETE UNIT TO THE TEMPORARY TRAFFIC SIGNAL INSTALLATION. THE RELOCATION OF THE UPS SHALL BE INCLUDED IN THE COST OF "TEMPORARY TRAFFIC SIGNAL INSTALLATION" EACH. AFTER THE PERMANENT TRAFFIC SIGNAL INSTALLATION HAS BEEN TURNED-ON, THE CONTRACTOR SHALL REMOVE THE UPS AND ARRANGE FOR PICK UP OR DELIVERY OF ALL EQUIPMENT TO THE MCHENRY COUNTY DIVISION OF TRANSPORTATION.
9. THE CONTRACTOR SHALL INSTALL TEMPORARY INTERSECTION LIGHTING ON THE TEMPORARY WOOD POLES USED FOR THE TEMPORARY TRAFFIC SIGNAL INSTALLATION. ALL LUMINAIRES, ARMS, CABLES, AND ASSOCIATED CONNECTORS SHALL BE INCLUDED IN THE COST OF "TEMPORARY TRAFFIC SIGNAL INSTALLATION" EACH.

THE FOLLOWING EXISTING TRAFFIC SIGNAL EQUIPMENT SHALL BE REMOVED BY THE CONTRACTOR, SHALL REMAIN THE PROPERTY OF THE AGENCY LISTED BELOW. THE CONTRACTOR SHALL SAFELY STORE AND ARRANGE FOR PICK UP OR DELIVERY OF ALL EQUIPMENT TO BE RETURNED TO THE LISTED AGENCY AS PER THE TRAFFIC SIGNAL SPECIFICATIONS.

AGENCY: MCHENRY COUNTY DIVISION OF TRANSPORTATION
1 EACH CABINET AND CONTROLER (COMPLETE)

AGENCY: CITY OF CRYSTAL LAKE
2 EACH LIGHT DETECTOR
1 EACH LIGHT DETECTOR AMPLIFIER

THE FOLLOWING ITEMS SHALL BE REMOVED BY THE CONTRACTOR AND SHALL BE DISPOSED OF BY THEM OUTSIDE THE RIGHT-OF-WAY AT THEIR EXPENSE. THE SALVAGE VALUE OF THE REMOVED EQUIPMENT SHALL BE REFLECTED IN THE CONTRACT BID PRICE.

3 EACH SIGNAL HEAD, 3-SECTION
10 EACH SIGNAL HEAD, 5-SECTION
2 EACH PEDESTRIAN SIGNAL HEAD
4 EACH STEEL MAST ARM ASSEMBLEY AND POLE
2 EACH TRAFFIC SIGNAL POST
1 EACH SERVICE INSTALLATION

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

FOR PAVEMENT MARKINGS SEE STRP-5

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

GHA GEWALT HAMILTON ASSOCIATES, INC.
850 Forest Edge Drive ▪ Vernon Hills, IL 60061
Consulting Engineers & Surveyors
847-478-9700
FAX: 847-478-9701

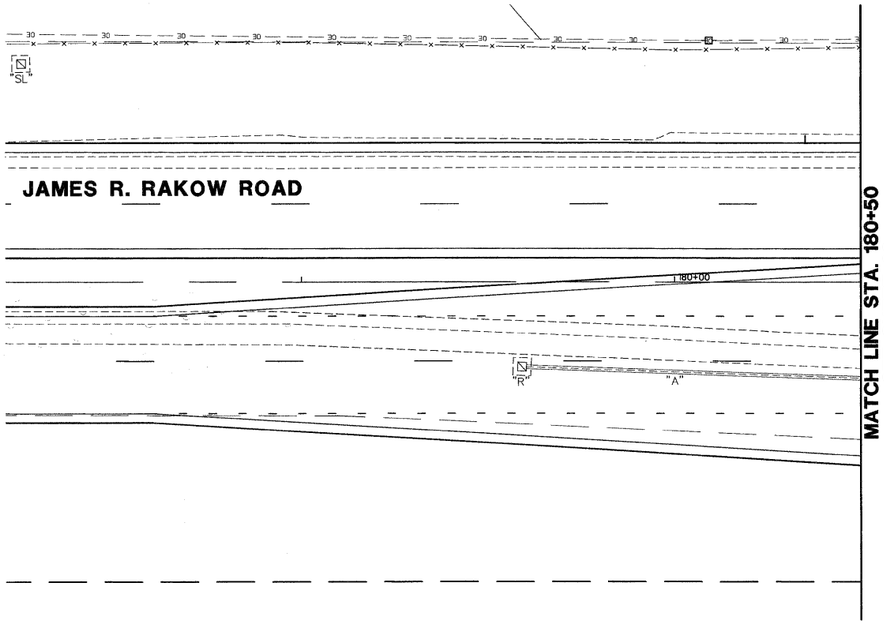
FILE NAME = 4153.800-tr1.dwg	USER NAME = GHA	DESIGNED - DPB	REVISED -	
		DRAWN - ZCW	REVISED -	
	PLOT SCALE = N.T.S.	CHECKED - DPB	REVISED -	
	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -	

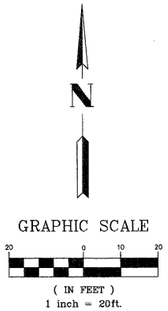
MCHENRY COUNTY
DIVISION OF TRANSPORTATION

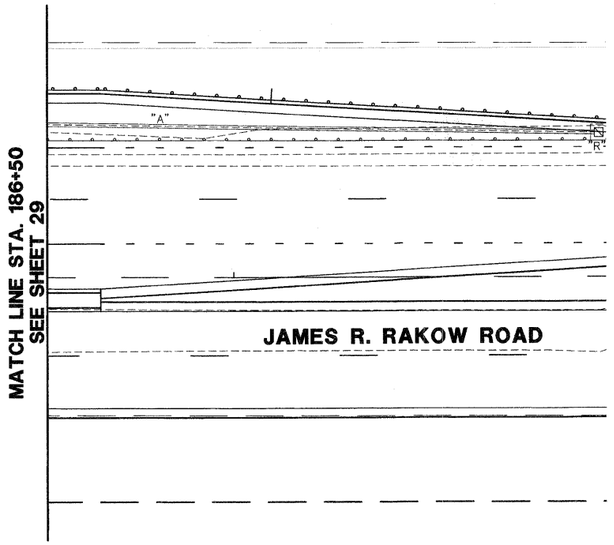
TEMPORARY TRAFFIC SIGNAL INSTALLATION AND REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT JAMES R. RAKOW RD. AND VIRGINIA RD.

SCALE: 1"=20' | SGNL SHEET # 29 OF 65 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	338
		CONTRACT #:	63398	
	ILLINOIS | FED. AID PROJECT			

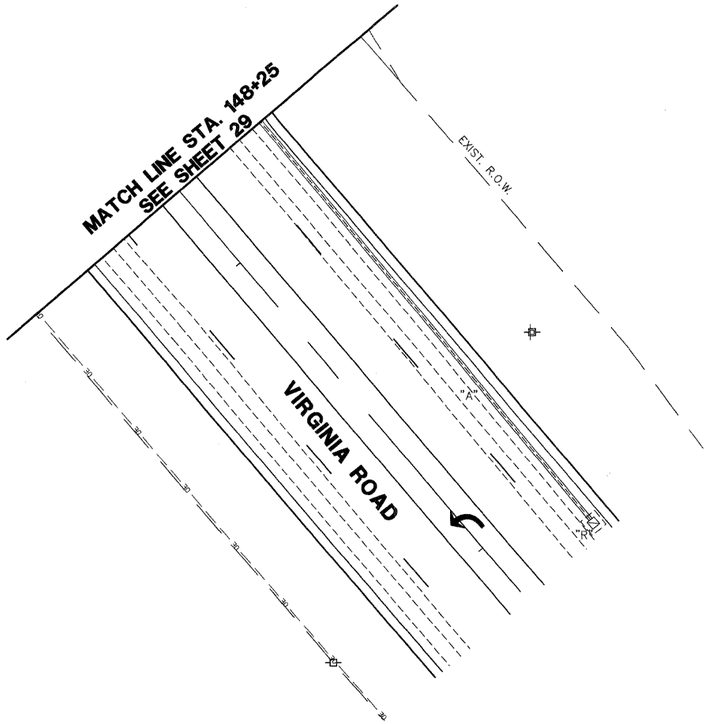


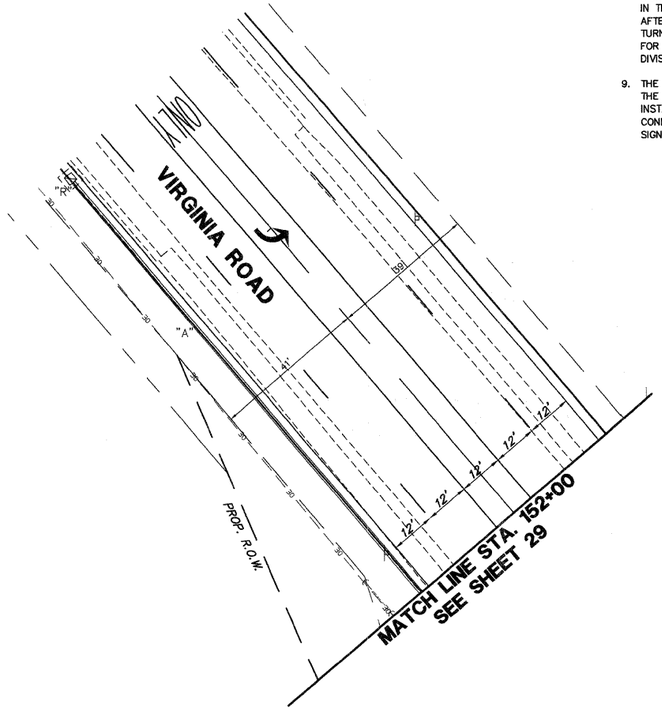




THE TRAFFIC SIGNAL CONTROL EQUIPMENT FOR THIS PROJECT SHALL BE "ECONOLITE" TO MATCH THE EXISTING ADJACENT SYSTEM.

FOR PAVEMENT MARKINGS SEE STRP-5





NOTES FOR TEMPORARY TRAFFIC SIGNALS

1. ALL CONTROL EQUIPMENT INCLUDING EMERGENCY PRE-EMPTION AND COMMUNICATION DEVICES FOR THE TEMPORARY TRAFFIC SIGNAL(S) SHALL BE FURNISHED BY THE CONTRACTOR.
2. ONLY ECONOLITE CONTROLLERS SUPPLIED BY ONE OF THE COUNTY APPROVED CLOSED LOOP EQUIPMENT MANUFACTURERS WILL BE APPROVED FOR USE AT TEMPORARY SIGNAL LOCATIONS. ALL CONTROLLERS USED FOR TEMPORARY TRAFFIC SIGNALS SHALL BE FULLY-ACTUATED NEMA MICROPROCESSOR BASED WITH RS232 DATA ENTRY PORTS COMPATIBLE WITH EXISTING MONITORING SOFTWARE APPROVED BY THE COUNTY INSTALLED IN A NEMA TS1 OR TS2 CABINET.
3. ALL LED TRAFFIC SIGNAL SECTIONS AND LED PEDESTRIAN SIGNAL SECTIONS SHALL BE 12". HEADS AND SHALL BE PLACED AS INDICATED ON THE TEMPORARY TRAFFIC SIGNAL PLAN OR AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL FURNISH ENOUGH CABLE SLACK TO RELOCATE HEADS TO ANY POSITION ON THE SPAN WIRE FOR CONSTRUCTION STAGING. THE TEMPORARY TRAFFIC SIGNAL SHALL REMAIN IN OPERATION DURING ALL SIGNAL HEAD RELOCATIONS. EACH TEMPORARY TRAFFIC SIGNAL HEAD SHALL HAVE ITS OWN CABLE FROM THE CONTROLLER CABINET TO THE SIGNAL HEAD.
4. ALL EXISTING STREET NAME AND INTERSECTION REGULATORY SIGNS SHALL BE REMOVED FROM EXISTING POLES, RELOCATED, AND SECURELY FASTENED TO THE SIGNAL SPAN WIRE OR WOOD POLE AS DIRECTED BY THE ENGINEER.
5. ANY TEMPORARY SIGNAL WITHIN AN EXISTING CLOSED LOOP TRAFFIC SIGNAL SYSTEM SHALL BE INTERCONNECTED TO THAT SYSTEM. ANY TEMPORARY TRAFFIC SIGNAL WITHIN AN ICONS SYSTEM SHALL BE NTCIP COMPATIBLE AND SHALL BE INTERCONNECTED TO THAT SYSTEM.
6. IF NO TRAFFIC STAGING IS IN PLACE OR WILL NOT BE STAGED ON THE DAY OF THE TURN-ON, THE TEMPORARY TRAFFIC SIGNAL SHALL HAVE THE SIGNAL HEAD DISPLAYS, SIGNAL HEAD PLACEMENTS, AND CONTROLLER PHASING MATCH THE EXISTING TRAFFIC SIGNAL AT THE TIME OF THE TURN-ON.
7. UPON COMPLETION OF THE PERMANENT TRAFFIC SIGNAL INSTALLATION, THE NEW VIDEO VEHICLE DETECTION SYSTEM COMPLETE, SHALL BE RELOCATED FROM THE TEMPORARY TRAFFIC SIGNAL INSTALLATION TO THE PERMANENT TRAFFIC SIGNAL INSTALLATION. THE NEW VIDEO VEHICLE DETECTION SYSTEM RELOCATION SHALL BE INCLUDED IN THE COST OF "TEMPORARY TRAFFIC SIGNAL INSTALLATION" EACH. IF THE CONTRACTOR DECIDED TO USE THEIR OWN VIDEO DETECTION CAMERAS, THE CAMERAS SHALL REMAIN THE PROPERTY OF THE TRAFFIC SIGNAL CONTRACTOR.
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9. THE CONTRACTOR SHALL INSTALL TEMPORARY INTERSECTION LIGHTING ON THE TEMPORARY WOOD POLES USED FOR THE TEMPORARY TRAFFIC SIGNAL INSTALLATION. ALL LUMINAIRES, ARMS, CABLES, AND ASSOCIATED CONNECTORS SHALL BE INCLUDED IN THE COST OF "TEMPORARY TRAFFIC SIGNAL INSTALLATION" EACH.

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

GHA GEWALT HAMILTON ASSOCIATES, INC.
850 Forest Edge Drive ■ Vernon Hills, IL. 60061
Consulting Engineers & Surveyors
847-478-9700
FAX: 847-478-9701

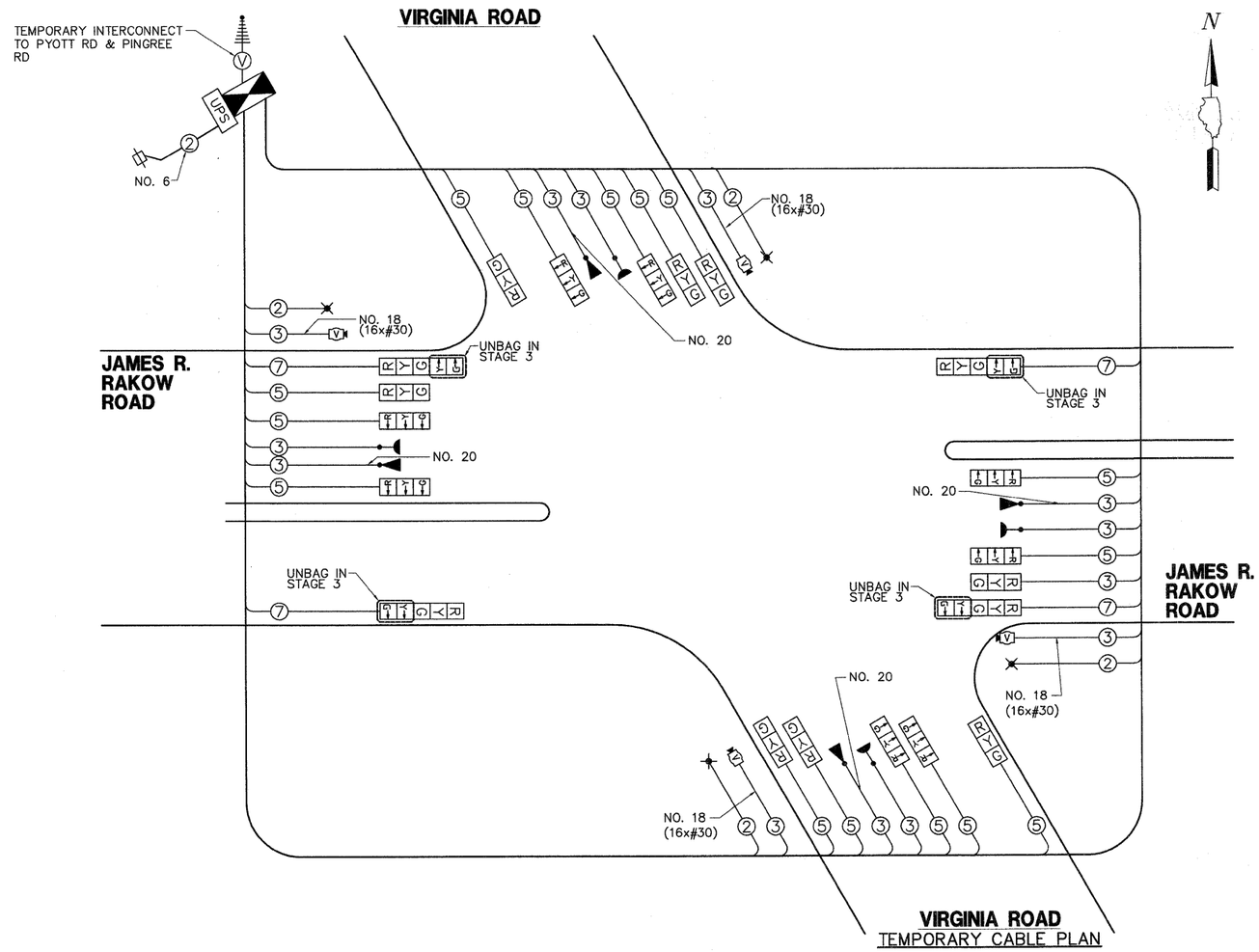
FILE NAME = 4153.800-tr1.dwg	USER NAME = GHA	DESIGNED - DPB	REVISED -
		DRAWN - ZCW	REVISED -
	PLOT SCALE = N.T.S.	CHECKED - DPB	REVISED -
	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

TEMPORARY TRAFFIC SIGNAL INSTALLATION AND REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT JAMES R. RAKOW RD. AND VIRGINIA RD.

SCALE: 1"=20' | SGNL. SHEET # 30 OF 65 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	339
		CONTRACT #:	63398	
	ILLINOIS FED. AID PROJECT			



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850 Forest Edge Drive ▪ Vernon Hills, IL 60061
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847.478.9700
FAX: 847.478.9701

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

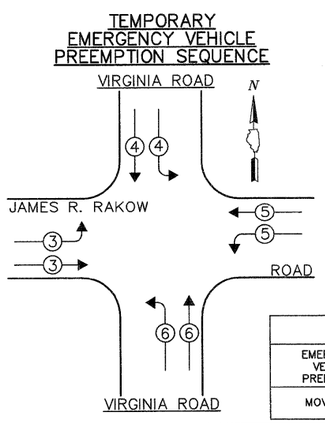
THE TRAFFIC SIGNAL CONTROL EQUIPMENT FOR THIS PROJECT SHALL BE "ECONOLITE" TO MATCH THE EXISTING ADJACENT SYSTEM.

McHENRY COUNTY DIVISION OF TRANSPORTATION
TRAFFIC SIGNAL INSTALLATION
ELECTRICAL SERVICE REQUIREMENTS

TYPE	NO LAMPS	WATTAGE INCAND.	WATTAGE L.E.D.	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	20	135	17	0.50	170.0
SIGNAL (YELLOW)	20	135	25	0.25	125.0
SIGNAL (GREEN)	20	135	15	0.25	75.0
ARROW	8	135	12	0.10	9.6
PED.SIGNAL		90	25	1.00	
CONTROLLER	1	100	100	1.00	100.0
BATTERY BACKUP	1		25	1.00	25.0
VIDEO SYSTEMS	1		150	1.00	150.0
LUMINAIRE	4	400		0.50	800.0
FLASHER				0.05	
				TOTAL =	1,454.6

ENERGY COSTS – BILLED TO: CITY OF CRYSTAL LAKE
(ADDRESS) 100 WEST MUNICIPAL COMPLEX
ENERGY SUPPLY – CONTACT: MS. AUDREY HELGESEN
PHONE: (847) 816-5225
COMPANY: COMED–LIBERTYVILLE

TEMPORARY EMERGENCY VEHICLE PREEMPTION SEQUENCE

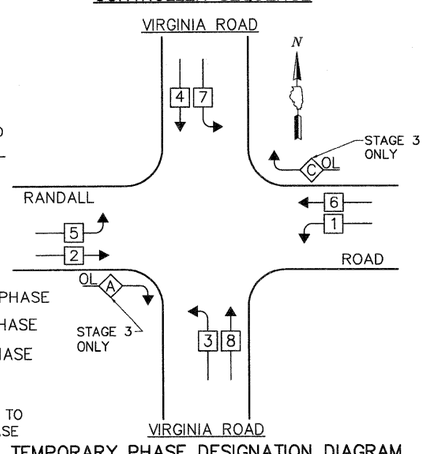


TEMPORARY EMERGENCY VEHICLE PREEMPTORS				
EMERGENCY VEHICLE PREEMPTOR	3	4	5	6
MOVEMENT				

OVERLAP LETTER		PERMISSIVE PHASE		PROTECTED PHASE
A	=	2	+	3
C	=	6	+	7

LEGEND:
- SINGLE ENTRY PHASE
- DUAL ENTRY PHASE
- PEDESTRIAN PHASE
- OL OVERLAP
- * NUMBER REFERS TO ASSOCIATED PHASE

TEMPORARY CONTROLLER SEQUENCE



TEMPORARY PHASE DESIGNATION DIAGRAM

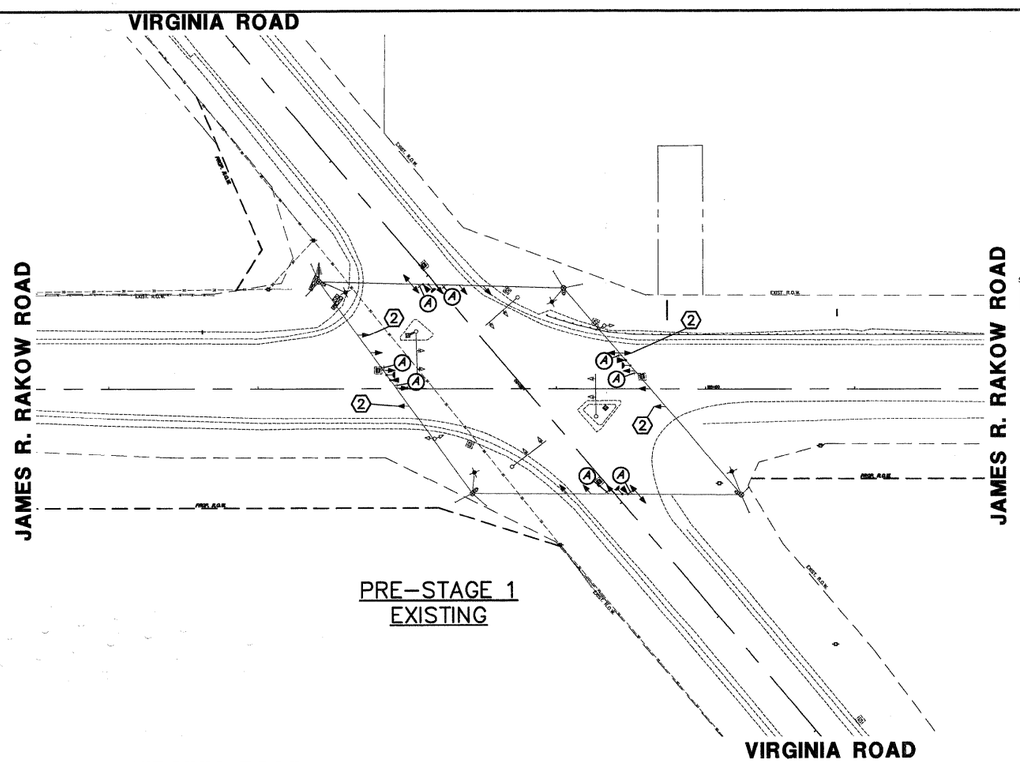
FILE NAME =	USER NAME = GHA	DESIGNED - DPB	REVISED -
4153.800–tr1.dwg		DRAWN - ZCW	REVISED -
	PLOT SCALE = N.T.S.	CHECKED - DPB	REVISED -
	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

TEMPORARY CABLE PLAN AND TEMPORARY PHASE DESIGNATION DIAGRAM JAMES R. RAKOW RD. AND VIRGINIA RD.

SCALE: N.A. | SGNL. SHEET # 31 OF 65 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05–00308–WR	McHENRY	606	340
		CONTRACT #:	63398	
	ILLINOIS FED. AID PROJECT			

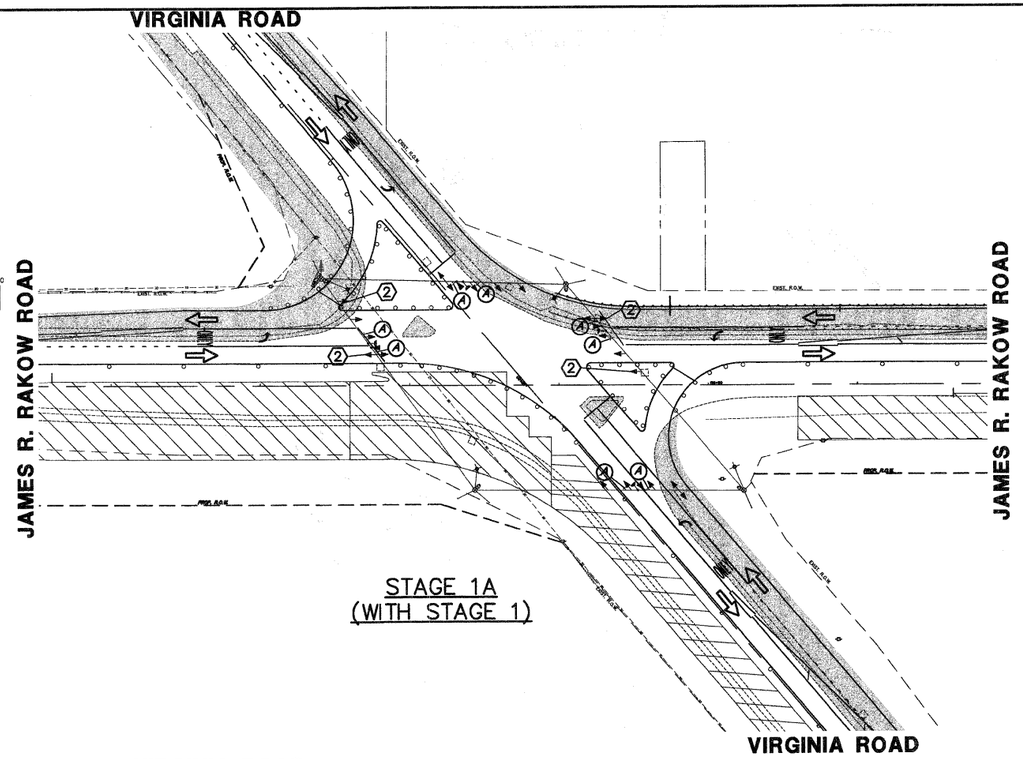


PRE-STAGE 1
EXISTING

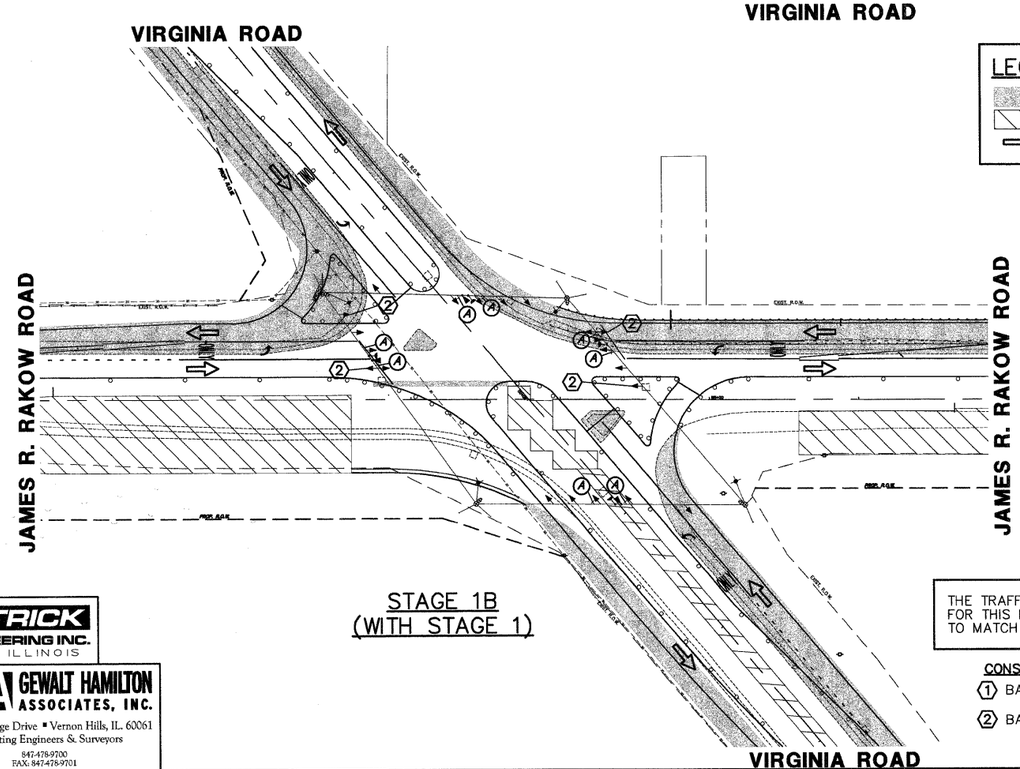
N

GRAPHIC SCALE
50 0 25 50
(IN FEET)
1 inch = 50ft.

SIGN (A)
LEFT ON GREEN ARROW ONLY
R10-5
30"x36" (TYP.)
SIGN PANEL TYPE I
8 REQUIRED



STAGE 1A
(WITH STAGE 1)

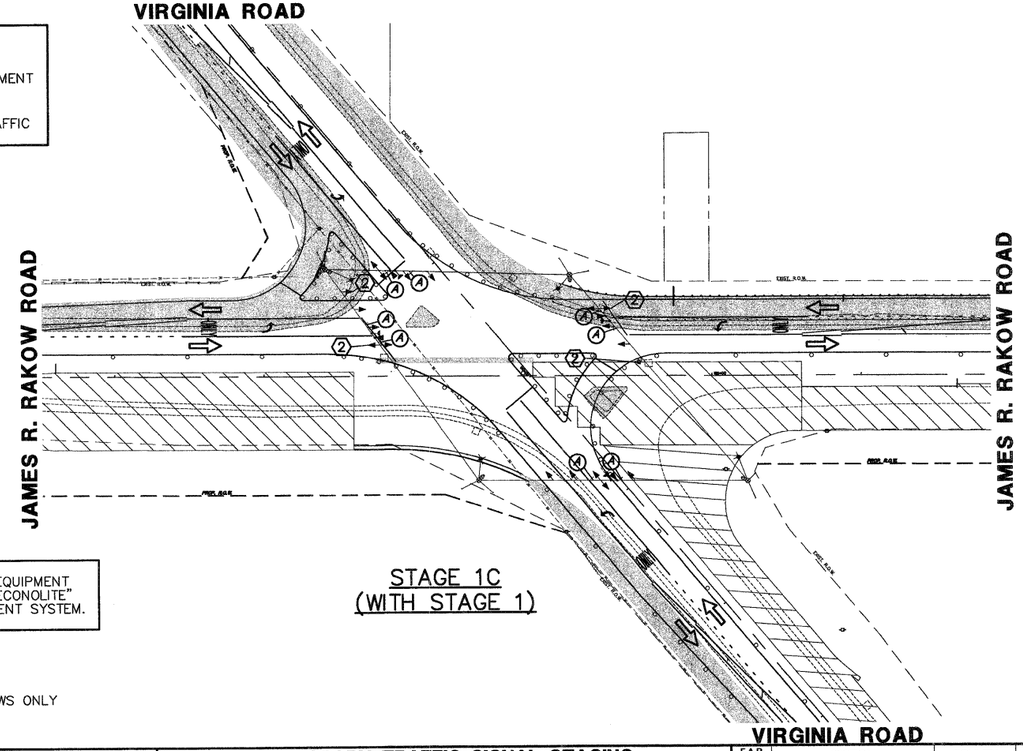


STAGE 1B
(WITH STAGE 1)

LEGEND
- TEMPORARY PAVEMENT
- WORK ZONE
- DIRECTION OF TRAFFIC

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

CONSTRUCTION NOTES:
1. BAG ENTIRE HEAD
2. BAG RIGHT TURN ARROWS ONLY



STAGE 1C
(WITH STAGE 1)

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

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850 Forest Edge Drive ▪ Vernon Hills, IL 60061
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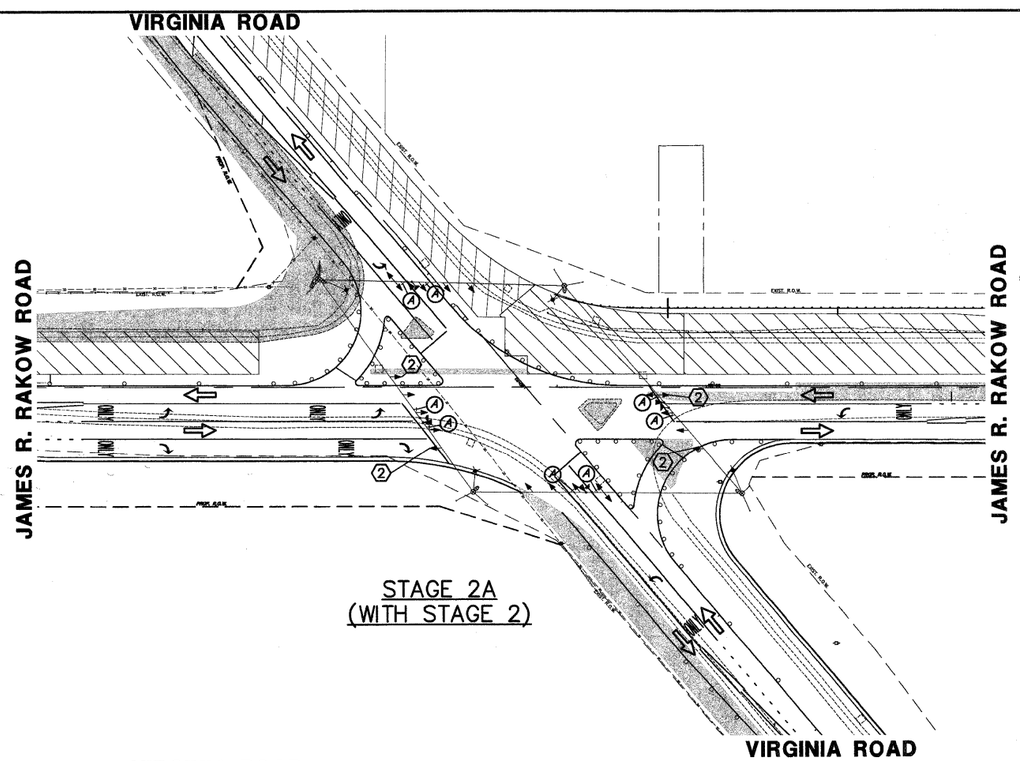
		DRAWN - ZCW	REVISED -
	PLOT SCALE = N.T.S.	CHECKED - DPB	REVISED -
	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

TEMPORARY TRAFFIC SIGNAL STAGING
STAGES PRE-1, 1A, 1B, & 1C
JAMES R. RAKOW RD. AND VIRGINIA RD.

SCALE: 1"=50' | SGNL. SHEET # 32 OF 65 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	341
		CONTRACT #:	63398	
	ILLINOIS FED. AID PROJECT			

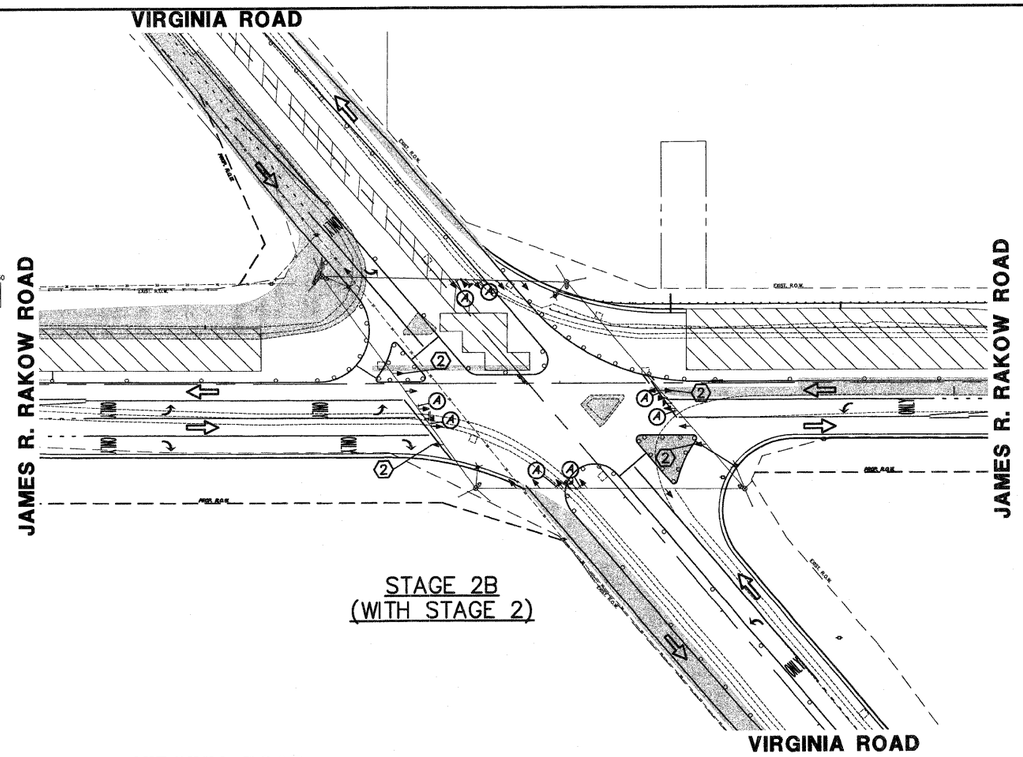


STAGE 2A
(WITH STAGE 2)

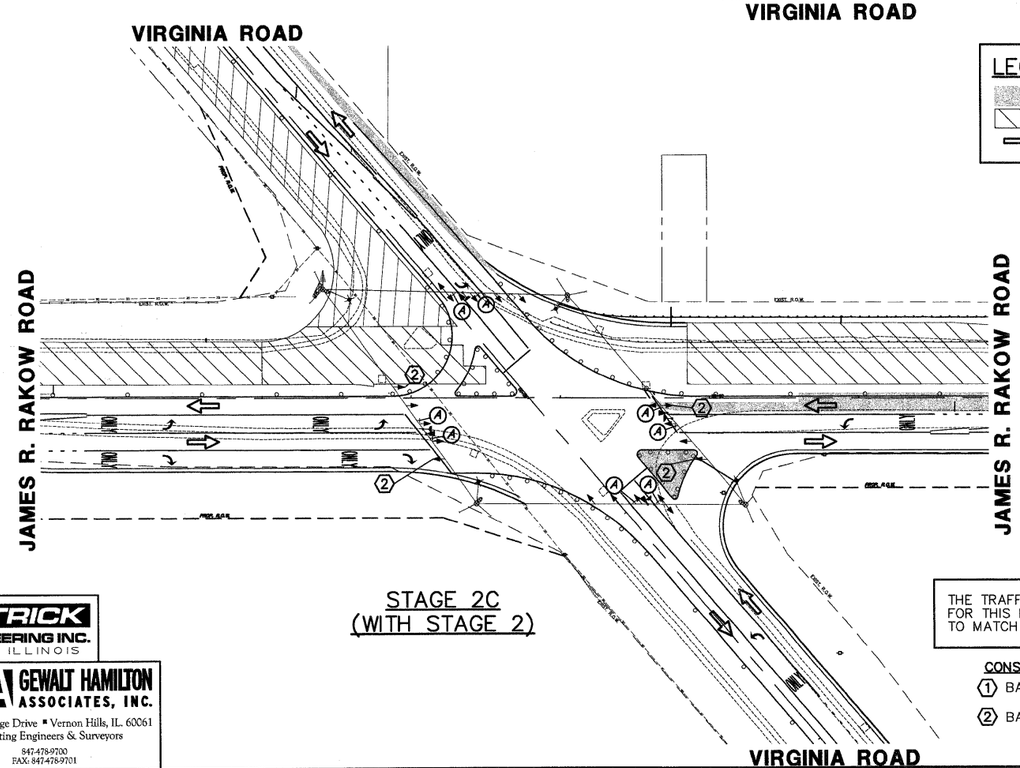
N

GRAPHIC SCALE
50 0 25 50
(IN FEET)
1 inch = 50ft.

SIGN (A)
LEFT ON GREEN ARROW ONLY
R10-5
30"x36" (TYP.)
SIGN PANEL TYPE I
8 REQUIRED

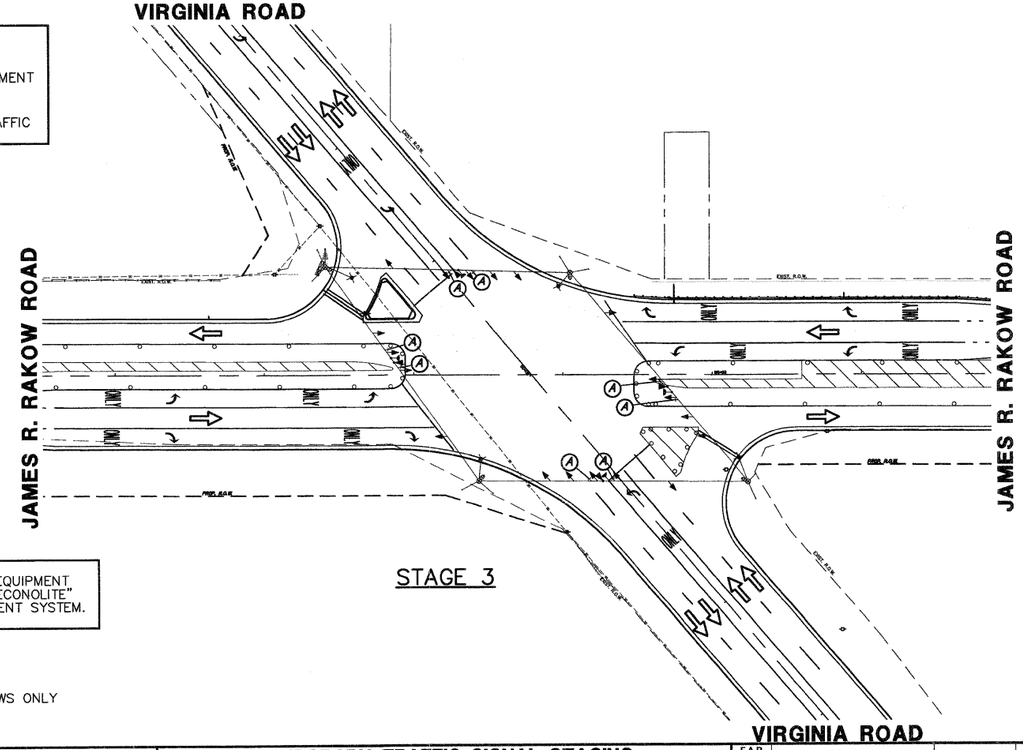


STAGE 2B
(WITH STAGE 2)



STAGE 2C
(WITH STAGE 2)

LEGEND
- TEMPORARY PAVEMENT
- WORK ZONE
- DIRECTION OF TRAFFIC



STAGE 3

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

CONSTRUCTION NOTES:
1. BAG ENTIRE HEAD
2. BAG RIGHT TURN ARROWS ONLY

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

GHA GEWALT HAMILTON ASSOCIATES, INC.
850 Forest Edge Drive ▪ Vernon Hills, IL. 60061
Consulting Engineers & Surveyors
847-478-9700
FAX: 847-478-9701

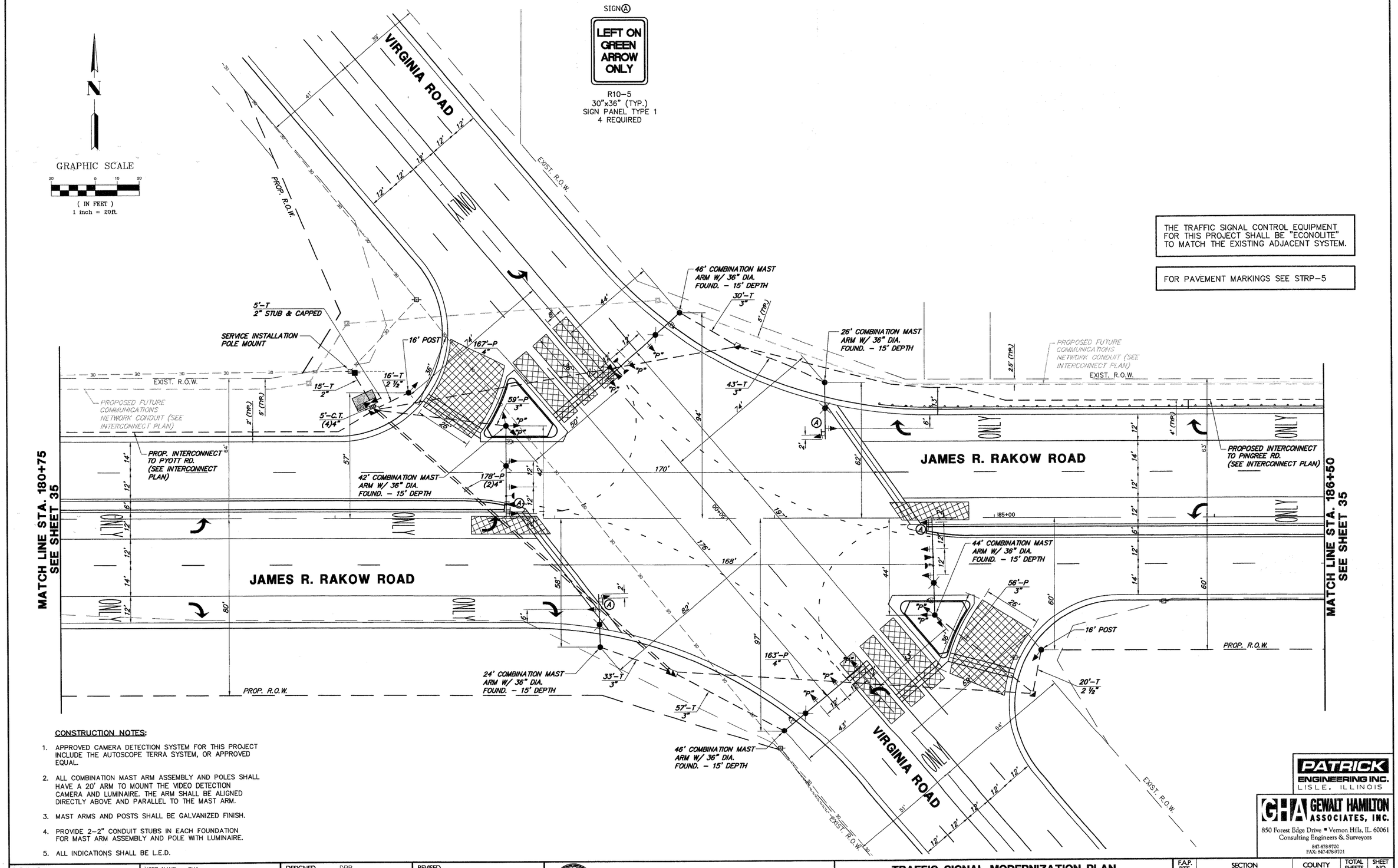
FILE NAME = 4153.800-tr1.dwg	USER NAME = GHA	DESIGNED - DPB	REVISED -
		DRAWN - ZCW	REVISED -
	PLOT SCALE = N.T.S.	CHECKED - DPB	REVISED -
	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

TEMPORARY TRAFFIC SIGNAL STAGING
STAGES 2A, 2B, 2C, & 3
JAMES R. RAKOW RD. AND VIRGINIA RD.

SCALE: 1"=50' | SGNL. SHEET # 33 OF 65 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	342
		CONTRACT #:	63398	
	ILLINOIS | FED. AID PROJECT			



CONSTRUCTION NOTES:

1. APPROVED CAMERA DETECTION SYSTEM FOR THIS PROJECT INCLUDE THE AUTOSCOPE TERRA SYSTEM, OR APPROVED EQUAL.
2. ALL COMBINATION MAST ARM ASSEMBLY AND POLES SHALL HAVE A 20' ARM TO MOUNT THE VIDEO DETECTION CAMERA AND LUMINAIRE. THE ARM SHALL BE ALIGNED DIRECTLY ABOVE AND PARALLEL TO THE MAST ARM.
3. MAST ARMS AND POSTS SHALL BE GALVANIZED FINISH.
4. PROVIDE 2-2" CONDUIT STUBS IN EACH FOUNDATION FOR MAST ARM ASSEMBLY AND POLE WITH LUMINAIRE.
5. ALL INDICATIONS SHALL BE L.E.D.

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

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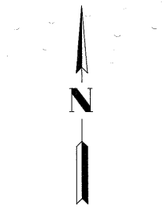
	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

TRAFFIC SIGNAL MODERNIZATION PLAN
JAMES R. RAKOW RD. AND VIRGINIA RD.

SCALE: 1"=20' | SGNL. SHEET # 34 OF 65 SHEETS | STA. | TO STA.

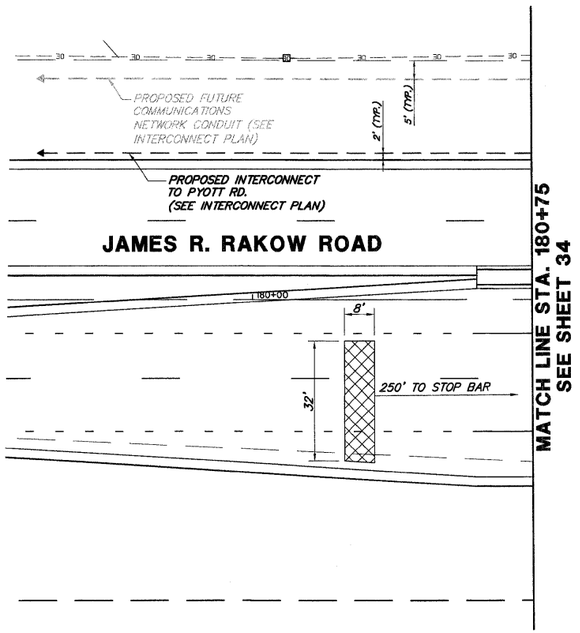
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	343
		CONTRACT #:	63398	
	ILLINOIS FED. AID PROJECT			

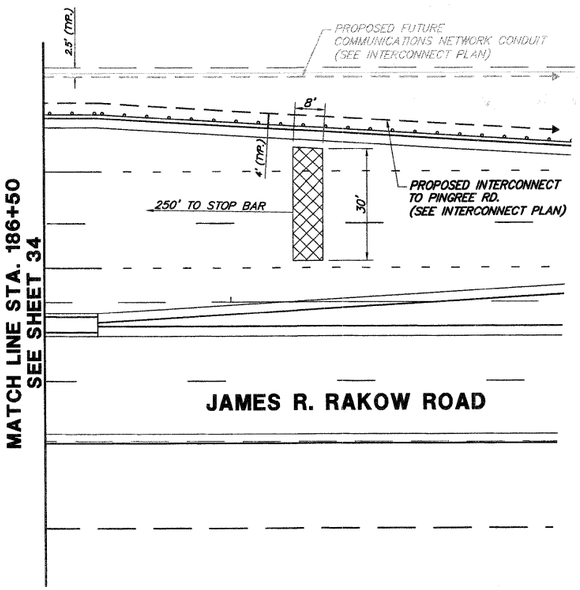


GRAPHIC SCALE

20 0 10 20

(IN FEET)
1 inch = 20ft.





CONSTRUCTION NOTES:

1. APPROVED CAMERA DETECTION SYSTEM FOR THIS PROJECT INCLUDE THE AUTOSCOPE TERRA SYSTEM, OR APPROVED EQUAL.
2. ALL COMBINATION MAST ARM ASSEMBLY AND POLES SHALL HAVE A 20' ARM TO MOUNT THE VIDEO DETECTION CAMERA AND LUMINAIRE. THE ARM SHALL BE ALIGNED DIRECTLY ABOVE AND PARALLEL TO THE MAST ARM.
3. MAST ARMS AND POSTS SHALL BE GALVANIZED FINISH.
4. PROVIDE 2–2" CONDUIT STUBS IN EACH FOUNDATION FOR MAST ARM ASSEMBLY AND POLE WITH LUMINAIRE.
5. ALL INDICATIONS SHALL BE L.E.D.

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

FOR PAVEMENT MARKINGS SEE STRP–5

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

GHA GEWALT HAMILTON ASSOCIATES, INC.
850 Forest Edge Drive ▪ Vernon Hills, IL 60061
Consulting Engineers & Surveyors
847-478-9700
FAX: 847-478-9701

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		DRAWN - ZCW	REVISED -
	PLOT SCALE = N.T.S.	CHECKED - DPB	REVISED -
	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

TRAFFIC SIGNAL MODERNIZATION PLAN
JAMES R. RAKOW RD. AND VIRGINIA RD.

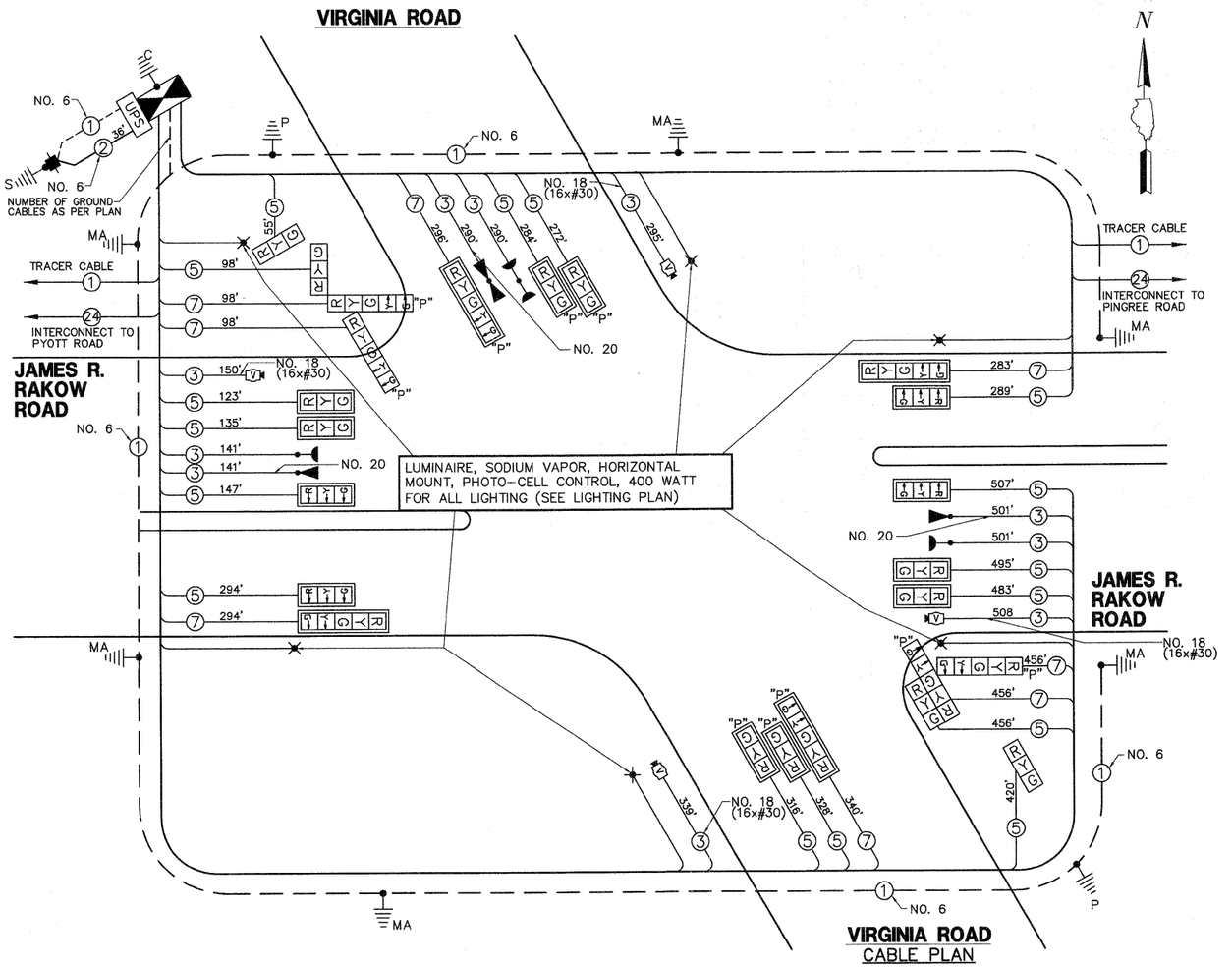
SCALE: 1"=20' | SGNL. SHEET # 35 OF 65 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05–00308–WR	McHENRY	606	344
		CONTRACT #:	63398	
	ILLINOIS FED. AID PROJECT			

SCHEDULE OF QUANTITIES

JAMES R. RAKOW ROAD AT VIRGINIA ROAD TRAFFIC SIGNAL MODERNIZATION

NO.	QUANT.	UNIT	
1.	30.00	SQ FT	SIGN PANEL - TYPE 1
2.	15	FOOT	CONDUIT IN TRENCH, 2" DIA., GALVANIZED STEEL
3.	36	FOOT	CONDUIT IN TRENCH, 2 1/2" DIA., GALVANIZED STEEL
4.	163	FOOT	CONDUIT IN TRENCH, 3" DIA., GALVANIZED STEEL
5.	25	FOOT	CONDUIT IN TRENCH, 4" DIA., GALVANIZED STEEL
6.	115	FOOT	CONDUIT PUSHED, 3" DIA., GALVANIZED STEEL
7.	587	FOOT	CONDUIT PUSHED, 4" DIA., GALVANIZED STEEL
8.	2	EACH	HANDHOLE
9.	2	EACH	DOUBLE HANDHOLE
10.	224	FOOT	TRENCH AND BACKFILL FOR ELECTRICAL WORK
11.	1	EACH	FULL-ACTUATED CONTROLLER AND TYPE V CABINET, SPECIAL
12.	1	EACH	TRANSCEIVER - FIBER OPTIC
13.	932	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 3C
14.	4,702	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 5C
15.	2,315	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 7C
16.	1,292	FOOT	ELECTRIC CABLE IN CONDUIT, COMMUNICATION NO. 18 3 PAIR
17.	36	FOOT	ELECTRIC CABLE IN CONDUIT, SERVICE, NO. 6 2 C
18.	2	EACH	TRAFFIC SIGNAL POST, GALVANIZED STEEL 16 FT.
19.	1	EACH	STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 24 FT.
20.	1	EACH	STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 26 FT.
21.	1	EACH	STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 42 FT.
22.	1	EACH	STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 44 FT.
23.	2	EACH	STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 46 FT.
24.	8	FOOT	CONCRETE FOUNDATION, TYPE A
25.	4	FOOT	CONCRETE FOUNDATION, TYPE C
26.	90	FOOT	CONCRETE FOUNDATION, TYPE E 36-INCH DIAMETER
27.	4	EACH	OPTICALLY PROGRAMMED SIGNAL HEAD, 1-FACE, 3-SECTION, MAST ARM MOUNTED
28.	2	EACH	OPTICALLY PROGRAMMED SIGNAL HEAD, 1-FACE, 5-SECTION, MAST ARM MOUNTED
29.	1	EACH	COMBINATION SIGNAL HEAD, 2-FACE, 1-5 SECTION OPTICALLY PROGRAMMED, 1-3 SECTION, BRACKET MOUNTED
30.	2	EACH	COMBINATION SIGNAL HEAD, 3-FACE, 2-5 SECTION OPTICALLY PROGRAMMED, 1-3 SECTION, BRACKET MOUNTED
31.	8	EACH	SIGNAL HEAD, LED, 1-FACE, 3-SECTION, MAST-ARM MOUNTED
32.	2	EACH	SIGNAL HEAD, LED, 1-FACE, 3-SECTION, BRACKET MOUNTED
33.	2	EACH	SIGNAL HEAD, LED, 1-FACE, 5-SECTION, MAST-ARM MOUNTED
34.	16	EACH	TRAFFIC SIGNAL BACKPLATE, LOUVERED, ALUMINUM
35.	3	EACH	LIGHT DETECTOR
36.	1	EACH	LIGHT DETECTOR AMPLIFIER
37.	1	EACH	TEMPORARY TRAFFIC SIGNAL INSTALLATION
38.	1	EACH	REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT
39.	14	EACH	REMOVE EXISTING HANDHOLE
40.	8	EACH	REMOVE EXISTING CONCRETE FOUNDATION
41.	1	EACH	TEMPORARY TRAFFIC SIGNAL TIMING
42.	1	EACH	SERVICE INSTALLATION - POLE MOUNTED
43.	1	EACH	UNINTERRUPTIBLE POWER SUPPLY
44.	932	FOOT	ELECTRIC CABLE IN CONDUIT, GROUNDING, NO. 6 1C
45.	932	FOOT	ELECTRIC CABLE IN CONDUIT NO. 20 3/C, TWISTED, SHIELDED
46.	1	EACH	VIDEO DETECTION SYSTEM COMPLETE INTERSECTION
47.	4	EACH	LED INTERNALLY ILLUMINATED STREET NAME SIGN



VIRGINIA ROAD
CABLE PLAN

GHA GEWALT HAMILTON ASSOCIATES, INC.
850 Forest Edge Drive ▪ Vernon Hills, IL 60061
Consulting Engineers & Surveyors
847-478-9700
FAX: 847-478-9701

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

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

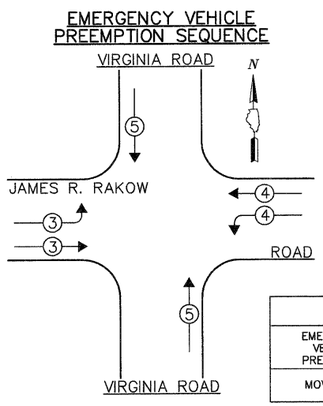
McHENRY COUNTY DIVISION OF TRANSPORTATION
TRAFFIC SIGNAL INSTALLATION
ELECTRICAL SERVICE REQUIREMENTS

TYPE	NO LAMPS	WATTAGE INCAND.	WATTAGE L.E.D.	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	24	135	17	0.50	204.0
SIGNAL (YELLOW)	24	135	25	0.25	150.0
SIGNAL (GREEN)	24	135	15	0.25	90.0
ARROW	16	135	12	0.10	19.2
PED.SIGNAL		90	25	1.00	
CONTROLLER	1	100	100	1.00	100.0
BATTERY BACKUP	1		25	1.00	25.0
VIDEO SYSTEMS	1		150	1.00	150.0
LUMINAIRE	6	400		0.50	1200.0
L.E.D. ST. NAME SIGN			64	0.50	128.0
FLASHER				0.05	
				TOTAL =	2,065.4

ENERGY COSTS – BILLED TO: CITY OF CRYSTAL LAKE
(ADDRESS) 100 WEST MUNICIPAL COMPLEX

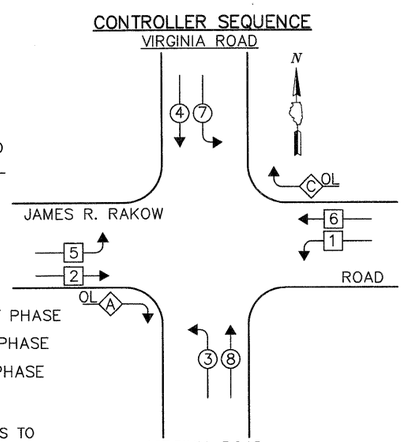
ENERGY SUPPLY – CONTACT: MS. AUDREY HELGESEN
PHONE: (847) 816-5225
COMPANY: COMED-LIBERTYVILLE

EMERGENCY VEHICLE PREEMPTION SEQUENCE



PROPOSED EMERGENCY VEHICLE PREEMPTORS			
EMERGENCY VEHICLE PREEMPTOR	3	4	5
MOVEMENT			

CONTROLLER SEQUENCE



OVERLAP LETTER		PERMISSIVE PHASE		PROTECTED PHASE
A	=	2	+	3
C	=	6	+	7

LEGEND:
- SINGLE ENTRY PHASE
- DUAL ENTRY PHASE
- PEDESTRIAN PHASE
- OVERLAP
- * NUMBER REFERS TO ASSOCIATED PHASE

PHASE DESIGNATION DIAGRAM

FILE NAME = 4153.800-tr1.dwg	USER NAME = GHA	DESIGNED - DPB	REVISED -
		DRAWN - ZCW	REVISED -
	PLOT SCALE = N.T.S.	CHECKED - DPB	REVISED -
	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -

MCHENRY COUNTY DIVISION OF TRANSPORTATION

CABLE PLAN, PHASE DESIGNATION DIAGRAM, AND SCHEDULE OF QUANTITIES
JAMES R. RAKOW RD. AND VIRGINIA RD.

SCALE: N.A. | SGNL. SHEET # 36 OF 65 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	345
		CONTRACT #:	63398	
	ILLINOIS FED. AID PROJECT			

THE FOLLOWING EXISTING TRAFFIC SIGNAL EQUIPMENT SHALL BE REMOVED BY THE CONTRACTOR, SHALL REMAIN THE PROPERTY OF THE AGENCY LISTED BELOW. THE CONTRACTOR SHALL SAFELY STORE AND ARRANGE FOR PICK UP OR DELIVERY OF ALL EQUIPMENT TO BE RETURNED TO THE LISTED AGENCY AS PER THE TRAFFIC SIGNAL SPECIFICATIONS.

AGENCY: CITY OF MCHENRY COUNTY DIVISION OF TRANSPORTATION
1 EACH CABINET AND CONTROLER (COMPLETE)

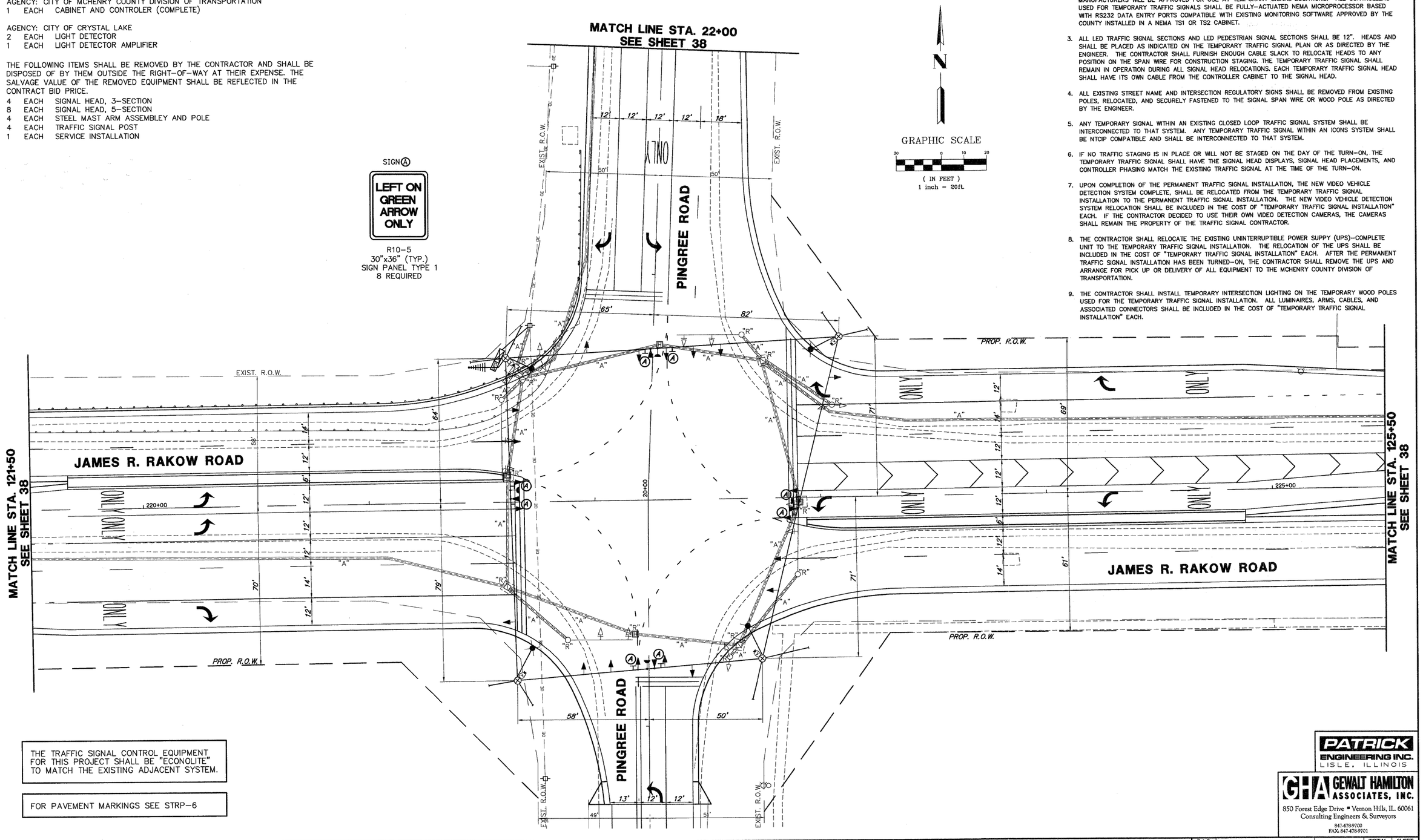
AGENCY: CITY OF CRYSTAL LAKE
2 EACH LIGHT DETECTOR
1 EACH LIGHT DETECTOR AMPLIFIER

THE FOLLOWING ITEMS SHALL BE REMOVED BY THE CONTRACTOR AND SHALL BE DISPOSED OF BY THEM OUTSIDE THE RIGHT-OF-WAY AT THEIR EXPENSE. THE SALVAGE VALUE OF THE REMOVED EQUIPMENT SHALL BE REFLECTED IN THE CONTRACT BID PRICE.
4 EACH SIGNAL HEAD, 3-SECTION
8 EACH SIGNAL HEAD, 5-SECTION
4 EACH STEEL MAST ARM ASSEMBLEY AND POLE
4 EACH TRAFFIC SIGNAL POST
1 EACH SERVICE INSTALLATION

SIGN (A)

LEFT ON GREEN ARROW ONLY

R10-5
30"x36" (TYP.)
SIGN PANEL TYPE 1
8 REQUIRED



GRAPHIC SCALE
20 0 10 20
(IN FEET)
1 inch = 20ft.

NOTES FOR TEMPORARY TRAFFIC SIGNALS

1. ALL CONTROL EQUIPMENT INCLUDING EMERGENCY PRE-EMPTION AND COMMUNICATION DEVICES FOR THE TEMPORARY TRAFFIC SIGNAL(S) SHALL BE FURNISHED BY THE CONTRACTOR.
2. ONLY ECONOLITE CONTROLLERS SUPPLIED BY ONE OF THE COUNTY APPROVED CLOSED LOOP EQUIPMENT MANUFACTURERS WILL BE APPROVED FOR USE AT TEMPORARY SIGNAL LOCATIONS. ALL CONTROLLERS USED FOR TEMPORARY TRAFFIC SIGNALS SHALL BE FULLY-ACTUATED NEMA MICROPROCESSOR BASED WITH RS232 DATA ENTRY PORTS COMPATIBLE WITH EXISTING MONITORING SOFTWARE APPROVED BY THE COUNTY INSTALLED IN A NEMA TS1 OR TS2 CABINET.
3. ALL LED TRAFFIC SIGNAL SECTIONS AND LED PEDESTRIAN SIGNAL SECTIONS SHALL BE 12". HEADS AND SHALL BE PLACED AS INDICATED ON THE TEMPORARY TRAFFIC SIGNAL PLAN OR AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL FURNISH ENOUGH CABLE SLACK TO RELOCATE HEADS TO ANY POSITION ON THE SPAN WIRE FOR CONSTRUCTION STAGING. THE TEMPORARY TRAFFIC SIGNAL SHALL REMAIN IN OPERATION DURING ALL SIGNAL HEAD RELOCATIONS. EACH TEMPORARY TRAFFIC SIGNAL HEAD SHALL HAVE ITS OWN CABLE FROM THE CONTROLLER CABINET TO THE SIGNAL HEAD.
4. ALL EXISTING STREET NAME AND INTERSECTION REGULATORY SIGNS SHALL BE REMOVED FROM EXISTING POLES, RELOCATED, AND SECURELY FASTENED TO THE SIGNAL SPAN WIRE OR WOOD POLE AS DIRECTED BY THE ENGINEER.
5. ANY TEMPORARY SIGNAL WITHIN AN EXISTING CLOSED LOOP TRAFFIC SIGNAL SYSTEM SHALL BE INTERCONNECTED TO THAT SYSTEM. ANY TEMPORARY TRAFFIC SIGNAL WITHIN AN ICONS SYSTEM SHALL BE NTCIP COMPATIBLE AND SHALL BE INTERCONNECTED TO THAT SYSTEM.
6. IF NO TRAFFIC STAGING IS IN PLACE OR WILL NOT BE STAGED ON THE DAY OF THE TURN-ON, THE TEMPORARY TRAFFIC SIGNAL SHALL HAVE THE SIGNAL HEAD DISPLAYS, SIGNAL HEAD PLACEMENTS, AND CONTROLLER PHASING MATCH THE EXISTING TRAFFIC SIGNAL AT THE TIME OF THE TURN-ON.
7. UPON COMPLETION OF THE PERMANENT TRAFFIC SIGNAL INSTALLATION, THE NEW VIDEO VEHICLE DETECTION SYSTEM COMPLETE, SHALL BE RELOCATED FROM THE TEMPORARY TRAFFIC SIGNAL INSTALLATION TO THE PERMANENT TRAFFIC SIGNAL INSTALLATION. THE NEW VIDEO VEHICLE DETECTION SYSTEM RELOCATION SHALL BE INCLUDED IN THE COST OF "TEMPORARY TRAFFIC SIGNAL INSTALLATION" EACH. IF THE CONTRACTOR DECIDED TO USE THEIR OWN VIDEO DETECTION CAMERAS, THE CAMERAS SHALL REMAIN THE PROPERTY OF THE TRAFFIC SIGNAL CONTRACTOR.
8. THE CONTRACTOR SHALL RELOCATE THE EXISTING UNINTERRUPTIBLE POWER SUPPY (UPS)-COMPLETE UNIT TO THE TEMPORARY TRAFFIC SIGNAL INSTALLATION. THE RELOCATION OF THE UPS SHALL BE INCLUDED IN THE COST OF "TEMPORARY TRAFFIC SIGNAL INSTALLATION" EACH. AFTER THE PERMANENT TRAFFIC SIGNAL INSTALLATION HAS BEEN TURNED-ON, THE CONTRACTOR SHALL REMOVE THE UPS AND ARRANGE FOR PICK UP OR DELIVERY OF ALL EQUIPMENT TO THE MCHENRY COUNTY DIVISION OF TRANSPORTATION.
9. THE CONTRACTOR SHALL INSTALL TEMPORARY INTERSECTION LIGHTING ON THE TEMPORARY WOOD POLES USED FOR THE TEMPORARY TRAFFIC SIGNAL INSTALLATION. ALL LUMINAIRES, ARMS, CABLES, AND ASSOCIATED CONNECTORS SHALL BE INCLUDED IN THE COST OF "TEMPORARY TRAFFIC SIGNAL INSTALLATION" EACH.

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

FOR PAVEMENT MARKINGS SEE STRP-6

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

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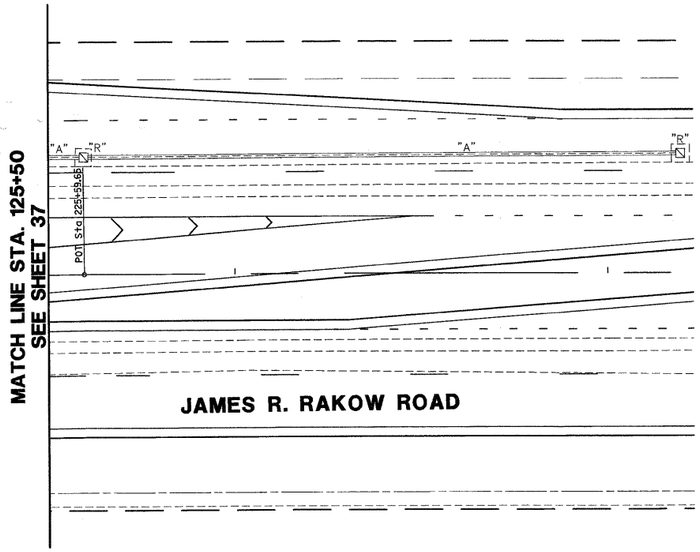
	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

TEMPORARY TRAFFIC SIGNAL INSTALLATION AND REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT JAMES R. RAKOW RD. AND PINGREE RD.

SCALE 1"=20' | SGNL. SHEET # 37 OF 65 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	346
		CONTRACT #:	63398	
		ILLINOIS FED. AID PROJECT		

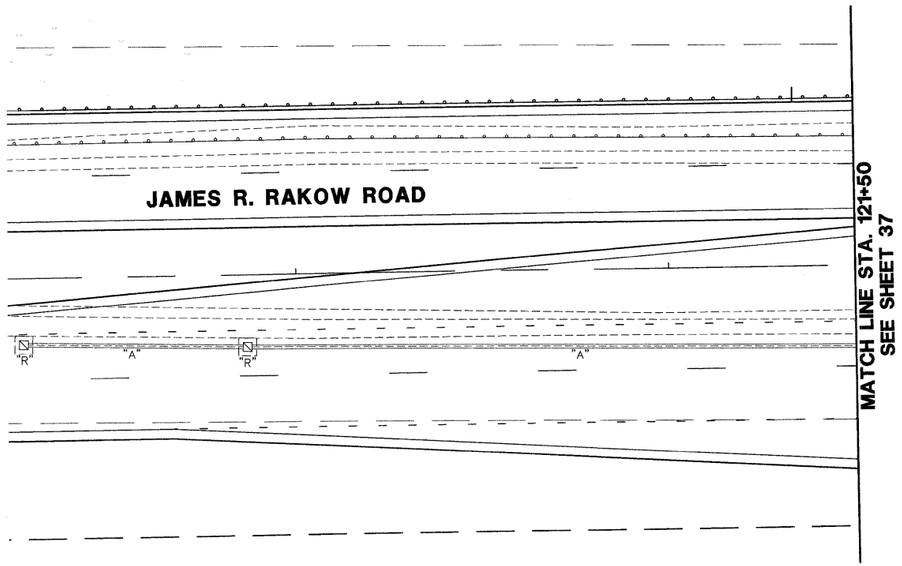


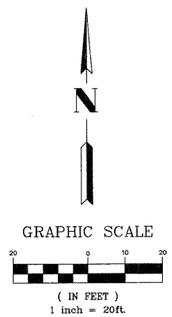
THE TRAFFIC SIGNAL CONTROL EQUIPMENT FOR THIS PROJECT SHALL BE "ECONOLITE" TO MATCH THE EXISTING ADJACENT SYSTEM.

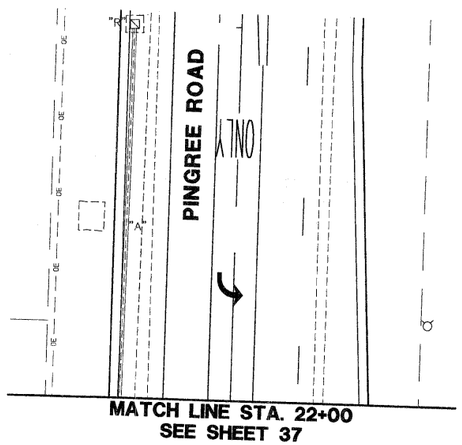
FOR PAVEMENT MARKINGS SEE STRP-6

NOTES FOR TEMPORARY TRAFFIC SIGNALS

1. ALL CONTROL EQUIPMENT INCLUDING EMERGENCY PRE-EMPTION AND COMMUNICATION DEVICES FOR THE TEMPORARY TRAFFIC SIGNAL(S) SHALL BE FURNISHED BY THE CONTRACTOR.
2. ONLY ECONOLITE CONTROLLERS SUPPLIED BY ONE OF THE COUNTY APPROVED CLOSED LOOP EQUIPMENT MANUFACTURERS WILL BE APPROVED FOR USE AT TEMPORARY SIGNAL LOCATIONS. ALL CONTROLLERS USED FOR TEMPORARY TRAFFIC SIGNALS SHALL BE FULLY-ACTUATED NEMA MICROPROCESSOR BASED WITH RS232 DATA ENTRY PORTS COMPATIBLE WITH EXISTING MONITORING SOFTWARE APPROVED BY THE COUNTY INSTALLED IN A NEMA TS1 OR TS2 CABINET.
3. ALL LED TRAFFIC SIGNAL SECTIONS AND LED PEDESTRIAN SIGNAL SECTIONS SHALL BE 12". HEADS AND SHALL BE PLACED AS INDICATED ON THE TEMPORARY TRAFFIC SIGNAL PLAN OR AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL FURNISH ENOUGH CABLE SLACK TO RELOCATE HEADS TO ANY POSITION ON THE SPAN WIRE FOR CONSTRUCTION STAGING. THE TEMPORARY TRAFFIC SIGNAL SHALL REMAIN IN OPERATION DURING ALL SIGNAL HEAD RELOCATIONS. EACH TEMPORARY TRAFFIC SIGNAL HEAD SHALL HAVE ITS OWN CABLE FROM THE CONTROLLER CABINET TO THE SIGNAL HEAD.
4. ALL EXISTING STREET NAME AND INTERSECTION REGULATORY SIGNS SHALL BE REMOVED FROM EXISTING POLES, RELOCATED, AND SECURELY FASTENED TO THE SIGNAL SPAN WIRE OR WOOD POLE AS DIRECTED BY THE ENGINEER.
5. ANY TEMPORARY SIGNAL WITHIN AN EXISTING CLOSED LOOP TRAFFIC SIGNAL SYSTEM SHALL BE INTERCONNECTED TO THAT SYSTEM. ANY TEMPORARY TRAFFIC SIGNAL WITHIN AN ICONS SYSTEM SHALL BE NTCIP COMPATIBLE AND SHALL BE INTERCONNECTED TO THAT SYSTEM.
6. IF NO TRAFFIC STAGING IS IN PLACE OR WILL NOT BE STAGED ON THE DAY OF THE TURN-ON, THE TEMPORARY TRAFFIC SIGNAL SHALL HAVE THE SIGNAL HEAD DISPLAYS, SIGNAL HEAD PLACEMENTS, AND CONTROLLER PHASING MATCH THE EXISTING TRAFFIC SIGNAL AT THE TIME OF THE TURN-ON.
7. UPON COMPLETION OF THE PERMANENT TRAFFIC SIGNAL INSTALLATION, THE NEW VIDEO VEHICLE DETECTION SYSTEM COMPLETE, SHALL BE RELOCATED FROM THE TEMPORARY TRAFFIC SIGNAL INSTALLATION TO THE PERMANENT TRAFFIC SIGNAL INSTALLATION. THE NEW VIDEO VEHICLE DETECTION SYSTEM RELOCATION SHALL BE INCLUDED IN THE COST OF "TEMPORARY TRAFFIC SIGNAL INSTALLATION" EACH. IF THE CONTRACTOR DECIDED TO USE THEIR OWN VIDEO DETECTION CAMERAS, THE CAMERAS SHALL REMAIN THE PROPERTY OF THE TRAFFIC SIGNAL CONTRACTOR.
8. THE CONTRACTOR SHALL RELOCATE THE EXISTING UNINTERRUPTIBLE POWER SUPPY (UPS)-COMPLETE UNIT TO THE TEMPORARY TRAFFIC SIGNAL INSTALLATION. THE RELOCATION OF THE UPS SHALL BE INCLUDED IN THE COST OF "TEMPORARY TRAFFIC SIGNAL INSTALLATION" EACH. AFTER THE PERMANENT TRAFFIC SIGNAL INSTALLATION HAS BEEN TURNED-ON, THE CONTRACTOR SHALL REMOVE THE UPS AND ARRANGE FOR PICK UP OR DELIVERY OF ALL EQUIPMENT TO THE MCHENRY COUNTY DIVISION OF TRANSPORTATION.
9. THE CONTRACTOR SHALL INSTALL TEMPORARY INTERSECTION LIGHTING ON THE TEMPORARY WOOD POLES USED FOR THE TEMPORARY TRAFFIC SIGNAL INSTALLATION. ALL LUMINAIRES, ARMS, CABLES, AND ASSOCIATED CONNECTORS SHALL BE INCLUDED IN THE COST OF "TEMPORARY TRAFFIC SIGNAL INSTALLATION" EACH.







PATRICK ENGINEERING INC.
LISLE, ILLINOIS

GHA GEWALT HAMILTON ASSOCIATES, INC.
850 Forest Edge Drive ▪ Vernon Hills, IL. 60061
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FAX: 847-478-9701

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		DRAWN - ZCW	REVISED -
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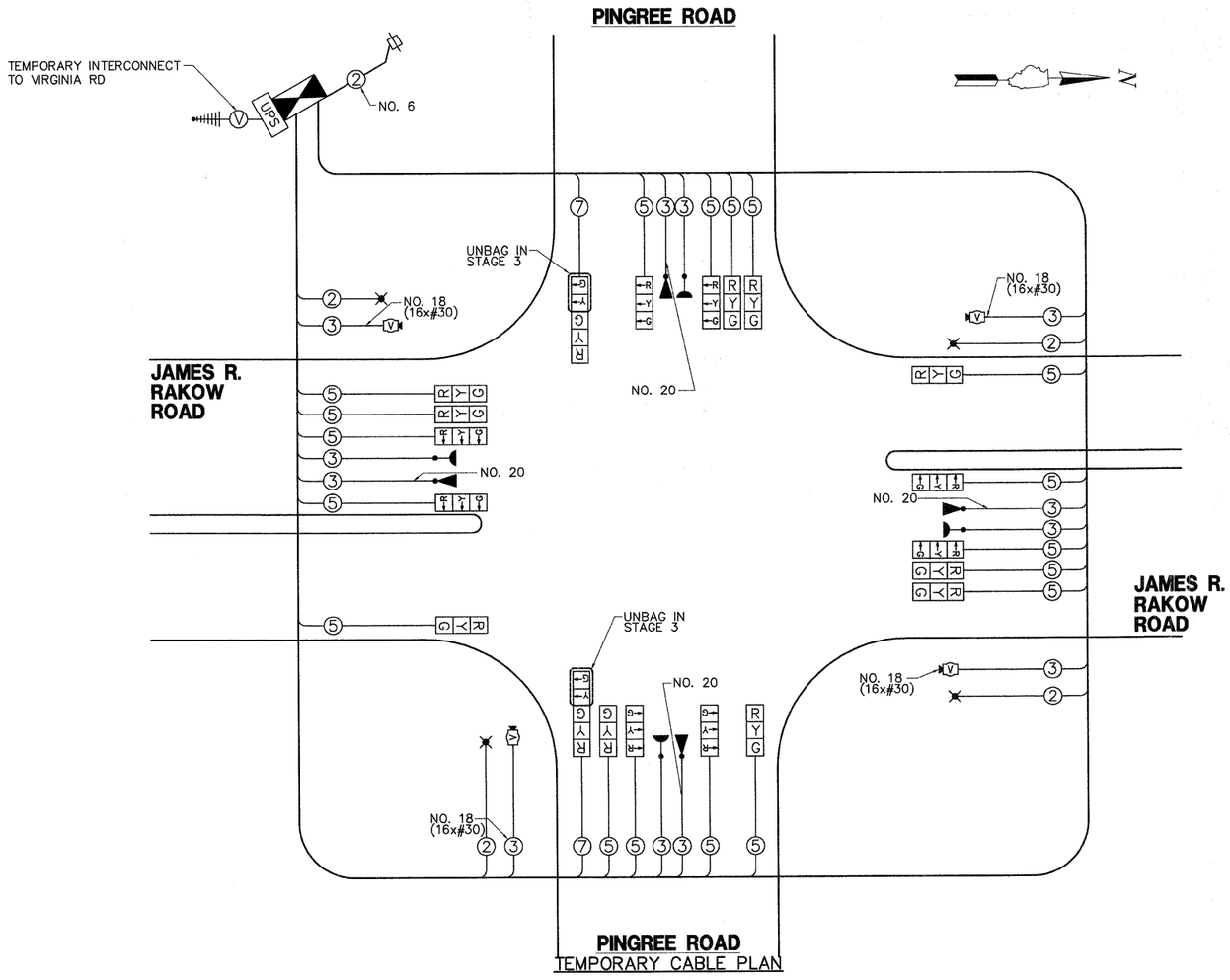
	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

TEMPORARY TRAFFIC SIGNAL INSTALLATION AND REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT JAMES R. RAKOW RD. AND PINGREE RD.

SCALE: 1"=20' | SGNL. SHEET # 38 OF 65 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	347
		CONTRACT #:	63398	
	ILLINOIS FED. AID PROJECT			



PINGREE ROAD
TEMPORARY CABLE PLAN

GHA GEWALT HAMILTON ASSOCIATES, INC.
850 Forest Edge Drive ▪ Vernon Hills, IL 60061
Consulting Engineers & Surveyors
847-478-9700
FAX: 847-478-9701

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

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

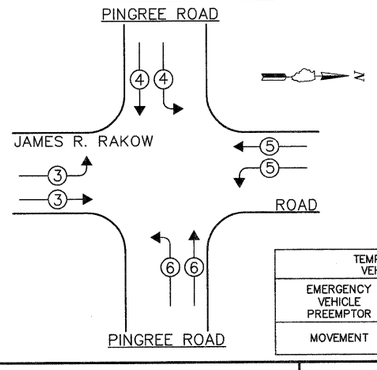
McHENRY COUNTY DIVISION OF TRANSPORTATION
TRAFFIC SIGNAL INSTALLATION
ELECTRICAL SERVICE REQUIREMENTS

TYPE	NO LAMPS	WATTAGE INCAND.	WATTAGE L.E.D.	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	20	135	17	0.50	170.0
SIGNAL (YELLOW)	20	135	25	0.25	125.0
SIGNAL (GREEN)	20	135	15	0.25	75.0
ARROW	4	135	12	0.10	4.8
PED.SIGNAL		90	25	1.00	
CONTROLLER	1	100	100	1.00	100.0
BATTERY BACKUP	1		25	1.00	25.0
VIDEO SYSTEMS	1		150	1.00	150.0
LUMINAIRE	4	400		0.50	800.0
FLASHER				0.05	
				TOTAL =	1,449.8

ENERGY COSTS – BILLED TO: CITY OF CRYSTAL LAKE
(ADDRESS) 100 WEST MUNICIPAL COMPLEX

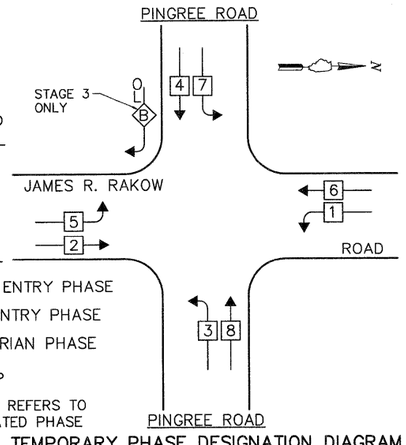
ENERGY SUPPLY – CONTACT: MS. AUDREY HELGESEN
PHONE: (847) 816-5225
COMPANY: COMED-LIBERTYVILLE

TEMPORARY EMERGENCY VEHICLE PREEMPTION SEQUENCE



TEMPORARY EMERGENCY VEHICLE PREEMPTORS				
EMERGENCY VEHICLE PREEMPTOR	3	4	5	6
MOVEMENT				

TEMPORARY CONTROLLER SEQUENCE



OVERLAP LETTER		PERMISSIVE PHASE		PROTECTED PHASE
B	=	4	+	5

LEGEND:
- SINGLE ENTRY PHASE
- DUAL ENTRY PHASE
- PEDESTRIAN PHASE
- OL OVERLAP
- * NUMBER REFERS TO ASSOCIATED PHASE

TEMPORARY PHASE DESIGNATION DIAGRAM

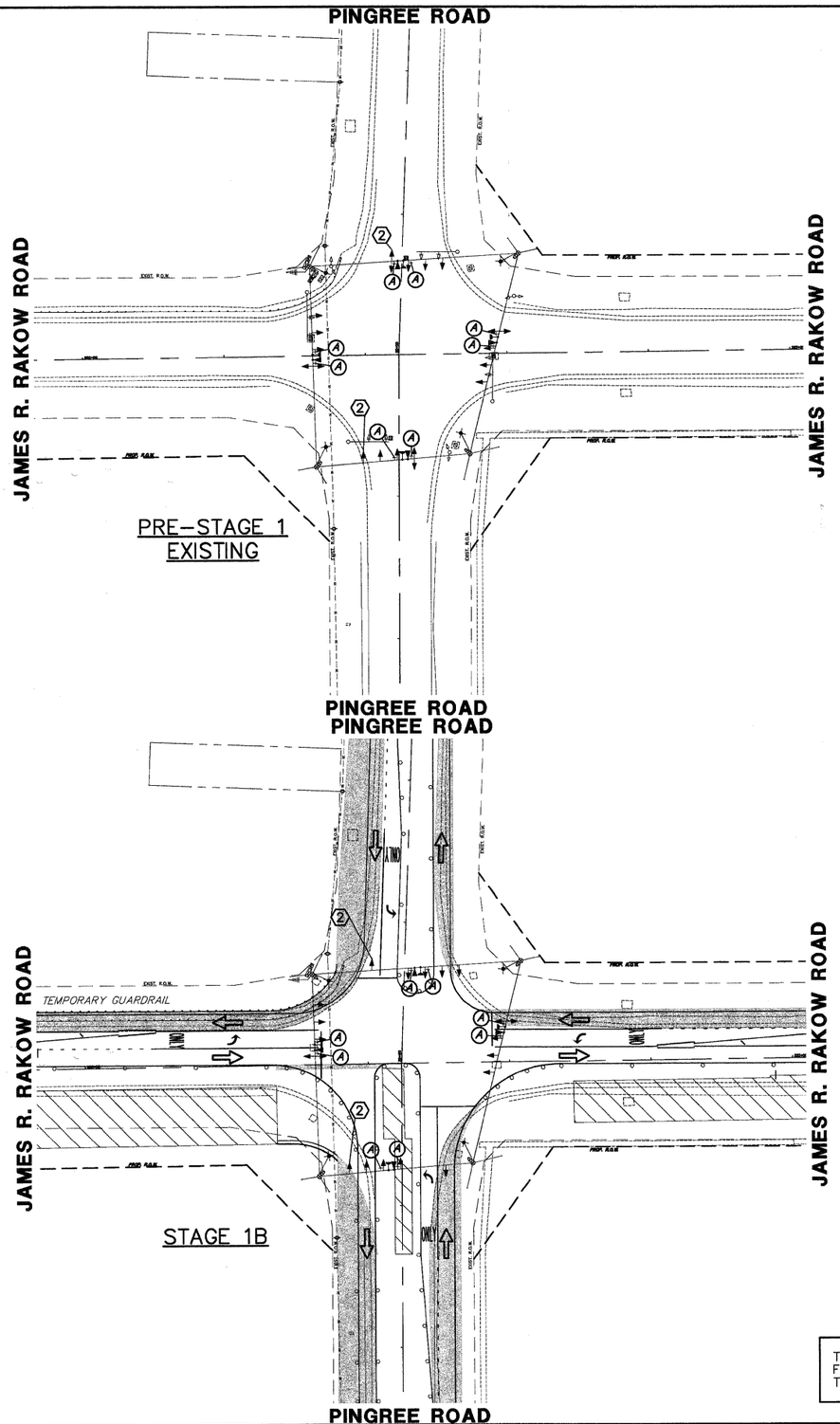
FILE NAME = 4153.800-tr1.dwg	USER NAME = GHA	DESIGNED - DPB	REVISED -
		DRAWN - ZCW	REVISED -
	PLOT SCALE = N.T.S.	CHECKED - DPB	REVISED -
	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

TEMPORARY CABLE PLAN AND TEMPORARY PHASE DESIGNATION DIAGRAM JAMES R. RAKOW RD. AND PINGREE RD.

SCALE: N.A. | SGNL. SHEET # 39 OF 65 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	348
		CONTRACT #:	63398	
	ILLINOIS FED. AID PROJECT			



N

GRAPHIC SCALE

50 0 25 50

(IN FEET)
1 inch = 50ft.

SIGN (A)

LEFT ON GREEN ARROW ONLY

R10-5
30"x36" (TYP.)
SIGN PANEL TYPE 1
8 REQUIRED

LEGEND

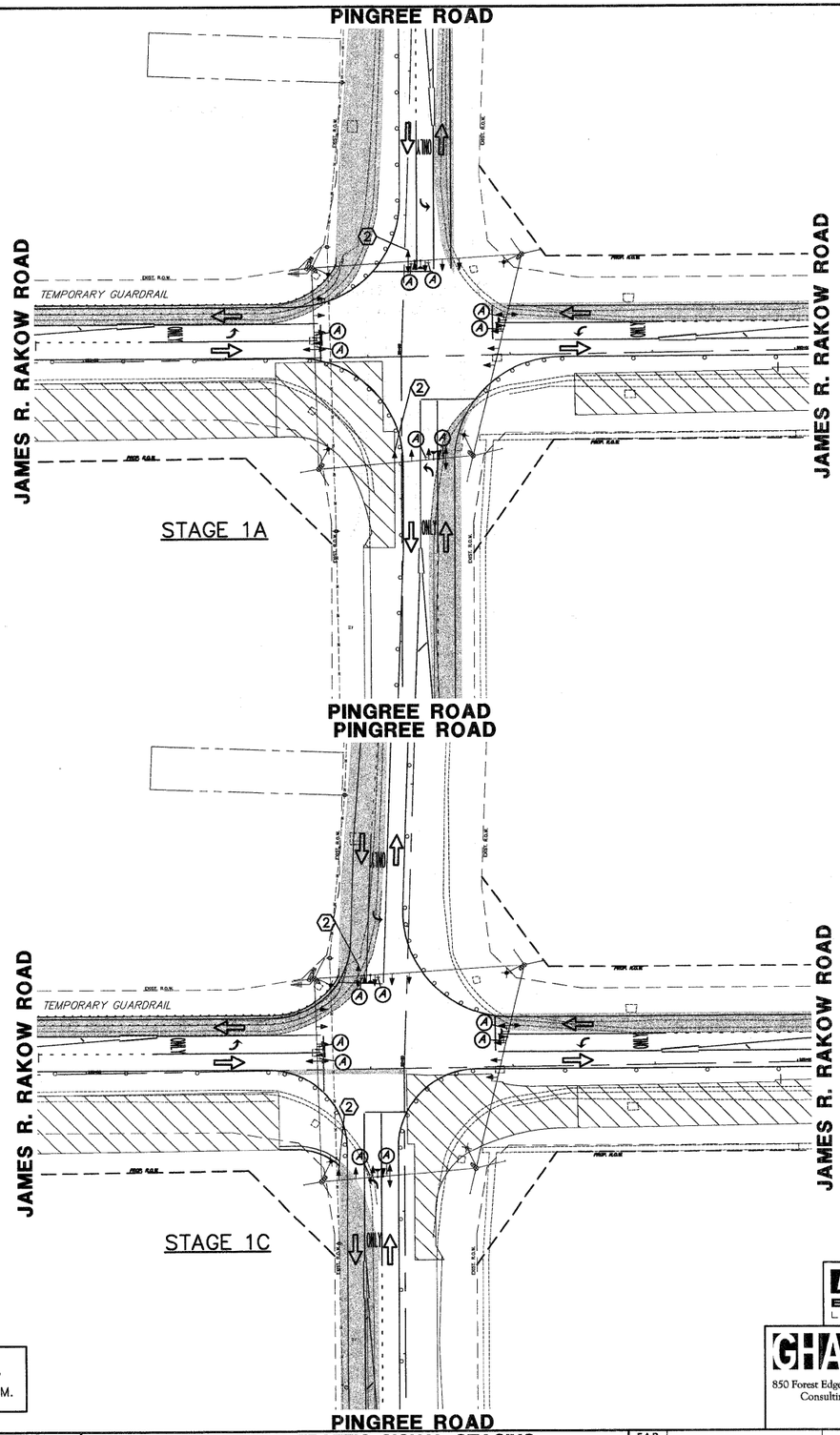
- TEMPORARY PAVEMENT
- WORK ZONE
- DIRECTION OF TRAFFIC

CONSTRUCTION NOTES:

(1) BAG ENTIRE HEAD

(2) BAG RIGHT TURN ARROWS ONLY

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



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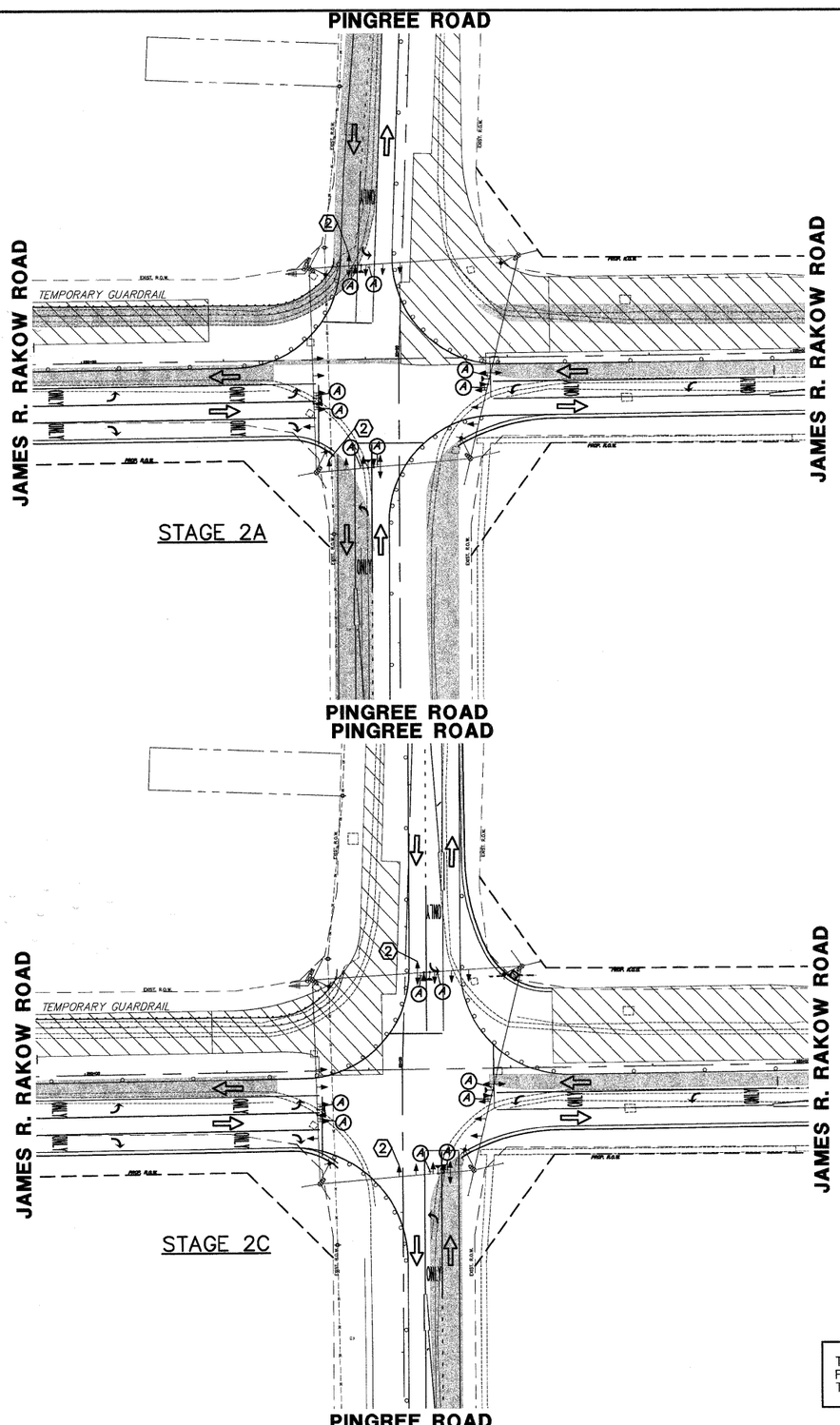
	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

TEMPORARY TRAFFIC SIGNAL STAGING
STAGES PRE-1, 1A, 1B, & 1C
JAMES R. RAKOW RD. AND PINGREE RD.

SCALE: 1"=50' | SGNL. SHEET # 40 OF 65 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	349
		CONTRACT #:	63398	
	ILLINOIS FED. AID PROJECT			



GRAPHIC SCALE

50 0 25 50

(IN FEET)
1 inch = 50ft.

SIGN (A)

LEFT ON GREEN ARROW ONLY

R10-5
30"x36" (TYP.)
SIGN PANEL TYPE I
8 REQUIRED

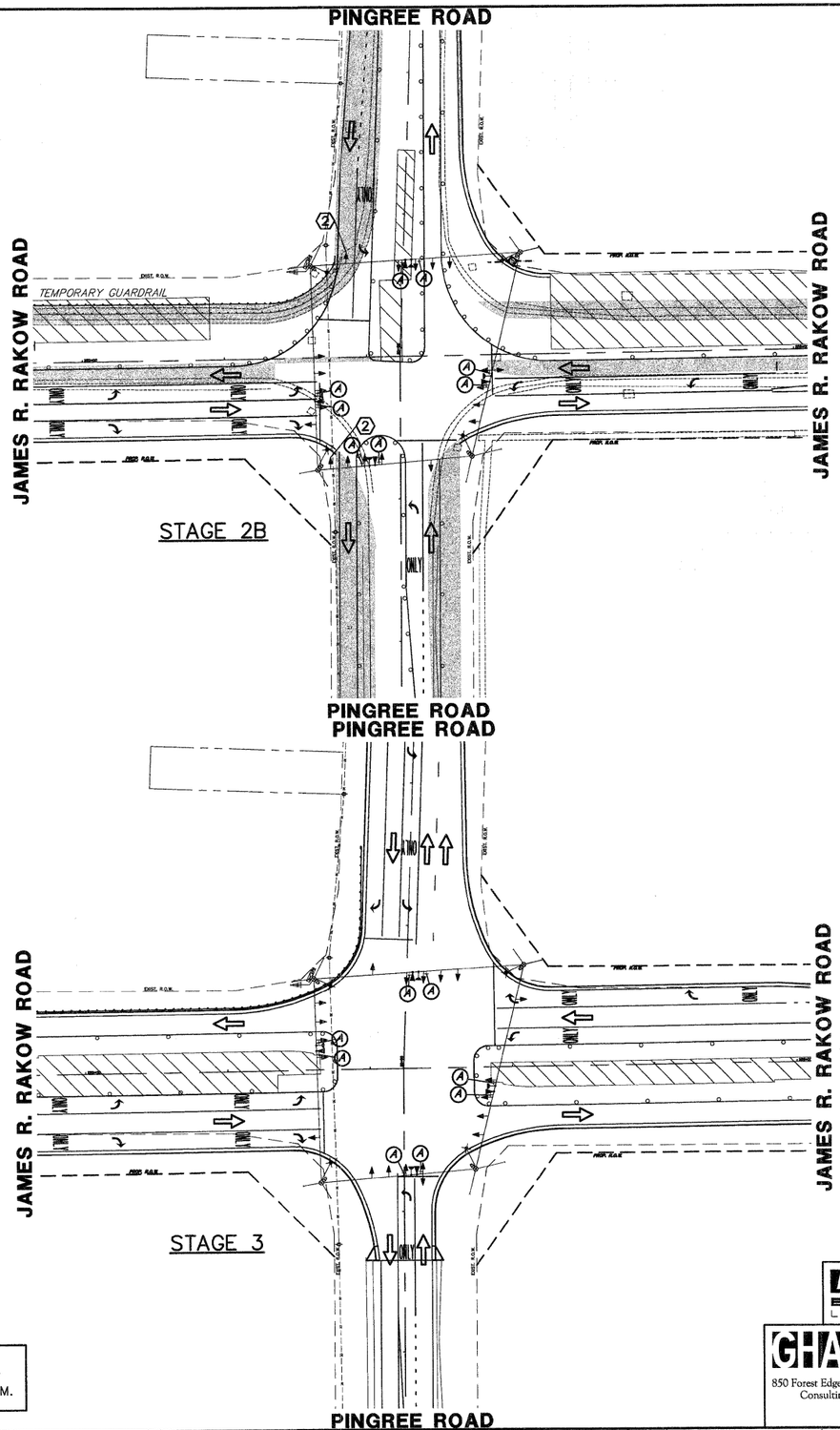
LEGEND

- TEMPORARY PAVEMENT
- WORK ZONE
- DIRECTION OF TRAFFIC

CONSTRUCTION NOTES:

1. BAG ENTIRE HEAD
2. BAG RIGHT TURN ARROWS ONLY

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



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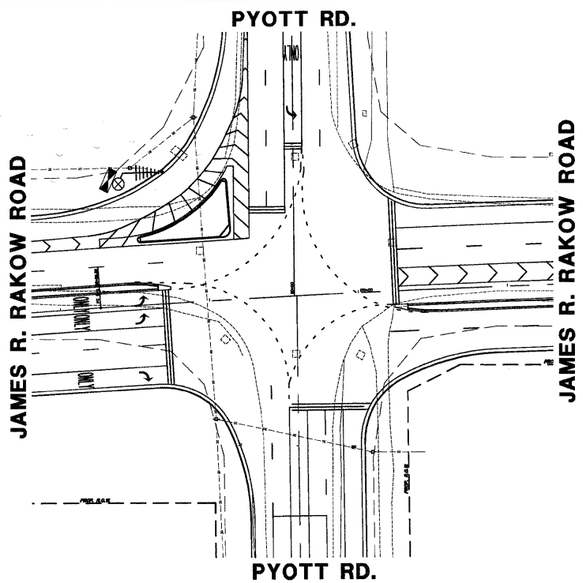
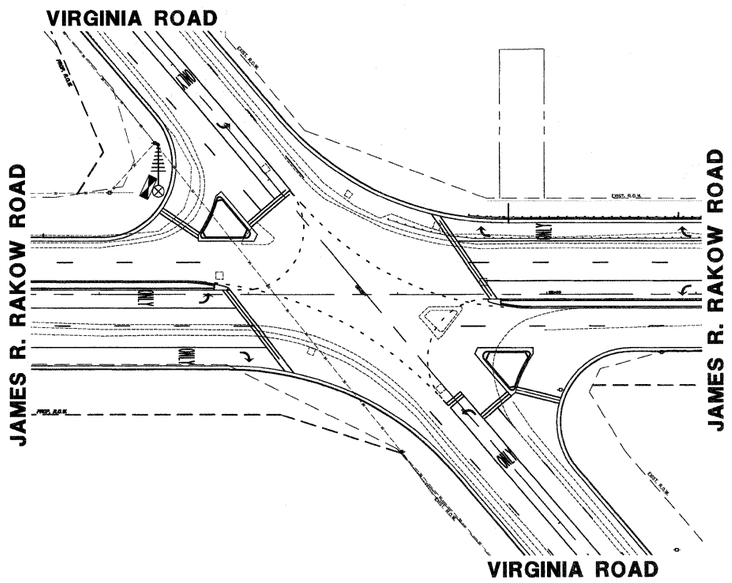
MCHENRY COUNTY
DIVISION OF TRANSPORTATION

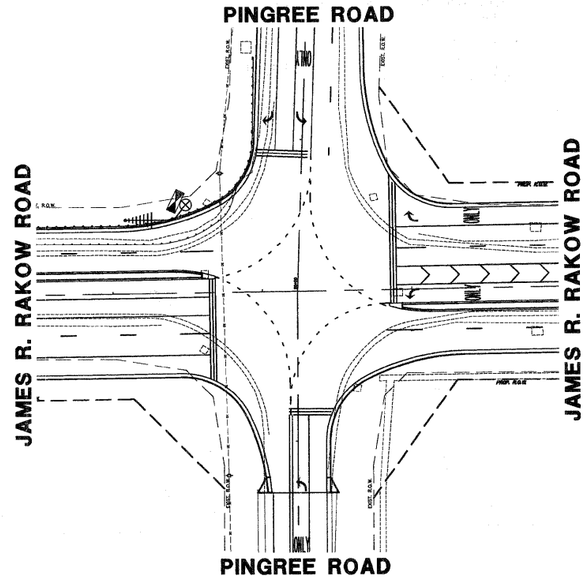
TEMPORARY TRAFFIC SIGNAL STAGING STAGES 2A, 2B, 2C, & 3 JAMES R. RAKOW RD. AND PINGREE RD.

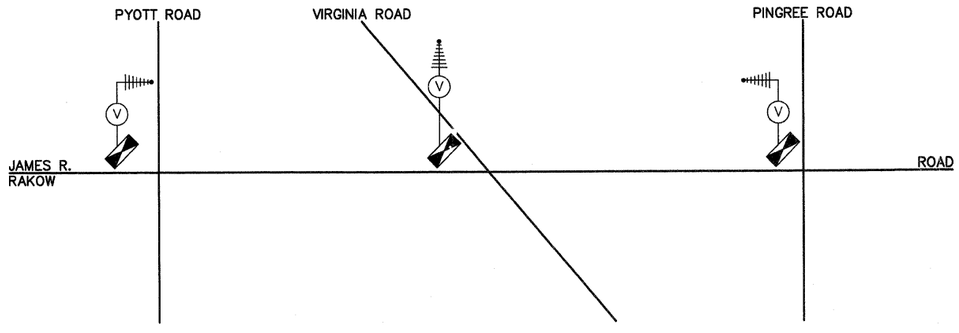
SCALE: 1"=50' | SGNL. SHEET # 41 OF 65 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	350
		CONTRACT #: 63398		
	ILLINOIS FED. AID PROJECT			









GRAPHIC SCALE

50 0 25 50

(IN FEET)
1 inch = 50ft.

N

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

CONSTRUCTION NOTES:

(1) THE CONTRACTOR SHALL INSTALL A TEMPORARY RADIO INTERCONNECT SYSTEM TO MAINTAIN THE EXISTING INTERCONNECT BETWEEN PYOTT RD, VIRGINIA RD, AND PINGREE RD DURING CONTSTRUCTION. THE TEMPORARY MASTER CONTROLLER SHALL BE LOCATED AT VIRGINIA RD. THE COST OF THE TEMPORARY RADIO INTERCONNECT SHALL BE INCLUDED IN THE COST OF THE "TEMPORARY TRAFFIC SIGNAL INSTALLATION", EACH.

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LISLE, ILLINOIS

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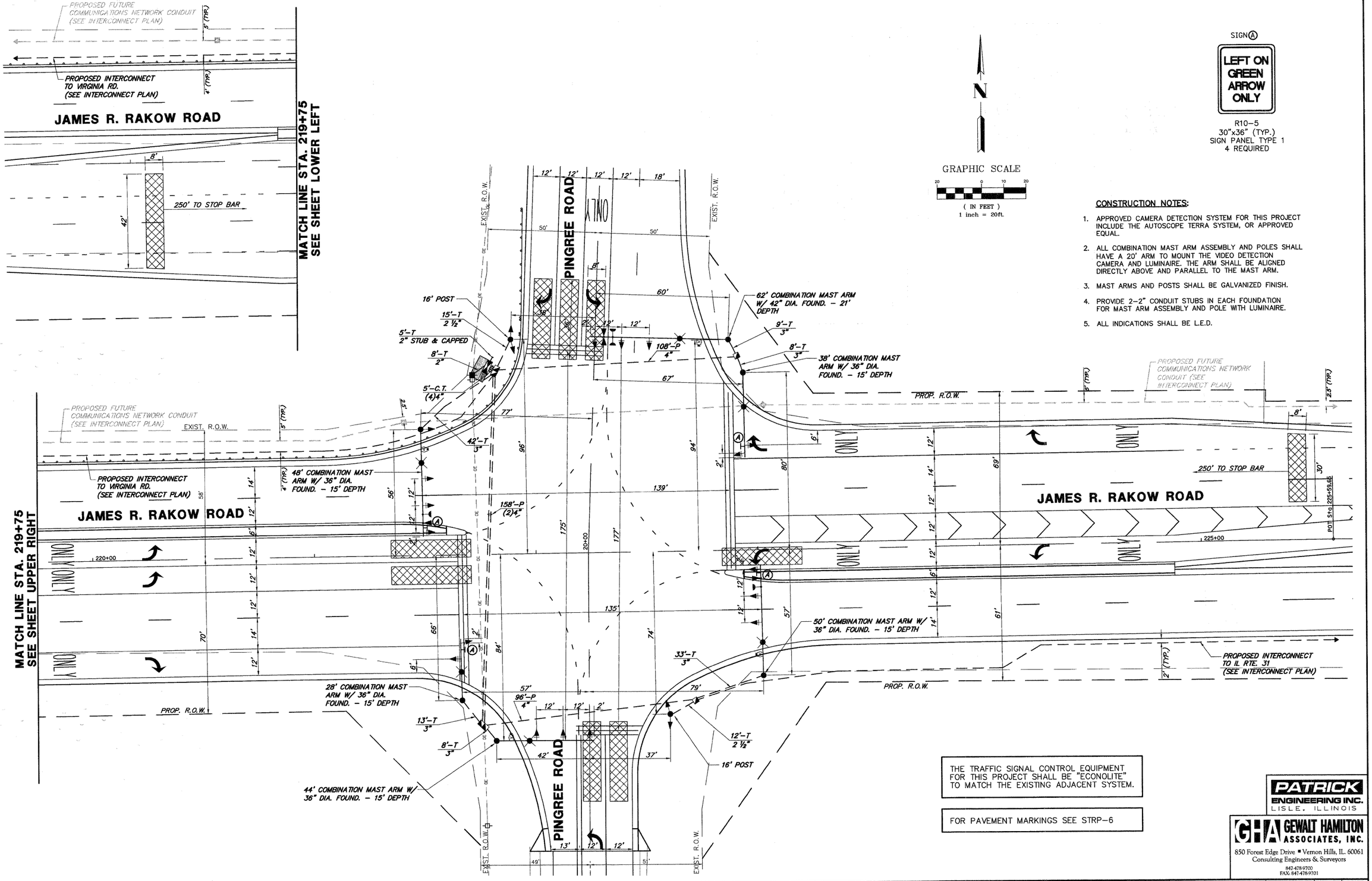
TEMPORARY RADIO INTERCONNECT PLAN AND SCHEMATIC
JAMES R. RAKOW RD. - PYOTT RD. TO PINGREE RD.

SCALE: 1"=50' | SGNL SHEET # 42 OF 65 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	351
		CONTRACT #:	63398	
		ILLINOIS FED. AID PROJECT		



CONSTRUCTION NOTES:

1. APPROVED CAMERA DETECTION SYSTEM FOR THIS PROJECT INCLUDE THE AUTOSCOPE TERRA SYSTEM, OR APPROVED EQUAL.
2. ALL COMBINATION MAST ARM ASSEMBLY AND POLES SHALL HAVE A 20' ARM TO MOUNT THE VIDEO DETECTION CAMERA AND LUMINAIRE. THE ARM SHALL BE ALIGNED DIRECTLY ABOVE AND PARALLEL TO THE MAST ARM.
3. MAST ARMS AND POSTS SHALL BE GALVANIZED FINISH.
4. PROVIDE 2-2" CONDUIT STUBS IN EACH FOUNDATION FOR MAST ARM ASSEMBLY AND POLE WITH LUMINAIRE.
5. ALL INDICATIONS SHALL BE L.E.D.

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

FOR PAVEMENT MARKINGS SEE STRP-6

PATRICK ENGINEERING INC.
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	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

TRAFFIC SIGNAL MODERNIZATION PLAN
JAMES R. RAKOW RD. AND PINGREE RD.

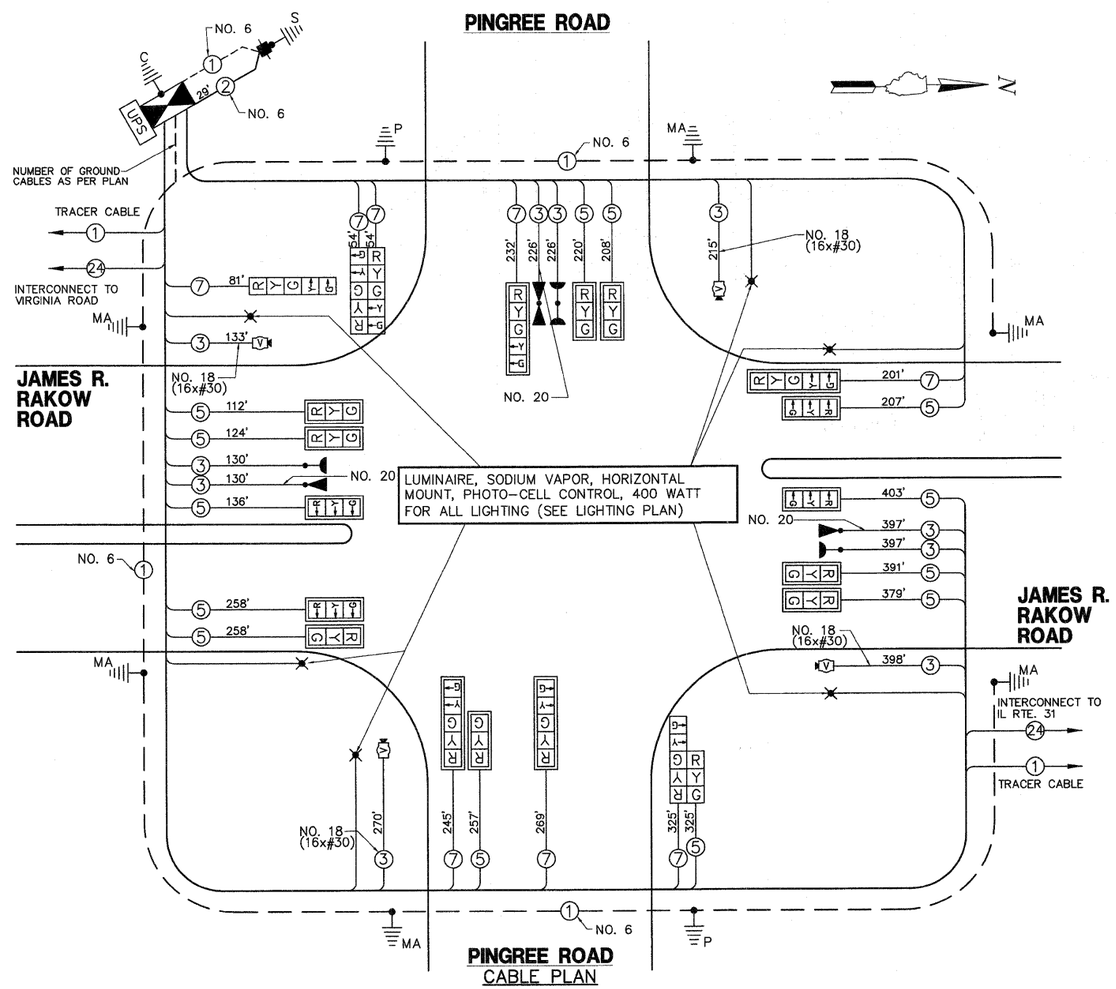
SCALE: 1"=20' | SGNL. SHEET # 43 OF 65 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	352
		CONTRACT #:	63398	
		ILLINOIS FED. AID PROJECT		

SCHEDULE OF QUANTITIES

JAMES R. RAKOW ROAD AT PINGREE ROAD TRAFFIC SIGNAL MODERNIZATION

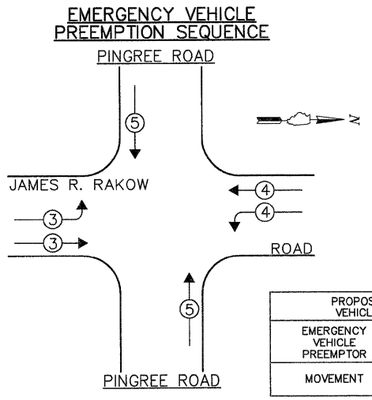
NO.	QUANT.	UNIT	
1.	30.00	SQ FT	SIGN PANEL - TYPE 1
2.	8	FOOT	CONDUIT IN TRENCH, 2" DIA., GALVANIZED STEEL
3.	27	FOOT	CONDUIT IN TRENCH, 2 1/2" DIA., GALVANIZED STEEL
4.	113	FOOT	CONDUIT IN TRENCH, 3" DIA., GALVANIZED STEEL
5.	25	FOOT	CONDUIT IN TRENCH, 4" DIA., GALVANIZED STEEL
6.	520	FOOT	CONDUIT PUSHED, 4" DIA., GALVANIZED STEEL
7.	2	EACH	HANDHOLE
8.	2	EACH	DOUBLE HANDHOLE
9.	150	FOOT	TRENCH AND BACKFILL FOR ELECTRICAL WORK
10.	1	EACH	FULL-ACTUATED CONTROLLER AND TYPE IV CABINET, SPECIAL
11.	1	EACH	TRANSCEIVER - FIBER OPTIC
12.	753	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 3C
13.	3,394	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 5C
14.	1,467	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 7C
15.	1,016	FOOT	ELECTRIC CABLE IN CONDUIT, COMMUNICATION NO. 18 3 PAIR
16.	29	FOOT	ELECTRIC CABLE IN CONDUIT, SERVICE, NO. 6 2 C
17.	2	EACH	TRAFFIC SIGNAL POST, GALVANIZED STEEL 16 FT.
18.	1	EACH	STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 28 FT.
19.	1	EACH	STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 38 FT.
20.	1	EACH	STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 44 FT.
21.	1	EACH	STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 48 FT.
22.	1	EACH	STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 50 FT.
23.	1	EACH	STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 62 FT.
24.	8	FOOT	CONCRETE FOUNDATION, TYPE A
25.	4	FOOT	CONCRETE FOUNDATION, TYPE C
26.	75	FOOT	CONCRETE FOUNDATION, TYPE E 36-INCH DIAMETER
27.	21	FOOT	CONCRETE FOUNDATION, TYPE E 42-INCH DIAMETER
28.	12	EACH	SIGNAL HEAD, LED, 1-FACE, 3-SECTION, MAST-ARM MOUNTED
29.	1	EACH	SIGNAL HEAD, LED, 1-FACE, 5-SECTION, BRACKET MOUNTED
30.	4	EACH	SIGNAL HEAD, LED, 1-FACE, 5-SECTION, MAST-ARM MOUNTED
31.	1	EACH	SIGNAL HEAD, LED, 2-FACE, 5-SECTION, BRACKET MOUNTED
32.	1	EACH	SIGNAL HEAD, LED, 2-FACE, 1-3 SECTION, 1-5 SECTION, BRACKET MOUNTED
33.	16	EACH	TRAFFIC SIGNAL BACKPLATE, LOUVERED, ALUMINUM
34.	3	EACH	LIGHT DETECTOR
35.	1	EACH	LIGHT DETECTOR AMPLIFIER
36.	1	EACH	TEMPORARY TRAFFIC SIGNAL INSTALLATION
37.	1	EACH	REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT
38.	9	EACH	REMOVE EXISTING HANDHOLE
39.	10	EACH	REMOVE EXISTING CONCRETE FOUNDATION
40.	1	EACH	TEMPORARY TRAFFIC SIGNAL TIMING
41.	1	EACH	SERVICE INSTALLATION - POLE MOUNTED
42.	1	EACH	UNINTERRUPTIBLE POWER SUPPLY
43.	605	FOOT	ELECTRIC CABLE IN CONDUIT, GROUNDING, NO. 6 1C
44.	753	FOOT	ELECTRIC CABLE IN CONDUIT NO. 20 3/C, TWISTED, SHIELDED
45.	1	EACH	VIDEO DETECTION SYSTEM COMPLETE INTERSECTION
46.	4	EACH	LED INTERNALLY ILLUMINATED STREET NAME SIGN



PINGREE ROAD
CABLE PLAN

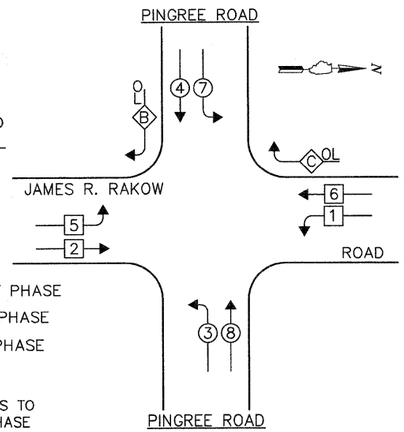
THE TRAFFIC SIGNAL CONTROL EQUIPMENT FOR THIS PROJECT SHALL BE "ECONOLITE" TO MATCH THE EXISTING ADJACENT SYSTEM.

EMERGENCY VEHICLE PREEMPTION SEQUENCE



PROPOSED EMERGENCY VEHICLE PREEMPTORS			
EMERGENCY VEHICLE PREEMPTOR	3	4	5
MOVEMENT			

CONTROLLER SEQUENCE



OVERLAP LETTER		PERMISSIVE PHASE		PROTECTED PHASE
B	=	4	+	5
C	=	6	+	7

LEGEND:

- SINGLE ENTRY PHASE
- DUAL ENTRY PHASE
- PEDESTRIAN PHASE
- OVERLAP
- NUMBER REFERS TO ASSOCIATED PHASE

PHASE DESIGNATION DIAGRAM

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PATRICK ENGINEERING INC.
LISLE, ILLINOIS

McHENRY COUNTY DIVISION OF TRANSPORTATION
TRAFFIC SIGNAL INSTALLATION
ELECTRICAL SERVICE REQUIREMENTS

TYPE	NO LAMPS	WATTAGE INCAND.	WATTAGE L.E.D.	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	21	135	17	0.50	178.5
SIGNAL (YELLOW)	21	135	25	0.25	131.25
SIGNAL (GREEN)	21	135	15	0.25	78.75
ARROW	16	135	12	0.10	19.2
PED.SIGNAL		90	25	1.00	
CONTROLLER	1	100	100	1.00	100.0
BATTERY BACKUP	1		25	1.00	25.0
VIDEO SYSTEMS	1		150	1.00	150.0
LUMINAIRE	6	400		0.50	1200.0
L.E.D. ST. NAME SIGN			64	0.50	128.0
FLASHER				0.05	
				TOTAL =	2,010.5

ENERGY COSTS – BILLED TO: CITY OF CRYSTAL LAKE
(ADDRESS) 100 WEST MUNICIPAL COMPLEX

ENERGY SUPPLY – CONTACT: MS. AUDREY HELGESEN
PHONE: (847) 816-5225
COMPANY: COMED–LIBERTYVILLE

FILE NAME = 4153.800-tr1.dwg	USER NAME = GHA	DESIGNED - DPB	REVISED -
		DRAWN - ZCW	REVISED -
	PLOT SCALE = N.T.S.	CHECKED - DPB	REVISED -
	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

CABLE PLAN, PHASE DESIGNATION DIAGRAM, AND SCHEDULE OF QUANTITIES
JAMES R. RAKOW RD. AND PINGREE RD.

SCALE: N.A. | SGNL SHEET # 44 OF 65 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	353
		CONTRACT #:	63398	
		ILLINOIS FED. AID PROJECT		

THE FOLLOWING EXISTING TRAFFIC SIGNAL EQUIPMENT SHALL BE REMOVED BY THE CONTRACTOR, SHALL REMAIN THE PROPERTY OF THE AGENCY LISTED BELOW. THE CONTRACTOR SHALL SAFELY STORE AND ARRANGE FOR PICK UP OR DELIVERY OF ALL EQUIPMENT TO BE RETURNED TO THE LISTED AGENCY AS PER THE TRAFFIC SIGNAL SPECIFICATIONS.

AGENCY: CITY OF CRYSTAL LAKE
4 EACH LIGHT DETECTOR
1 EACH LIGHT DETECTOR AMPLIFIER

THE FOLLOWING ITEMS SHALL BE REMOVED BY THE CONTRACTOR AND SHALL BE DISPOSED OF BY THEM OUTSIDE THE RIGHT-OF-WAY AT THEIR EXPENSE. THE SALVAGE VALUE OF THE REMOVED EQUIPMENT SHALL BE REFLECTED IN THE CONTRACT BID PRICE.

7 EACH SIGNAL HEAD, 3-SECTION
3 EACH SIGNAL HEAD, 5-SECTION
2 EACH STEEL MAST ARM ASSEMBLEY AND POLE
2 EACH TRAFFIC SIGNAL POST
2 EACH PEDESTRIAN SIGNAL HEAD
2 EACH PEDESTRIAN PUSH BUTTON

NOTES FOR TEMPORARY TRAFFIC SIGNALS:

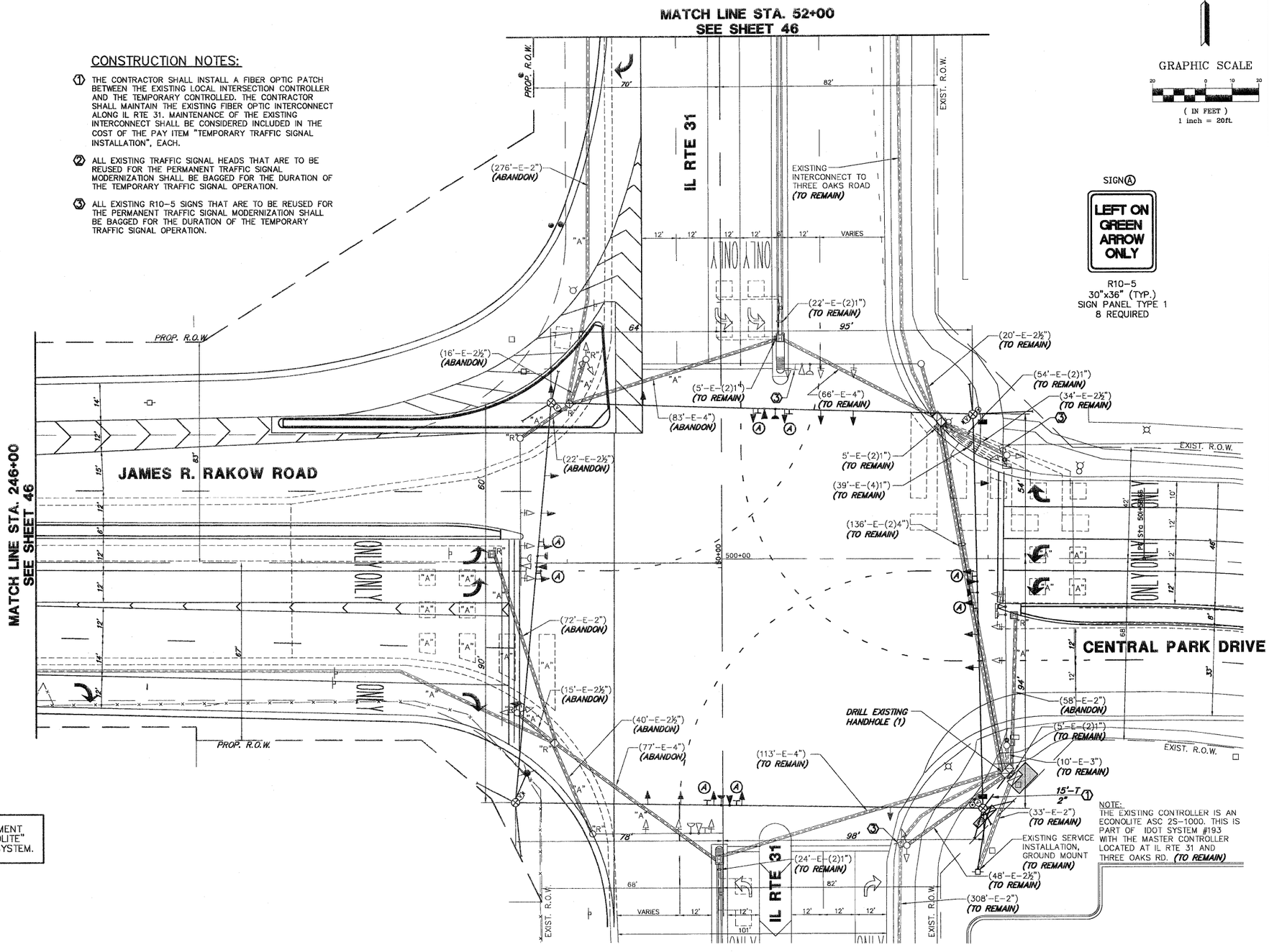
1. ALL CONTROL EQUIPMENT INCLUDING EMERGENCY PRE-EMPTION AND COMMUNICATION DEVICES FOR THE TEMPORARY TRAFFIC SIGNAL(S) SHALL BE FURNISHED BY THE CONTRACTOR.
2. ONLY CONTROLLERS SUPPLIED BY ONE OF THE DISTRICT APPROVED CLOSED LOOP EQUIPMENT MANUFACTURERS WILL BE APPROVED FOR USE AT TEMPORARY SIGNAL LOCATIONS. ALL CONTROLERS USED FOR TEMPORARY TRAFFIC SIGNALS SHALL BE FULLY ACTUATED NEMA MICROPOCESSOR BASED WITH RS232 DATA ENTRY PORTS COMPATIBLE WITH EXISTING MONITORING SOFTWARE APPROVED BY IDOT DISTRICT 1, INSTALLED IN A NEMA TS2 CABINET. ONLY ONE BRAND OF CONTROLLER WILL BE ACCEPTED FOR ANY ONE CONTRACT.
3. ALL TRAFFIC SIGNAL SECTIONS AND PEDESTRIAN SIGNAL SECTIONS SHALL BE LED AND 12" (300mm) DIAMETER. HEADS SHALL BE PLACED AS INDICATED ON THE TEMPORARY TRAFFIC SIGNAL PLAN OR AS DIRECTED BY THE ENGINEER. PEDESTRIAN SIGNALS SHALL INCLUDE SOLID INTERNATIONAL SYMBOLS. PEDESTRIAN SIGNALS WITH COUNTDOWN TIMERS SHALL BE USED WHEN THE EXISTING INSTALLATION UTILIZES COUNTDOWN TYPE OR AS DIRECTED BY THE ENGINEER. COUNTDOWN TYPE PEDESTRIAN SIGNALS ARE NOT TO BE INSTALLED AT A RAILROAD INTERSECTION. THE CONTRACTOR SHALL FURNISH ENOUGH CABLE SLACK TO RELOCATE HEADS TO ANY POSITION ON THE SPAN WIRE OR AT LOCATIONS ILLUSTRATED ON THE PLANS FOR CONSTRUCTION STAGING. THE TEMPORARY TRAFFIC SIGNAL SHALL REMAIN IN OPERATION DURING ALL SIGNAL HEAD RELOCATIONS. EACH TEMPORARY TRAFFIC SIGNAL HEAD SHALL HAVE ITS OWN CABLE FROM THE CONTROLLER CABINET TO THE SIGNAL HEAD.
4. ALL EXISTING STREET NAME AND INTERSECTION REGULATORY SIGNS SHALL BE REMOVED FROM EXISTING POLES, RELOCATED AND SECURELY FASTENED TO THE SPAN WIRE OR WOOD POLE AS DIRECTED BY THE ENGINEER.
5. ANY TEMPORARY SIGNAL WITHIN AN EXISTING CLOSED LOOP TRAFFIC SIGNAL SYSTEM SHALL BE INTERCONNECTED TO THAT SYSTEM USING SIMILAR BRAND CONTROLLER EQUIPMENT.
6. THE TEMPORARY TRAFFIC SIGNAL SHALL HAVE THE SIGNAL HEAD DISPLAYS, SIGNAL HEAD PLACEMENTS AND CONTROLLER PHASING MATCH THE EXISTING TRAFFIC SIGNAL, AT THE TIME OF THE TURN ON, IF NO TRAFFIC STAGING IS IN PLACE OR WILL NOT BE STAGED ON THE DAY OF THE TURN ON.
7. UNINTERRUPTIBLE POWER SUPPLY (UPS) SYSTEMS SHALL BE INSTALLED AND MADE OPERATIONAL AT TEMPORARY TRAFFIC SIGNAL INSTALLATIONS WHERE UPS IS INSTALLED AT THE EXISTING TRAFFIC SIGNAL, TEMPORARY TRAFFIS SIGNALS AT RAILROAD INTERSECTIONS, AND TEMPORARY TRAFFIC SIGNALS AT INTERSECTIONS WITH FIRE STATION ACTUATED EMERGENCY VEHICLE PRE-EMPTION, OR WHEN INDICATED ON THE PLANS.
8. TRAFFIC SIGNAL MANAGEMENT SYSTEMS SHALL BE MAINTAINED IN OPERATION AS INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER. REQUIRED EQUIPMENT SHALL BE AS SHOWN ON THE PLANS AND THE CONTRACTOR SHALL PLACE THE EQUIPMENT IN OPERATION TO THE SATISFACTION OF THE ENGINEER AND THE AGENCY RESPONSIBLE FOR THE TRAFFIC SIGNAL MANAGEMENT SYSTEM.
9. DETECTION AT TEMPORARY TRAFFIC SIGNALS SHALL BE INCLUDED FOR ALL APPROACHES OF THE INTERSECTION UNLESS INDICATED OTHERWISE ON THE PLANS. THE DETECTION SYSTEM MUST MEET THE SPECIFICATIONS OF THE DISTRICT 1 AND THE CONTRACTOR SHALL PLACE THE DETECTORS INTO OPERATION TO THE SATISFACTION OF THE ENGINEER.
10. WHEN PAN, TILT, ZOOM CAMERAS ARE INSTALLED AT THE EXISTING INTERSECTION OR ARE CALLED FOR IN THE PLANS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING AND MAINTAINING THE CAMERAS TO THE SATISFACTION OF THE ENGINEER AND THE AGENCY RESPSONSIBLE FOR THE CAMERAS.

CONSTRUCTION NOTES:

① THE CONTRACTOR SHALL INSTALL A FIBER OPTIC PATCH BETWEEN THE EXISTING LOCAL INTERSECTION CONTROLLER AND THE TEMPORARY CONTROLLED. THE CONTRACTOR SHALL MAINTAIN THE EXISTING FIBER OPTIC INTERCONNECT ALONG IL RTE 31. MAINTENANCE OF THE EXISTING INTERCONNECT SHALL BE CONSIDERED INCLUDED IN THE COST OF THE PAY ITEM "TEMPORARY TRAFFIC SIGNAL INSTALLATION", EACH.

② ALL EXISTING TRAFFIC SIGNAL HEADS THAT ARE TO BE REUSED FOR THE PERMANENT TRAFFIC SIGNAL MODERNIZATION SHALL BE BAGGED FOR THE DURATION OF THE TEMPORARY TRAFFIC SIGNAL OPERATION.

③ ALL EXISTING R10-5 SIGNS THAT ARE TO BE REUSED FOR THE PERMANENT TRAFFIC SIGNAL MODERNIZATION SHALL BE BAGGED FOR THE DURATION OF THE TEMPORARY TRAFFIC SIGNAL OPERATION.



NOTE:
THE EXISTING CONTROLLER IS AN ECONOLITE ASC 2S-1000. THIS IS PART OF IDOT SYSTEM #193 WITH THE MASTER CONTROLLER LOCATED AT IL RTE 31 AND THREE OAKS RD. (TO REMAIN)

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

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

GHA GEWALT HAMILTON ASSOCIATES, INC.
850 Forest Edge Drive ▪ Vernon Hills, IL. 60061
Consulting Engineers & Surveyors
847-478-9700
FAX: 847-478-9701

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	PLOT SCALE = N.T.S.	CHECKED - DPB	REVISED -
	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

TEMPORARY TRAFFIC SIGNAL INSTALLATION AND REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT
IL. RTE. 31 AND JAMES R. RAKOW RD./CENTRAL PARK DR.

SCALE: 1"=20' | SGNL. SHEET # 45 OF 65 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	354
		CONTRACT #: 63398		
		ILLINOIS FED. AID PROJECT		

NOTES FOR TEMPORARY TRAFFIC SIGNALS:

1. ALL CONTROL EQUIPMENT INCLUDING EMERGENCY PRE-EMPTION AND COMMUNICATION DEVICES FOR THE TEMPORARY TRAFFIC SIGNAL(S) SHALL BE FURNISHED BY THE CONTRACTOR.
2. ONLY CONTROLLERS SUPPLIED BY ONE OF THE DISTRICT APPROVED CLOSED LOOP EQUIPMENT MANUFACTURERS WILL BE APPROVED FOR USE AT TEMPORARY SIGNAL LOCATIONS. ALL CONTROLERS USED FOR TEMPORARY TRAFFIC SIGNALS SHALL BE FULLY ACTUATED NEMA MICROPOCESSOR BASED WITH RS232 DATA ENTRY PORTS COMPATIBLE WITH EXISTING MONITORING SOFTWARE APPROVED BY IDOT DISTRICT 1, INSTALLED IN A NEMA TS2 CABINET. ONLY ONE BRAND OF CONTROLLER WILL BE ACCEPTED FOR ANY ONE CONTRACT.
3. ALL TRAFFIC SIGNAL SECTIONS AND PEDESTRIAN SIGNAL SECTIONS SHALL BE LED AND 12" (300mm) DIAMETER. HEADS SHALL BE PLACED AS INDICATED ON THE TEMPORARY TRAFFIC SIGNAL PLAN OR AS DIRECTED BY THE ENGINEER. PEDESTRIAN SIGNALS SHALL INCLUDE SOLID INTERNATIONAL SYMBOLS. PEDESTRIAN SIGNALS WITH COUNTDOWN TIMERS SHALL BE USED WHEN THE EXISTING INSTALLATION UTILIZES COUNTDOWN TYPE OR AS DIRECTED BY THE ENGINEER. COUNTDOWN TYPE PEDESTRIAN SIGNALS ARE NOT TO BE INSTALLED AT A RAILROAD INTERSECTION. THE CONTRACTOR SHALL FURNISH ENOUGH CABLE SLACK TO RELOCATE HEADS TO ANY POSITION ON THE SPAN WIRE OR AT LOCATIONS ILLUSTRATED ON THE PLANS FOR CONSTRUCTION STAGING. THE TEMPORARY TRAFFIC SIGNAL SHALL REMAIN IN OPERATION DURING ALL SIGNAL HEAD RELOCATIONS. EACH TEMPORARY TRAFFIC SIGNAL HEAD SHALL HAVE ITS OWN CABLE FROM THE CONTROLLER CABINET TO THE SIGNAL HEAD.
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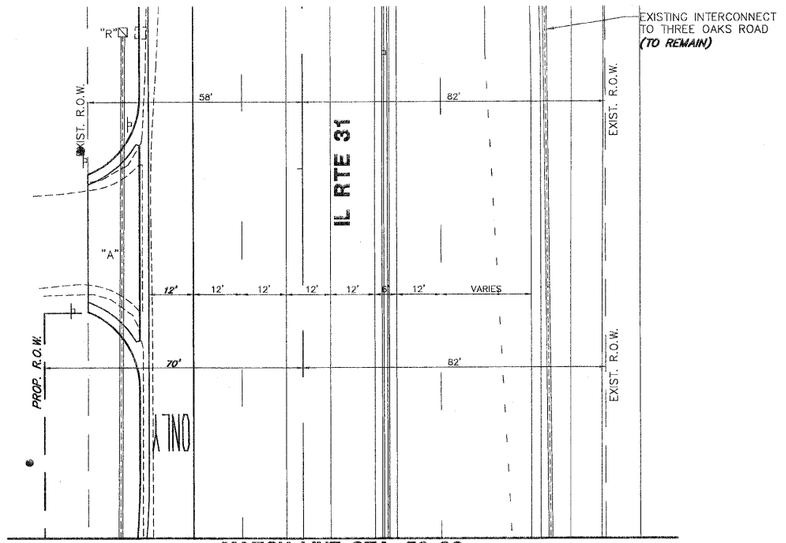
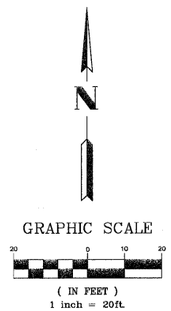
7. UNINTERRUPTIBLE POWER SUPPLY (UPS) SYSTEMS SHALL BE INSTALLED AND MADE OPERATIONAL AT TEMPORARY TRAFFIC SIGNAL INSTALLATIONS WHERE UPS IS INSTALLED AT THE EXISTING TRAFFIC SIGNAL, TEMPORARY TRAFFIS SIGNALS AT RAILROAD INTERSECTIONS, AND TEMPORARY TRAFFIC SIGNALS AT INTERSECTIONS WITH FIRE STATION ACTUATED EMERGENCY VEHICLE PRE-EMPTION, OR WHEN INDICATED ON THE PLANS.
8. TRAFFIC SIGNAL MANAGEMENT SYSTEMS SHALL BE MAINTAINED IN OPERATION AS INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER. REQUIRED EQUIPMENT SHALL BE AS SHOWN ON THE PLANS AND THE CONTRACTOR SHALL PLACE THE EQUIPMENT IN OPERATION TO THE SATISFACTION OF THE ENGINEER AND THE AGENCY RESPONSIBLE FOR THE TRAFFIC SIGNAL MANAGEMENT SYSTEM.
9. DETECTION AT TEMPORARY TRAFFIC SIGNALS SHALL BE INCLUDED FOR ALL APPROACHES OF THE INTERSECTION UNLESS INDICATED OTHERWISE ON THE PLANS. THE DETECTION SYSTEM MUST MEET THE SPECIFICATIONS OF THE DISTRICT 1 AND THE CONTRACTOR SHALL PLACE THE DETECTORS INTO OPERATION TO THE SATISFACTION OF THE ENGINEER.
10. WHEN PAN, TILT, ZOOM CAMERAS ARE INSTALLED AT THE EXISTING INTERSECTION OR ARE CALLED FOR IN THE PLANS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING AND MAINTAINING THE CAMERAS TO THE SATISFACTION OF THE ENGINEER AND THE AGENCY RESPSONSIBLE FOR THE CAMERAS.

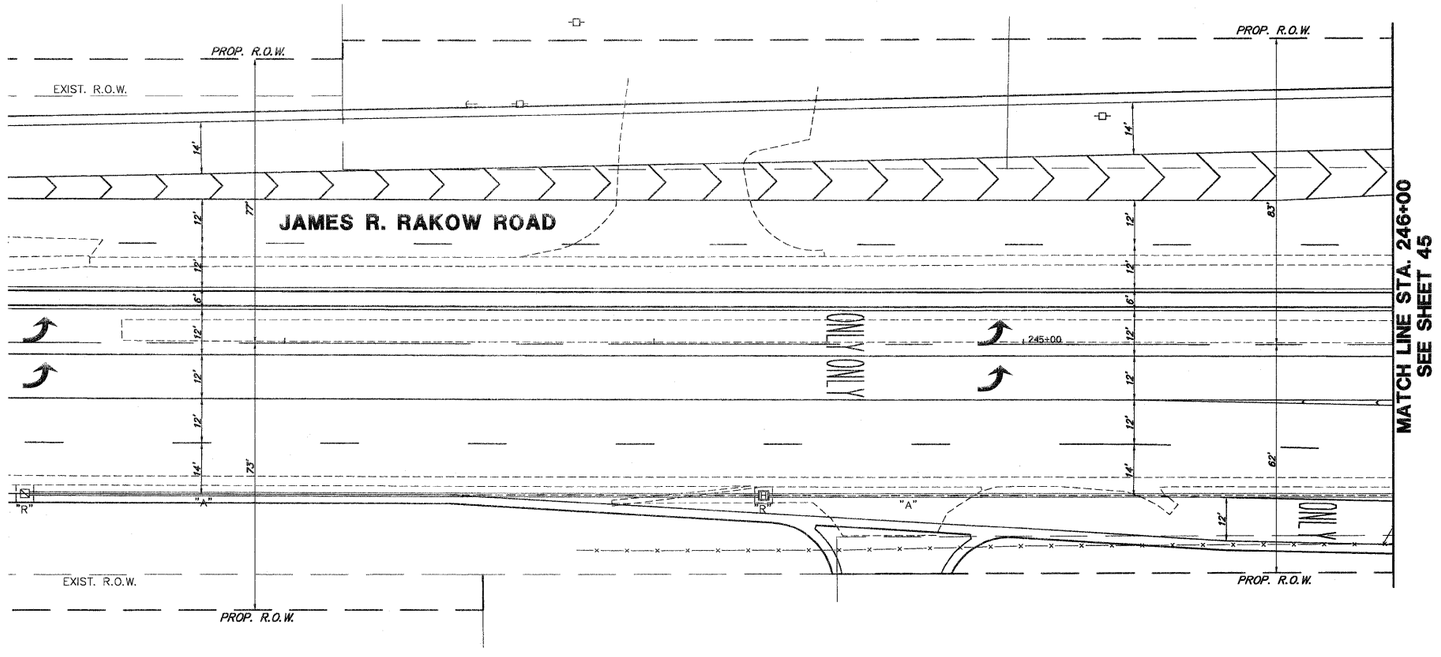
THE TRAFFIC SIGNAL CONTROL EQUIPMENT FOR THIS PROJECT SHALL BE "ECONOLITE" TO MATCH THE EXISTING ADJACENT SYSTEM.





CONSTRUCTION NOTES:

(1) THE CONTRACTOR SHALL INSTALL A FIBER OPTIC PATCH BETWEEN THE EXISTING LOCAL INTERSECTION CONTROLLER AND THE TEMPORARY CONTROLLED. THE CONTRACTOR SHALL MAINTAIN THE EXISTING FIBER OPTIC INTERCONNECT ALONG IL RTE 31. MAINTENANCE OF THE EXISTING INTERCONNECT SHALL BE CONSIDERED INCLUDED IN THE COST OF THE PAY ITEM "TEMPORARY TRAFFIC SIGNAL INSTALLATION", EACH.



GHA GEWALT HAMILTON ASSOCIATES, INC.
850 Forest Edge Drive ▪ Vernon Hills, IL 60061
Consulting Engineers & Surveyors
847.478.9700
FAX: 847.478.9701

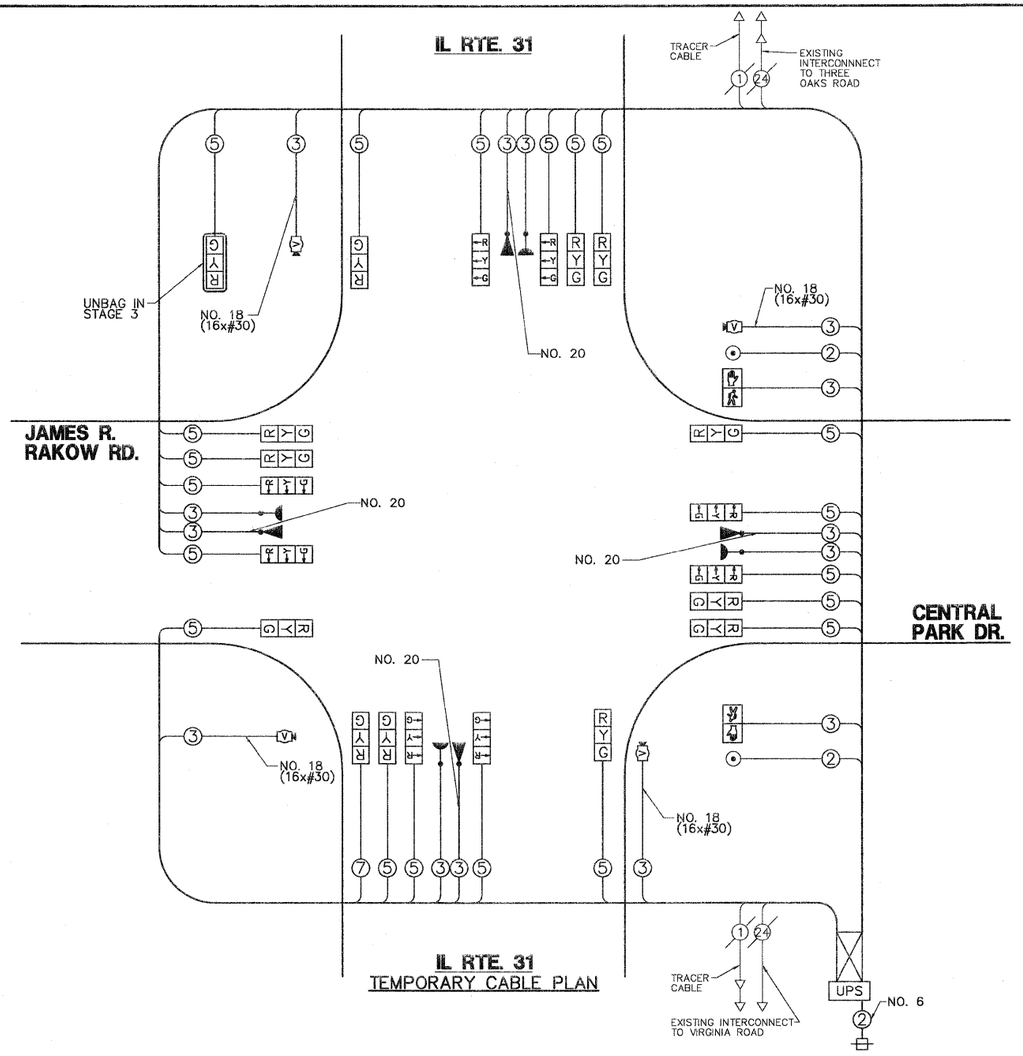
PATRICK ENGINEERING INC.
LISLE, ILLINOIS

FILE NAME = 4153.800-tr1.dwg	USER NAME = GHA	DESIGNED - DPB	REVISED -
		DRAWN - ZCW	REVISED -
	PLOT SCALE = N.T.S.	CHECKED - DPB	REVISED -
	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -

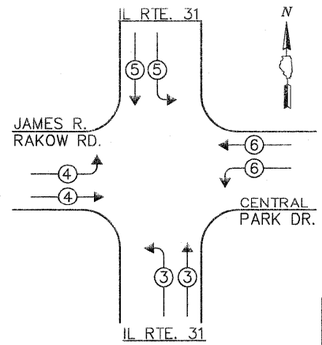
MCHENRY COUNTY
DIVISION OF TRANSPORTATION

TEMPORARY TRAFFIC SIGNAL INSTALLATION AND REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT
IL RTE. 31 AND JAMES R. RAKOW RD./CENTRAL PARK DR.
SCALE: 1"=20' | SGNL SHEET # 46 OF 65 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	355
		CONTRACT #: 63398		
		ILLINOIS FED. AID PROJECT		



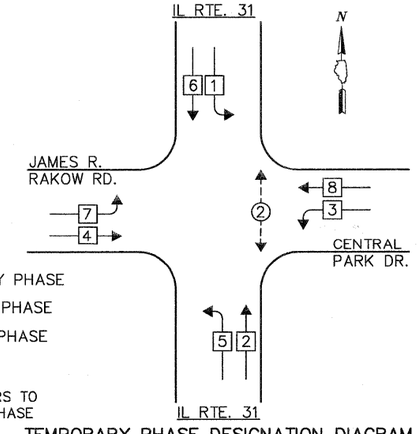
IL RTE. 31
TEMPORARY CABLE PLAN



TEMPORARY EMERGENCY VEHICLE PREEMPTION SEQUENCE

TEMPORARY EMERGENCY VEHICLE PREEMPTORS				
EMERGENCY VEHICLE PREEMPTOR	3	4	5	6
MOVEMENT				

TEMPORARY CONTROLLER SEQUENCE



LEGEND:
- SINGLE ENTRY PHASE
- DUAL ENTRY PHASE
- PEDESTRIAN PHASE
- OL OVERLAP
- * NUMBER REFERS TO ASSOCIATED PHASE

TEMPORARY PHASE DESIGNATION DIAGRAM

GHA GEWALT HAMILTON ASSOCIATES, INC.
850 Forest Edge Drive ▪ Vernon Hills, IL. 60061
Consulting Engineers & Surveyors
847-478-9700
FAX: 847-478-9701

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

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

McHENRY COUNTY DIVISION OF TRANSPORTATION
TRAFFIC SIGNAL INSTALLATION
ELECTRICAL SERVICE REQUIREMENTS

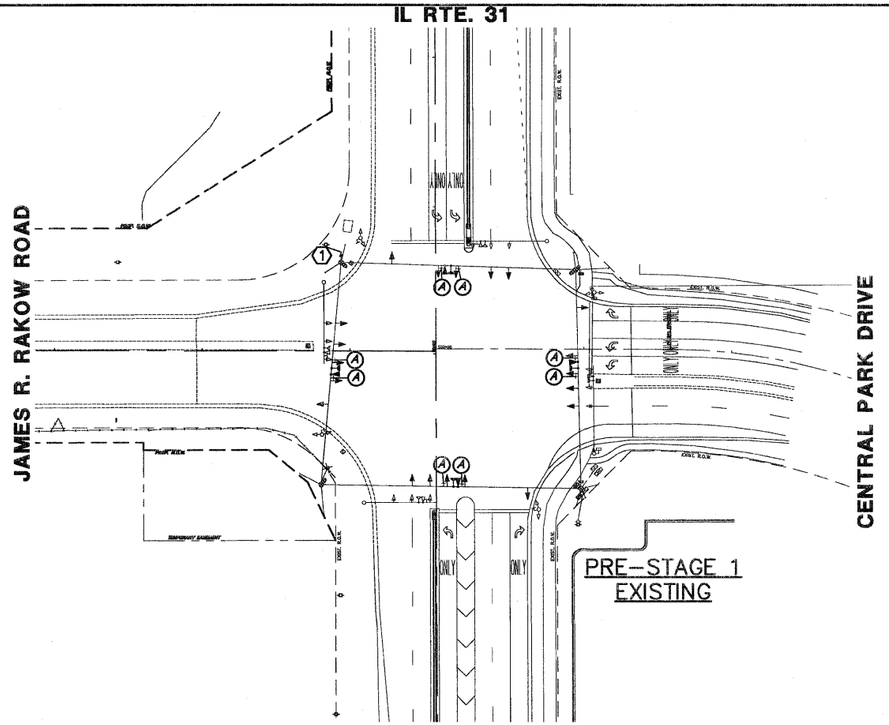
TYPE	NO LAMPS	WATTAGE INCAND.	WATTAGE L.E.D.	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	20	135	17	0.50	170.0
SIGNAL (YELLOW)	20	135	25	0.25	125.0
SIGNAL (GREEN)	20	135	15	0.25	75.0
ARROW		135	12	0.10	
PED.SIGNAL	2	90	25	1.00	50.0
CONTROLLER	1	100	100	1.00	100.0
BATTERY BACKUP	1		25	1.00	25.0
VIDEO SYSTEMS	1		150	1.00	150.0
LUMINAIRE		400		0.50	
FLASHER				0.05	
				TOTAL =	695.0

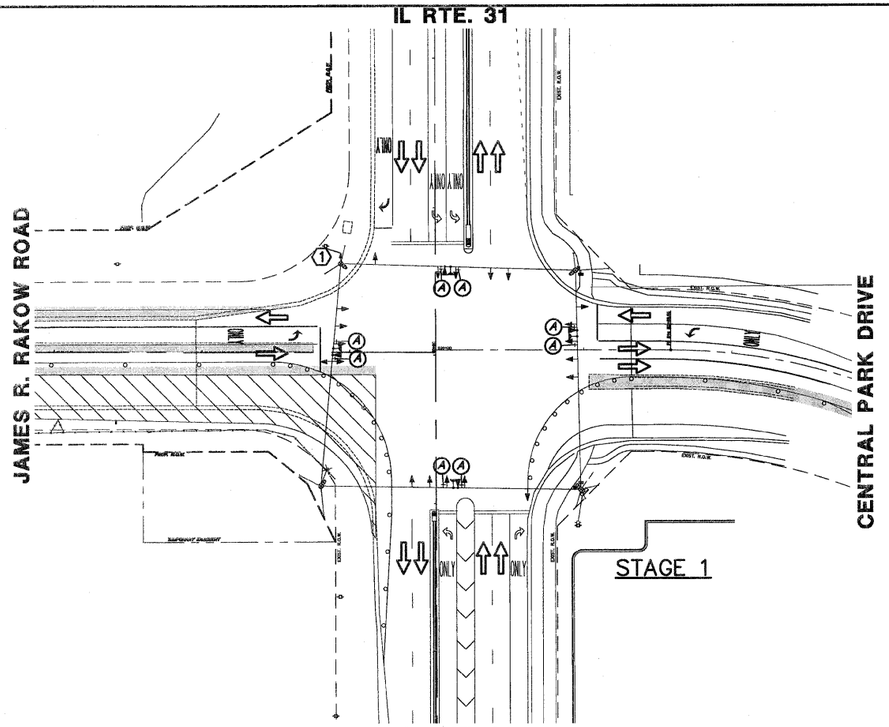
ENERGY COSTS – BILLED TO: CITY OF CRYSTAL LAKE
(ADDRESS) 100 WEST MUNICIPAL COMPLEX

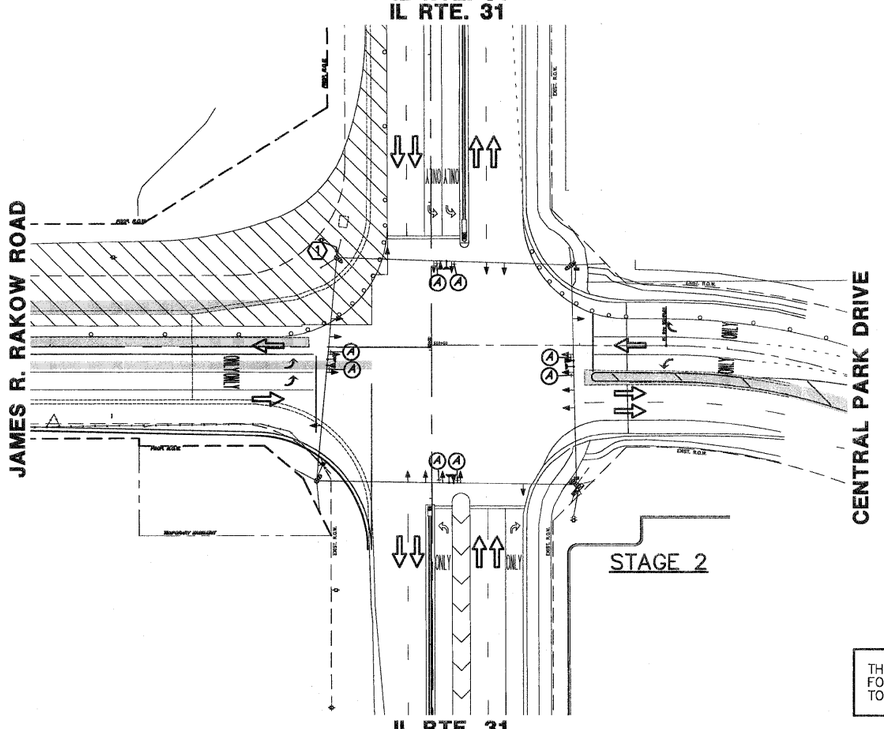
ENERGY SUPPLY – CONTACT: MS. AUDREY HELGESEN
PHONE: (847) 816-5225
COMPANY: COMED-LIBERTYVILLE

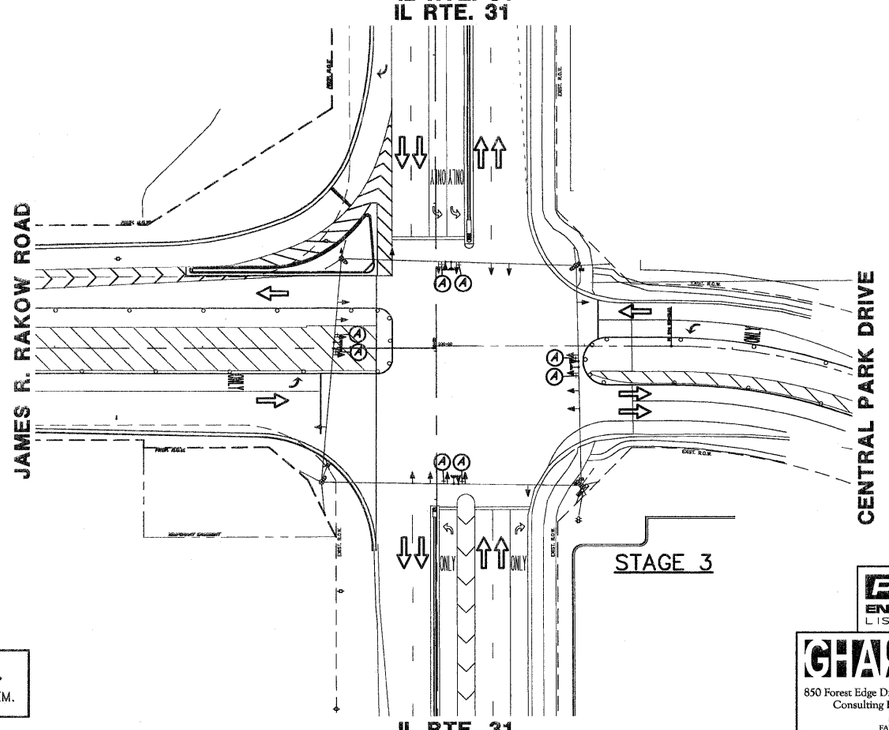
FILE NAME = 4153.800-tr1.dwg	USER NAME = GHA	DESIGNED - DPB	REVISED -	MCHENRY COUNTY DIVISION OF TRANSPORTATION	TEMPORARY CABLE PLAN AND TEMPORARY PHASE DESIGNATION DIAGRAM IL RTE. 31 AND JAMES R. RAKOW RD./CENTRAL PARK DR.
		DRAWN - ZCW	REVISED -		SCALE N.A. | SGNL. SHEET # 47 OF 65 SHEETS | STA. | TO STA.
	PLOT SCALE = N.T.S.	CHECKED - DPB	REVISED -		
	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -		

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	356
		CONTRACT #:	63398	
	ILLINOIS | FED. AID PROJECT			









N

GRAPHIC SCALE

50 0 25 50

(IN FEET)
1 inch = 50ft.

SIGN (A)

LEFT ON GREEN ARROW ONLY

R10-5
30"x36" (TYP.)
SIGN PANEL TYPE 1
8 REQUIRED

LEGEND

- TEMPORARY PAVEMENT
- WORK ZONE
- DIRECTION OF TRAFFIC

CONSTRUCTION NOTES:

(1) BAG ENTIRE HEAD

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

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

GHA GEWALT HAMILTON ASSOCIATES, INC.
850 Forest Edge Drive ▪ Vernon Hills, IL 60061
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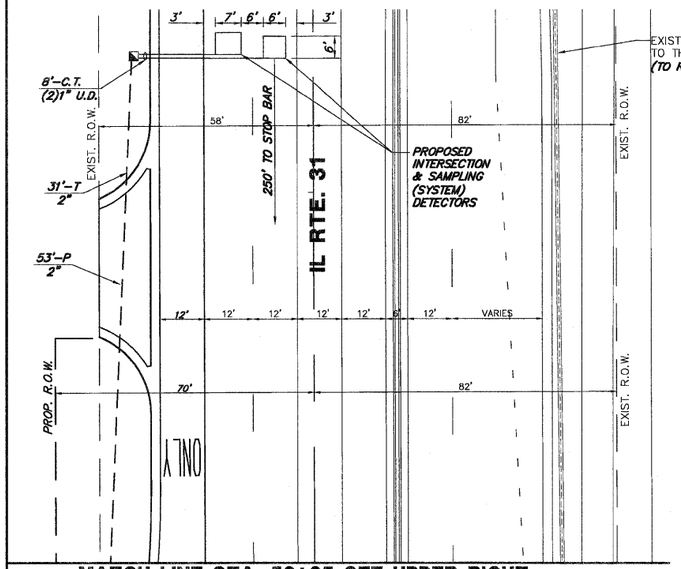
MCHENRY COUNTY
DIVISION OF TRANSPORTATION

TEMPORARY TRAFFIC SIGNAL STAGING
STAGES PRE-1, 1, 2, AND 3
IL RTE. 31 AND JAMES R. RAKOW RD./CENTRAL PARK DR.

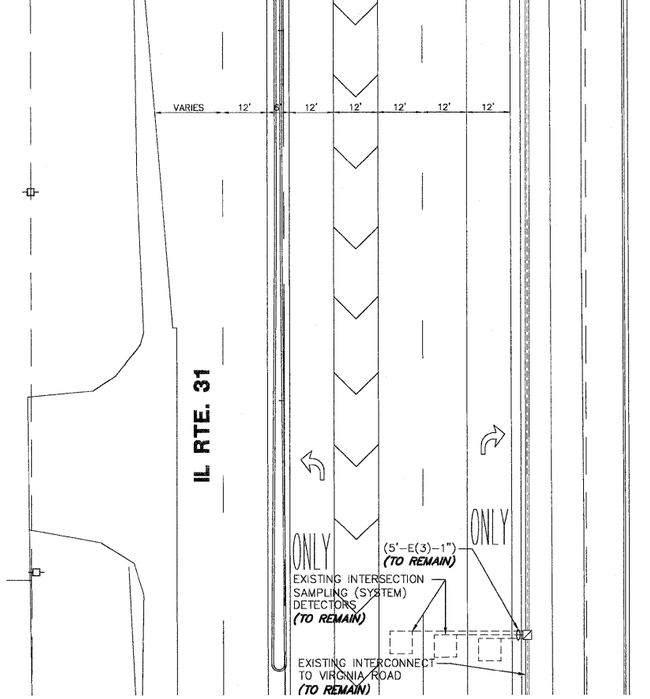
SCALE: 1"=50' | SGNL. SHEET # 48 OF 65 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	357
		CONTRACT #: 63398		
		ILLINOIS FED. AID PROJECT		

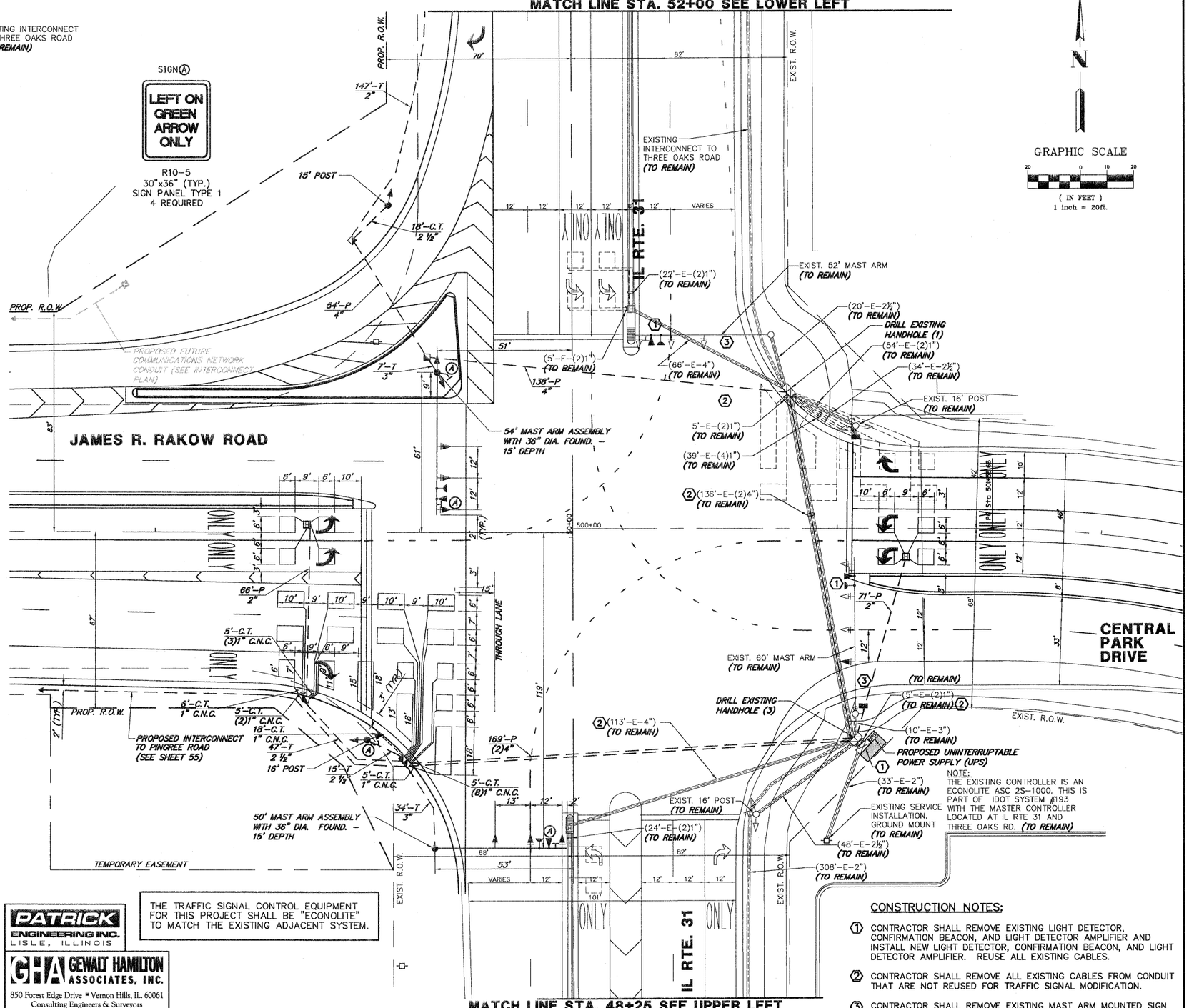


MATCH LINE STA. 52+25 SEE UPPER RIGHT

MATCH LINE STA. 48+25 SEE LOWER RIGHT



MATCH LINE STA. 52+00 SEE LOWER LEFT



MATCH LINE STA. 48+25 SEE UPPER LEFT

GRAPHIC SCALE

20 0 10 20

(IN FEET)
1 inch = 20ft.

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

CONSTRUCTION NOTES:

1. CONTRACTOR SHALL REMOVE EXISTING LIGHT DETECTOR, CONFIRMATION BEACON, AND LIGHT DETECTOR AMPLIFIER AND INSTALL NEW LIGHT DETECTOR, CONFIRMATION BEACON, AND LIGHT DETECTOR AMPLIFIER. REUSE ALL EXISTING CABLES.
2. CONTRACTOR SHALL REMOVE ALL EXISTING CABLES FROM CONDUIT THAT ARE NOT REUSED FOR TRAFFIC SIGNAL MODIFICATION.
3. CONTRACTOR SHALL REMOVE EXISTING MAST ARM MOUNTED SIGN AND REPLACE WITH NEW MAST ARM MOUNTED STREET NAME SIGN.

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

GHA GEWALT HAMILTON ASSOCIATES, INC.
850 Forest Edge Drive * Vernon Hills, IL. 60061
Consulting Engineers & Surveyors
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	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -	

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

TRAFFIC SIGNAL MODERNIZATION PLAN
IL RTE. 31 AND JAMES R. RAKOW RD./CENTRAL PARK DR.

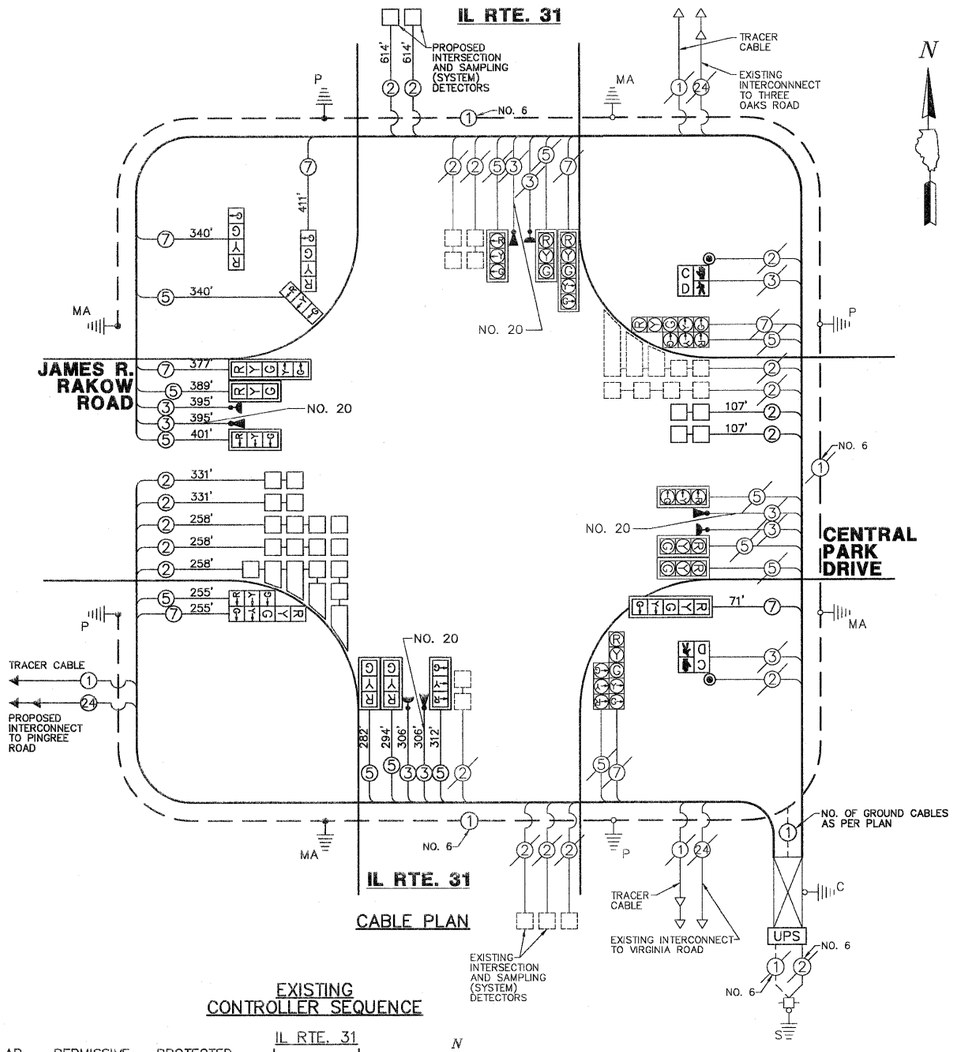
SCALE: 1"=20' | SGNL. SHEET # 49 OF 65 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	358
		CONTRACT #:	63398	
		ILLINOIS FED. AID PROJECT		

SCHEDULE OF QUANTITIES

JAMES R. RAKOW ROAD AT IL ROUTE 31 TRAFFIC SIGNAL MODERNIZATION

NO.	QUANT.	UNIT	
1.	45.00	SQ FT	SIGN PANEL - TYPE 1
2.	22.50	SQ FT	SIGN PANEL - TYPE 2
3.	178	FOOT	CONDUIT IN TRENCH, 2" DIA., GALVANIZED STEEL
4.	80	FOOT	CONDUIT IN TRENCH, 2 1/2" DIA., GALVANIZED STEEL
5.	41	FOOT	CONDUIT IN TRENCH, 3" DIA., GALVANIZED STEEL
6.	190	FOOT	CONDUIT PUSHED, 2" DIA., GALVANIZED STEEL
7.	530	FOOT	CONDUIT PUSHED, 4" DIA., GALVANIZED STEEL
8.	4	EACH	HANDHOLE
9.	2	EACH	HEAVY-DUTY HANDHOLE
10.	2	EACH	DOUBLE HANDHOLE
11.	281	FOOT	TRENCH AND BACKFILL FOR ELECTRICAL WORK
12.	701	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 3C
13.	2,273	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 5C
14.	1,454	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 7C
15.	2,878	FOOT	ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR
16.	1	EACH	TRAFFIC SIGNAL POST, GALVANIZED STEEL 15 FT.
17.	1	EACH	TRAFFIC SIGNAL POST, GALVANIZED STEEL 16 FT.
18.	1	EACH	STEEL MAST ARM ASSEMBLY AND POLE, 50 FT.
19.	1	EACH	STEEL MAST ARM ASSEMBLY AND POLE, 54 FT.
20.	8	FOOT	CONCRETE FOUNDATION, TYPE A
21.	30	FOOT	CONCRETE FOUNDATION, TYPE E 36-INCH DIAMETER
22.	4	EACH	DRILL EXISTING HANDHOLE
23.	5	EACH	SIGNAL HEAD, LED, 1-FACE, 3-SECTION, MAST-ARM MOUNTED
24.	1	EACH	SIGNAL HEAD, LED, 1-FACE, 4-SECTION, BRACKET MOUNTED
25.	2	EACH	SIGNAL HEAD, LED, 1-FACE, 5-SECTION, MAST-ARM MOUNTED
26.	1	EACH	SIGNAL HEAD, LED, 2-FACE, 1-3 SECTION, 1-4 SECTION, BRACKET MOUNTED
27.	1	EACH	SIGNAL HEAD, LED, 2-FACE, 1-3 SECTION, 1-5 SECTION, BRACKET MOUNTED
28.	2	EACH	PEDESTRIAN SIGNAL HEAD, LED, 1-FACE, BRACKET MOUNTED WITH COUNTDOWN TIMER
29.	7	EACH	TRAFFIC SIGNAL BACKPLATE, LOUVERED, ALUMINUM
30.	7	EACH	INDUCTIVE LOOP DETECTOR
31.	1,402	FOOT	DETECTOR LOOP, TYPE I
32.	4	EACH	LIGHT DETECTOR
33.	1	EACH	LIGHT DETECTOR AMPLIFIER
34.	2	EACH	PEDESTRIAN PUSH-BUTTON
35.	1	EACH	TEMPORARY TRAFFIC SIGNAL INSTALLATION
36.	1	EACH	MODIFY EXISTING CONTROLLER
37.	3,230	FOOT	REMOVE ELECTRIC CABLE FROM CONDUIT
38.	1	EACH	REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT
39.	7	EACH	REMOVE EXISTING HANDHOLE
40.	4	EACH	REMOVE EXISTING CONCRETE FOUNDATION
41.	1	EACH	TEMPORARY TRAFFIC SIGNAL TIMING
42.	1	EACH	UNINTERRUPTIBLE POWER SUPPLY
43.	493	FOOT	ELECTRIC CABLE IN CONDUIT, GROUNDING, NO. 6 1C
44.	701	FOOT	ELECTRIC CABLE IN CONDUIT NO. 20 3/C, TWISTED, SHIELDED



CABLE PLAN

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

GHA GEWALT HAMILTON ASSOCIATES, INC.
850 Forest Edge Drive ▪ Vernon Hills, IL 60061
Consulting Engineers & Surveyors
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FAX: 847-478-9701

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

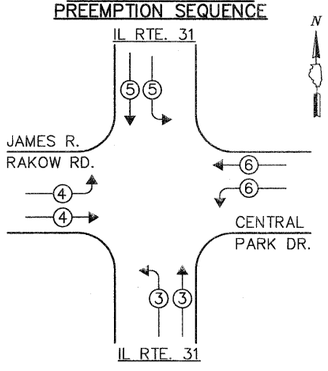
McHENRY COUNTY DIVISION OF TRANSPORTATION
TRAFFIC SIGNAL INSTALLATION
ELECTRICAL SERVICE REQUIREMENTS

TYPE	NO LAMPS	WATTAGE INCAND.	WATTAGE L.E.D.	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	22	135	17	0.50	187.0
SIGNAL (YELLOW)	22	135	25	0.25	137.5
SIGNAL (GREEN)	24	135	15	0.25	90.0
ARROW	12	135	12	0.10	14.4
PED.SIGNAL	2	90	25	1.00	50.0
CONTROLLER	1	100	100	1.00	100.0
BATTERY BACKUP	1		25	1.00	25.0
VIDEO SYSTEMS			150	1.00	
LUMINAIRE		400		0.50	
FLASHER				0.05	
				TOTAL =	603.9

ENERGY COSTS – BILLED TO: CITY OF CRYSTAL LAKE
(ADDRESS) 100 WEST MUNICIPAL COMPLEX

ENERGY SUPPLY – CONTACT: MS. AUDREY HELGESEN
PHONE: (847) 816-5225
COMPANY: COMED–LIBERTYVILLE

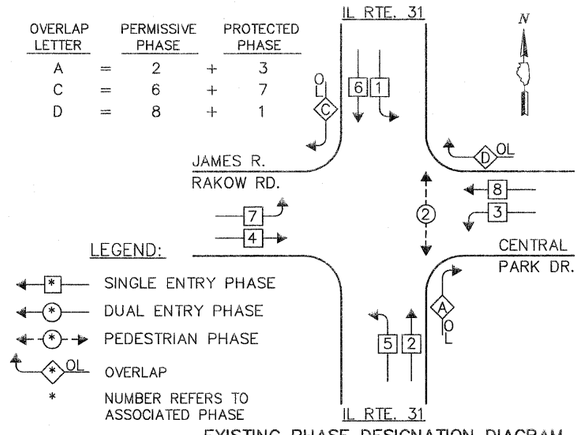
EXISTING & PROPOSED EMERGENCY VEHICLE PREEMPTION SEQUENCE



EXISTING & PROPOSED EMERGENCY VEHICLE PREEMPTORS				
EMERGENCY VEHICLE PREEMPTOR	3	4	5	6
MOVEMENT				

EXISTING CONTROLLER SEQUENCE

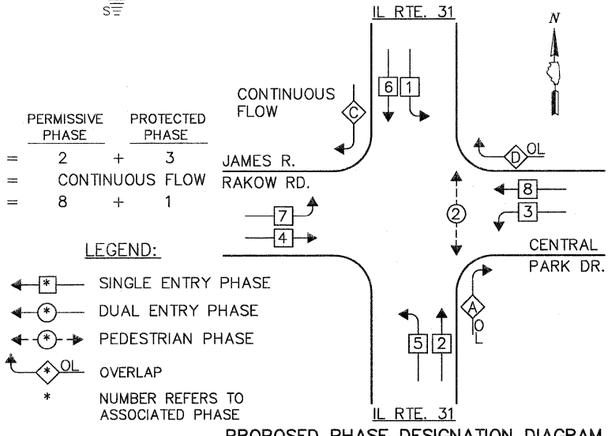
OVERLAP LETTER		PERMISSIVE PHASE		PROTECTED PHASE
A	=	2	+	3
C	=	6	+	7
D	=	8	+	1



EXISTING PHASE DESIGNATION DIAGRAM

PROPOSED CONTROLLER SEQUENCE

OVERLAP LETTER		PERMISSIVE PHASE		PROTECTED PHASE
A	=	2	+	3
C	=	CONTINUOUS FLOW		
D	=	8	+	1



PROPOSED PHASE DESIGNATION DIAGRAM

FILE NAME = 4153.800–tr1.dwg	USER NAME = GHA	DESIGNED - DPB	REVISED -
		DRAWN - ZCW	REVISED -
	PLOT SCALE = N.T.S.	CHECKED - DPB	REVISED -
	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -

MCHENRY COUNTY DIVISION OF TRANSPORTATION

CABLE PLAN, PHASE DESIGNATION DIAGRAM, AND SCHEDULE OF QUANTITIES
IL RTE. 31 AND JAMES R. RAKOW RD./CENTRAL PARK DR.

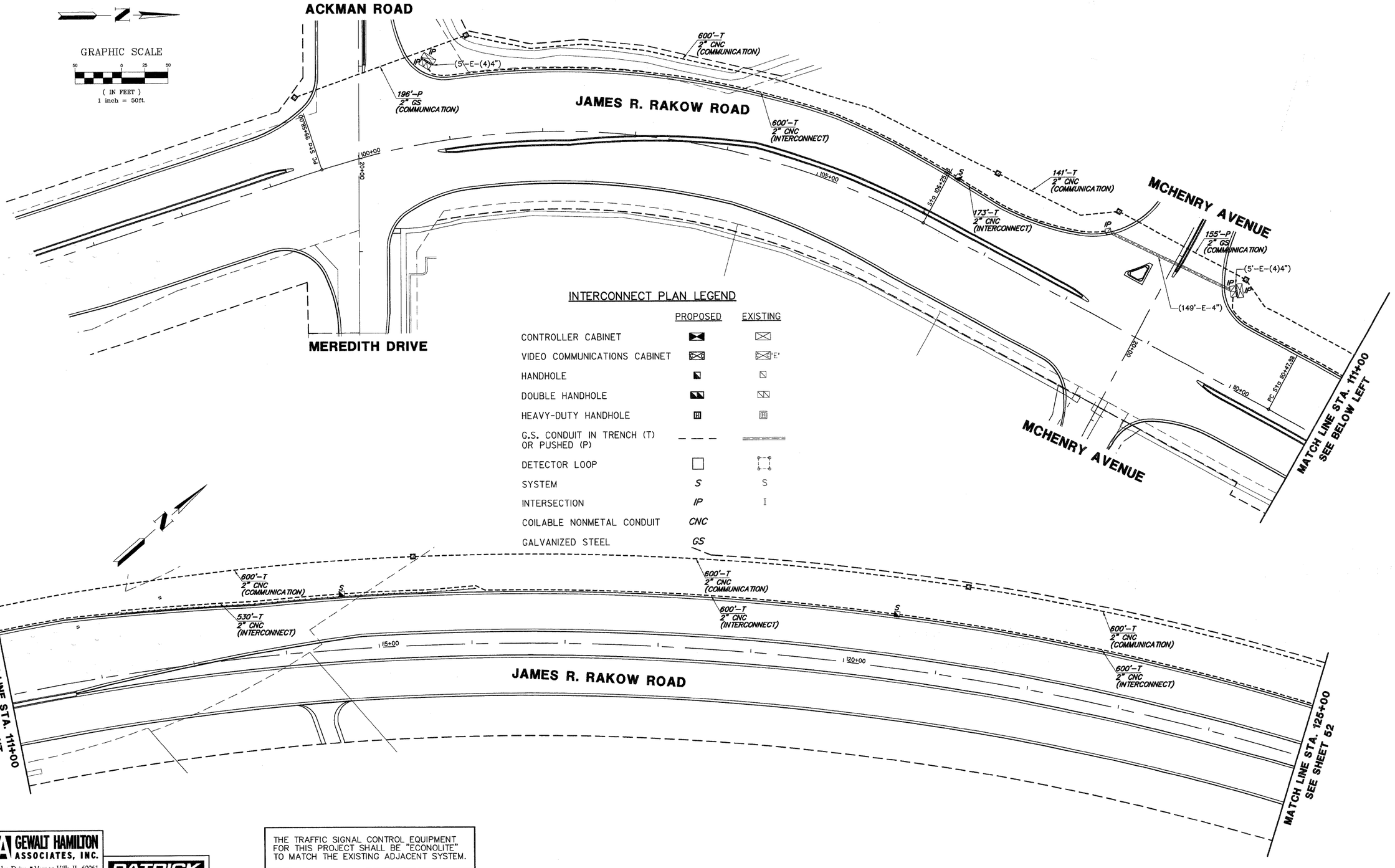
SCALE: N.A. | SGNL. SHEET # 50 OF 65 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05–00308–WR	McHENRY	606	359
		CONTRACT #:	63398	
		ILLINOIS FED. AID PROJECT		

GRAPHIC SCALE

50 0 25 50

(IN FEET)
1 inch = 50ft.



INTERCONNECT PLAN LEGEND

	PROPOSED	EXISTING
CONTROLLER CABINET	■	☒
VIDEO COMMUNICATIONS CABINET	☒	☒ 'E'
HANDHOLE	◪	◪
DOUBLE HANDHOLE	◪	◪
HEAVY-DUTY HANDHOLE	▣	▣
G.S. CONDUIT IN TRENCH (T) OR PUSHED (P)	- - -	═══
DETECTOR LOOP	□	□
SYSTEM	S	S
INTERSECTION	IP	I
COILABLE NONMETAL CONDUIT	CNC	
GALVANIZED STEEL	GS	

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

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PATRICK ENGINEERING INC.
LISLE, ILLINOIS

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	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

INTERCONNECT PLAN (SHEET 1 OF 5)
JAMES R. RAKOW RD. - ACKMAN RD./MEREDITH DR. TO IL RTE 31

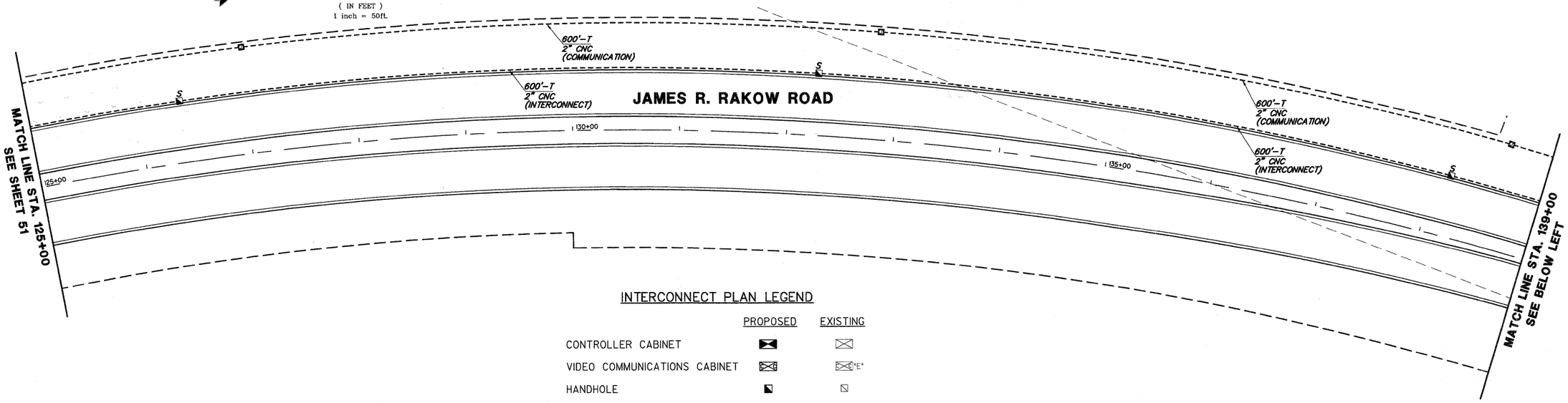
SCALE: 1"=50' | SGNL SHEET # 51 OF 65 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	360
		CONTRACT #:	63398	
	ILLINOIS FED. AID PROJECT			

GRAPHIC SCALE

50 0 25 50

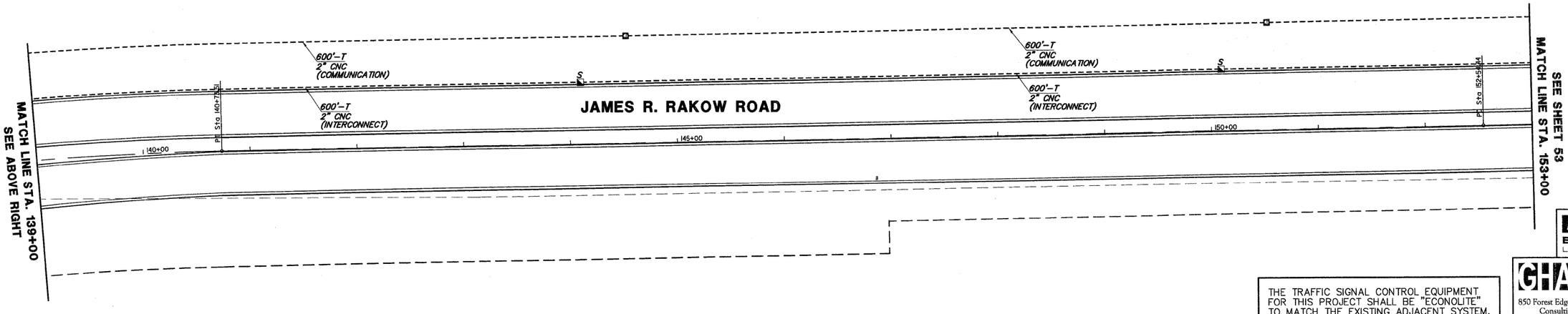
(IN FEET)
1 inch = 50ft.



INTERCONNECT PLAN LEGEND

	PROPOSED	EXISTING
CONTROLLER CABINET		
VIDEO COMMUNICATIONS CABINET		"E"
HANDHOLE		
DOUBLE HANDHOLE		
HEAVY-DUTY HANDHOLE	H	H
G.S. CONDUIT IN TRENCH (T) OR PUSHED (P)		
DETECTOR LOOP		
SYSTEM	S	S
INTERSECTION	IP	I
COILABLE NONMETAL CONDUIT	CNC	
GALVANIZED STEEL	GS	

N



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

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	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

INTERCONNECT PLAN (SHEET 2 OF 5)
JAMES R. RAKOW RD. - ACKMAN RD./MEREDITH DR. TO IL RTE 31

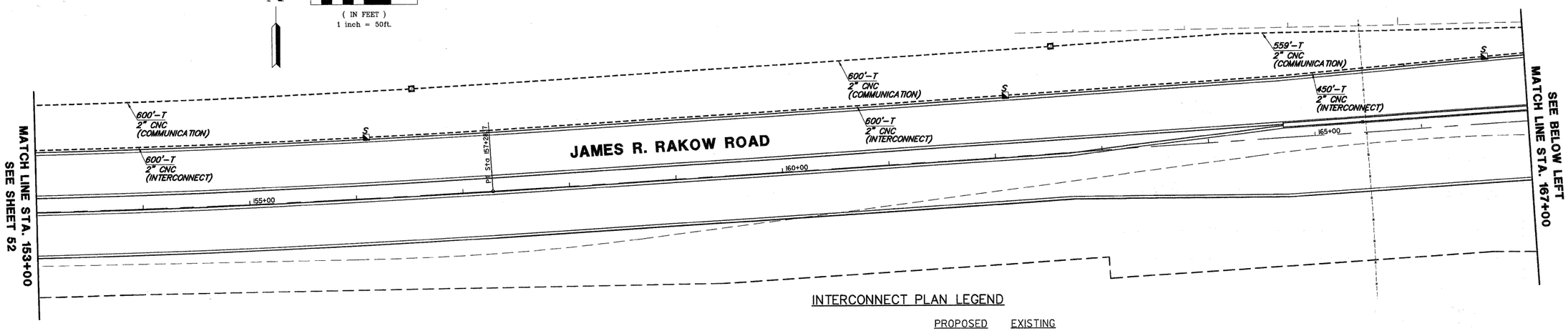
SCALE: 1"=50' | SGNL. SHEET # 52 OF 65 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	361
		CONTRACT #:	63398	
		ILLINOIS FED. AID PROJECT		

GRAPHIC SCALE

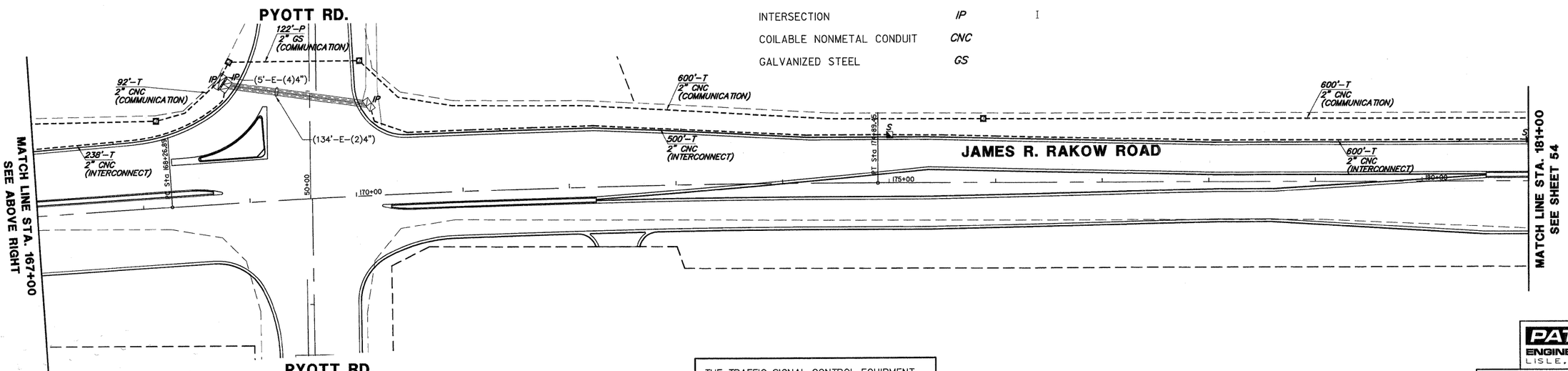
50 0 25 50

(IN FEET)
1 inch = 50ft.



INTERCONNECT PLAN LEGEND

	PROPOSED	EXISTING
CONTROLLER CABINET	⊠	⊠
VIDEO COMMUNICATIONS CABINET	⊠	⊠ 'E'
HANDHOLE	◪	◪
DOUBLE HANDHOLE	◪	◪
HEAVY-DUTY HANDHOLE	H	H
G.S. CONDUIT IN TRENCH (T) OR PUSHED (P)	— — —	═══
DETECTOR LOOP	□	⊡
SYSTEM	S	S
INTERSECTION	IP	I
COILABLE NONMETAL CONDUIT	CNC	
GALVANIZED STEEL	GS	



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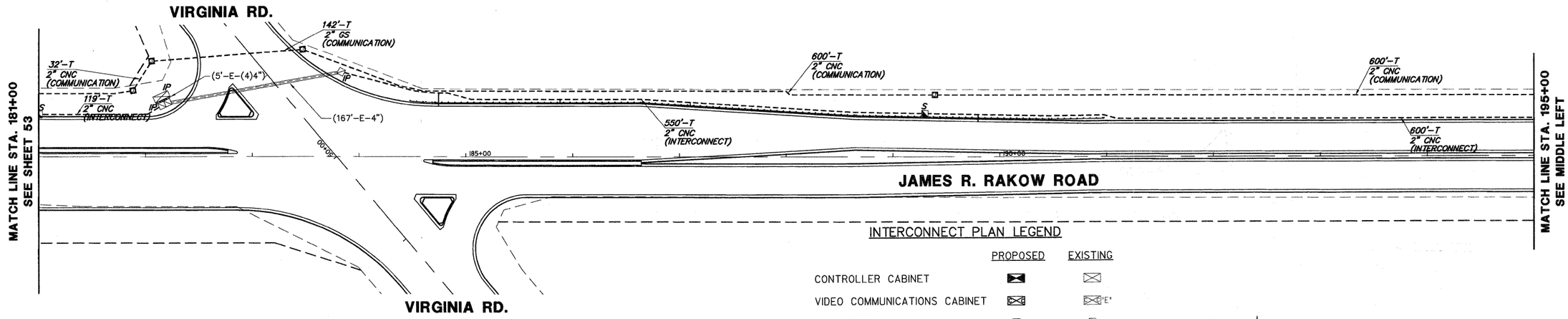
	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

INTERCONNECT PLAN (SHEET 3 OF 5)
JAMES R. RAKOW RD. - ACKMAN RD./MEREDITH DR. TO IL RTE 31

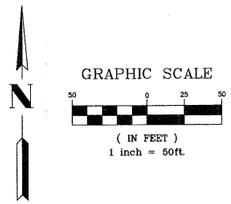
SCALE: 1"=50' | SGNL. SHEET # 53 OF 65 SHEETS | STA. | TO STA.

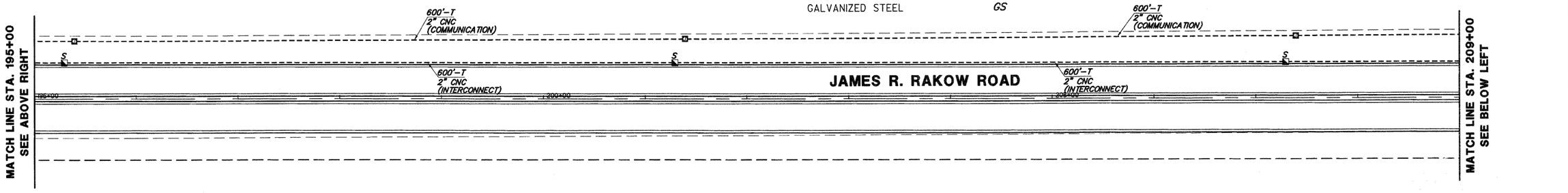
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	362
		CONTRACT #:	63398	
		ILLINOIS FED. AID PROJECT		

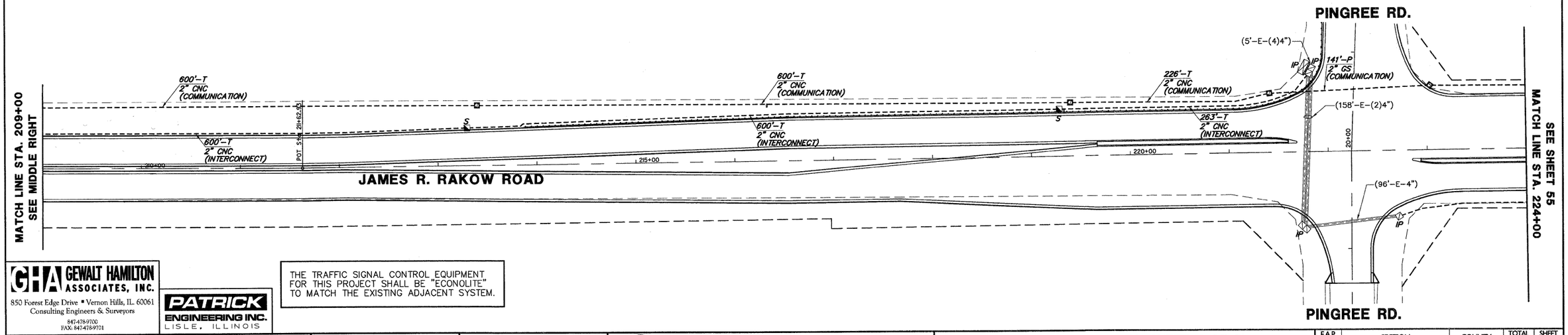


INTERCONNECT PLAN LEGEND

	PROPOSED	EXISTING
CONTROLLER CABINET	▪	▫
VIDEO COMMUNICATIONS CABINET	▪	▫ "E"
HANDHOLE	▪	▫
DOUBLE HANDHOLE	▪	▫
HEAVY-DUTY HANDHOLE	▪	▫
G.S. CONDUIT IN TRENCH (T) OR PUSHED (P)	– – –	═══
DETECTOR LOOP	□	⊡
SYSTEM	S	S
INTERSECTION	IP	I
COILABLE NONMETAL CONDUIT	CNC	
GALVANIZED STEEL	GS	







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LISLE, ILLINOIS

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		DRAWN - ZCW	REVISED -
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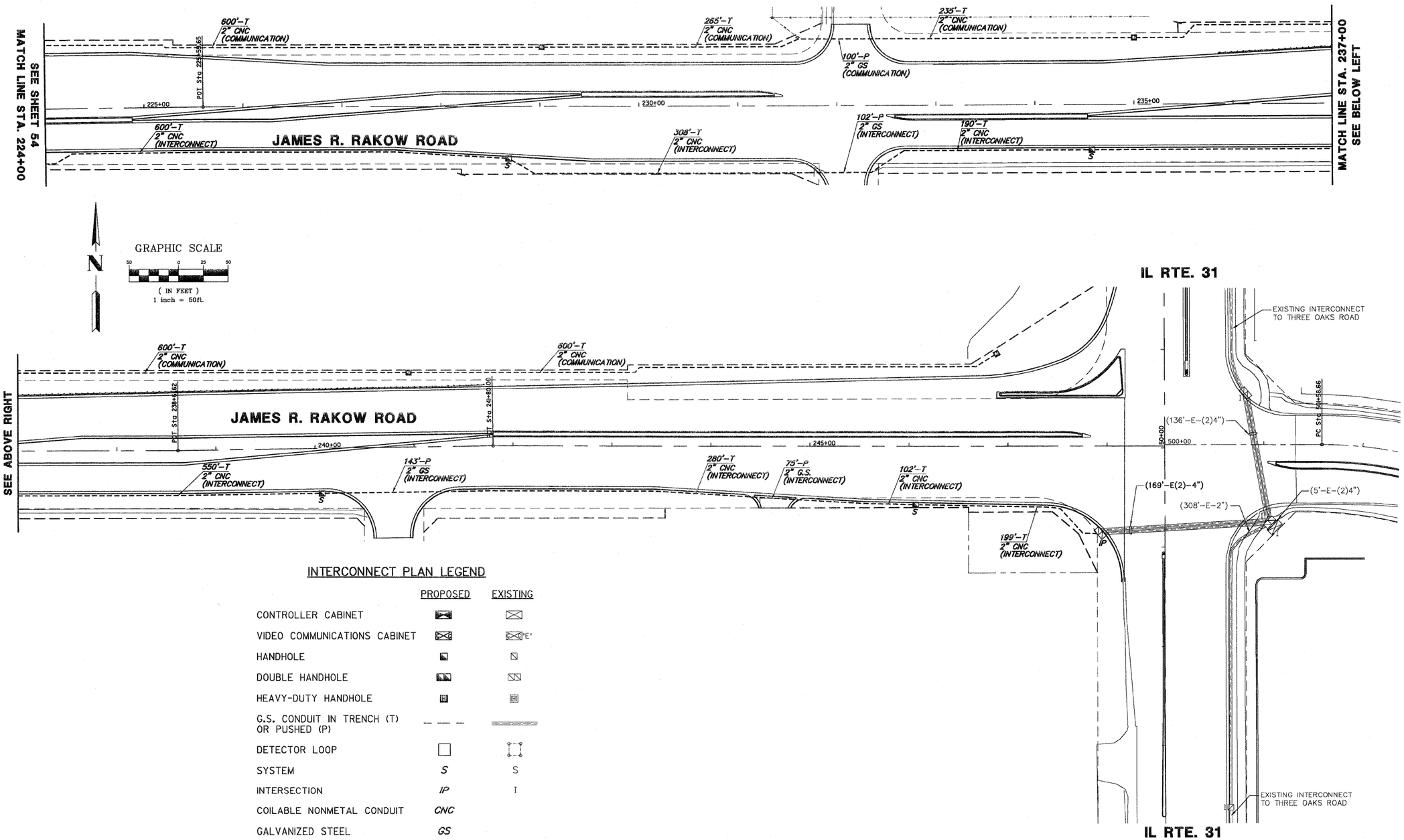
	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

INTERCONNECT PLAN (SHEET 4 OF 5)
JAMES R. RAKOW RD. - ACKMAN RD./MEREDITH DR. TO IL RTE 31

SCALE: 1"=50' | SGNL. SHEET # 54 OF 65 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	363
		CONTRACT #:	63398	
	ILLINOIS FED. AID PROJECT			



INTERCONNECT PLAN LEGEND

	PROPOSED	EXISTING
CONTROLLER CABINET		
VIDEO COMMUNICATIONS CABINET		"E"
HANDHOLE		
DOUBLE HANDHOLE		
HEAVY-DUTY HANDHOLE		
C.S. CONDUIT IN TRENCH (T) OR PUSHED (P)		
DETECTOR LOOP		
SYSTEM	S	S
INTERSECTION	IP	I
COILABLE NONMETAL CONDUIT	CNC	
GALVANIZED STEEL	GS	

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

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	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

INTERCONNECT PLAN (SHEET 5 OF 5)
JAMES R. RAKOW RD. - ACKMAN RD./MEREDITH DR. TO IL RTE 31
SCALE: 1"=50' | SGNL. SHEET # 55 OF 65 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	364
		CONTRACT #: 63398		
	ILLINOIS FED. AID PROJECT			

INTERCONNECT SCHEMATIC LEGEND

EXISTING INTERSECTION CONTROLLER	EXISTING FIBER OPTIC CABLE IN CONDUIT, NO. 62.5/125, MM12F SM12F
PROPOSED INTERSECTION CONTROLLER	**PROPOSED FIBER OPTIC CABLE IN CONDUIT, NO. 62.5/125, MM12F SM12F**
EXISTING MASTER CONTROLLER	EXISTING INTERCONNECT CABLE – NO. 62.5/125 12F FIBER OPTIC CABLE
PROPOSED MASTER CONTROLLER	**PROPOSED FIBER OPTIC CABLE IN CONDUIT, 62.5/125 12F FIBER OPTIC CABLE**
MASTER MASTER CONTROLLER	EXISTING INTERCONNECT CABLE – NO. 18 3 PAIR TWISTED, SHIELDED
EXISTING INTERSECTION & SAMPLING (SYSTEM) DETECTORS	**PROPOSED INTERCONNECT CABLE – NO. 18 3 PAIR TWISTED, SHIELDED**
PROPOSED INTERSECTION & SAMPLING (SYSTEM) DETECTORS	EXISTING LOOP DETECTOR CABLE 2/C TWISTED, SHIELDED
EXISTING INTERSECTION LOOP DETECTORS PROPOSED SAMPLING (SYSTEM) DETECTORS	**PROPOSED LOOP DETECTOR CABLE 2/C TWISTED, SHIELDED**
EXISTING SAMPLING (SYSTEM) DETECTORS	EXISTING ELECTRIC CABLE, 1/C (AS SPECIFIED)
PROPOSED SAMPLING (SYSTEM) DETECTORS	**PROPOSED ELECTRIC CABLE, 1/C (AS SPECIFIED)**
EXISTING SAMPLING (SYSTEM) DETECTORS. PROPOSED INTERSECTION AND SAMPLING (SYSTEM) DETECTORS	EXISTING INTERCONNECT CABLE – NO. 62.5/125, 36F FIBER OPTIC CABLE
EXISTING SAMPLING (SYSTEM) DETECTORS PROPOSED SAMPLING (SYSTEM) DETECTORS	**PROPOSED FIBER OPTIC CABLE IN CONDUIT – NO. 62.5/125, MM12F SM24F**
EXISTING PREFORMED INTERSECTION & SAMPLING (SYSTEM) DETECTORS	**PROPOSED INTERCONNECT CABLE – NO. 62.5/125, MM12F SM12F**
PROPOSED PREFORMED INTERSECTION & SAMPLING (SYSTEM) DETECTORS	EXISTING INTERCONNECT CABLE – NO. 62.5/125, MM12F SM12F
EXISTING SAMPLING (SYSTEM) PREFORMED DETECTORS	EXISTING TELEPHONE CONNECTION
PROPOSED SAMPLING (SYSTEM) PREFORMED DETECTORS	**PROPOSED TELEPHONE CONNECTION**
	EXISTING ISDN TELEPHONE CONNECTION
	PROPOSED ISDN TELEPHONE CONNECTION

SCHEDULE OF QUANTITIES

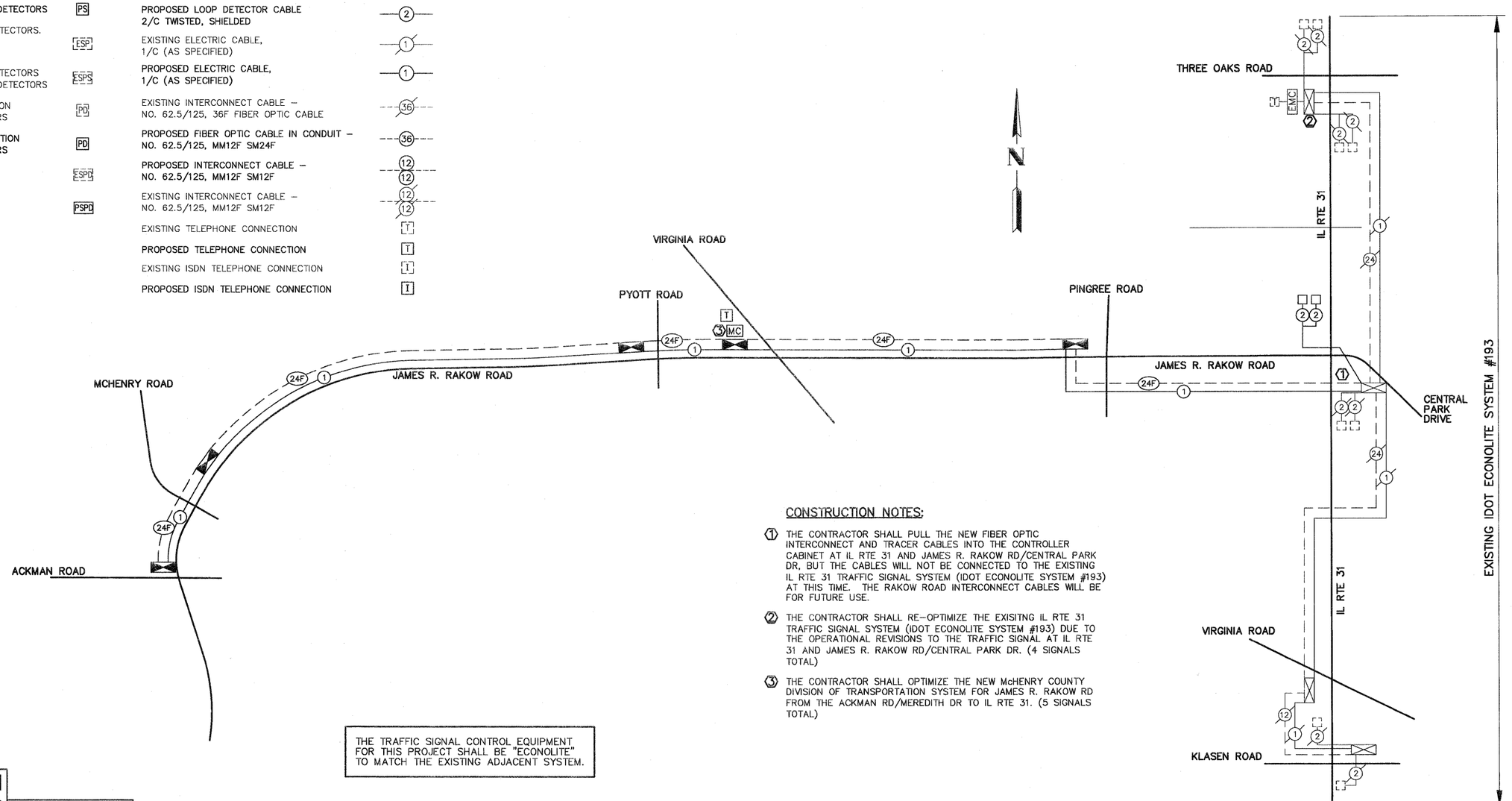
TRAFFIC SIGNAL INTERCONNECT - JAMES R. RAKOW RD. FROM ACKMAN RD./MEREDITH DR. TO IL RTE 31

NO.	QUANT.	UNIT	
1.	3,697	FOOT	CONDUIT IN TRENCH, 2" DIA., GALVANIZED STEEL
2.	10,298	FOOT	CONDUIT IN TRENCH, 2" DIA., COILABLE NONMETALLIC CONDUIT
3.	395	FOOT	CONDUIT PUSHED, 2" DIA., GALVANIZED STEEL
4.	23	EACH	HANDHOLE
5.	14,070	FOOT	TRENCH AND BACKFILL FOR ELECTRICAL WORK
6.	1	EACH	MASTER CONTROLLER (SPECIAL)
7.	15,691	FOOT	ELECTRIC CABLE IN CONDUIT, TRACER, NO. 14 1C
8.	1	EACH	OPTIMIZE TRAFFIC SIGNAL SYSTEM
9.	1	EACH	RE-OPTIMIZE TRAFFIC SIGNAL SYSTEM LEVEL 2
10.	15,691	FOOT	FIBER OPTIC CABLE IN CONDUIT, NO. 62.5/125, MM12F SM12F

SCHEDULE OF QUANTITIES

MISCELLANEOUS COMMUNICATION CONDUIT

NO.	QUANT.	UNIT	
1.	14,126	FOOT	CONDUIT IN TRENCH, 2" DIA., COILABLE NONMETALLIC CONDUIT
2.	877	FOOT	CONDUIT PUSHED, 2" DIA., GALVANIZED STEEL
3.	33	EACH	GULFBOX JUNCTION, COMPOSITE CONCRETE
4.	14,126	FOOT	TRENCH AND BACKFILL FOR ELECTRICAL WORK
5.	15,003	FOOT	ELECTRIC CABLE IN CONDUIT, TRACER, NO. 14 1C



CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL PULL THE NEW FIBER OPTIC INTERCONNECT AND TRACER CABLES INTO THE CONTROLLER CABINET AT IL RTE 31 AND JAMES R. RAKOW RD/CENTRAL PARK DR, BUT THE CABLES WILL NOT BE CONNECTED TO THE EXISTING IL RTE 31 TRAFFIC SIGNAL SYSTEM (IDOT ECONOLITE SYSTEM #193) AT THIS TIME. THE RAKOW ROAD INTERCONNECT CABLES WILL BE FOR FUTURE USE.
2. THE CONTRACTOR SHALL RE-OPTIMIZE THE EXISITNG IL RTE 31 TRAFFIC SIGNAL SYSTEM (IDOT ECONOLITE SYSTEM #193) DUE TO THE OPERATIONAL REVISIONS TO THE TRAFFIC SIGNAL AT IL RTE 31 AND JAMES R. RAKOW RD/CENTRAL PARK DR. (4 SIGNALS TOTAL)
3. THE CONTRACTOR SHALL OPTIMIZE THE NEW McHENRY COUNTY DIVISION OF TRANSPORTATION SYSTEM FOR JAMES R. RAKOW RD FROM THE ACKMAN RD/MEREDITH DR TO IL RTE 31. (5 SIGNALS TOTAL)

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

GHA GEWALT HAMILTON ASSOCIATES, INC.
850 Forest Edge Drive ▪ Vernon Hills, IL. 60061
Consulting Engineers & Surveyors
847-478-9700
FAX: 847-478-9701

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

FILE NAME = 4153.800-tr1.dwg	USER NAME = GHA	DESIGNED - DPB	REVISED -
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	PLOT SCALE = N.T.S.	CHECKED - DPB	REVISED -
	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

INTERCONNECT SCHEMATIC
JAMES R. RAKOW RD. - ACKMAN RD./MEREDITH DR. TO IL RTE 31

SCALE: N.A. | SGNL SHEET # 56 OF 65 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	365
		CONTRACT #: 63398		
		ILLINOIS FED. AID PROJECT		

LOOP DETECTOR NOTES

1. 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.

2. 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.

3. 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.

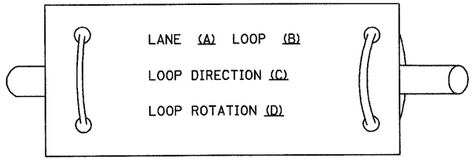
4. ALL LOOP CABLE SHALL BE FASTENED WITH PLASTIC TIE WRAP TO THE HANDHOLE HOOKS.

5. 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.

6. 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.

7. 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

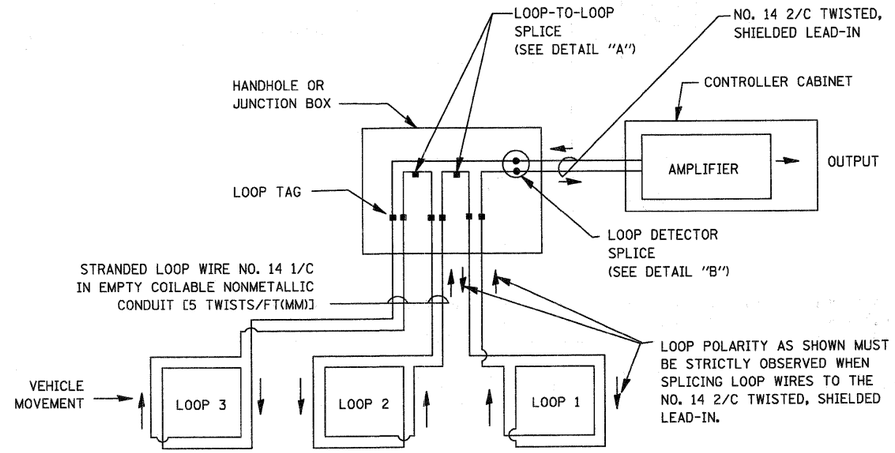


A. LANE 1 IS THE LANE CLOSEST TO THE CENTERLINE OF THE ROADWAY

B. LOOP #1 IS THE LOOP IN THE LANE CLOSEST TO THE INTERSECTION.

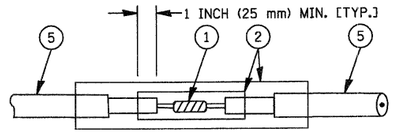
C. LABEL LOOP CABLE "IN" OR LOOP CABLE "OUT".

D. LABEL LOOP CABLE CLOCKWISE OR LOOP CABLE COUNTERCLOCKWISE.

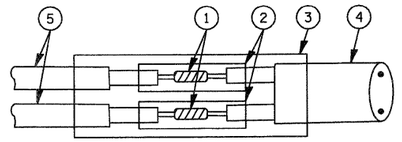


DETECTOR LOOP WIRING SCHEMATIC

- 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.

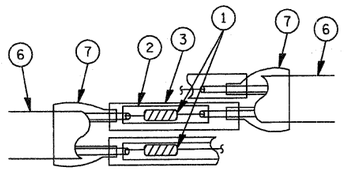


DETAIL "A"
LOOP-TO-LOOP SPLICE



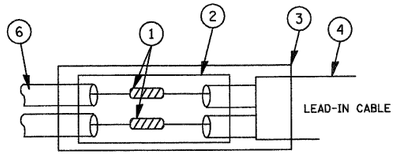
DETAIL "B"
LOOP-TO-CONTROLLER SPLICE

TYPE I LOOP



DETAIL "A"
LOOP-TO-LOOP SPLICE

PRE-FORMED LOOP



DETAIL "B"
LOOP-TO-CONTROLLER SPLICE

LOOP DETECTOR SPLICE

(1) WESTERN UNION SPLICE SOLDERED WITH ROSIN CORE FLUX. ALL EXPOSED SURFACES OF THE SOLDER SHALL BE SMOOTH.

(2) WCSMW 30/100 HEAT SHRINK TUBE, MINIMUM LENGTH 3" (75 mm), UNDERWATER GRADE.

(3) WCS 200/750 HEAT SHRINK TUBE, MINIMUM LENGHT 6" (150 mm), UNDERWATER GRADE.

(4) NO. 14 2/C TWISTED, SHIELDED CABLE.

(5) LOOP CONDUCTOR WITH FLEXIBLE PLASTIC TUBE.

(6) PRE-FORMED LOOP

(7) XL POLYOLEFIN 2 CONDUCTOR BREAKOUT SEALS. TYCO CBR-2 OR APPROVED EQUAL

FILE NAME = 4153.800-tr1.dwg	USER NAME = GHA	DESIGNED - DPB	REVISED -
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

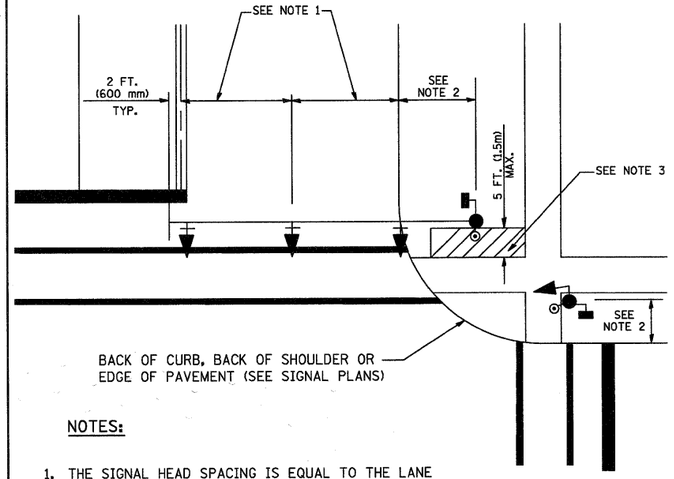
DISTRICT 1 (SHEET 1 OF 6)
STANDARD TRAFFIC SIGNAL DESIGN DETAILS

SCALE: N.A. | SGNL SHEET # 57 OF 65 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	366
		CONTRACT #:	63398	
		ILLINOIS FED. AID PROJECT		

TRAFFIC SIGNAL MAST ARM AND SIGNAL POST

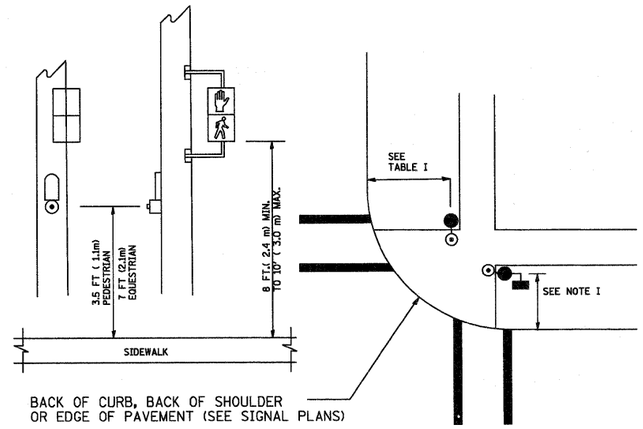
MAST ARM MOUNTED SIGNALS IN EXISTING, PROPOSED OR FUTURE SIDEWALK/BICYCLE PATH AREA. INTERSECTION SHOWN WITH PEDESTRIAN SIGNALS AND PEDESTRIAN PUSHBUTTON DETECTORS.



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."

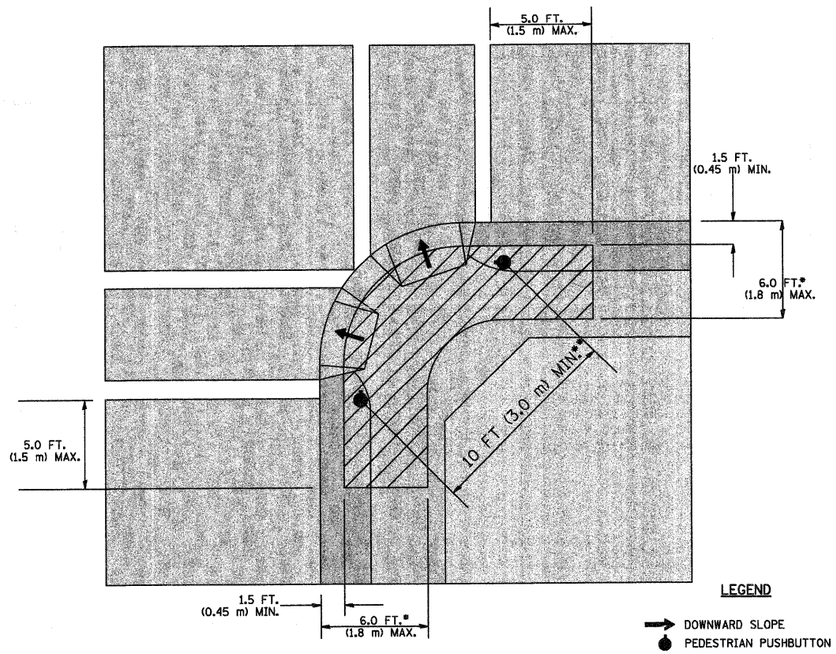
PEDESTRIAN SIGNAL POST AND PEDESTRIAN PUSH BUTTON POST



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



* 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:

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.

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.

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.

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.

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.

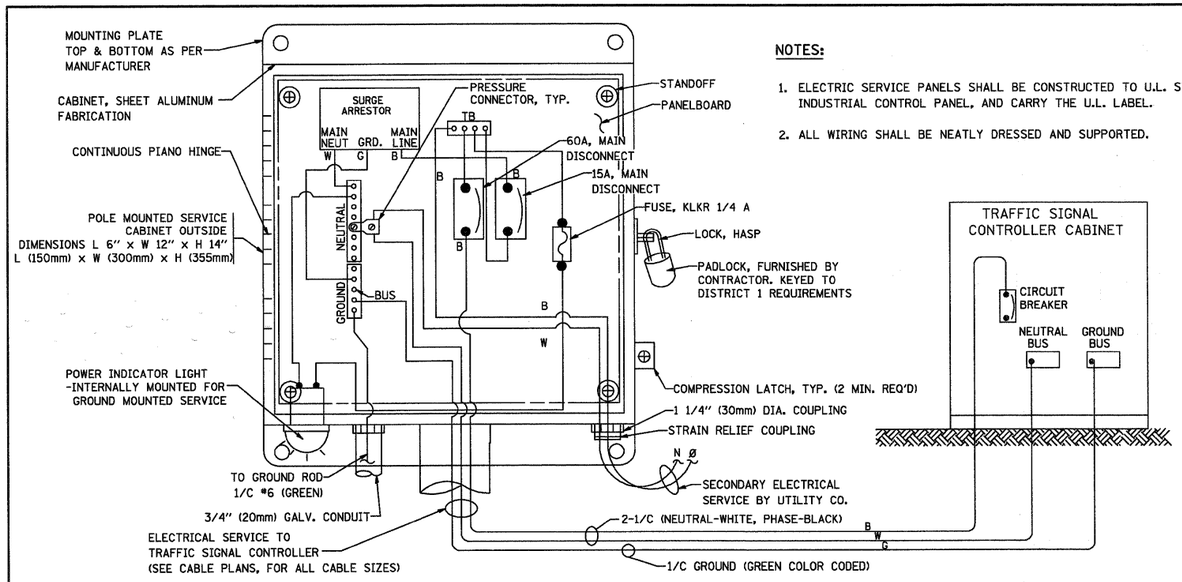
FILE NAME = 4153.800-tr1.dwg	USER NAME = GHA	DESIGNED - DPB	REVISED -
		DRAWN - ZCW	REVISED -
	PLOT SCALE = N.T.S.	CHECKED - DPB	REVISED -
	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DISTRICT 1 (SHEET 2 OF 6)
STANDARD TRAFFIC SIGNAL DESIGN DETAILS

SCALE: N.A. | SGNL SHEET # 58 OF 65 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	367
		CONTRACT #: 63398		
	ILLINOIS FED. AID PROJECT			



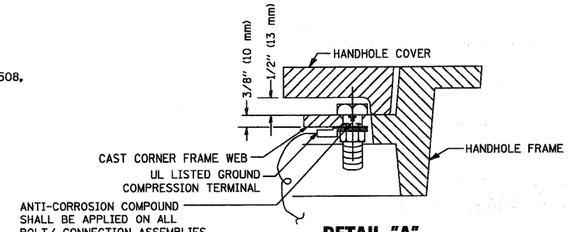
NOTES:

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.

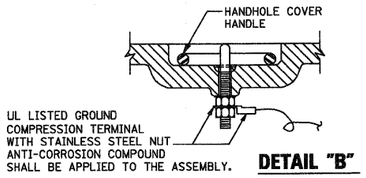
ELECTRICAL SERVICE – PANEL DIAGRAM (TYPICAL FOR POLE AND GROUND MOUNTED SERVICE)

SERVICE INSTALLATION POLE MOUNT (SHOWN)

(NOT TO SCALE)



DETAIL "A"

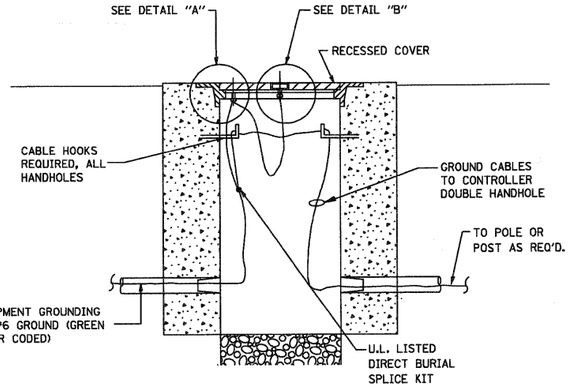


DETAIL "B"

NOTES:

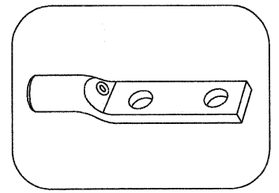
GROUNDING SYSTEM

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.

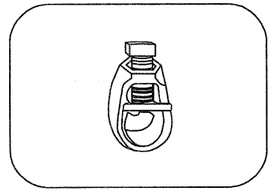


HANDHOLE COVER & FRAME – GROUNDING DETAIL

(NOT TO SCALE)



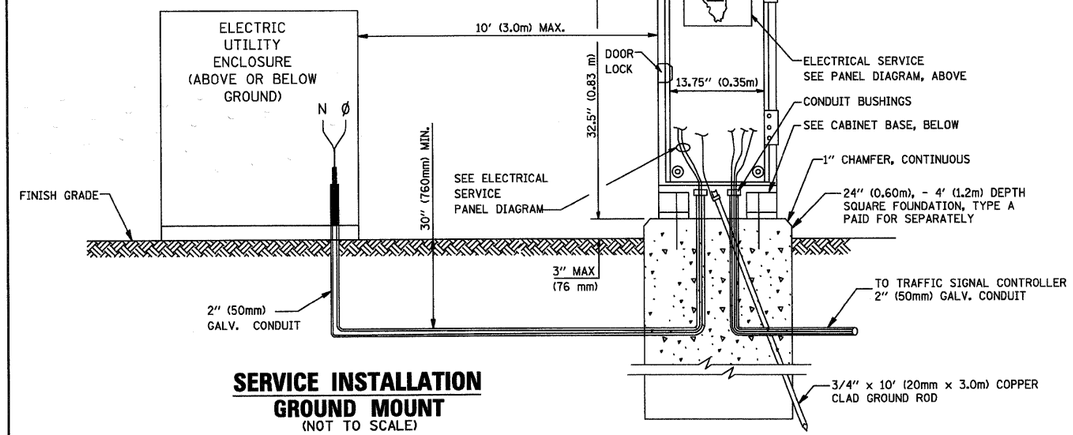
HEAVY-DUTY COMPRESSION TERMINAL (BURNDY TYPE YGHA OR APPROVED EQUAL)



¾" (20mm) HEAVY-DUTY GROUND ROD CLAMP (BURNDY TYPE GRC OR APPROVED EQUAL)

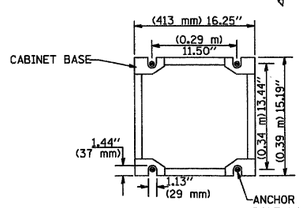
NOTES:

- 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.



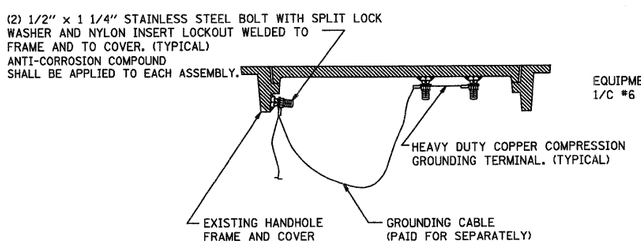
SERVICE INSTALLATION GROUND MOUNT

(NOT TO SCALE)



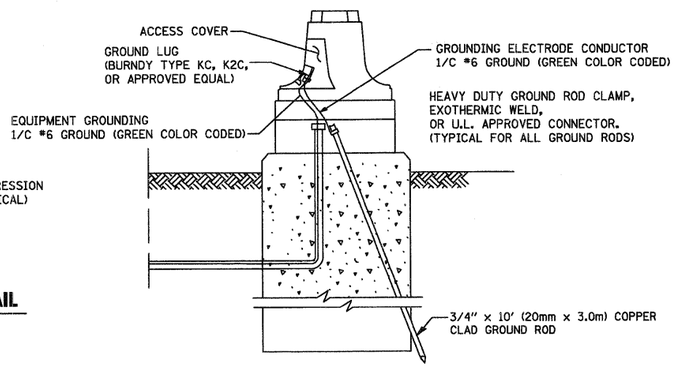
CABINET – BASE BOLT PATTERN

(NOT TO SCALE)



EXISTING HANDHOLE COVER & FRAME – GROUNDING DETAIL

(NOT TO SCALE)



MAST ARM POLE / POST–GROUNDING DETAIL

(NOT TO SCALE)

FILE NAME = 4153.800-tr1.dwg	USER NAME = GHA	DESIGNED - DPB	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DISTRICT 1 (SHEET 3 OF 6) STANDARD TRAFFIC SIGNAL DESIGN DETAILS
		DRAWN - ZCW	REVISED -		
	PLOT SCALE = N.T.S.	CHECKED - DPB	REVISED -		
	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -		SCALE: N.A. | SGNL SHEET # 59 OF 65 SHEETS | STA. | TO STA.

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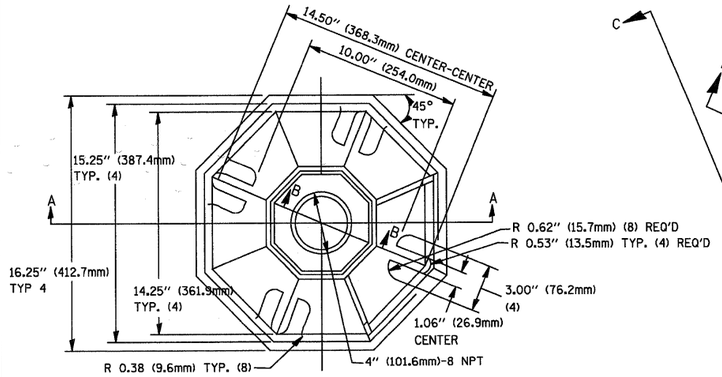
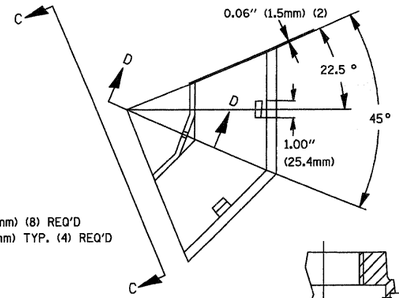
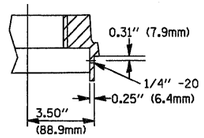
0336	05-00308-WR	McHENRY	606	368
		CONTRACT #: 63398		
		ILLINOIS | FED. AID PROJECT		

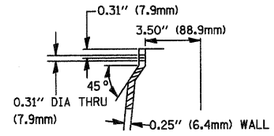


TOP VIEW

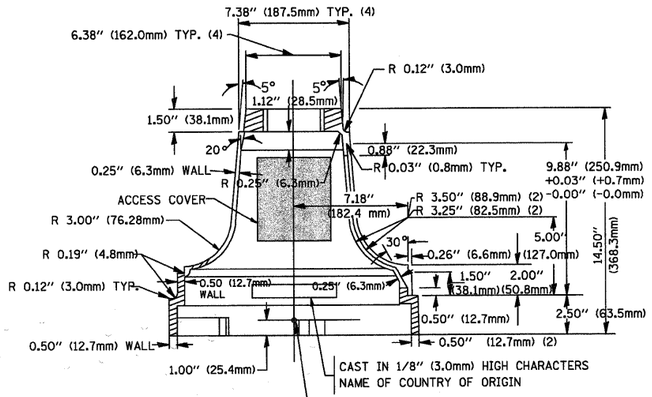




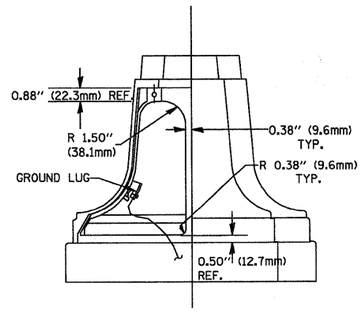
SECTION B-B



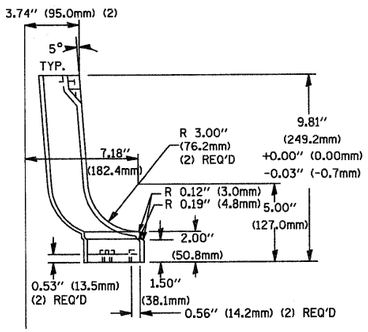
SECTION D-D



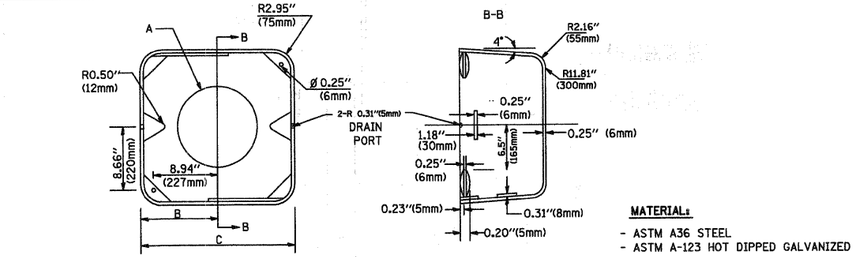
SECTION A-A



VIEW C-C



TRAFFIC SIGNAL POST - MOUNTING BASE - TYPE A



MATERIAL:
- ASTM A36 STEEL
- ASTM A-123 HOT DIPPED GALVANIZED

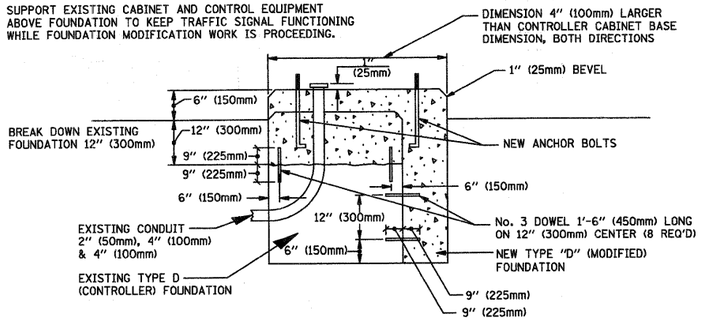
A	B	C	HEIGHT	WEIGHT
VARIES	9.5"(241mm)	19"(483mm)	7" (178mm) - 12" (300mm)	53 lbs (24kg)
VARIES	10.75"(273mm)	21.5"(546mm)	7" (178mm) - 12" (300mm)	68 lbs (31 kg)
VARIES	13.0"(330mm)	26"(660mm)	7" (178mm) - 12" (300mm)	81 lbs (37 kg)
VARIES	18.5"(470mm)	37"(940mm)	7" (178mm) - 12" (300mm)	126 lbs (57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

SHROUD

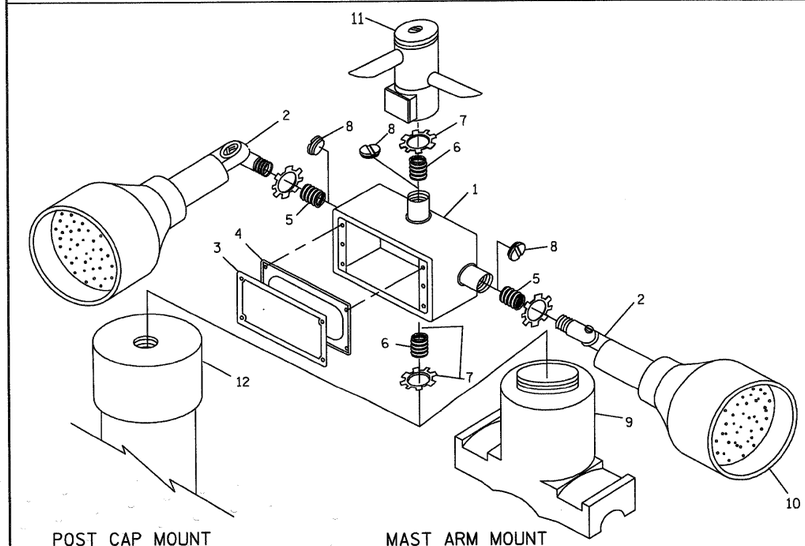
NOTES:

1. 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.
2. THE SUPPLIER SHALL VERIFIED THE ABOVE DIMENSIONS BASED ON MAST ARM REQUIREMENTS.
3. THE HEIGHT OF THE SHROUD SHALL COVER THE ANCHOR BOLTS, NUTS AND MAST ARM POLE BASE.

NOTE:
SUPPORT EXISTING CABINET AND CONTROL EQUIPMENT ABOVE FOUNDATION TO KEEP TRAFFIC SIGNAL FUNCTIONING WHILE FOUNDATION MODIFICATION WORK IS PROCEEDING.



MODIFY EXISTING TYPE "D" FOUNDATION



POST CAP MOUNT

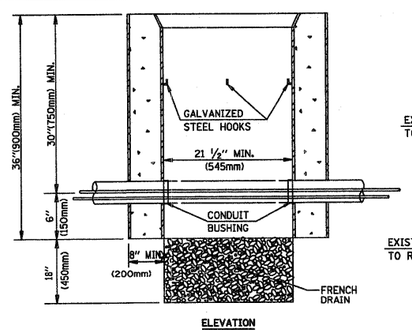
MAST ARM MOUNT

EMERGENCY VEHICLE DETECTOR WITH CONFIRMATION BEACON MOUNTING DETAIL

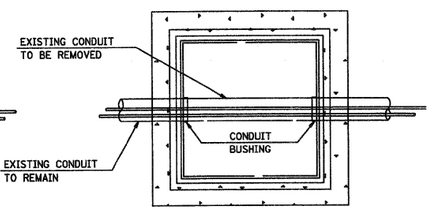
ITEM NO.	IDENTIFICATION
1	OUTLET BOX- GALV. 21 CU.IN. (0.000344 CU-M)
2	LAMP HOLDER AND COVER
3	OUTLET BOX COVER
4	RUBBER COVER GASKET
5	REDUCING BUSHING
6	¾"(19 mm) CLOSE NIPPLE
7	¾"(19 mm) LOCKNUT
8	¾"(19 mm) HOLE PLUG
9	SADDLE BRACKET - GALV.
10	6 WATT PAR 38 LED FLOOD LAMP
11	DETECTOR UNIT
12	POST CAP [18 FT. (5.4 m) POST MIN.]

NOTES:

1. ALL ELECTRICAL ITEMS, EXCEPT ITEMS #2 AND #11 SHALL BE ALUMINUM OR GALVANIZED
2. ITEM #1- OZ/GEDNEY FSX-1-50 OR EQUIVALENT
   ITEM #2- MULBERRY CON-O-SHADE LAMP SHIELD OR EQUIVALENT
   ITEM #9- "BAND-IT" SADDLE BRACKET OR EQUIVALENT
3. 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 ¾"(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.



ELEVATION



PLAN

NOTES:

1. HANDHOLE CONSTRUCTED PER STATE STANDARD 814001.
2. 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

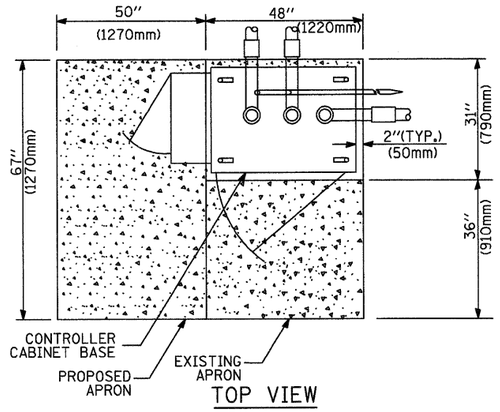
FILE NAME = 4153.800-tr1.dwg	USER NAME = GHA	DESIGNED - DPB	REVISED -
		DRAWN - ZCW	REVISED -
	PLOT SCALE = N.T.S.	CHECKED - DPB	REVISED -
	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

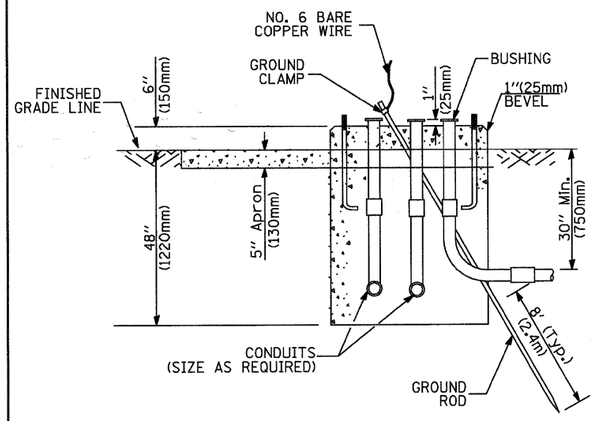
DISTRICT 1 (SHEET 4 OF 6)
STANDARD TRAFFIC SIGNAL DESIGN DETAILS

SCALE: N.A. | SGNL. SHEET # 60 OF 65 SHEETS | STA. | TO STA.

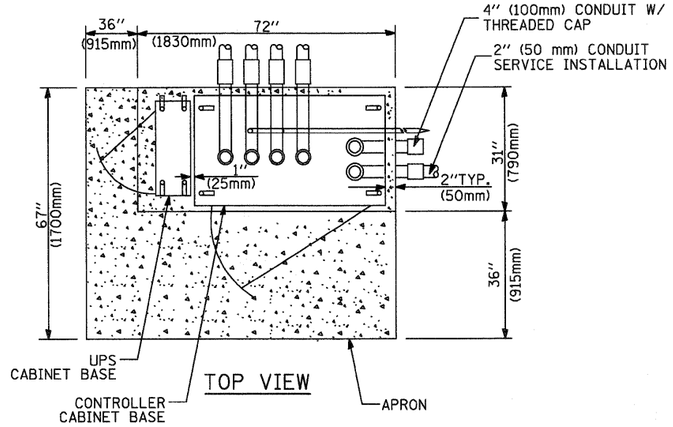
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	369
		CONTRACT #: 63398		
	ILLINOIS FED. AID PROJECT			



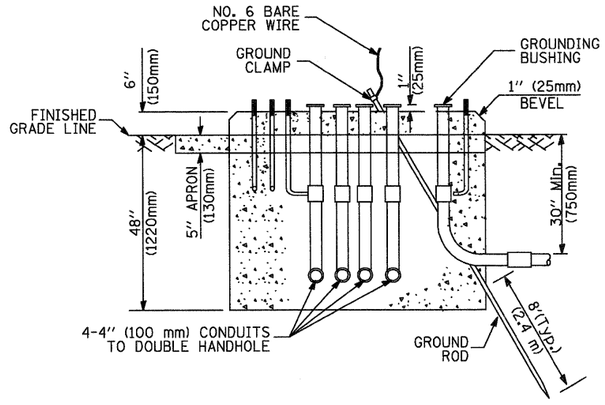
TOP VIEW



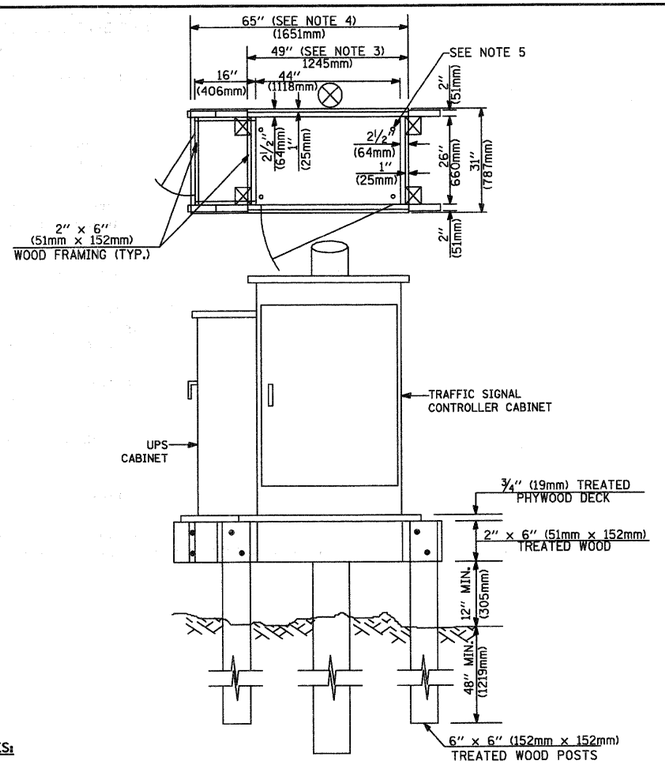
TYPE D
FOR GROUND MOUNTED
CONTROLLER CABINET
AND UPS BATTERY CABINET



TOP VIEW



TYPE C
FOR GROUND MOUNTED
CONTROLLER CABINET
AND UPS BATTERY CABINET



NOTES:

1. 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.
2. 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.
3. PLATFORM SIZE FOR CONTROLLER CABINET TYPE IV.
4. PLATFORM SIZE FOR CONTROLLER CABINET TYPE IV AND UNINTERRUPTIBLE POWER SUPPLY CABINET.
5. 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.
6. 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)
	11'-0" (3.4 m)	36" (900mm)	30" (750mm)	12	7(22)
Greater than or equal to 40' (12.2 m) and less than 50' (15.2 m)	13'-0" (4.0 m)	36" (900mm)	30" (750mm)	12	7(22)
Greater than or equal to 50' (15.2 m) and up to 55' (16.8 m)	15'-0" (4.6 m)	36" (900mm)	30" (750mm)	12	7(22)
Greater than or equal to 56' (16.8 m) and less than 65' (19.8 m)	21'-0" (6.4 m)	42" (1060mm)	36" (900mm)	16	8(25)
Greater than or equal to 65' (19.8 m) and up to 75' (22.9 m)	25'-0" (7.6 m)	42" (1060mm)	36" (900mm)	16	8(25)

NOTES:

1. 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.
2. Combination mast arm assemblies under 55 feet (16.8 m) shall use 36" (900 mm) diameter foundations.
3. Combination mast arm assemblies under 56 feet (16.8 m) through 75 feet (22.9 m) shall use 42" (1060 mm) diameter foundations.
4. For mast arm assemblies with dual arms refer to state standard 878001.

DEPTH OF MAST ARM FOUNDATIONS, TYPE E

FILE NAME = 4153.800-tr1.dwg	USER NAME = GHA	DESIGNED - DPB	REVISED -
		DRAWN - ZCW	REVISED -
	PLOT SCALE = N.T.S.	CHECKED - DPB	REVISED -
	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DISTRICT 1 (SHEET 5 OF 6)
STANDARD TRAFFIC SIGNAL DESIGN DETAILS

SCALE: N.A. | SGNL. SHEET # 61 OF 65 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	370
		CONTRACT #:	63398	
	ILLINOIS FED. AID PROJECT			

TRAFFIC SIGNAL LEGEND

ITEM	REMOVAL	EXISTING	PROPOSED
CONTROLLER CABINET	R		
RAILROAD CONTROL CABINET			
COMMUNICATIONS CABINET	R CC	ECC	CC
MASTER CONTROLLER		EMC	MC
MASTER MASTER CONTROLLER		EMMC	MMC
UNINTERRUPTIBLE POWER SUPPLY	R UPS	EUPS	UPS
SERVICE INSTALLATION, (P) POLE OR (G) GROUND MOUNT	R	P	P
TELEPHONE CONNECTION (P) POLE OR (G) GROUND MOUNT	R T	P T	P T
STEEL MAST ARM ASSEMBLY AND POLE	R		
ALUMINUM MAST ARM ASSEMBLY AND POLE	R		
STEEL COMBINATION MAST ARM ASSEMBLY AND POLE WITH LUMINAIRE	R		
STEEL COMBINATION MAST ARM ASSEMBLY AND POLE WITH PTZ CAMERA	R PTZ	PTZ	PTZ
SIGNAL POST	R		
TEMPORARY WOOD POLE (CLASS 5 OR BETTER) 45 FOOT (13.7m) MINIMUM	R		
GUY WIRE	R		
SIGNAL HEAD	R		
SIGNAL HEAD CONSTRUCTION STAGES (NUMBERS INDICATE THE CONSTRUCTION STAGE)			2
SIGNAL HEAD WITH BACKPLATE	R		
SIGNAL HEAD OPTICALLY PROGRAMMED	R "P"	"P"	"P"
FLASHER INSTALLATION (S DENOTES SOLAR POWER)	R "F"	"F"	"F"
PEDESTRIAN SIGNAL HEAD	R		
PEDESTRIAN PUSHBUTTON DETECTOR	R		
ACCESSIBLE PEDESTRIAN PUSHBUTTON DETECTOR	R APS	APS	APS
ILLUMINATED SIGN "NO LEFT TURN"	R		
ILLUMINATED SIGN "NO RIGHT TURN"	R		
DETECTOR LOOP, TYPE I			
PREFORMED DETECTOR LOOP		P	P
MICROWAVE VEHICLE SENSOR	R M	M	M
VIDEO DETECTION CAMERA	R V	V	V
VIDEO DETECTION ZONE			
PAN, TILT, ZOOM CAMERA	R PTZ	PTZ	PTZ
WIRELESS DETECTOR SENSOR	R W	W	W
WIRELESS ACCESS POINT	R		

ITEM	REMOVAL	EXISTING	PROPOSED
EMERGENCY VEHICLE LIGHT DETECTOR	R		
CONFIRMATION BEACON	R		
HANDHOLE	R		
HEAVY DUTY HANDHOLE	R H	H	H
DOUBLE HANDHOLE	R		
JUNCTION BOX	R		
GALVANIZED STEEL CONDUIT IN TRENCH (T) OR PUSHED (P)			
TEMPORARY SPAN WIRE, TETHER WIRE, AND CABLE	R		
COMMON TRENCH			CT
COILABLE NONMETALLIC CONDUIT (EMPTY)			CNC
SYSTEM ITEM		S	S
INTERSECTION ITEM		I	IP
REMOVE ITEM	R		
RELOCATE ITEM	RL		
ABANDON ITEM	A		
12" (300mm) TRAFFIC SIGNAL SECTION		R	R
12" (300mm) RED WITH 8" (200mm) YELLOW AND GREEN TRAFFIC SIGNAL FACE		R Y G	
SIGNAL FACE		R Y G Y G	R Y G Y G
SIGNAL FACE WITH BACKPLATE. "P" INDICATES PROGRAMMED HEAD		R Y G Y G "P"	R Y G Y G "P"
12" (300mm) PEDESTRIAN SIGNAL HEAD WALK/DON'T WALK SYMBOL		DW W	
12" (300mm) PEDESTRIAN SIGNAL HEAD INTERNATIONAL SYMBOL, OUTLINED			
12" (300mm) PEDESTRIAN SIGNAL HEAD INTERNATIONAL SYMBOL, SOLID			
PEDESTRIAN SIGNAL HEAD, INTERNATIONAL SYMBOL, WITH COUNTDOWN TIMER		C D	C D
RADIO INTERCONNECT	R		
RADIO REPEATER	R ERR	ERR	RR
DENOTES NUMBER OF CONDUCTORS, ELECTRIC CABLE NO. 14, UNLESS NOTED OTHERWISE, ALL DETECTOR LOOP CABLE TO BE SHIELDED		5	5
GROUND CABLE IN CONDUIT NO. 6 SOLID COPPER (GREEN)		1	1

ITEM	REMOVAL	EXISTING	PROPOSED
ELECTRIC CABLE IN CONDUIT, TRACER, NO. 14 1/C, UNLESS NOTED OTHERWISE		1	1
COAXIAL CABLE		C	C
VENDOR CABLE FOR CAMERA		V	V
COPPER INTERCONNECT CABLE, NO. 18 3 PAIR TWISTED, SHIELDED		6	6
FIBER OPTIC CABLE NO. 62.5/125, MM12F		12F	
FIBER OPTIC CABLE NO. 62.5/125, MM12F SM12F		24F	24F
FIBER OPTIC CABLE NO. 62.5/125, (NUMBER OF FIBERS & TYPE TO BE NOTED ON PLANS)			
GROUND ROD AT (C) CONTROLLER, (H) HANDHOLE, (P) POST, (M) MAST ARM, OR (S) SERVICE		C	C
CONTROLLER CABINET AND FOUNDATION TO BE REMOVED	RCF		
STEEL MAST ARM POLE AND FOUNDATION TO BE REMOVED	RMF		
ALUMINUM MAST ARM POLE AND FOUNDATION TO BE REMOVED	RMF		
STEEL COMBINATION MAST ARM ASSEMBLY AND POLE WITH LUMINAIRE AND FOUNDATION TO BE REMOVED	RMF		
SIGNAL POST AND FOUNDATION TO BE REMOVED	RMF		
INTERSECTION & SAMPLING (SYSTEM) DETECTOR		IS	IS
SAMPLING (SYSTEM) DETECTOR		S	S
EXISTING INTERSECTION LOOP DETECTOR PROPOSED INTERSECTION AND SAMPLING (SYSTEM) DETECTOR		P	
EXISTING PREFORMED INTERSECTION LOOP DETECTOR PROPOSED INTERSECTION AND SAMPLING (SYSTEM) DETECTOR		PP	
PREFORMED INTERSECTION AND SAMPLING (SYSTEM) DETECTOR		PIS	PIS
PREFORMED SAMPLING (SYSTEM) DETECTOR		PS	PS

RAILROAD SYMBOLS

	EXISTING	PROPOSED
RAILROAD CONTROL CABINET		
RAILROAD CANTILEVER MAST ARM		
FLASHING SIGNAL		
CROSSING GATE		
CROSSBUCK		

FILE NAME = 4153.800-tr1.dwg	USER NAME = GHA	DESIGNED - DPB	REVISED -
		DRAWN - ZCW	REVISED -
	PLOT SCALE = N.T.S.	CHECKED - DPB	REVISED -
	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DISTRICT 1 (SHEET 6 OF 6)
STANDARD TRAFFIC SIGNAL DESIGN DETAILS

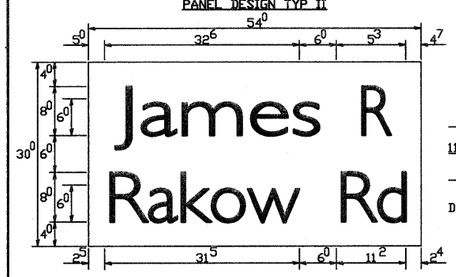
SCALE: N.A. | SGNL. SHEET # 62 OF 65 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	371
		CONTRACT #:	63398	
	ILLINOIS FED. AID PROJECT			

PANEL DESIGN TYPE I

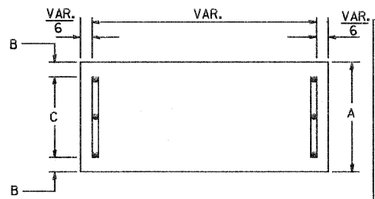
____ Sq. M. each
7.50 Sq. Ft. each
2 Required
Design Series D

PANEL DESIGN TYP II

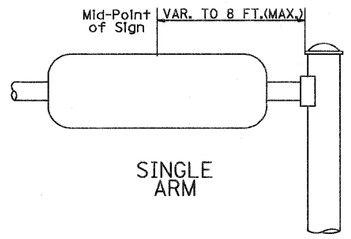


____ Sq. M. each
11.25 Sq. Ft. each
2 Required
Design Series D

SUPPORTING CHANNELS



A	B	C
18″	2″	14″



Upper Case To Lower Case
Spacing Chart 8-6 Inch Series "C & D"

FIRST LETTER	SECOND LETTER: a c d e g o q		b h i k l m n p r u		f w		j		s t		v y		x		z	
SERIES	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
A W X	1^{2}	1^{4}	1^{4}	1^{5}	1^{2}	1^{4}	0^{6}	1^{0}	1^{1}	1^{4}	0^{6}	1^{0}	1^{1}	1^{2}	1^{2}	1^{4}
B	1^{4}	1^{5}	2^{0}	2^{1}	1^{4}	1^{5}	1^{1}	1^{2}	1^{4}	1^{5}	1^{2}	1^{4}	1^{2}	1^{4}	1^{6}	1^{7}
C E G	1^{4}	1^{5}	2^{0}	2^{1}	1^{2}	1^{4}	0^{6}	1^{0}	1^{2}	1^{4}	1^{2}	1^{4}	1^{4}	1^{5}	1^{4}	1^{5}
D O Q R	1^{4}	1^{5}	2^{0}	2^{1}	1^{4}	1^{5}	0^{6}	1^{0}	1^{2}	1^{4}	1^{2}	1^{4}	1^{4}	1^{5}	1^{4}	1^{5}
F	0^{5}	0^{6}	1^{4}	1^{5}	0^{6}	1^{0}	0^{5}	0^{6}	0^{6}	1^{0}	0^{6}	1^{0}	0^{6}	1^{0}	1^{1}	1^{2}
H I M N	2^{0}	2^{1}	2^{2}	2^{4}	2^{0}	2^{1}	1^{4}	1^{5}	1^{6}	1^{7}	1^{6}	1^{7}	2^{0}	2^{1}	2^{0}	2^{1}
J U	2^{0}	2^{1}	2^{0}	2^{1}	1^{6}	1^{7}	1^{4}	1^{5}	1^{6}	1^{7}	1^{6}	1^{7}	1^{6}	1^{7}	2^{0}	2^{1}
K L	1^{1}	1^{2}	1^{6}	1^{7}	1^{1}	1^{2}	0^{5}	0^{6}	1^{1}	1^{2}	1^{1}	1^{2}	1^{1}	1^{2}	1^{2}	1^{4}
P	1^{2}	1^{4}	1^{4}	1^{5}	1^{2}	1^{4}	0^{5}	0^{6}	1^{1}	1^{2}	1^{1}	1^{2}	1^{2}	1^{4}	1^{2}	1^{4}
S	1^{2}	1^{4}	1^{6}	1^{7}	1^{2}	1^{4}	0^{6}	1^{0}	1^{2}	1^{4}	1^{2}	1^{4}	1^{2}	1^{4}	1^{2}	1^{4}
T	1^{1}	1^{2}	1^{6}	1^{7}	0^{6}	1^{0}	0^{6}	1^{0}	1^{1}	1^{2}	1^{1}	1^{2}	1^{1}	1^{2}	1^{2}	1^{4}
V	0^{6}	1^{0}	1^{4}	1^{5}	1^{1}	1^{2}	0^{6}	1^{0}	1^{2}	1^{4}	1^{2}	1^{4}	1^{2}	1^{4}	1^{2}	1^{4}
Y	0^{5}	0^{6}	1^{4}	1^{5}	0^{6}	1^{0}	0^{5}	0^{6}	0^{5}	0^{7}	0^{5}	0^{6}	0^{6}	1^{0}	1^{1}	1^{2}
Z	1^{6}	1^{7}	2^{2}	2^{4}	1^{6}	1^{7}	1^{2}	1^{4}	1^{6}	1^{7}	1^{6}	1^{7}	1^{6}	1^{7}	2^{0}	2^{1}

EXAMPLE, $2^{\textcircled{3}}$ DENOTES $\frac{3''}{8}$

UPPER AND LOWER CASE
LETTER WIDTHS

LETTERS	6 INCH UPPER CASE LETTERS SERIES C	D	8 INCH UPPER CASE LETTERS SERIES C	D	LETTERS	6 INCH LOWER CASE LETTERS SERIES C	D
A	3^{6}	5^{0}	5^{0}	6^{5}	a	3^{5}	4^{2}
B	3^{2}	4^{0}	4^{3}	5^{3}	b	3^{5}	4^{2}
C	3^{2}	4^{0}	4^{3}	5^{3}	c	3^{5}	4^{1}
D	3^{2}	4^{0}	4^{3}	5^{3}	d	3^{5}	4^{2}
E	3^{0}	3^{5}	4^{0}	4^{7}	e	3^{5}	4^{2}
F	3^{0}	3^{5}	4^{0}	4^{7}	f	2^{3}	2^{6}
G	3^{2}	4^{0}	4^{3}	5^{3}	g	3^{5}	4^{2}
H	3^{2}	4^{0}	4^{3}	5^{3}	h	3^{5}	4^{2}
I	0^{7}	0^{7}	1^{1}	1^{2}	i	1^{1}	1^{1}
J	3^{0}	3^{6}	4^{0}	5^{0}	j	2^{0}	2^{2}
K	3^{2}	4^{1}	4^{3}	5^{4}	k	3^{5}	4^{2}
L	3^{0}	3^{5}	4^{0}	4^{7}	l	1^{1}	1^{1}
M	3^{7}	4^{5}	5^{1}	6^{1}	m	6^{0}	7^{0}
N	3^{2}	4^{0}	4^{3}	5^{3}	n	3^{5}	4^{2}
O	3^{4}	4^{2}	4^{5}	5^{5}	o	3^{6}	4^{3}
P	3^{2}	4^{0}	4^{3}	5^{3}	p	3^{5}	4^{2}
Q	3^{4}	4^{2}	4^{5}	5^{5}	q	3^{5}	4^{2}
R	3^{2}	4^{0}	4^{3}	5^{3}	r	2^{6}	3^{2}
S	3^{2}	4^{0}	4^{3}	5^{3}	s	3^{6}	4^{2}
T	3^{0}	3^{5}	4^{0}	4^{7}	t	2^{7}	3^{2}
U	3^{2}	4^{0}	4^{3}	5^{3}	u	3^{5}	4^{2}
V	3^{5}	4^{4}	4^{7}	6^{0}	v	4^{2}	4^{7}
W	4^{4}	5^{2}	6^{0}	7^{0}	w	5^{5}	6^{4}
X	3^{4}	4^{0}	4^{5}	5^{3}	x	4^{4}	5^{1}
Y	3^{6}	5^{0}	5^{0}	6^{6}	y	4^{6}	5^{3}
Z	3^{2}	4^{0}	4^{3}	5^{3}	z	3^{6}	4^{3}

SUPPORTING CHANNELS

A	B	C
18″	2″	12″
30″	2″	22″

Lower Case To Lower Case
Spacing Chart 6 Inch Series "C & D"

FIRST LETTER	SECOND LETTER: a c d e g o q		b h i k l m n p r u		f w		j		s t		v y		x		z	
SERIES	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
a d h g i j l m n q u	1^{6}	1^{7}	2^{2}	2^{4}	1^{6}	1^{7}	1^{2}	1^{4}	1^{4}	1^{5}	1^{4}	1^{5}	1^{6}	1^{7}	1^{6}	1^{7}
b f k o p s	1^{2}	1^{4}	1^{6}	1^{7}	1^{1}	1^{2}	0^{5}	0^{6}	1^{1}	1^{2}	1^{1}	1^{2}	1^{2}	1^{4}	1^{2}	1^{4}
c e	1^{2}	1^{4}	1^{6}	1^{7}	1^{2}	1^{4}	0^{6}	1^{0}	1^{2}	1^{4}	1^{2}	1^{4}	1^{2}	1^{4}	1^{2}	1^{4}
r	0^{6}	1^{0}	1^{2}	1^{4}	0^{6}	1^{0}	0^{3}	0^{3}	0^{5}	0^{6}	0^{5}	0^{6}	0^{6}	1^{0}	0^{6}	1^{0}
t z	1^{2}	1^{4}	1^{6}	1^{7}	1^{2}	1^{4}	0^{6}	1^{0}	1^{1}	1^{2}	1^{1}	1^{2}	1^{2}	1^{4}	1^{2}	1^{4}
v y	1^{1}	1^{2}	1^{4}	1^{5}	1^{1}	1^{2}	0^{5}	0^{6}	0^{6}	1^{0}	0^{6}	1^{0}	1^{1}	1^{2}	1^{1}	1^{2}
w	1^{1}	1^{2}	1^{4}	1^{5}	1^{1}	1^{2}	0^{5}	0^{6}	1^{1}	1^{2}	1^{1}	1^{2}	1^{1}	1^{2}	1^{2}	1^{4}
x	1^{2}	1^{4}	1^{6}	1^{7}	1^{1}	1^{2}	0^{5}	0^{6}	1^{1}	1^{2}	1^{1}	1^{2}	1^{1}	1^{2}	1^{2}	1^{4}

SIGNFIX ALUMINUM CHANNEL FRAMING SYSTEM
shall be used. See Note #5.

Number To Number
Spacing Chart 8 Inch Series "C & D"

FIRST NUMBER	SECOND NUMBER: 0		1		2		3		4		5		6		7		8		9	
SERIES	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
0 9	1^{6}	1^{7}	1^{6}	1^{7}	1^{4}	1^{5}	1^{2}	1^{4}	1^{4}	1^{5}	1^{4}	1^{5}	1^{6}	1^{7}	1^{2}	1^{4}	1^{6}	1^{7}	1^{6}	1^{7}
1	2^{0}	2^{1}	2^{0}	2^{1}	2^{0}	2^{1}	1^{6}	1^{7}	1^{4}	1^{5}	2^{0}	2^{1}	2^{0}	2^{1}	1^{4}	1^{5}	2^{0}	2^{1}	2^{0}	2^{1}
2 3 4	1^{4}	1^{5}	1^{4}	1^{5}	1^{4}	1^{5}	1^{2}	1^{4}	1^{2}	1^{4}	1^{4}	1^{5}	1^{4}	1^{5}	1^{1}	1^{2}	1^{6}	1^{7}	1^{4}	1^{5}
5	1^{4}	1^{5}	1^{4}	1^{5}	1^{4}	1^{5}	1^{1}	1^{2}	1^{1}	1^{2}	1^{4}	1^{5}	1^{4}	1^{5}	1^{1}	1^{2}	1^{4}	1^{5}	1^{4}	1^{5}
6	1^{6}	1^{7}	1^{4}	1^{5}	1^{4}	1^{5}	1^{2}	1^{5}	1^{2}	1^{4}	1^{4}	1^{5}	1^{4}	1^{5}	1^{1}	1^{2}	1^{4}	1^{5}	1^{4}	1^{5}
7	1^{2}	1^{4}	1^{2}	1^{4}	1^{4}	1^{5}	1^{2}	1^{5}	0^{5}	0^{6}	1^{2}	1^{4}	1^{4}	1^{5}	1^{1}	1^{2}	1^{4}	1^{5}	1^{2}	1^{4}
8	1^{6}	1^{7}	1^{6}	1^{7}	1^{4}	1^{5}	1^{2}	1^{5}	1^{2}	1^{4}	1^{4}	1^{5}	1^{6}	1^{7}	1^{2}	1^{4}	1^{6}	1^{7}	1^{4}	1^{5}

NUMBER	6 INCH SERIES C	D	8 INCH SERIES C	D
1	1^{2}	1^{4}	1^{5}	2^{0}
2	3^{2}	4^{0}	4^{3}	5^{3}
3	3^{2}	4^{0}	4^{3}	5^{3}
4	3^{5}	4^{3}	4^{7}	5^{7}
5	3^{2}	4^{0}	4^{3}	5^{3}
6	3^{2}	4^{0}	4^{3}	5^{3}
7	3^{2}	4^{0}	4^{3}	5^{3}
8	3^{2}	4^{0}	4^{3}	5^{3}
9	3^{2}	4^{0}	4^{3}	5^{3}
0	3^{4}	4^{2}	4^{5}	5^{5}

NOTE: SIGN DIMENSIONS ARE IN ENGLISH UNITS

GENERAL NOTES

1. WHERE MAST ARM MOUNTED STREET NAME SIGNS ARE SPECIFIED, THE MAST ARM ASSEMBLY AND POLES SHALL BE DESIGNED TO SUPPORT THE LOADINGS CALLED FOR ON STANDARDS 877001, 877002, 877006, 877011 AND 877012, AS APPLICABLE, PLUS TWO (2) SIGN PANELS 2′-6″ x 8′-0″ MOUNTED AS SHOWN. THE DESIGN SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CURRENT "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS" AS PUBLISHED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS FOR 80 M.P.H. WIND VELOCITY.
2. ALL SIGNS SHALL HAVE A WHITE REFLECTORIZED LEGEND AND BORDER ON A GREEN REFLECTORIZED BACKGROUND, TYPE A SHEETING.
3. THE SIGN LENGTH SHOULD BE INCREASED IN 6-INCH INCREMENTS, BUT THE OVERALL LENGTH SHOULD NOT EXCEED 8′-0″.
4. ALL BORDERS SHALL BE ¾″ WIDE AND CORNER RADIUS SHALL BE 2-1/4 ″.
5. SIGNFIX ALUMINUM CHANNEL FRAMING SYSTEM SHALL BE USED FOR ALL SIGNS ATTACHED TO SIGNAL POLES AND POSTS. LOCAL SUPPLIERS OF THE SIGNFIX ALUMINUM CHANNEL FRAMING SYSTEM ARE:

* J.O. HERBERT CO.
MIDLOTHIAN, VA.

* WESTERN REMAC INC.
WOODRIDGE, IL.

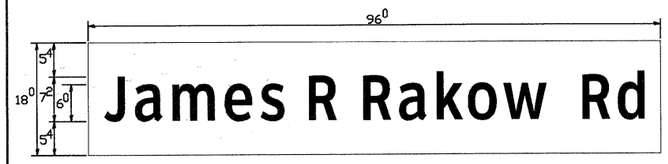
PARTS LISTING:

SIGN CHANNEL	PART #HPN053 (MED. CHANNEL)
SIGN SCREWS	¼″ x 14 x 1″ H.W.H. #3 SELF TAPPING WITH NEOPRENE WASHER
BRACKETS	PART #HPN034 (UNIVERSAL) CHANNEL CLAMPS WITH STAINLESS STEEL STRAPPING

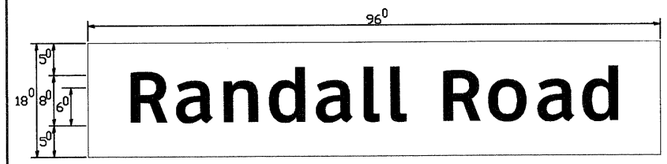
OTHER BRANDS OF MOUNTING HARDWARE ARE ACCEPTABLE, BASED UPON THE DEPARTMENT'S APPROVAL AND COMPATIBILITY WITH THE CHANNEL/BRACKET OF THE ABOVE PRODUCT.

FILE NAME = 4153.800-tr1.dwg	USER NAME = GHA	DESIGNED - DPB	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DISTRICT 1 MAST ARM MOUNTED STREET NAME SIGNS
		DRAWN - ZCW	REVISED -		
	PLOT SCALE = N.T.S.	CHECKED - DPB	REVISED -		SCALE: N.A. SGNL. SHEET # 63 OF 65 SHEETS STA. TO STA.
	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -		

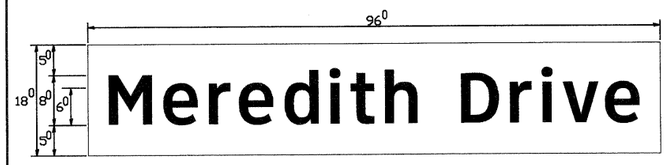
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	372
		CONTRACT #: 63398		
		ILLINOIS FED. AID PROJECT		



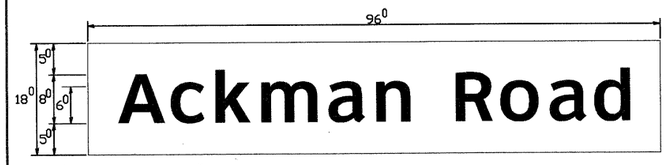
___ Sq. M. each
12.0 Sq. Ft. each
7 Required
Design Series D



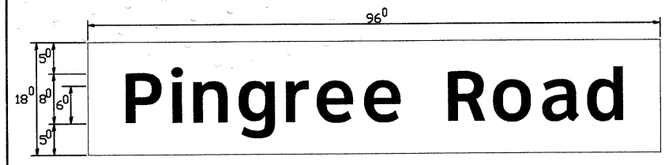
___ Sq. M. each
12.0 Sq. Ft. each
3 Required
Design Series D



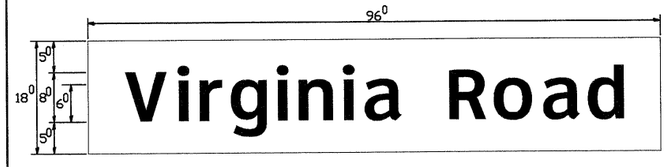
___ Sq. M. each
12.0 Sq. Ft. each
1 Required
Design Series D



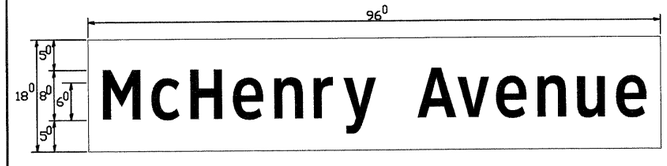
___ Sq. M. each
12.0 Sq. Ft. each
1 Required
Design Series D



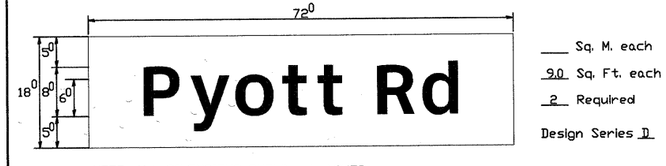
___ Sq. M. each
12.0 Sq. Ft. each
2 Required
Design Series D



___ Sq. M. each
12.0 Sq. Ft. each
2 Required
Design Series D



___ Sq. M. each
12.0 Sq. Ft. each
2 Required
Design Series D

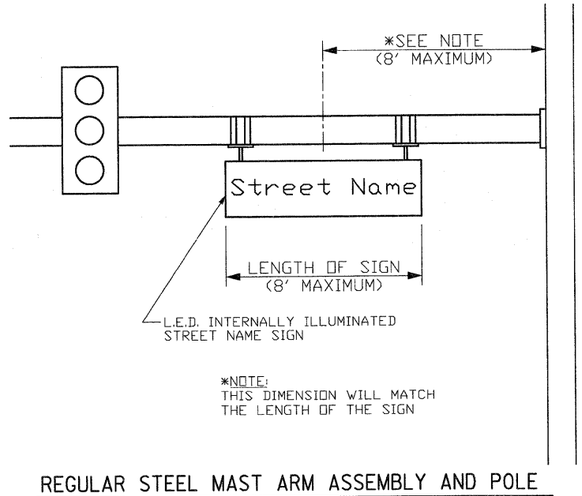


___ Sq. M. each
9.0 Sq. Ft. each
2 Required
Design Series D

NOTE: ALL DIMENSIONS SHOWN IN INCHES

IMPORTANT NOTE:

THE L.E.D. ILLUMINATED STREET NAME SIGNS WILL BE INSTALLED ON RANDALL ROAD AND JAMES R. RAKOW ROAD UNDER THE McHENRY COUNTY DIVISION OF TRANSPORATION JURISDICTION



REGULAR STEEL MAST ARM ASSEMBLY AND POLE

NOTE: L.E.D. ILLUMINATED STREET NAME SIGNS AVAILABLE ONLY IN 2 FOOT INCREMENTS.

FILE NAME = 4153.800-tr1.dwg	USER NAME = GHA	DESIGNED - DPB	REVISED -
		DRAWN - ZCW	REVISED -
	PLOT SCALE = N.T.S.	CHECKED - DPB	REVISED -
	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -

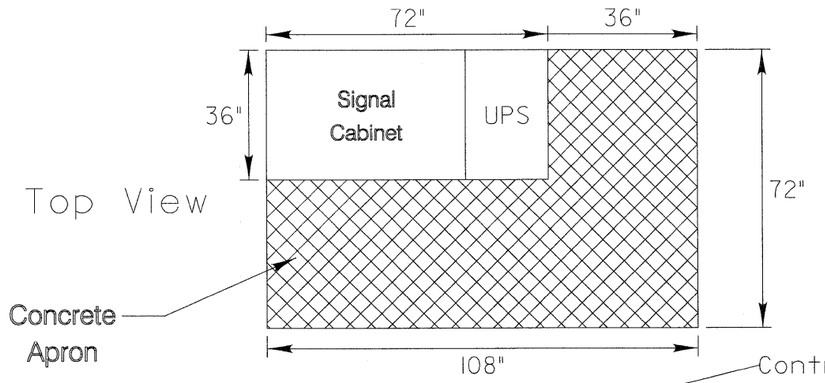
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DETAIL SHEET
MAST ARM MOUNTED STREET NAME SIGNS

SCALE: N.A. | SGNL. SHEET # 64 OF 65 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	373
		CONTRACT #:	63398	
		ILLINOIS | FED. AID PROJECT		

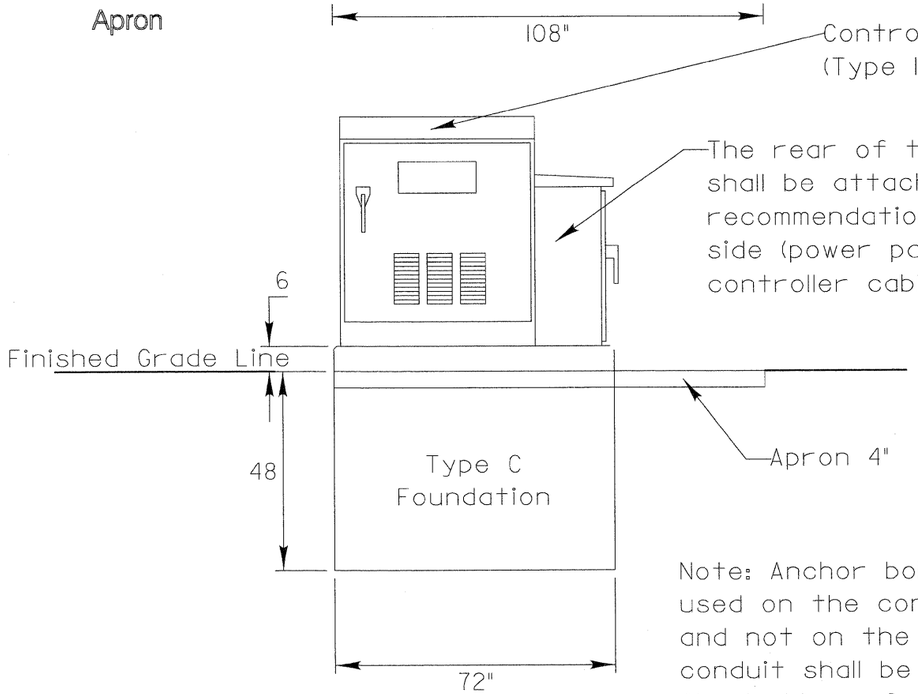
UNITERRUPTED POWER SUPPLY CABINET INSTALLATION



Signal cabinet and UPS shall be centered on the 72" x 36" type C foundation.

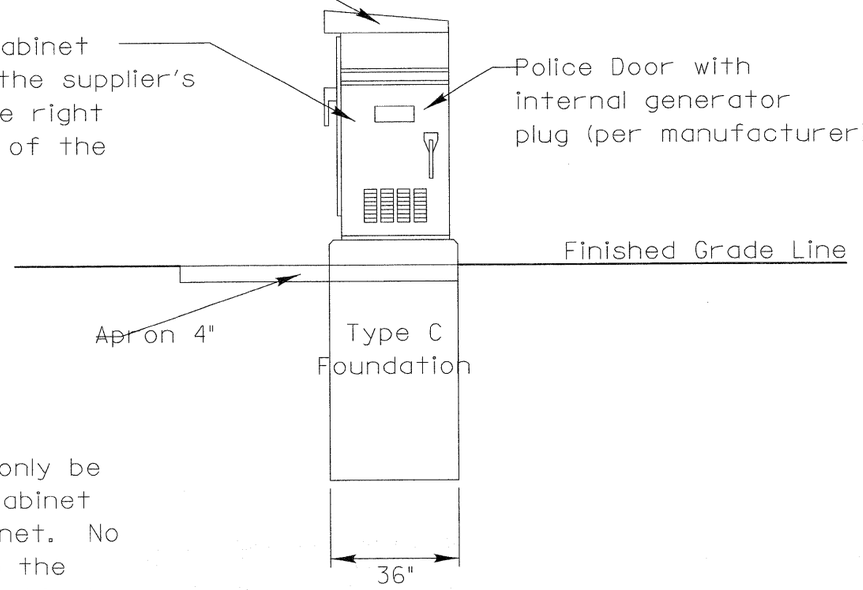
Note: 4-4 inch conduits and 2-2 inch conduits required for type C foundation.

1-2 inch conduit for power.
1-2 inch conduit for spare.



Type IV or V Controller Cabinet Front View

Note: Anchor bolts shall only be used on the controller cabinet and not on the UPS cabinet. No conduit shall be run into the the bottom of the UPS cabinet.



Type IV or V Controller Cabinet Right Side View

Note: The full depth (54") foundation is required under both the CONTROLLER and UPS cabinet.

REVISIONS	DATE
Revised dimmensions for C Foundation - BJC	03/17/10

McHENRY COUNTY
DIVISION OF TRANSPORTATION

DATE: MARCH 17, 2010

Type C (SPECIAL) Foundation for Traffic Signal Controller Cabinet and U.P.S. Cabinet

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

GHA GEWALT HAMILTON ASSOCIATES, INC.
850 Forest Edge Drive • Vernon Hills, IL. 60061
Consulting Engineers & Surveyors
847-478-9700
FAX: 847-478-9701

FILE NAME = 4153.800-tr1.dwg	USER NAME = GHA	DESIGNED - DPB	REVISED -
		DRAWN - ZCW	REVISED -
	PLOT SCALE = N.T.S.	CHECKED - DPB	REVISED -
	PLOT DATE = 8/2/10	DATE - 8/2/10	REVISED -

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

DETAIL SHEET
UNITERRUPTIBLE POWER SUPPLY, CABINET, & TYPE C FOUNDATION
SCALE: N.A. | SGNL. SHEET # 65 OF 65 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-WR	McHENRY	606	374
		CONTRACT #:	63398	
	ILLINOIS FED. AID PROJECT			

LEGEND

R — EXISTING LIGHT POLE TO BE REMOVED

PROPOSED LIGHTING CONTROLLER

ELECTRICAL SERVICE INSTALLATION

PROPOSED COMBINATION POLE
(SEE TRAFFIC SIGNAL PLANS FOR TYPE)

E — PROPOSED ELECTRICAL CABLE IN UNIT DUCT

PROPOSED LIGHT POLE, 40' MOUNTING HEIGHT,
15' MAST ARM, 400W MCIII FIXTURE

PROPOSED LIGHT POLE, 40' MOUNTING HEIGHT,
15' MAST ARM, 310W MCIII FIXTURE

S — PROPOSED LIGHT POLE, 40' MOUNTING HEIGHT,
15' MAST ARM, 400W MCIII FIXTURE WITH SHIELD

P — RIGID GALVANIZED STEEL, PUSHED

GENERAL NOTES

1. CONTRACTOR SHALL INSTALL THE ELECTRICAL COMPONENTS ACCORDING TO THE NATIONAL ELECTRIC CODE (NEC), LATEST EDITION.
2. ALL EQUIPMENT SHALL BE GROUNDED AND BONDED ACCORDING TO THE NEC.
3. CONTRACTOR SHALL NOT INSTALL POLES WITHOUT THE MAST ARMS AND LUMINAIRES ATTACHED.
4. CONTRACTOR SHALL COORDINATE WITH COMMONWEALTH EDISON FOR SITE POWER REQUIREMENTS.
5. CONTRACTOR SHALL VERIFY THE QUANTITIES LISTED AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
6. CONTRACTOR IS RESPONSIBLE TO KEEP A CLEAN WORK SITE. ALL DEBRIS SHALL BE DISPOSED OF AT THE END OF EACH WORK DAY.
7. CONTRACTOR SHALL KEEP A SET OF AS-BUILTS TO BE TURNED OVER TO THE ENGINEER UPON PROJECT COMPLETION.

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

USER NAME = tkoeppen(Rdwy_Lisle)	DESIGNED - CMH	REVISED -
PLOT CONFIG= PDF(Grey_Large).plt	DRAWN - MJP	REVISED -
PLOT SCALE = 1:50	CHECKED - DH	REVISED -
PLOT DATE = 7/29/2010	DATE - 8/2/2010	REVISED -

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

RAKOW ROAD FROM ACKMAN ROAD TO ILLINOIS ROUTE 31
LIGHTING NOTES AND QUANTITIES

SCALE: NONE | SHEET NO. LT 1 OF 28 | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-00-WR	MCHENRY	606	375
		CONTRACT NO. 63398		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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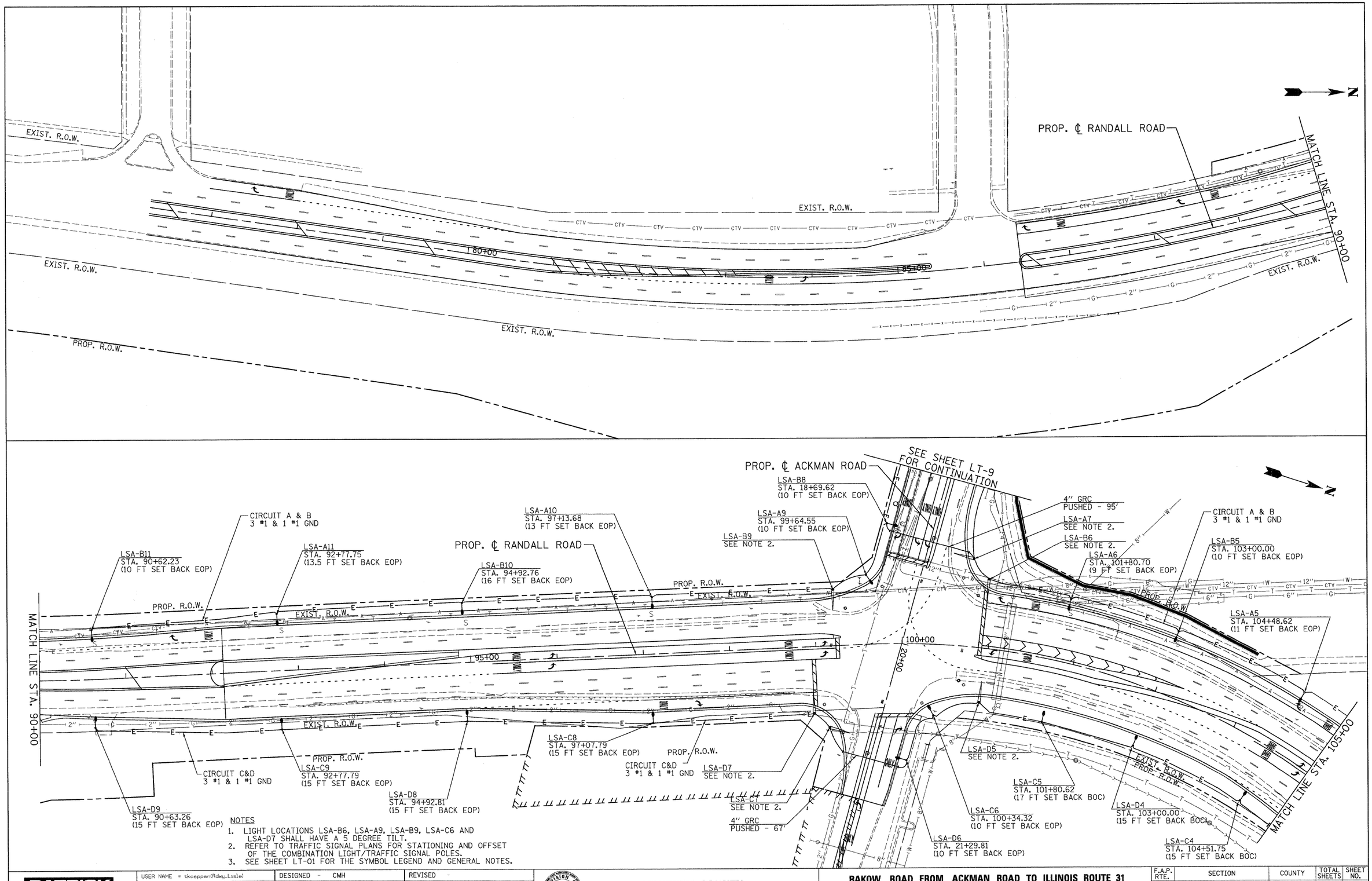
CODE #	DESCRIPTION	UNIT	QUANTITY
80400100	ELECTRIC SERVICE INSTALLATION	EACH	3
80400200	ELECTRIC UTILITY SERVICE CONNECTION	L SUM	1
81018900	CONDUIT PUSHED, 4" DIA., GALVANIZED STEEL	FOOT	1320
81019100	CONDUIT PUSHED, 6" DIA., GALVANIZED STEEL	FOOT	280
81000600	CONDUIT IN TRENCH, 2" DIA., GALVANIZED STEEL	FOOT	15
81001000	CONDUIT IN TRENCH, 4" DIA., GALVANIZED STEEL	FOOT	30
	UNIT DUCT, WITH 3-1/C NO.1/0 AND 1/C NO. 2 GROUND, 600V (EPR-TYPE RHW), 2" DIA., POLYETHYLENE	FOOT	6700
X0325254	UNIT DUCT WITH 3-1/C NO. 1 AND 1/C NO.1 GROUND, 600V (EPR-TYPE RHW), 2" DIAMETER SCHEDULE 40 POLYETHYLENE	FOOT	17200
XX007614	UNIT DUCT, 600 V, 3-1C NO. 8, 1/C NO. 8 GROUND, 1" DIA. POLYETHYLENE	FOOT	2300
X0322925	ELCBL C TRACER 14 1C	FOOT	26200
81702140	ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 1/C NO. 4	FOOT	100
81702180	ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 1/C NO. 3/0	FOOT	300
81900200	TRENCH AND BACKFILL FOR ELECTRICAL WORK	FOOT	24650
82102310	LUMINAIRE, SODIUM VAPOR, HORIZONTAL MOUNT, 310 WATT	EACH	14
82102400	LUMINAIRE, SODIUM VAPOR, HORIZONTAL MOUNT, 400 WATT	EACH	140
	LUMINAIRE SHIELDS	EACH	38
X8250400	LIGHTING CONTROLLER, PEDESTAL MOUNT	EACH	1
X8250085	LIGHTING CONTROLLER, DUPLEX CONSOLE TYPE	EACH	2
83008600	LIGHT POLE, ALUMINUM, 40 FT. M.H., 15 FT. MAST ARM	EACH	123
83800205	BREAKAWAY DEVICE, TRANSFORMER BASE, 15" BOLT CIRCLE	EACH	123
83600357	LIGHT POLE FOUNDATION METAL, 15" BOLT CIRCLE, 8" X 8'	EACH	123
84200500	REMOVAL OF EXISTING LIGHTING UNIT, SALVAGE	EACH	38
84200705	LIGHTING FOUNDATION REMOVAL, PARTIAL	EACH	38
84500110	REMOVAL OF LIGHTING CONTROLLER	EACH	1
84500120	REMOVAL OF ELECTRIC SERVICE INSTALLATION	EACH	1
84500130	REMOVAL OF LIGHTING CONTROLLER FOUNDATION	EACH	1



NOTES

1. LIGHT LOCATIONS LSA-B6, LSA-A9, LSA-B9, LSA-C6 AND LSA-D7 SHALL HAVE A 5 DEGREE TILT.
2. REFER TO TRAFFIC SIGNAL PLANS FOR STATIONING AND OFFSET OF THE COMBINATION LIGHT/TRAFFIC SIGNAL POLES.
3. SEE SHEET LT-01 FOR THE SYMBOL LEGEND AND GENERAL NOTES.

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

USER NAME = tkoeppen(Rdwy_Lisle)	DESIGNED - CMH	REVISED -
PLOT CONFIG= PDF(Grey_Large).plt	DRAWN - MJP	REVISED -
PLOT SCALE = 1:50	CHECKED - DH	REVISED -
PLOT DATE = 7/29/2010	DATE - 8/2/2010	REVISED -

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

RAKOW ROAD FROM ACKMAN ROAD TO ILLINOIS ROUTE 31
RAKOW ROAD PROPOSED LIGHTING PLAN

SCALE: 1"=50' | SHEET NO. LT 3 OF 28 | STA. PROJ. STAR TO STA. 105+00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-00-WR	MCHENRY	606	377
		CONTRACT NO. 63398		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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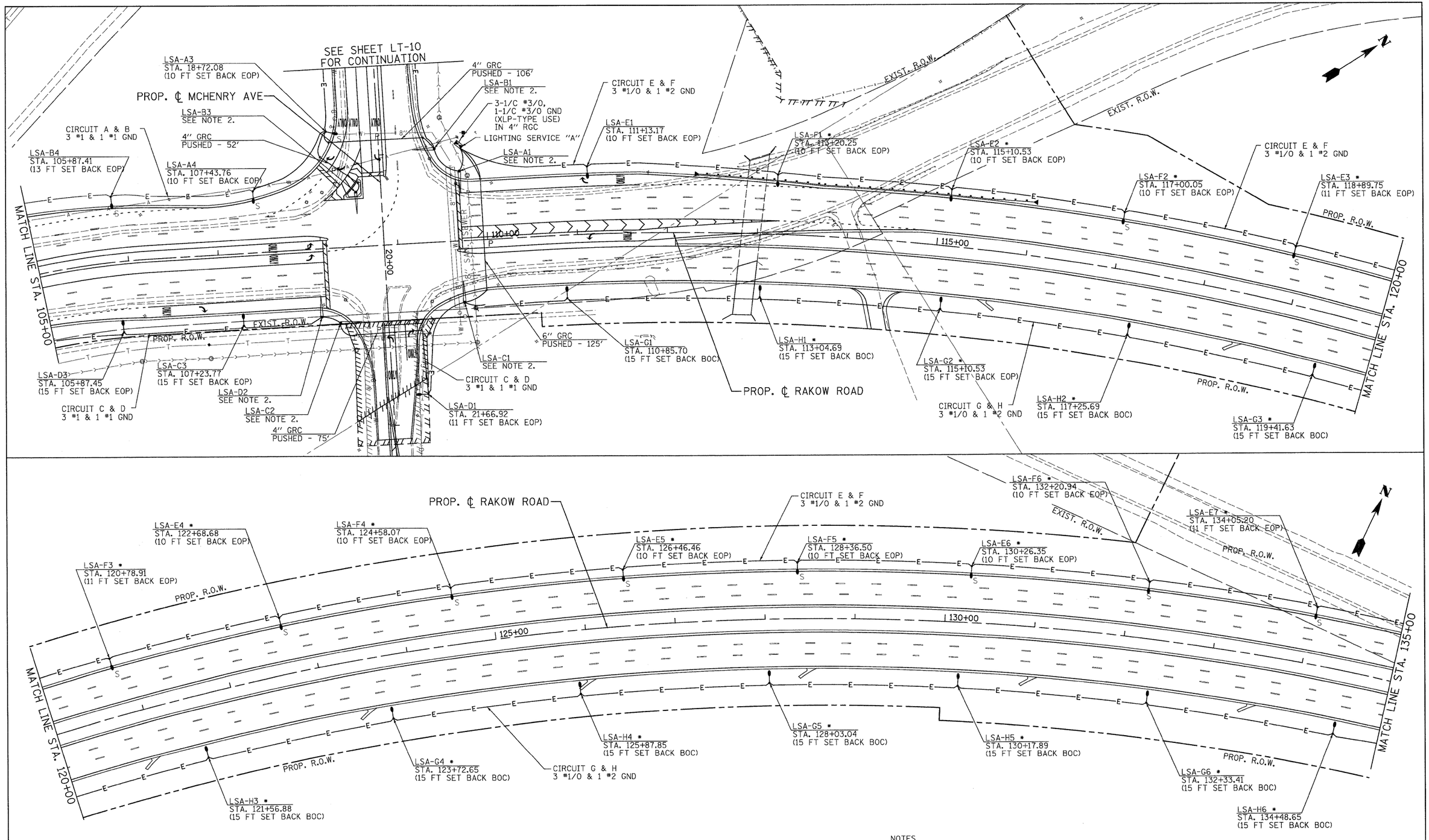

NOTES

1. LIGHT LOCATIONS WITH A (*) SHALL HAVE A 5 DEGREE TILT.
2. REFER TO TRAFFIC SIGNAL PLANS FOR STATIONING AND OFFSET OF THE COMBINATION LIGHT/TRAFFIC SIGNAL POLES.
3. SEE SHEET LT-01 FOR THE SYMBOL LEGEND AND GENERAL NOTES.

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

USER NAME = tkoeppen(Rdwy_Lisle)	DESIGNED - CMH	REVISED -	
PLOT CONFIG= PDF(Grey_Large).plt	DRAWN - MJP	REVISED -	
PLOT SCALE = 1:50	CHECKED - DH	REVISED -	
PLOT DATE = 7/29/2010	DATE - 8/2/2010	REVISED -	

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

RAKOW ROAD FROM ACKMAN ROAD TO ILLINOIS ROUTE 31
RAKOW ROAD PROPOSED LIGHTING PLAN

SCALE: 1"=50' | SHEET NO. LT 4 OF 28 | STA. 105+00 | TO STA. 135+00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-00-WR	MCHENRY	606	378
		CONTRACT NO. 63398		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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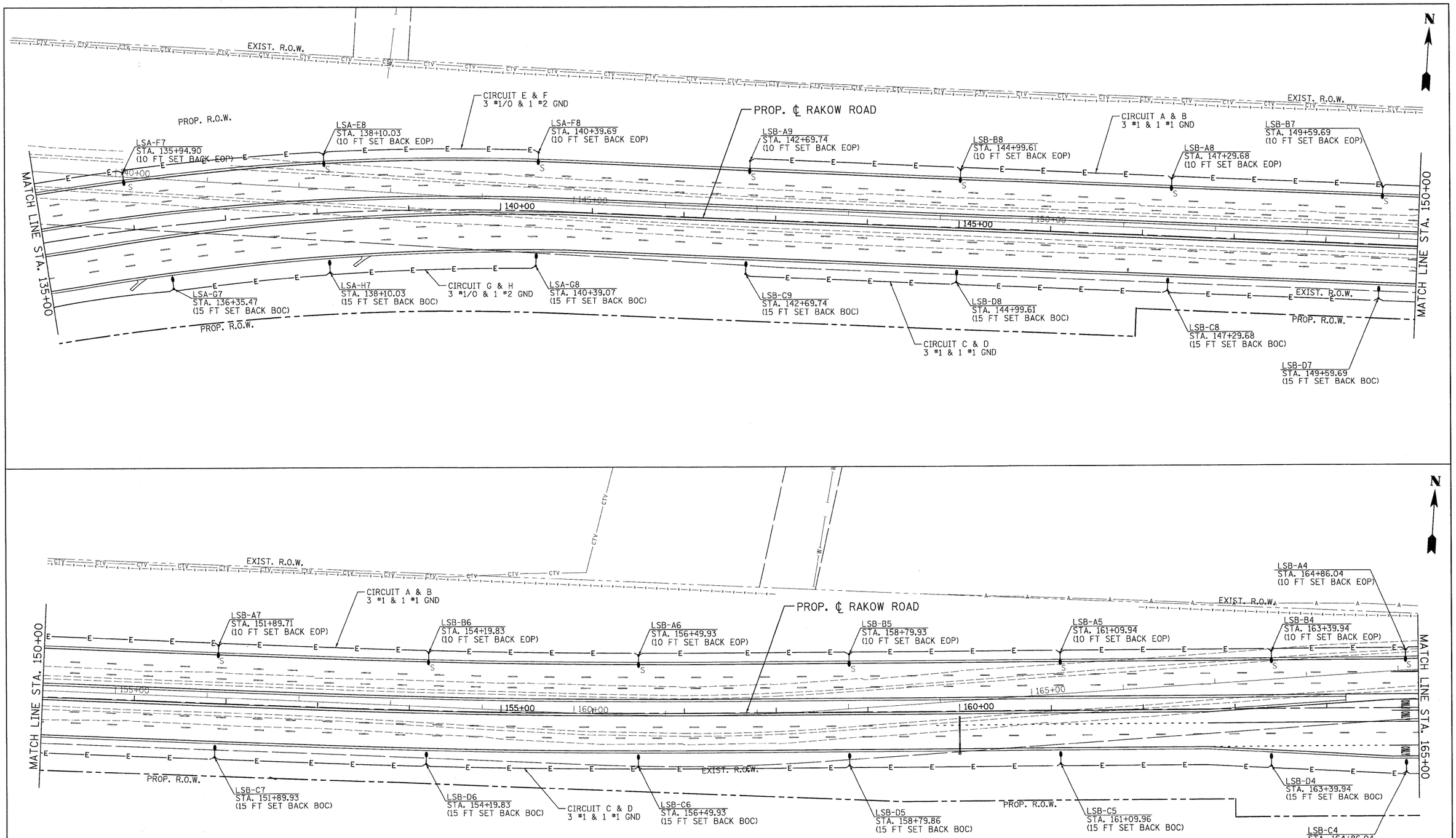

NOTES

1. ALL LIGHT LOCATIONS ON THIS SHEET SHALL HAVE A 5 DEGREE TILT.
2. SEE SHEET LT-01 FOR THE SYMBOL LEGEND AND GENERAL NOTES.

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

USER NAME = tkoeppen(Rdwy_Lisle)	DESIGNED - CMH	REVISED -	
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PLOT SCALE = 1:50	CHECKED - DH	REVISED -	
PLOT DATE = 7/29/2010	DATE - 8/2/2010	REVISED -	

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

RAKOW ROAD FROM ACKMAN ROAD TO ILLINOIS ROUTE 31
RAKOW ROAD PROPOSED LIGHTING PLAN

SCALE: 1"=50' | SHEET NO. LT 5 OF 28 | STA. 135+00 | TO STA. 165+00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-00-WR	MCHENRY	606	379
		CONTRACT NO. 63398		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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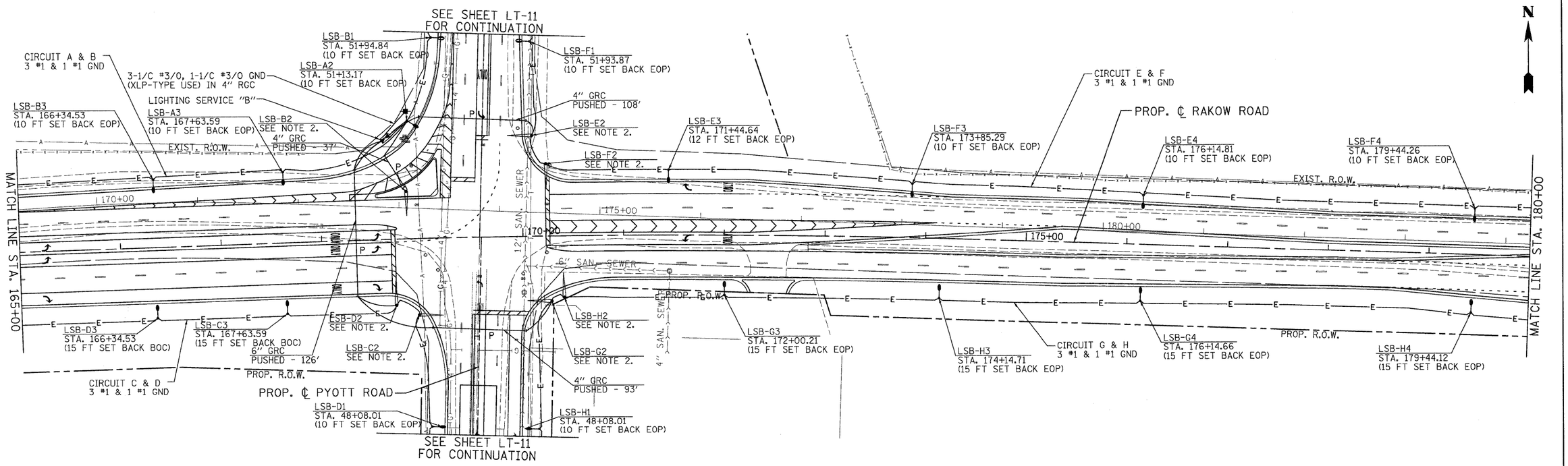

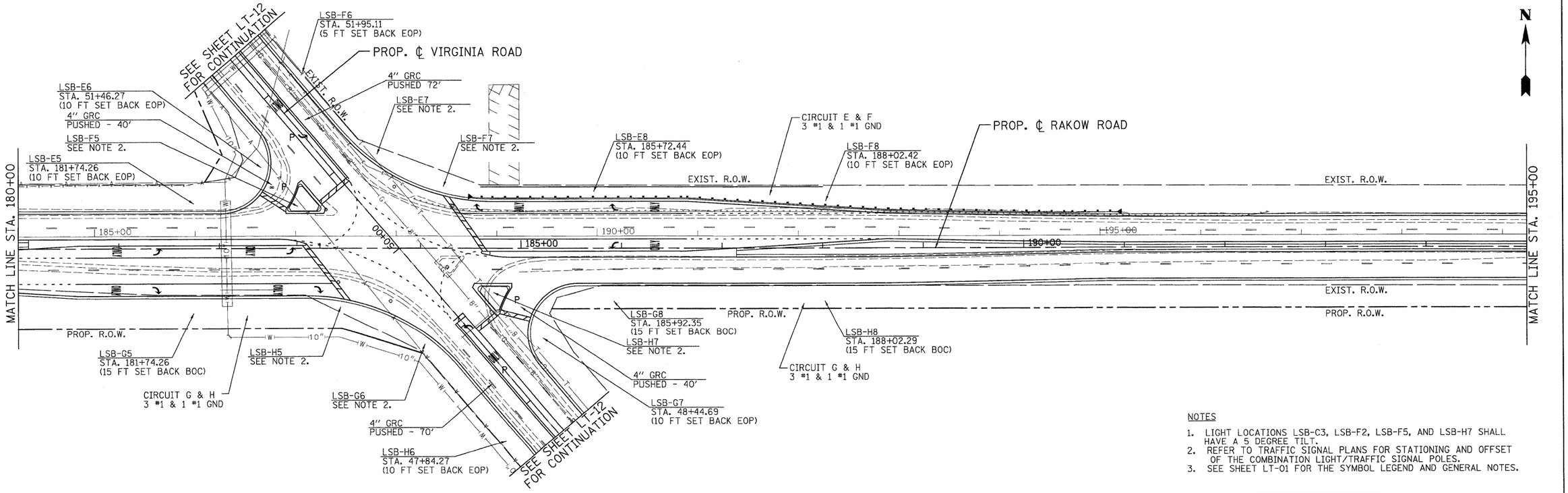

NOTES

1. LIGHT LOCATIONS LSB-C3, LSB-F2, LSB-F5, AND LSB-H7 SHALL HAVE A 5 DEGREE TILT.
2. REFER TO TRAFFIC SIGNAL PLANS FOR STATIONING AND OFFSET OF THE COMBINATION LIGHT/TRAFFIC SIGNAL POLES.
3. SEE SHEET LT-01 FOR THE SYMBOL LEGEND AND GENERAL NOTES.

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

USER NAME = tkoeppen(Rdwy_Lisle)	DESIGNED - CMH	REVISED -	
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PLOT SCALE = 1:50	CHECKED - DH	REVISED -	
PLOT DATE = 7/29/2010	DATE - 8/2/2010	REVISED -	

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

RAKOW ROAD FROM ACKMAN ROAD TO ILLINOIS ROUTE 31
RAKOW ROAD PROPOSED LIGHTING PLAN

SCALE: 1"=50' | SHEET NO. LT 6 OF 28 | STA. 165+00 | TO STA. 195+00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-00-WR	MCHENRY	606	380
		CONTRACT NO. 63398		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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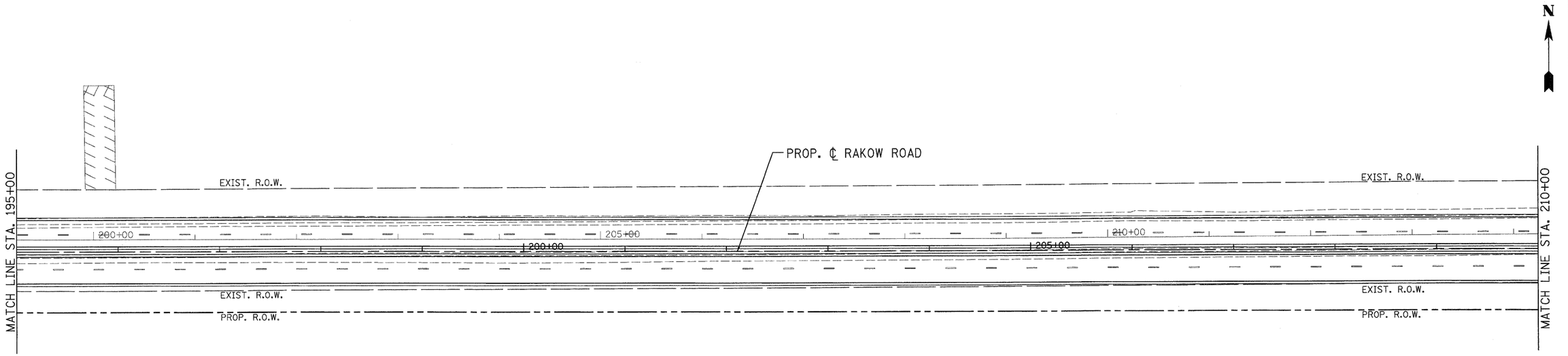

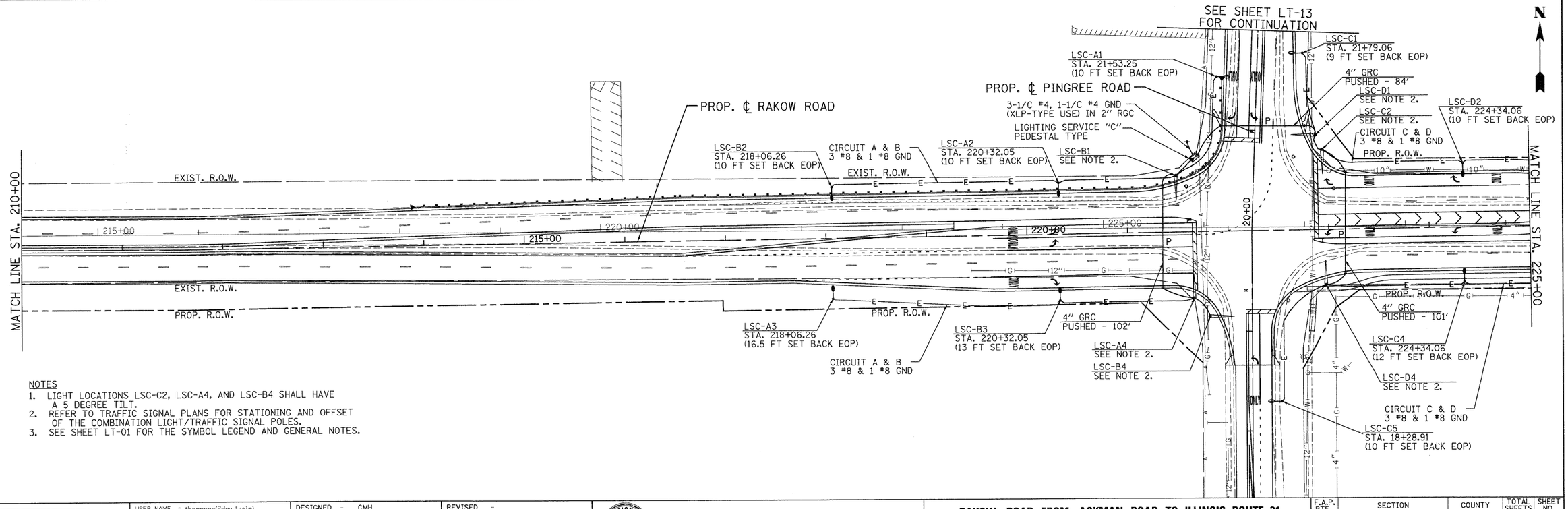

NOTES
1. LIGHT LOCATIONS LSC-C2, LSC-A4, AND LSC-B4 SHALL HAVE A 5 DEGREE TILT.
2. REFER TO TRAFFIC SIGNAL PLANS FOR STATIONING AND OFFSET OF THE COMBINATION LIGHT/TRAFFIC SIGNAL POLES.
3. SEE SHEET LT-01 FOR THE SYMBOL LEGEND AND GENERAL NOTES.

PATRICK ENGINEERING INC. LISLE, ILLINOIS	USER NAME = tkoeppen(Rdwy_Lisle)	DESIGNED - CMH	REVISED -
	PLOT CONFIG= PDF(Grey_Large).plt	DRAWN - MJP	REVISED -
	PLOT SCALE = 1:50	CHECKED - DH	REVISED -
	PLOT DATE = 7/29/2010	DATE - 8/2/2010	REVISED -

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

RAKOW ROAD FROM ACKMAN ROAD TO ILLINOIS ROUTE 31
RAKOW ROAD PROPOSED LIGHTING PLAN

SCALE: 1"=50' | SHEET NO. LT 7 OF 28 | STA. 195+00 | TO STA. 225+00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-00-WR	MCHENRY	606	381
		CONTRACT NO. 63398		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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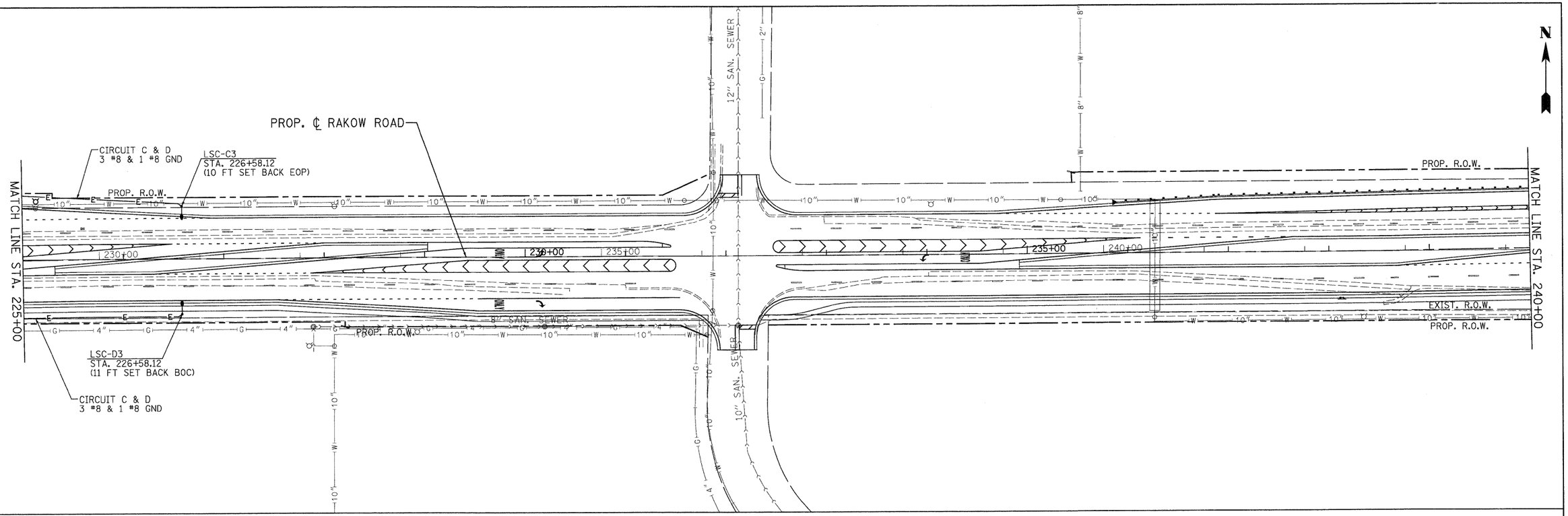

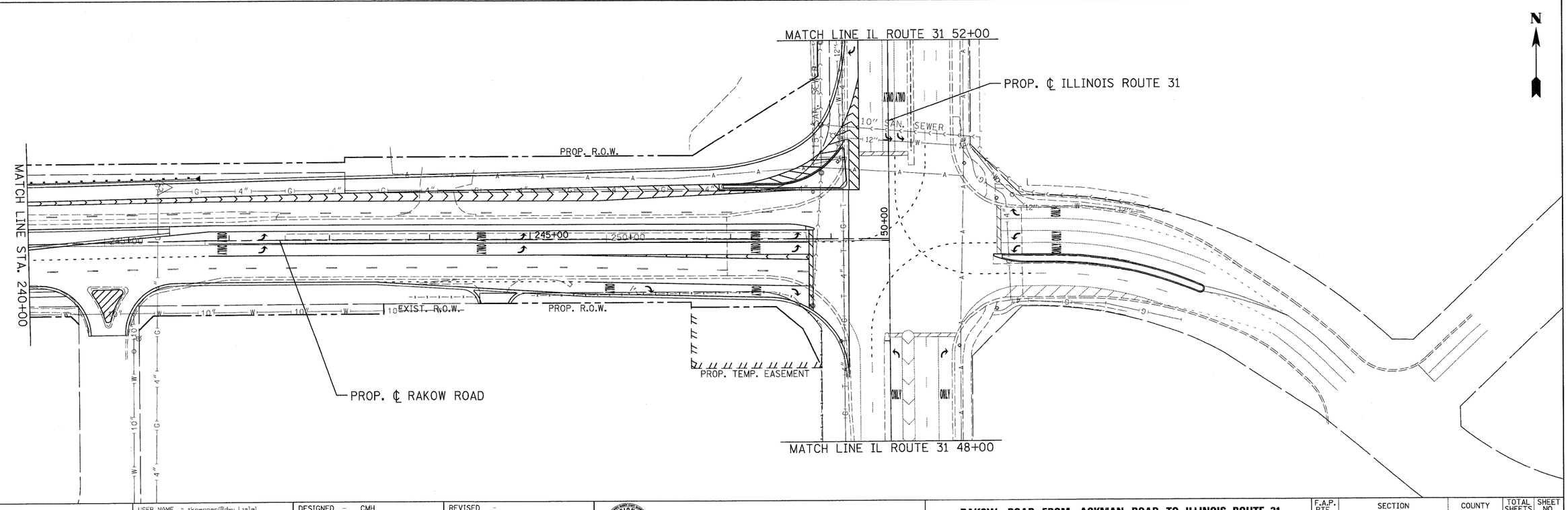

PATRICK ENGINEERING INC. LISLE, ILLINOIS	USER NAME = tkoeppen(Rdwy_Lisle)	DESIGNED - CMH	REVISED -	MCHENRY COUNTY DIVISION OF TRANSPORTATION	RAKOW ROAD FROM ACKMAN ROAD TO ILLINOIS ROUTE 31 RAKOW ROAD PROPOSED LIGHTING PLAN
	PLOT CONFIG= PDF(Grey_Large).plt	DRAWN - MJP	REVISED -		
	PLOT SCALE = 1:50	CHECKED - DH	REVISED -		
	PLOT DATE = 7/29/2010	DATE - 8/2/2010	REVISED -		SCALE: 1"=50' SHEET NO. LT 8 OF 28 STA. 225+00 TO STA. PROJ. END

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-00-WR	MCHENRY	606	382
		CONTRACT NO. 63398		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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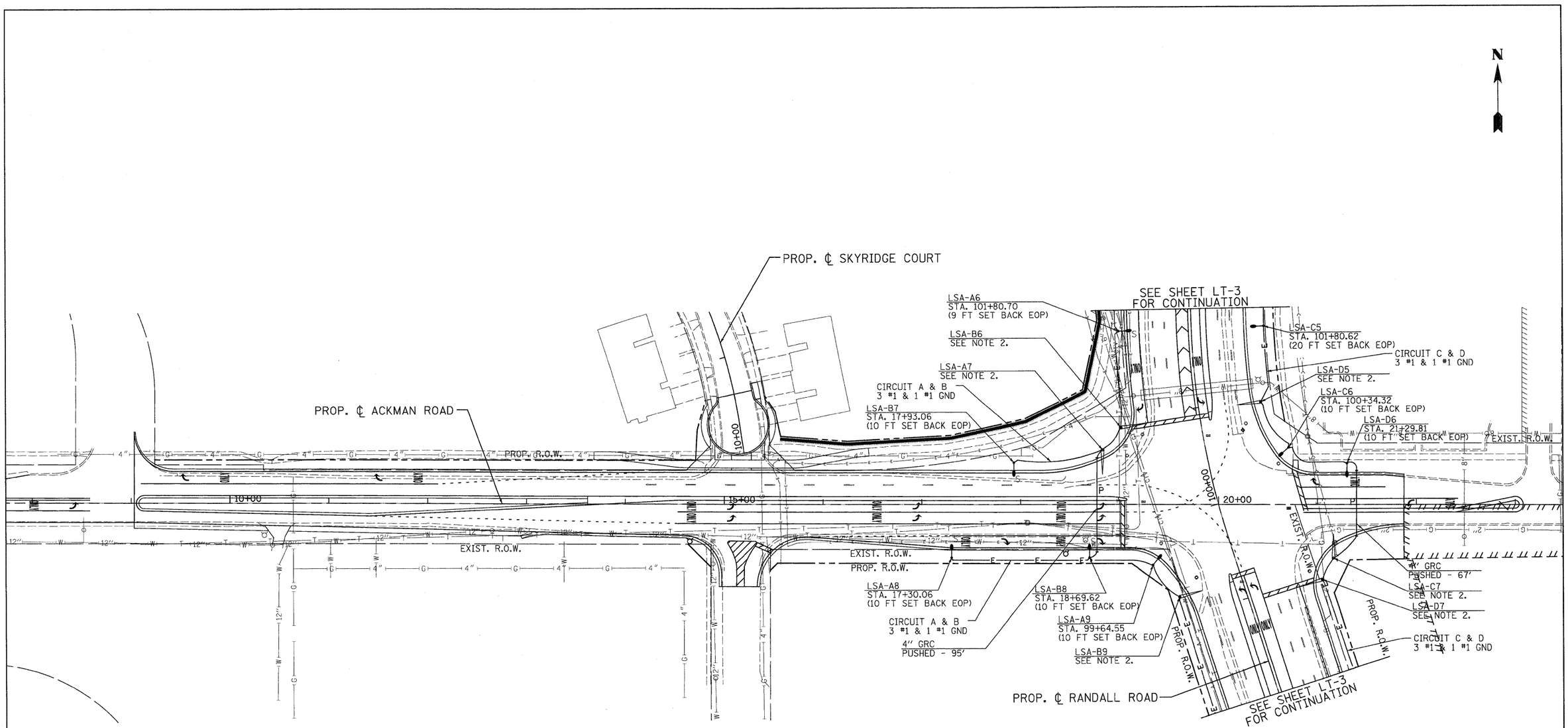

NOTES

1. LIGHT LOCATIONS LSA-B6, LSA-A9, LSA-B9, LSA-C6 AND LSA-D7 SHALL HAVE A 5 DEGREE TILT.
2. REFER TO TRAFFIC SIGNAL PLANS FOR STATIONING AND OFFSET OF THE COMBINATION LIGHT/TRAFFIC SIGNAL POLES.
3. SEE SHEET LT-01 FOR THE SYMBOL LEGEND AND GENERAL NOTES.

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

USER NAME = tkoeppen(Rdwy_Lisle)	DESIGNED - CMH	REVISED -
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PLOT SCALE = 1:50	CHECKED - DH	REVISED -
PLOT DATE = 7/29/2010	DATE - 8/2/2010	REVISED -

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

RAKOW ROAD FROM ACKMAN ROAD TO ILLINOIS ROUTE 31
ACKMAN ROAD PROPOSED LIGHTING PLAN

SCALE: 1"=50' | SHEET NO. LT 9 OF 28 | STA. END OF IMP TO STA. 22+00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-00-WR	MCHENRY	606	383
		CONTRACT NO. 63398		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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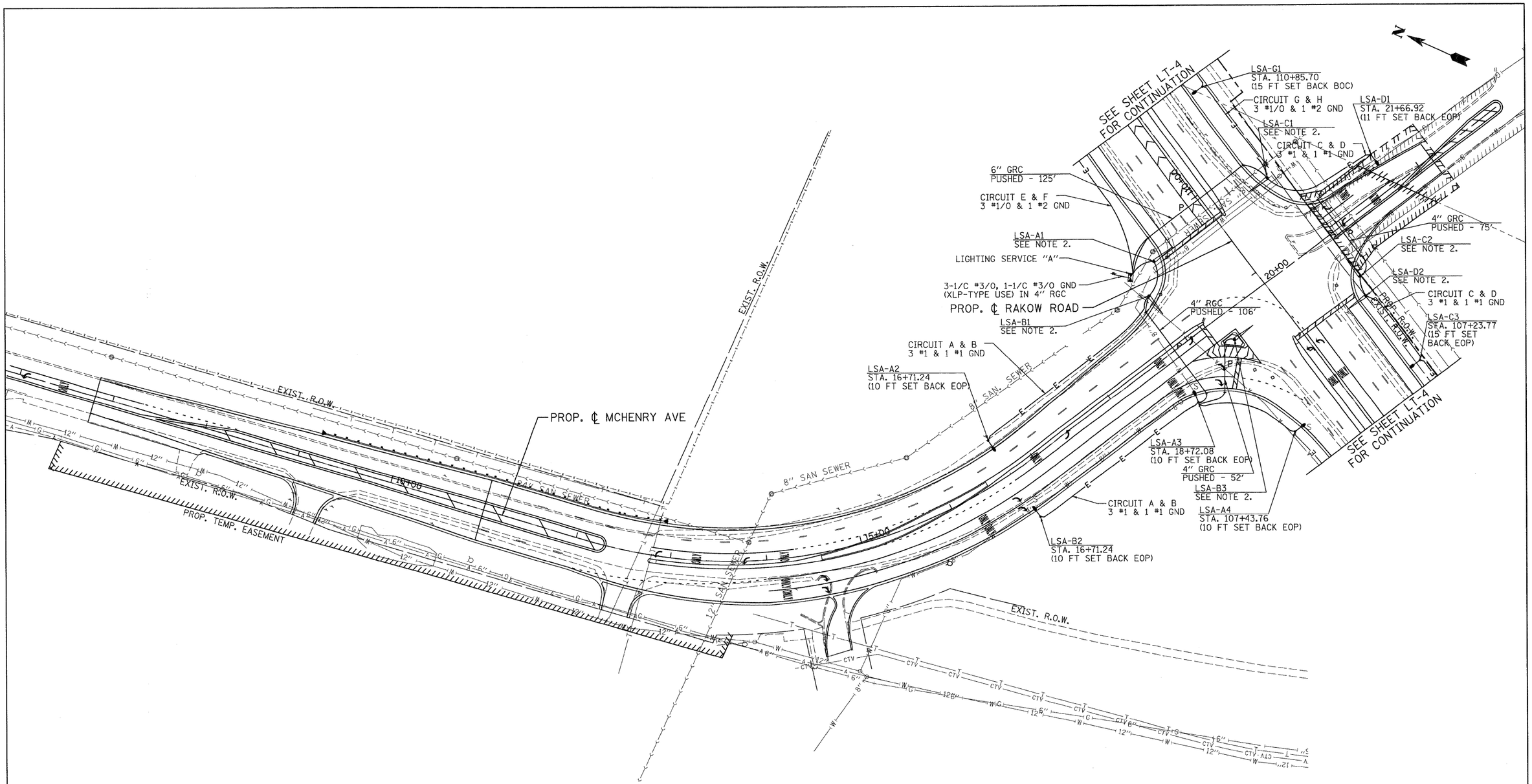

NOTES

1. REFER TO TRAFFIC SIGNAL PLANS FOR STATIONING AND OFFSET OF THE COMBINATION LIGHT/TRAFFIC SIGNAL POLES.
2. SEE SHEET LT-01 FOR THE SYMBOL LEGEND AND GENERAL NOTES.

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

USER NAME = tkoeppen(Rdwy_Lisle)	DESIGNED - CMH	REVISED -
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PLOT SCALE = 1:50	CHECKED - DH	REVISED -
PLOT DATE = 7/29/2010	DATE - 8/2/2010	REVISED -

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

RAKOW ROAD FROM ACKMAN ROAD TO ILLINOIS ROUTE 31
MCHENRY AVENUE PROPOSED LIGHTING PLAN

SCALE: 1"=50' | SHEET NO. LT 10 OF 28 | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-00-WR	MCHENRY	606	384
		CONTRACT NO. 63398		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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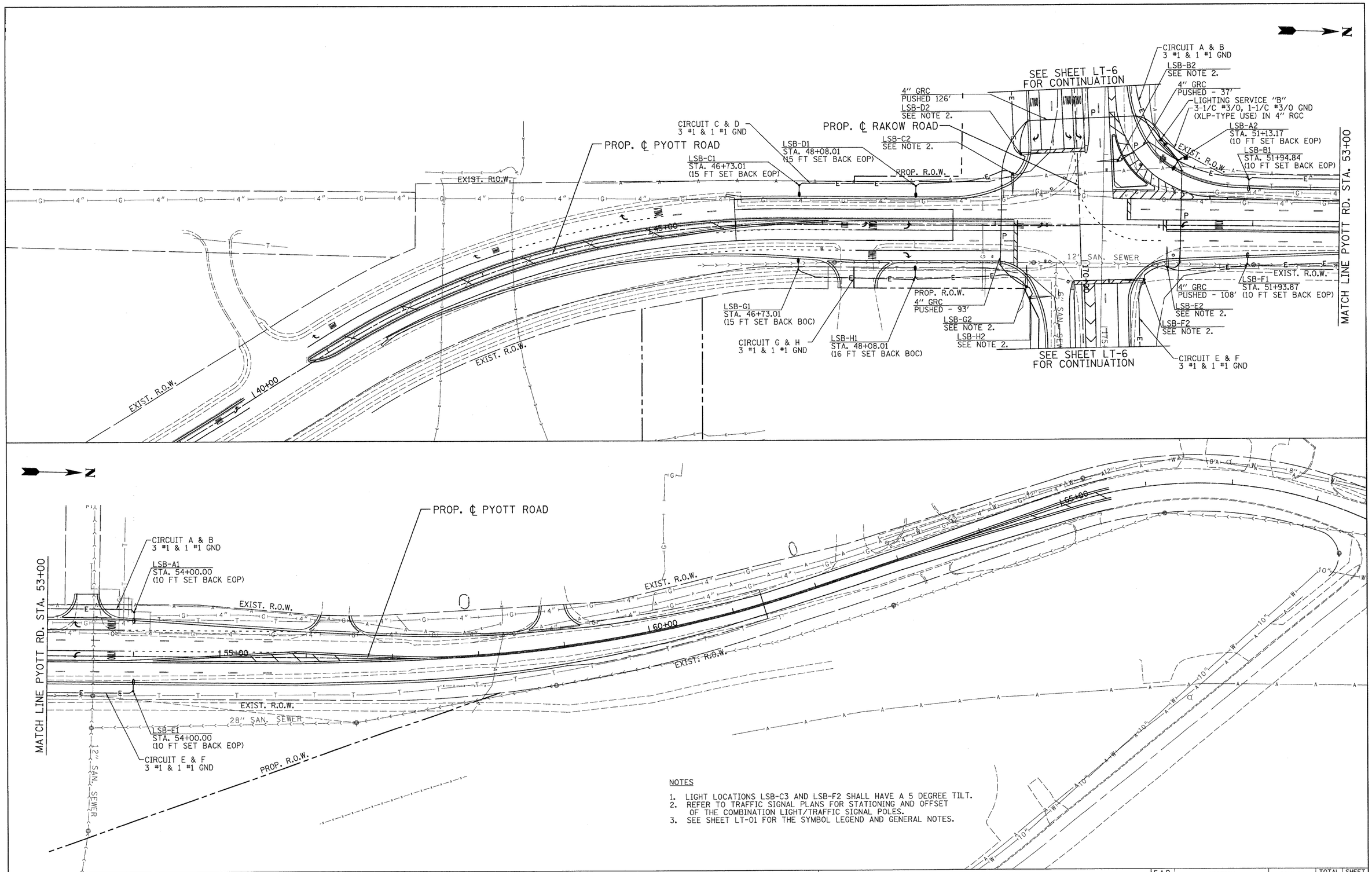

NOTES

1. LIGHT LOCATIONS LSB-C3 AND LSB-F2 SHALL HAVE A 5 DEGREE TILT.
2. REFER TO TRAFFIC SIGNAL PLANS FOR STATIONING AND OFFSET OF THE COMBINATION LIGHT/TRAFFIC SIGNAL POLES.
3. SEE SHEET LT-01 FOR THE SYMBOL LEGEND AND GENERAL NOTES.

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

USER NAME = tkoeppen(Rdwy_Lisle)	DESIGNED - CMH	REVISED -	
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PLOT SCALE = 1:50	CHECKED - DH	REVISED -	
PLOT DATE = 7/29/2010	DATE - 8/2/2010	REVISED -	

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

RAKOW ROAD FROM ACKMAN ROAD TO ILLINOIS ROUTE 31
PYOTT ROAD PROPOSED LIGHTING PLAN

SCALE: 1"=50' | SHEET NO. LT 11 OF 28 | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-00-WR	MCHENRY	606	385
		CONTRACT NO. 63398		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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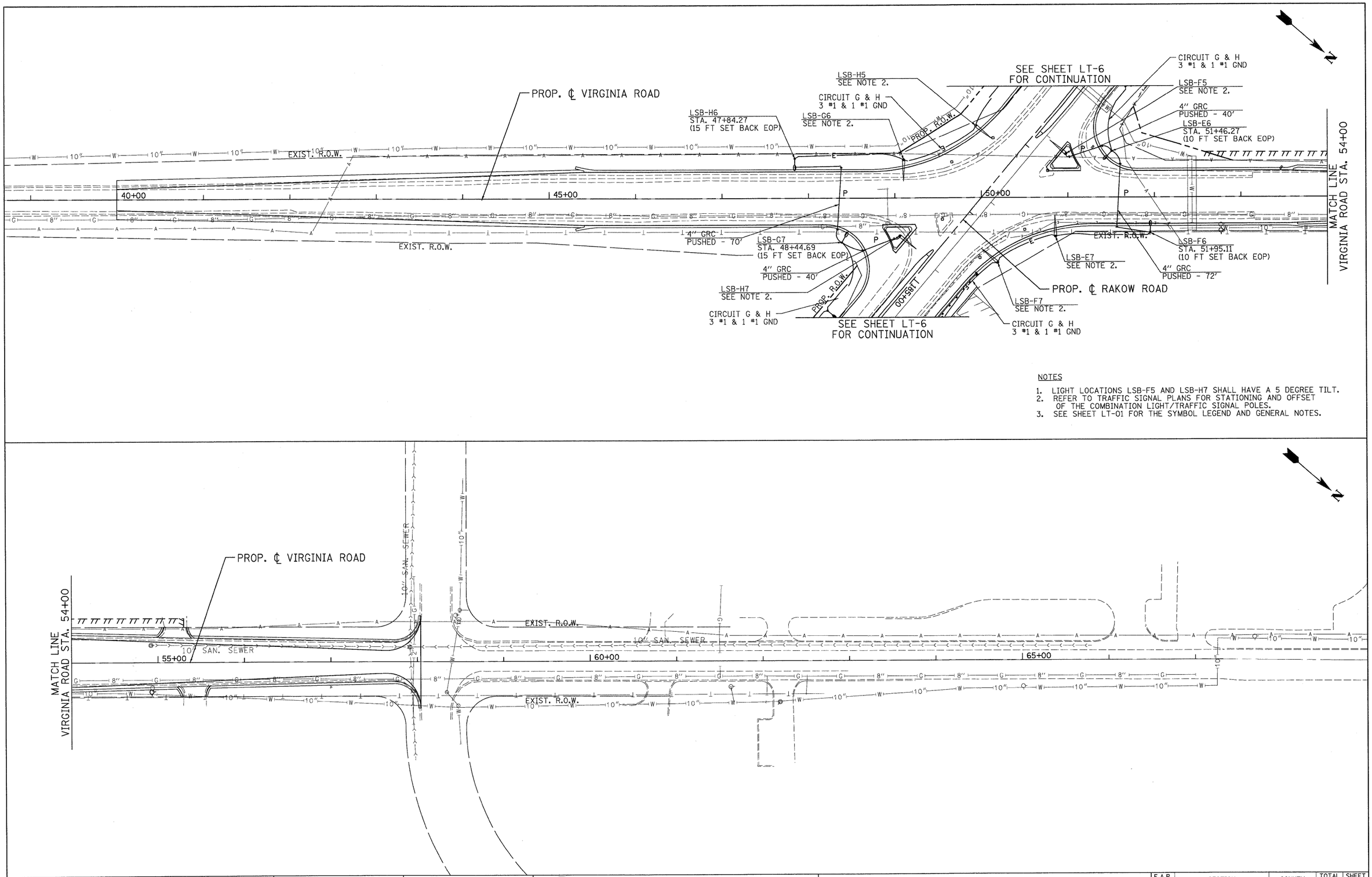

NOTES

1. LIGHT LOCATIONS LSB-F5 AND LSB-H7 SHALL HAVE A 5 DEGREE TILT.
2. REFER TO TRAFFIC SIGNAL PLANS FOR STATIONING AND OFFSET OF THE COMBINATION LIGHT/TRAFFIC SIGNAL POLES.
3. SEE SHEET LT-01 FOR THE SYMBOL LEGEND AND GENERAL NOTES.

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

USER NAME = tkoeppen(Rdwy_Lisle)	DESIGNED - CMH	REVISED -
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PLOT SCALE = 1:50	CHECKED - DH	REVISED -
PLOT DATE = 7/29/2010	DATE - 8/2/2010	REVISED -

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

RAKOW ROAD FROM ACKMAN ROAD TO ILLINOIS ROUTE 31
VIRGINIA ROAD PROPOSED LIGHTING PLAN

SCALE: 1"=50' | SHEET NO. LT 12 OF 28 | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-00-WR	MCHENRY	606	386
		CONTRACT NO. 63398		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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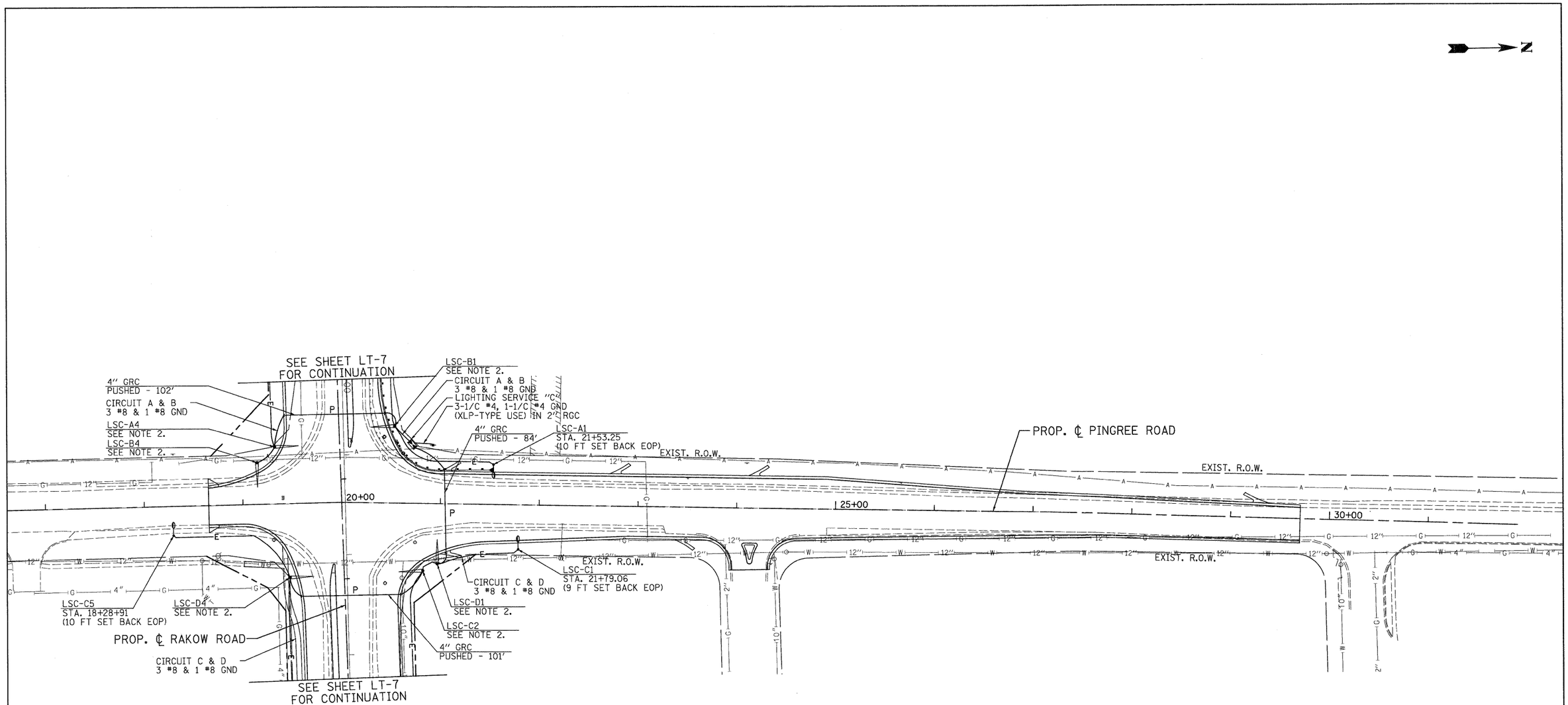

NOTES

1. LIGHT LOCATIONS LSC-A4, LSC-B4, AND LSC-C2 SHALL HAVE A 5 DEGREE TILT.
2. REFER TO TRAFFIC SIGNAL PLANS FOR STATIONING AND OFFSET OF THE COMBINATION LIGHT/TRAFFIC SIGNAL POLES.
3. SEE SHEET LT-01 FOR THE SYMBOL LEGEND AND GENERAL NOTES.

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

USER NAME = tkoeppen(Rdwy_Lisle)	DESIGNED - CMH	REVISED -	
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PLOT SCALE = 1:50	CHECKED - DH	REVISED -	
PLOT DATE = 7/29/2010	DATE - 8/2/2010	REVISED -	

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

RAKOW ROAD FROM ACKMAN ROAD TO ILLINOIS ROUTE 31
PINGREE ROAD PROPOSED LIGHTING PLAN

SCALE: 1"=50' | SHEET NO. LT 13 OF 28 | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-00-WR	MCHENRY	606	387
		CONTRACT NO. 63398		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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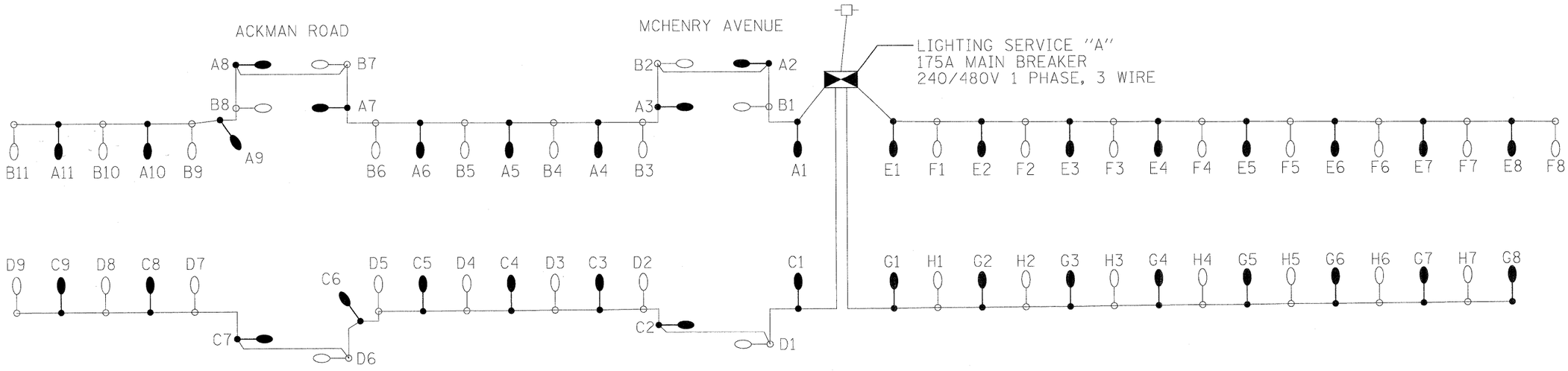

CKT	CURRENT	WATT	CKT	CURRENT	WATT
A	22.0A	4400	B	22.0A	4400
C	18.0A	3600	D	18.0A	3600
E	16.0A	3200	F	16.0A	3200
G	16.0A	3200	H	14.0A	2800
I	SPARE	0	J	SPARE	0
	72.0A	14,400	CKT	70.0A	14,000

LIGHT POLE, 400W, 15' MAST ARM
LIGHT POLE, 310W, 15' MAST ARM

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

USER NAME = tkoeppen(Rdwy_Lisle)	DESIGNED - CMH	REVISED -
PLOT CONFIG= PDF(Grey_Large).plt	DRAWN - MJP	REVISED -
PLOT SCALE = 1.50	CHECKED - DH	REVISED -
PLOT DATE = 7/29/2010	DATE - 8/2/2010	REVISED -

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

RAKOW ROAD FROM ACKMAN ROAD TO ILLINOIS ROUTE 31
SINGLE LINE DIAGRAM CONTROLLER A

SCALE: NONE | SHEET NO. LT 14 OF 28 | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-00-WR	MCHENRY	606	388
		CONTRACT NO. 63398		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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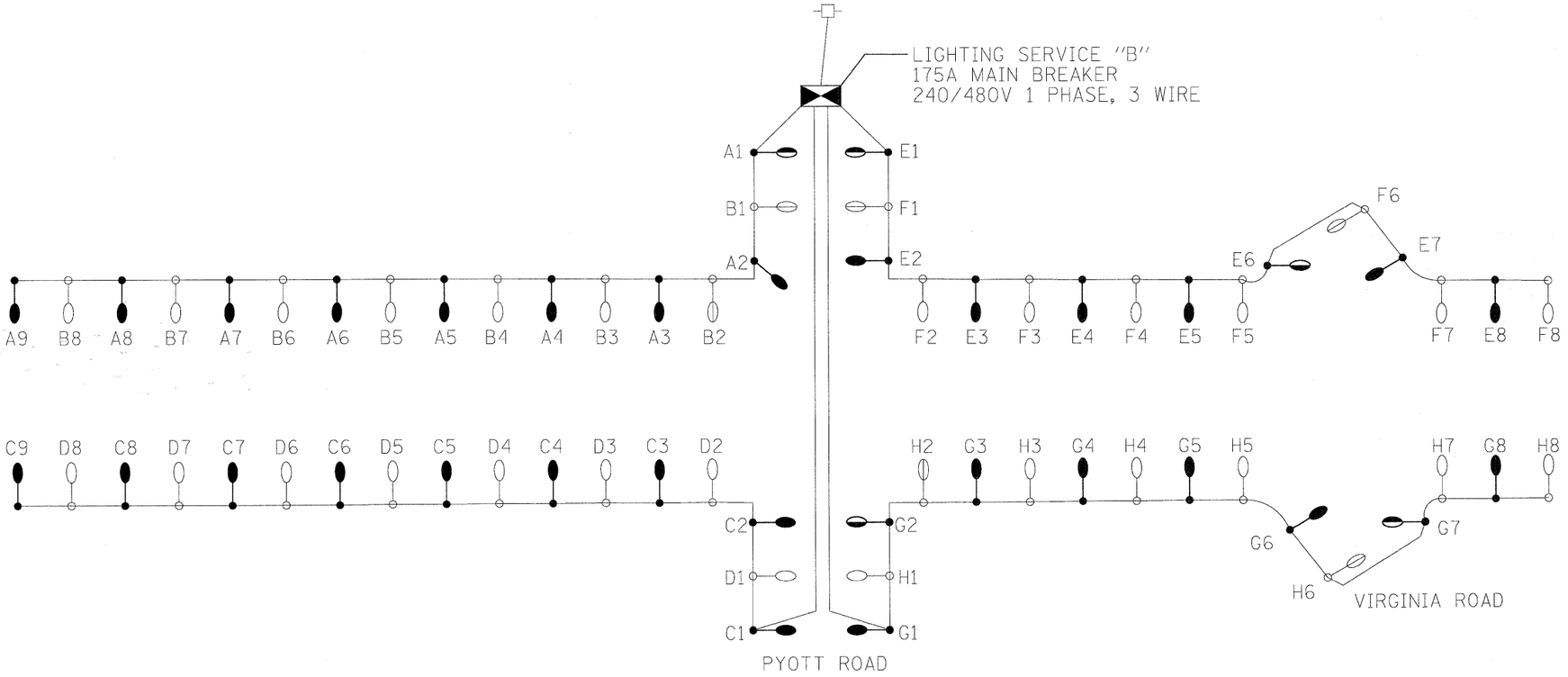
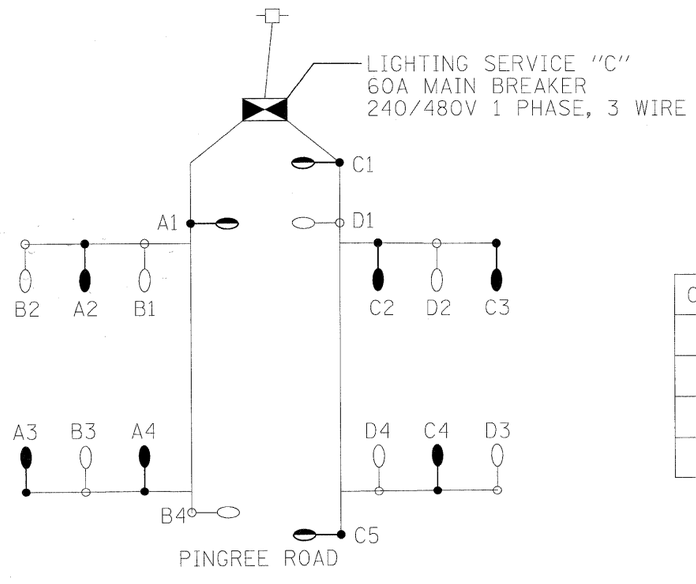


CKT	CURRENT	WATT	CKT	CURRENT	WATT
A	17.6A	3510	B	15.2A	3020
C	18.0A	3600	D	16.0A	3200
E	15.2A	3020	F	15.2A	3020
G	15.2A	3020	H	15.2A	3020
I	SPARE	0	J	SPARE	0
	66.0A	13,150		61.6A	12,260



CKT	CURRENT	WATT	CKT	CURRENT	WATT
A	7.6A	1510	B	8.0A	1600
C	9.2A	1820	D	8.0A	1600
E	SPARE	0	F	SPARE	0
	16.8A	3330	H	16.0A	3200

LIGHT POLE, 400W, 15' MAST ARM

LIGHT POLE, 310W, 15' MAST ARM

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

USER NAME = tkoeppen(Rdwy_Lisle)	DESIGNED - CMH	REVISED -	
PLOT CONFIG= PDF(Grey_Large).plt	DRAWN - MJP	REVISED -	
PLOT SCALE = 1:50	CHECKED - DH	REVISED -	
PLOT DATE = 7/29/2010	DATE - 8/2/2010	REVISED -	

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

RAKOW ROAD FROM ACKMAN ROAD TO ILLINOIS ROUTE 31
SINGLE LINE DIAGRAM CONTROLLERS B AND

SCALE: NONE | SHEET NO. LT 15 OF 28 | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-00-WR	MCHENRY	606	389
		CONTRACT NO. 63398		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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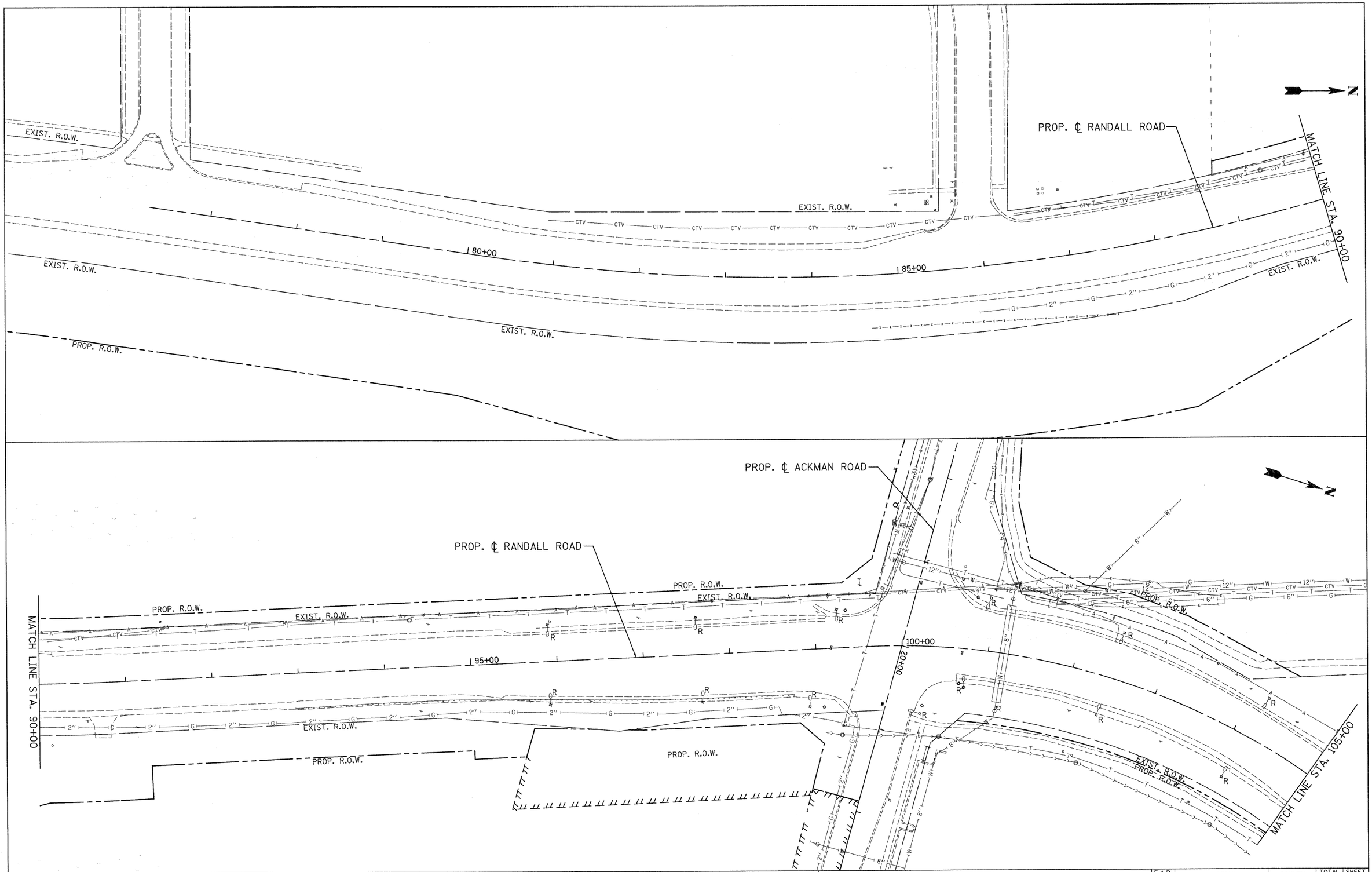

PATRICK ENGINEERING INC. LISLE, ILLINOIS	USER NAME = tkoeppen(Rdwy_Lisle)	DESIGNED - CMH	REVISED -
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	PLOT SCALE = 1:50	CHECKED - DH	REVISED -
	PLOT DATE = 7/29/2010	DATE - 8/2/2010	REVISED -

MCHENRY COUNTY DIVISION OF TRANSPORTATION

RAKOW ROAD FROM ACKMAN ROAD TO ILLINOIS ROUTE 31
RAKOW ROAD REMOVAL LIGHTING PLAN

SCALE: 1"=50' | SHEET NO. LT 16 OF 28 | STA. PROJ. START TO STA. 105+00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-00-WR	MCHENRY	606	390
		CONTRACT NO. 63398		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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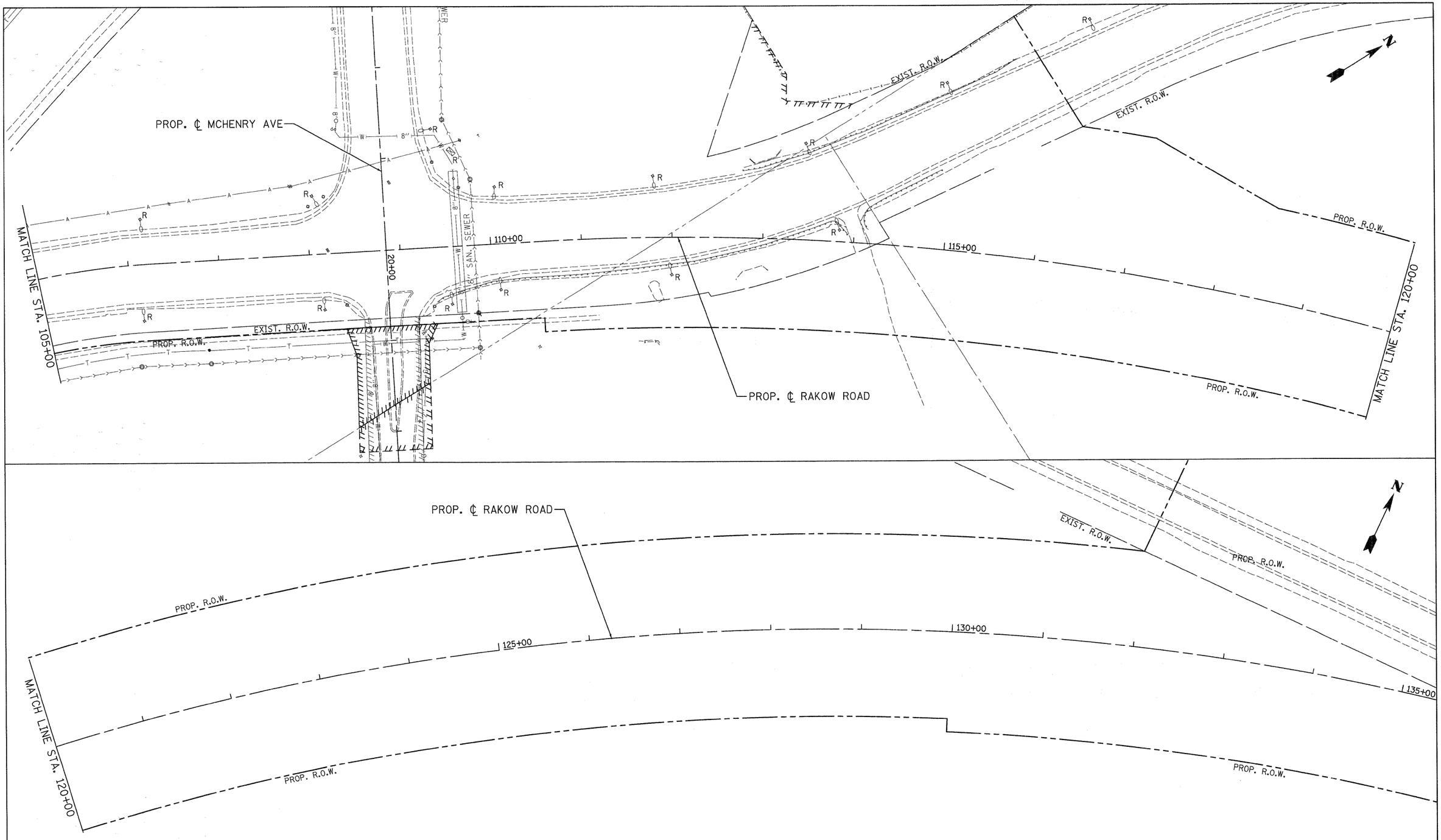

PATRICK ENGINEERING INC. LISLE, ILLINOIS	USER NAME = tkoeppen(Rdwy_Lisle)	DESIGNED - CMH	REVISED -
	PLOT CONFIG= PDF(Grey_Large).plt	DRAWN - MJP	REVISED -
	PLOT SCALE = 1:50	CHECKED - DH	REVISED -
	PLOT DATE = 7/29/2010	DATE - 8/2/2010	REVISED -

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

RAKOW ROAD FROM ACKMAN ROAD TO ILLINOIS ROUTE 31
RAKOW ROAD REMOVAL LIGHTING PLAN

SCALE: 1"=50' | SHEET NO. LT 17 OF 28 | STA. 105+00 | TO STA. 135+00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-00-WR	MCHENRY	606	391
		CONTRACT NO. 63398		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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EXIST. ℄ RAKOW ROAD

EXIST. R.O.W.

EXIST. R.O.W.

120+00

EXIST. R.O.W.

EXIST. R.O.W.

125+00

EXIST. R.O.W.

115+00

SEE SHEET LT-17 FOR CONTINUATION

PROP. R.O.W.

PROP. ℄ RAKOW ROAD

115+00

MATCH LINE EXIST. STA. 127+00

N

EXIST

EXIST

CTV

EXIST. R.O.W.

EXIST. ℄ RAKOW ROAD

130+00

135+00

140+00

EXIST. R.O.W.

MATCH LINE EXIST. STA. 127+00

PROP. ℄ RAKOW ROAD

135+00

PROP. R.O.W.

130+00

PROP. R.O.W.

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

USER NAME = tkoeppen(Rdwy_Lisle)	DESIGNED - CMH	REVISED -	
PLOT CONFIG= PDF(Grey_Large).plt	DRAWN - MJP	REVISED -	
PLOT SCALE = 1:50	CHECKED - DH	REVISED -	
PLOT DATE = 7/29/2010	DATE - 8/2/2010	REVISED -	

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

RAKOW ROAD FROM ACKMAN ROAD TO ILLINOIS ROUTE 31
RAKOW ROAD REMOVAL LIGHTING PLAN

SCALE: 1"=50' | SHEET NO. LT 18 OF 28 | STA. 114+00 | TO STA. 135+00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-00-WR	MCHENRY	606	392
		CONTRACT NO. 63398		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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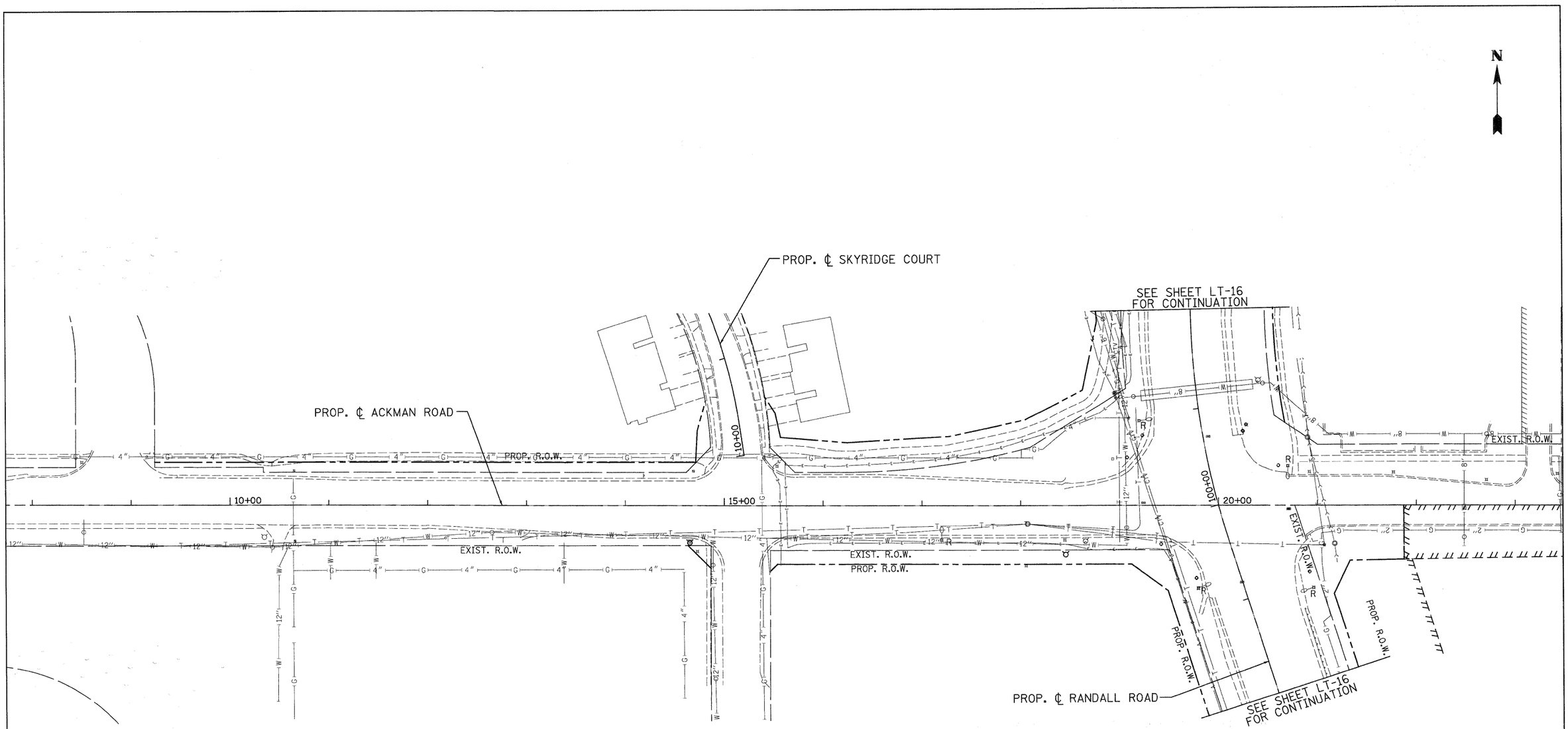

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

USER NAME = tkoeppen(Rdwy_Lisle)	DESIGNED - CMH	REVISED -	
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PLOT SCALE = 1:50	CHECKED - DH	REVISED -	
PLOT DATE = 7/29/2010	DATE - 8/2/2010	REVISED -	

MCHENRY COUNTY
DIVISION OF TRANSPORTATION

RAKOW ROAD FROM ACKMAN ROAD TO ILLINOIS ROUTE 31
ACKMAN ROAD REMOVAL LIGHTING PLAN

SCALE: 1"=50' | SHEET NO. LT 19 OF 28 | STA. END IMPROV TO STA. 22+00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-00-WR	MCHENRY	606	393
		CONTRACT NO. 63398		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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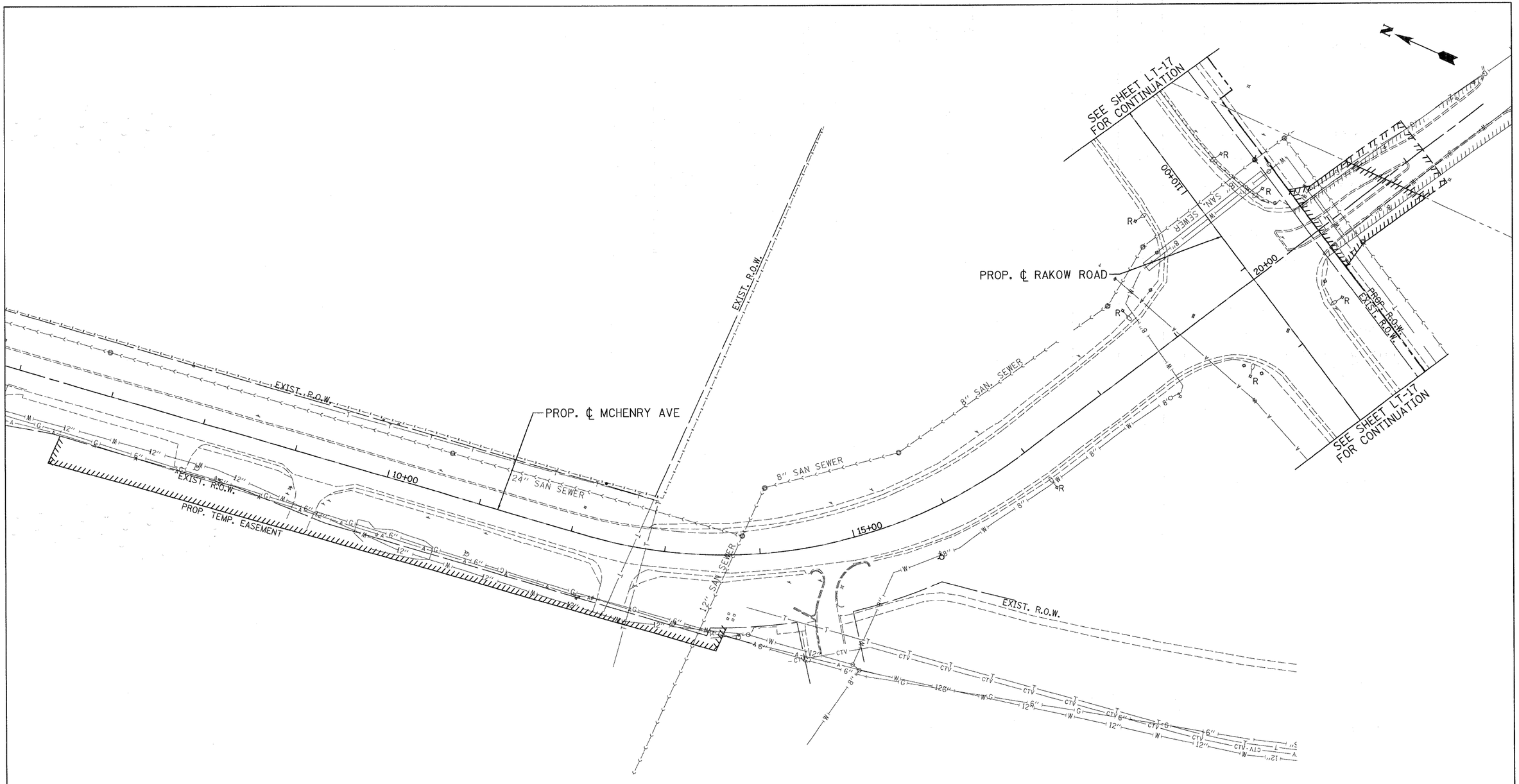

PATRICK ENGINEERING INC. LISLE, ILLINOIS	USER NAME = tkoeppen(Rdwy_Lisle)	DESIGNED - CMH	REVISED -	DIVISION OF TRANSPORTATION	MCHENRY COUNTY DIVISION OF TRANSPORTATION	RAKOW ROAD FROM ACKMAN ROAD TO ILLINOIS ROUTE 31 MCHENRY AVENUE REMOVAL LIGHTING PLAN		F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT CONFIG= PDF(Grey_Large).plt	DRAWN - MJP	REVISED -					0336	05-00308-00-WR	MCHENRY	606	394
	PLOT SCALE = 1:50	CHECKED - DH	REVISED -							CONTRACT NO. 63398		
	PLOT DATE = 7/29/2010	DATE - 8/2/2010	REVISED -			SCALE: 1"=50'	SHEET NO. LT 20 OF 28	STA.	TO STA.	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT

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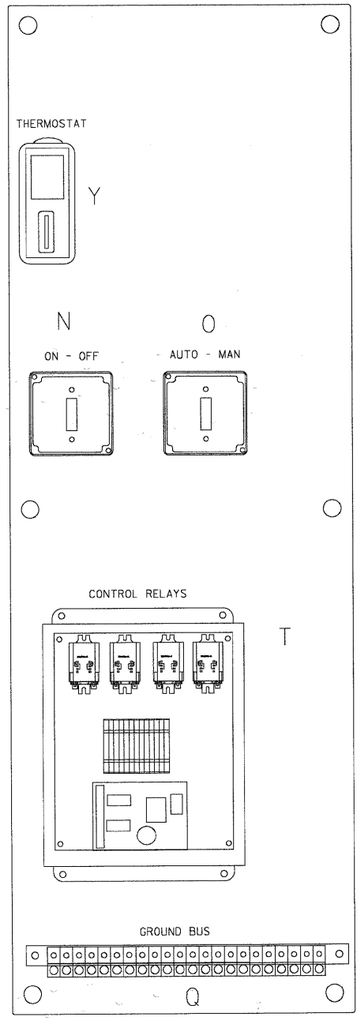
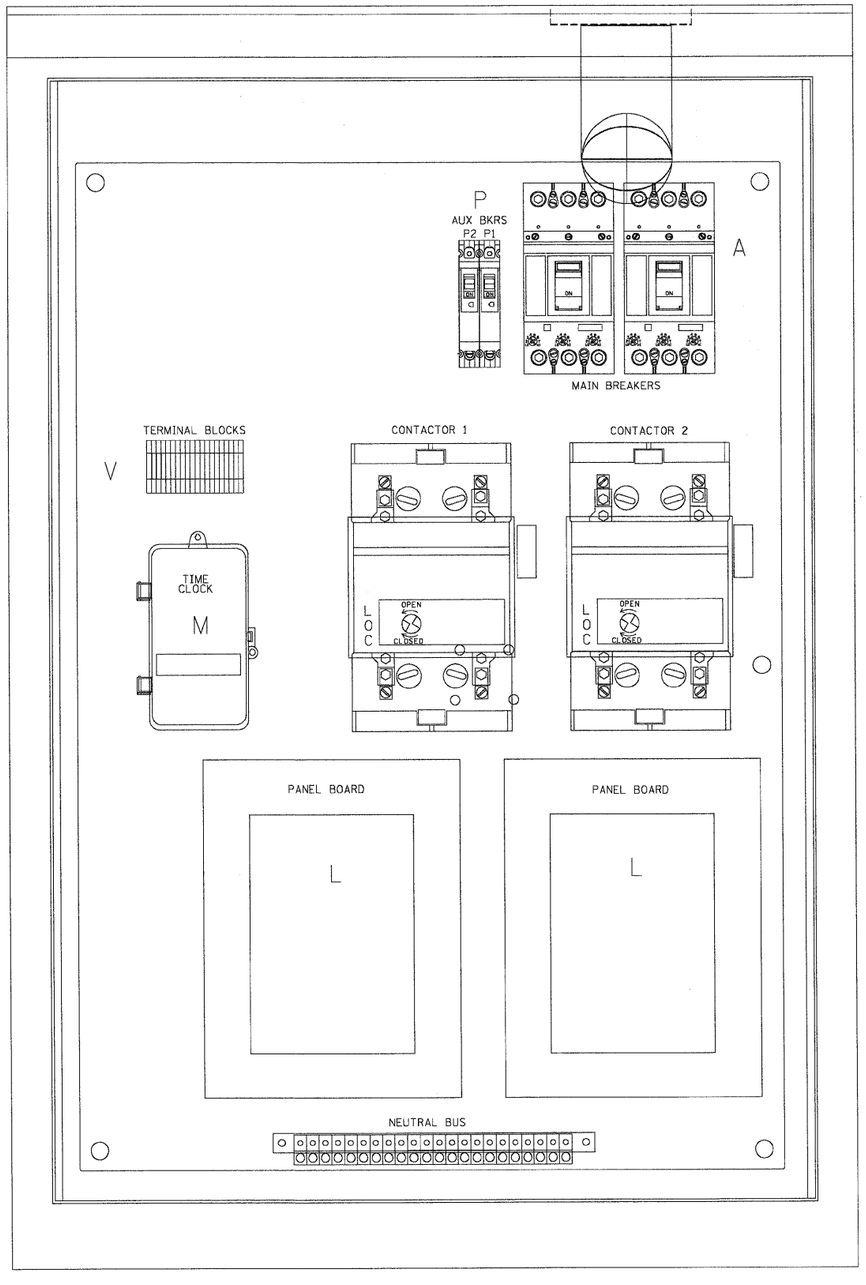
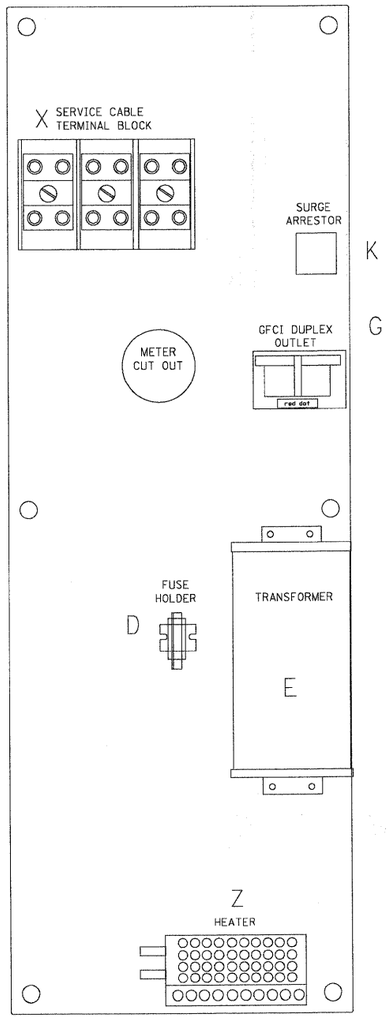


LEFT SIDE PANEL





RIGHT SIDE PANEL

BILL OF MATERIALS

ITEM *	QTY	DESCRIPTION
A	2	FXD62B175 BREAKERS 2 POLE 175 AMP WITH AUX CONTACT
C1,C2	2	MECHANICAL CONTRACTOR 8903PBV10X11V39 2 POLE 200 AMP 240V COIL WITH AUX CONTACTS
D	1	SECTIONAL FUSE HOLDER
E	1	1.5 KVA 277V-240/120 TRASFORMER
G	1	15 AMP GFCI
H	2	DOOR SWITCH
I	1	LIGHT FIXTURE
J	1	METER FITTING 1 PHASE 3 WIRE 200 AMP
K	1	SURGE ARRESTER
L	2	PANEL BOARD 480/240V 1 PHASE, 250 AMP COPPER BUS
M	1	2 CHANNEL DIGITAL TIME CLOCK
N	1	MOMENTARY SWITCH ON - OF
O	1	DPDT 20 AMP AUTO-MANUAL
P1	1	BREAKER 1P 15A
P2	1	BREAKER 1P 15A
Q	2	COPPER GROUND AND NEUTRAL BUS 1 X 16 X 1/4
T	1	CONTROL RELAY ASSEMBLY 240V COILS WITH DPDT 25 AMP RELAYS (R1,R2,R3,R4). MOMENTARY CONTACT ADAPTER. QTY 12 TERMINAL BLOCKS
V	20	TERMINAL BLOCKS
X	1	620 AMP SPLICE BLOCK
Y	1	CHROMALOX WR 80, 40-80 DEG THERMOSTAT
Z	1	HEATREX 276-10 375 WATT HEATER

*

E-200

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

USER NAME = tkoeppen(Rdwy Limle)	DESIGNED - CMH	REVISED -	
PLOT CONFIG= PDF(Grey_Large).plt	DRAWN - MJP	REVISED -	
PLOT SCALE = 1.50	CHECKED - DH	REVISED -	
PLOT DATE = 7/29/2010	DATE - 8/2/2010	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

RAKOW ROAD FROM ACKMAN ROAD TO ILLINOIS ROUTE 31
LIGHTING CONTROLLER, DUPLEX TYPE (1 OF 4)

SCALE: NONE | SHEET NO. LT 21 OF 28 | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-00-WR	MCHENRY	606	395
	E-200 (BE-200)	CONTRACT NO. 63398		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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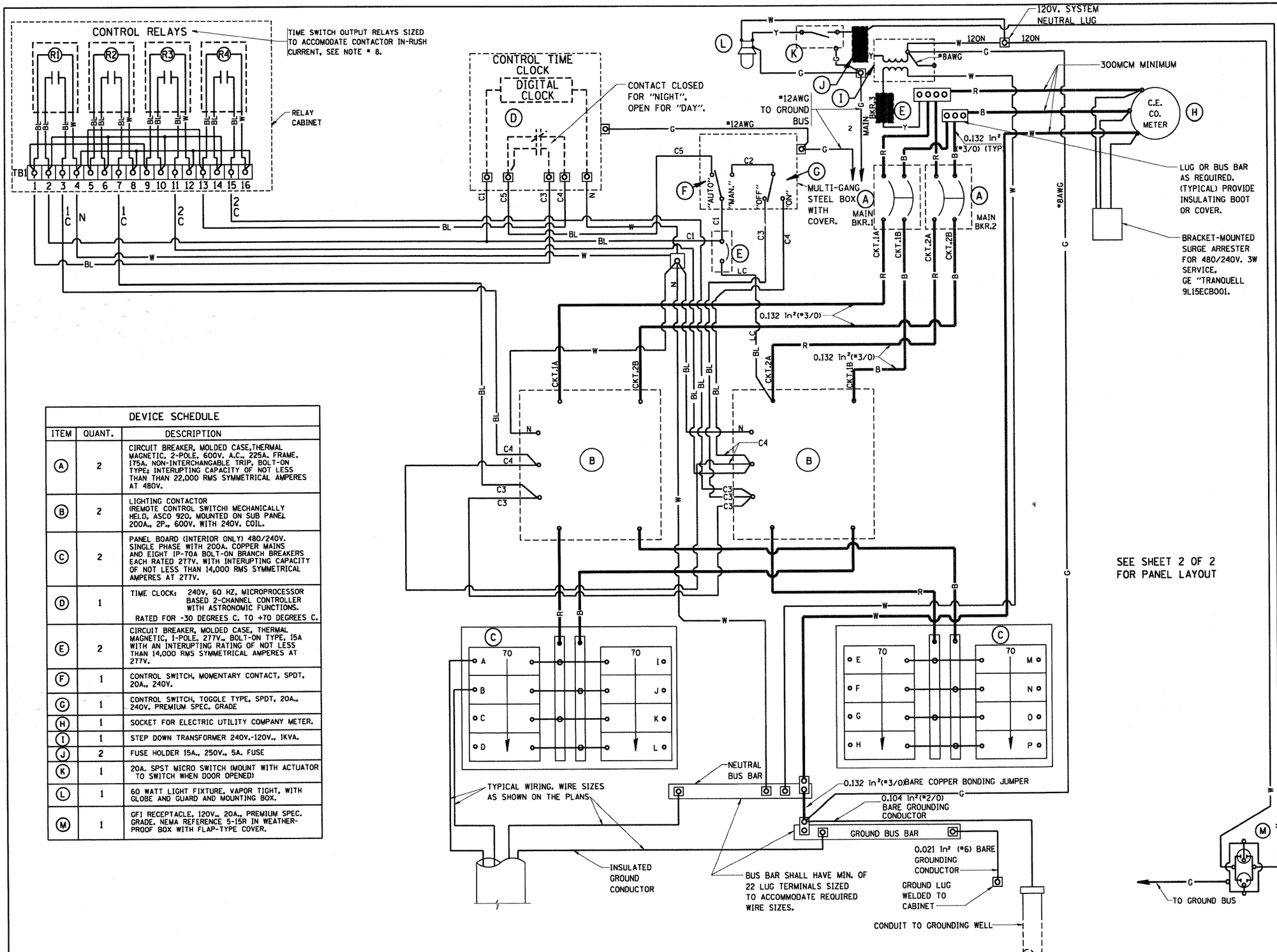

DEVICE SCHEDULE

ITEM	QUANT.	DESCRIPTION
(A)	2	CIRCUIT BREAKER, MOLDED CASE, THERMAL MAGNETIC, 2-POLE, 600V. A.C., 225A. FRAME, 175A. NON-INTERCHANGABLE TRIP, BOLT-ON TYPE; INTERUPTING CAPACITY OF NOT LESS THAN THAN 22,000 RMS SYMMETRICAL AMPERES AT 480V.
(B)	2	LIGHTING CONTACTOR (REMOTE CONTROL SWITCH) MECHANICALLY HELD, ASCO 920, MOUNTED ON SUB PANEL 200A., 2P., 600V. WITH 240V. COIL.
(C)	2	PANEL BOARD (INTERIOR ONLY) 480/240V. SINGLE PHASE WITH 200A. COPPER MAINS AND EIGHT IP-70A BOLT-ON BRANCH BREAKERS EACH RATED 277V. WITH INTERUPTING CAPACITY OF NOT LESS THAN 14,000 RMS SYMMETRICAL AMPERES AT 277V.
(D)	1	TIME CLOCK: 240V, 60 HZ, MICROPROCESSOR BASED 2-CHANNEL CONTROLLER WITH ASTRONOMIC FUNCTIONS. RATED FOR -30 DEGREES C. TO +70 DEGREES C.
(E)	2	CIRCUIT BREAKER, MOLDED CASE, THERMAL MAGNETIC, 1-POLE, 277V., BOLT-ON TYPE, 15A WITH AN INTERUPTING RATING OF NOT LESS THAN 14,000 RMS SYMMETRICAL AMPERES AT 277V.
(F)	1	CONTROL SWITCH, MOMENTARY CONTACT, SPDT, 20A., 240V.
(G)	1	CONTROL SWITCH, TOGGLE TYPE, SPDT, 20A., 240V. PREMIUM SPEC. GRADE
(H)	1	SOCKET FOR ELECTRIC UTILITY COMPANY METER.
(I)	1	STEP DOWN TRANSFORMER 240V.-120V., 1KVA.
(J)	2	FUSE HOLDER 15A., 250V., 5A. FUSE
(K)	1	20A. SPST MICRO SWITCH (MOUNT WITH ACTUATOR TO SWITCH WHEN DOOR OPENED)
(L)	1	60 WATT LIGHT FIXTURE, VAPOR TIGHT, WITH GLOBE AND GUARD AND MOUNTING BOX.
(M)	1	GFI RECEPTACLE, 120V., 20A., PREMIUM SPEC. GRADE. NEMA REFERENCE 5-15R IN WEATHER-PROOF BOX WITH FLAP-TYPE COVER.

SEE SHEET 2 OF 2 FOR PANEL LAYOUT

NOTES:

1. ALL CONTROL CABINET ITEMS SHALL HAVE SUITABLE IDENTIFICATION. OPEN CIRCUIT BREAKERS, CONTACTORS AND OTHER OPEN DEVICES SHALL HAVE PERMANENT SELF STICKING TAGS. DEVICES IN ENCLOSURES SHALL HAVE ENGRAVED 2-COLOR LAMINATED PLASTIC NAMEPLATES ATTACHED TO ENCLOSURES WITH SCREWS. NAMEPLATES SHALL BE ENGRAVED TO CORRESPOND TO DESIGNATIONS ON THE DRAWINGS. INTERNAL CABINET WIRING SHALL BE IDENTIFIED AS INDICATED OR AS DIRECTED BY THE ENGINEER BY MEANS OF SELF-STICKING TAGS APPLIED AT EACH CONNECTED END. IDENTIFICATION SHALL BE MADE BY THE CABINET MANUFACTURER.
2. ALL WIRING WITHIN THE CABINET SHALL BE COLOR CODED AS INDICATED.
   R = RED BL = BLUE W = WHITE
   B = BLACK Y = YELLOW G = GREEN
3. PROVIDE SEALING GROMMETS FOR ALL OPEN WIRING EXTENDED FROM DEVICES IN BOXES OR CABINETS WITHIN THE CONTROL CABINET.
4. ALL 120 VOLT SYSTEM AND ALL CONTROL WIRING SHALL BE #12AWG STRANDED UNLESS OTHERWISE INDICATED.
5. ALL WIRING SHALL BE NEATLY DRESSED AND SUPPORTED.
6. THE CONTROLLER SHALL BE CONSTRUCTED TO U.L. STD. 508 AND BEAR THE U.L. LABEL "ENCLOSED INDUSTRIAL CONTROL PANEL"
7. SEE CABINET AND FOUNDATION DETAIL SHEET FOR SCHEMATIC DIAGRAM AND DEVICE LAYOUT.
8. CONTROL RELAYS CAN BE ELIMINATED IF THE CONTROL TIME CLOCK OUTPUT CONTACTS ARE RATED FOR CONTACTOR INRUSH CURRENT.

E-200

PATRICK ENGINEERING INC. LISLE, ILLINOIS

USER NAME = tkoeppen(Rdwy_Lisle)	DESIGNED - CMH	REVISED - M. BURNS 07-25-91	
PLOT CONFIG= PDF(Grey_Large).plt	DRAWN - MJP	REVISED - S. MANLEY 10-11-93	
PLOT SCALE = 1:52	CHECKED - DH	REVISED -	
PLOT DATE = 7/29/2010	DATE - 8/2/2010	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

RAKOW ROAD FROM ACKMAN ROAD TO ILLINOIS ROUTE 31
CONTROL CABINET, DUPLEX TYPE WIRING DETAIL (2 OF 4)

SCALE: NONE | SHEET NO. LT 22 OF 28 | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-00-WR	MCHENRY	606	396
	E-200 (BE-200)	CONTRACT NO. 63398		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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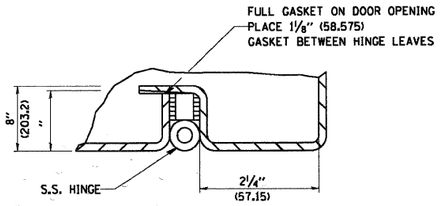
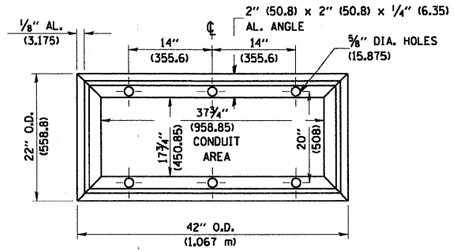
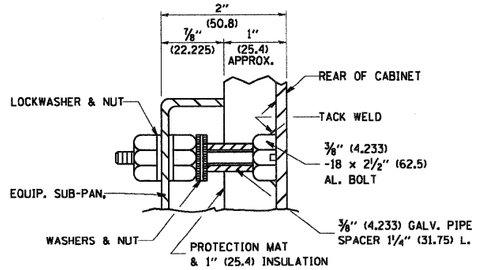


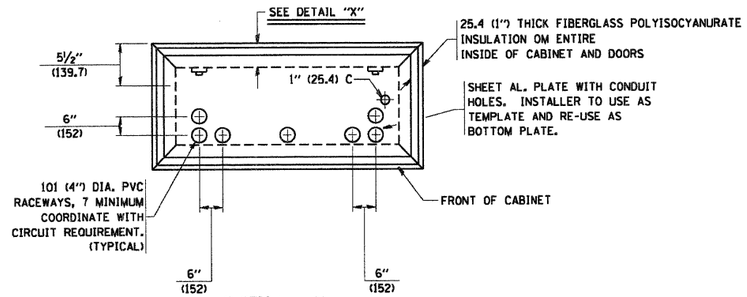
DETAIL "Y"



BASE MTG. DETAIL



DETAIL "X"



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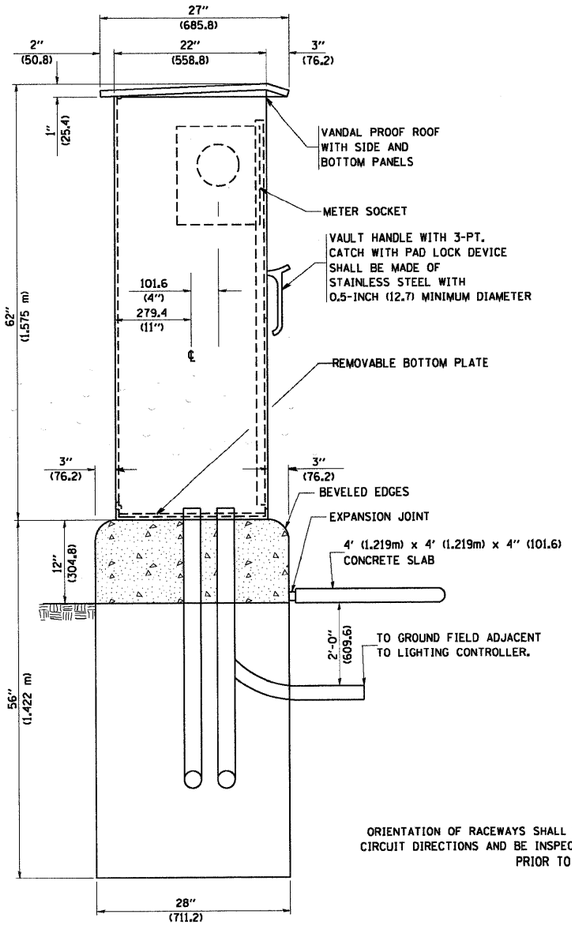
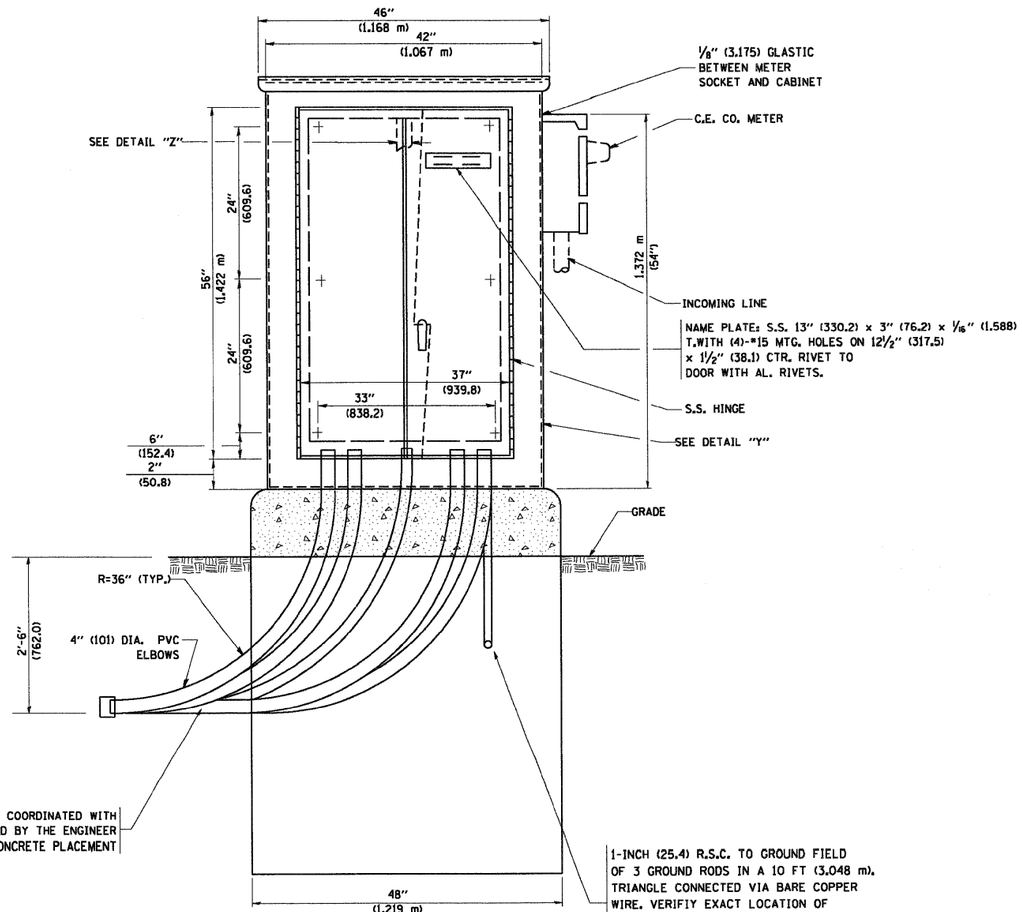
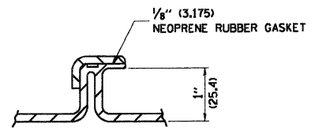


LEFT SIDE ELEVATION



FRONT ELEVATION



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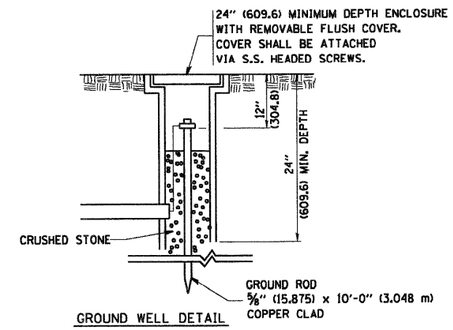
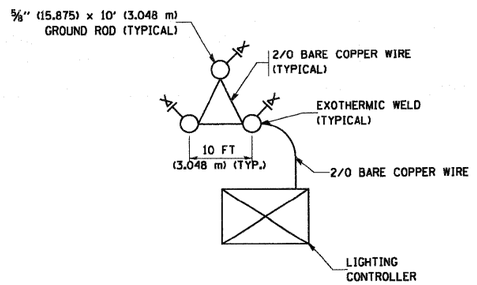


GROUND WELL DETAIL



GROUND FIELD DETAIL
(N.T.S.)

THE CONTRACTOR SHALL
VERIFY EXACT LOCATION
WITH THE ENGINEER

E-200

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

USER NAME = tkoeppen(Rdwy_Lisle)	DESIGNED - CMH	REVISED -	
PLOT CONFIG= PDF(Grey_Large).plt	DRAWN - MJP	REVISED -	
PLOT SCALE = 1:50	CHECKED - DH	REVISED -	
PLOT DATE = 7/29/2010	DATE - 8/2/2010	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

RAKOW ROAD FROM ACKMAN ROAD TO ILLINOIS ROUTE 31
LIGHTING CONTROLLER, DUPLEX TYPE (3 OF 4)

SCALE: NONE | SHEET NO. LT 23 OF 28 | STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-00-WR	MCHENRY	606	397
	E-200 (BE-200)	CONTRACT NO. 63398		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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NOTES

1. CABINET SHALL BE FABRICATED FROM 0.125-INCH (3.175) SHEET ALUMINUM *3003H14, FORMED AND ARC WELDED ASSEMBLY.
2. ALL SCREWS AND HARDWARE SHALL BE PLATED, GALVANIZED, OR MADE OF BRASS, ALUMINUM OR STAINLESS STEEL.
3. NAME PLATE SHALL HAVE ENGRAVED 0.75-INCH (19.05) HIGH LETTERS FILLED IN BLACK: "STATE OF ILLINOIS LIGHTING CONTROLS" UNLESS OTHERWISE SPECIFIED.
4. ONE INCH THICK POLYISOCYANURATE INSULATION SHALL BE INSTALL AND PERMANENTLY CEMENTED ON ALL SIDES OF THE CABINET AND DOORS.
5. CABINET SHALL BE PRIMED AND PAINTED AS SPECIFIED.
6. ELECTRIC UTILITY METER BOX SHALL BE MOUNTED ON THE SIDE OF CONTROL CABINET AS SHOWN ON THE PANEL LAYOUT DIAGRAM.
7. THE COMPLETED CONTROLLER SHALL BE U.L. LISTED AS AN INDUSTRIAL CONTROL PANEL UNDER UL508.
8. METAL MOUNTING PANEL SHALL BE #10 GAUGE GALVANIZED SHEET STEEL FLANGED BACK 0.75-INCHES I.D. ON 4 SIDES.
9. CIRCUIT BREAKERS AND CONTACTORS AND OTHER COMPONENTS SHALL BE MOUNTED ON 0.125-INCH (3.175) THICK GLASTIC INSULATION BACK PANEL.
10. ALL DEVICES SHALL BE FRONT REMOVABLE.
11. TIME CLOCK CHANNEL 1 N.O. CONTACT IS CLOSED NIGHT AND OPEN DAY.
12. SET "ON TIME" TO 30 MINUTES AFTER ASTRONOMICAL SUNSET.
13. BUS BAR SHALL HAVE 22 LUG TERMINALS SIZED TO ACCOMMODATE REQUIRED WIRE SIZES.
    NEUTRAL BUS SHALL BE PAINTED WHITE.
    GROUND BUS SHALL BE PAINTED GREEN.
14. ALL LUGS SHALL BE OF COPPER SCREWS AND CONNECTORS, SPRING HELD.
15. ALL WIRING TERMINATIONS SHALL BE RATED NOT LESS THAN 75 DEGREE CENTIGRADE.
16. ALL CONTROL WIRING SHALL BE 600V MACHINE TOOL WIRE TYPE MTW.
17. ALL POWER WIRING SHALL BE 600V TYPE RHH/RHW.
18. ALL WIRING WITHIN THE CABINET SHALL BE COLOR CODED AS INDICATED:
    R - RED Y - YELLOW
    B - BLACK W - WHITE
    BL- BLUE G - GREEN
19. ALL DIMENSIONS ARE IN MILIMETERS (INCHES) UNLESS OTHERWISE INDICATED.
20. SCHEMATIC SHOWN WITH BREAKER OPEN, CONTACTOR OPEN, CABINET DOOR CLOSED, CLOCK NOT ACTIVE.
21. A LAMINATED COPY OF THE CIRCUIT SCHEMATIC AND SCADA I/O DIAGRAM SHALL BE ATTACHED TO THE INSIDE OF THE CONTROLLER.

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	PLOT SCALE = 1:50	CHECKED - DH	REVISED -
	PLOT DATE = 7/29/2010	DATE - 8/2/2010	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

RAKOW ROAD FROM ACKMAN ROAD TO ILLINOIS ROUTE 31
LIGHTING CONTROLLER, DUPLEX TYPE (4 OF 4)

SCALE: NONE | SHEET NO. LT 24 OF 28 | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-00-WR	MCHENRY	606	398
	E-200 (BE-200)	CONTRACT NO. 63398		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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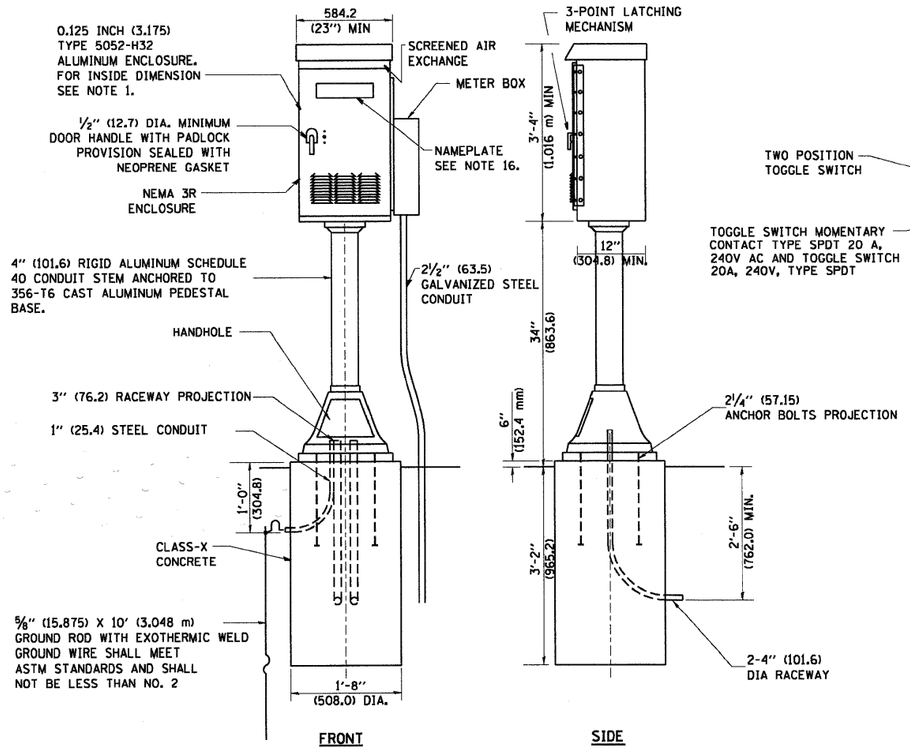
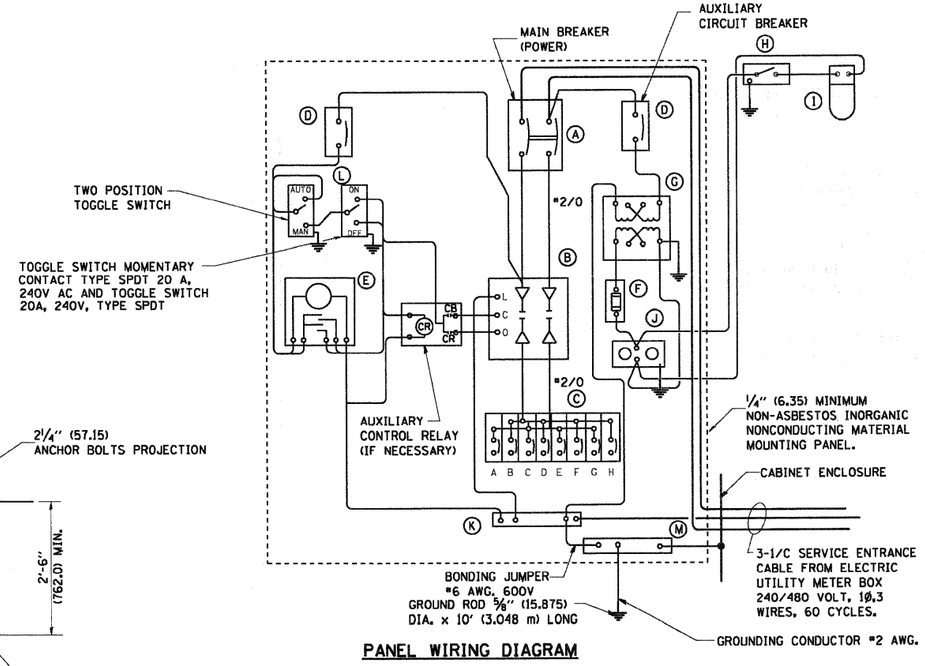


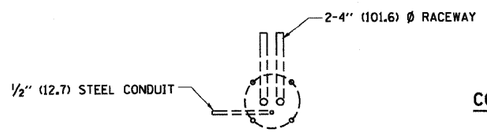


PANEL WIRING DIAGRAM

PANEL EQUIPMENT

BILL OF MATERIAL

ITEM	QUANTITY	DESCRIPTION
A	1	MAIN CIRCUIT BREAKER, 2 POLE, 600 VOLT 100 AMP. FRAME, 100 AMP. NON-INTERCHANGEABLE TRIP INTERRUPTING RATING NEMA-22000 AMP. AT 480 VOLT.
B	1	REMOTE CONTROL SWITCH, ELECTRICALLY OPERATED, MECHANICALLY HELD, 2 POLE, SINGLE THROW, 100 AMP., 600 VOLTS CONTROL CIRCUIT 240 VOLT.
C	8	CIRCUIT BREAKERS, 1 POLE, 277V., 100 AMP., FRAME 50 AMP. NON-INTERCHANGEABLE TRIP INTERRUPTING RATING NEMA-10,000 AMP. AT 240 V.
D	2	CONTROL CIRCUIT-CIRCUIT BREAKER, 1 POLE, 240 V., 100 AMP. FRAME, 15 AMP. NON-INTERCHANGEABLE TRIP INTERRUPTING RATING NEMA-5000 AMP. AT 240 V.
E	1	ASTRONOMIC MICROPROCESSOR-BASED 2-CHANNEL CONTROLLER [TIME SWITCH].
F	1	20 A., 120 V. FUSE.
G	1	1.5 KVA, SINGLE PHASE, ENCAPSULATED TRANSFORMER 240 X 480 / 120 X 240 VOLT, 60 Hz.
H	1	SPST 20A SWITCH ON DOOR, TO TURN LIGHT ON WHEN DOOR IS OPEN.
I	1	INCANDESCENT LIGHTING FIXTURE ENCLOSED AND GASKETED WITH 60 WATT, 120 V. LAMP.
J	1	20 A., 120 V., DUPLEX RECEPTACLE, GFCI.
K	1	COPPER GROUND BUS ¼" (6.35) X 1" (25.4) X 12" (304.8 mm) LONG MOUNTED ON PANEL WITH LUGS AND 4 SPARE LUGS
L	1	TOGGLE SWITCHES MOUNTED IN 4" (101.6) X 4" (101.6 mm) BOX.
M	1	COPPER GROUND BUS ¼" (6.35) X 1" (25.4) X 12" (304.8 mm) LONG MOUNTED ON PANEL WITH LUGS AND SPARE LUGS



FOUNDATION PLAN

CONTROL CABINET

NOTES:

1. ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.
2. UNLESS OTHERWISE INDICATED, THE CABINET SHALL BE MOUNTED ATOP A 4-INCH (101.6 mm) RIGID ALUMINUM SCHEDULE 40 CONDUIT STEM ANCHORED TO A CAST ALUMINUM PEDESTAL BASE.
3. IN FRONT OF CONTROL CABINET DOOR, REMOVE VEGETATION AND 2" (50.8 mm) TOP SOIL, LEVEL THE AREA AND ON TOP, PLACE LENGTH WISE PARALLEL TO CONTROL CABINET, A CONCRETE PAD 36" (914.4 mm) x 60" (18.288 m) x 4" (101 mm) MIN. SIZE. THE COST OF LABOR AND MATERIALS ARE INCLUDED IN THE COST OF THE CONTROLLER.
4. DOOR SHALL BE CONSTRUCTED FROM SAME TYPE OF MATERIAL AND THICKNESS AS CABINET.
5. DOOR SHALL BE EQUIPPED WITH THREE POINT LATCHING MECHANISM WITH NYLON ROLLERS AT TOP THE BOTTOM.
6. DOOR HINGE SHALL BE A HEAVY GAUGE CONTINUOUS HINGE WITH A ¼" (6.35 mm) DIA. STAINLESS STEEL HINGE PIN.
7. ALL EXTERNAL HARDWARE SHALL BE STAINLESS STEEL.
8. CONTROL WIRING TO BE #12 AWG, 600V, TYPE "SIS" GRAY SWITCH BOARD WIRE, STRANDED COPPER.
9. METER BOX SHALL BE MOUNTED ON THE SIDE OF CONTROL CABINET, NEAR TO THE SERVICE POLE.
10. CABINETS SHALL BE PRIMED AND PAINTED AS SPECIFIED.
11. THE HEADS OF CONNECTORS SCREWS SHALL BE PAINTED WHITE FOR NEUTRAL BAR CONNECTION AND GREEN FOR GROUND BAR CONNECTORS.
12. ALL WIRING WITHIN THE CABINET SHALL BE COLOR CODED AS INDICATED.
    R = RED BL = BLUE W = WHITE
    B = BLACK Y = YELLOW G = GREEN
13. PROVIDE SEALING GROMMETS FOR ALL OPEN WIRING EXTENDED FROM DEVICES IN BOXES OR CABINETS WITHIN THE CONTROL CABINET.
14. ALL WIRING SHALL BE NEATLY DRESSED AND SUPPORTED.
15. THE CONTROLLER SHALL BE CONSTRUCTED TO U.L. STD. 508 AND BEAR THE U.L. LABEL "ENCLOSED INDUSTRIAL CONTROL PANEL".
16. 12" (304.8) X 16" (406.4 mm) STAINLESS STEEL EXTERIOR NAMEPLATE SHALL BE ENGRAVED TO "STATE OF ILLINOIS LIGHTING CONTROLS" UNLESS OTHERWISE SPECIFIED.

PATRICK ENGINEERING INC.
LISLE, ILLINOIS

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PLOT SCALE = 1:50	CHECKED - DH	REVISED -	
PLOT DATE = 7/29/2010	DATE - 8/2/2010	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

RAKOW ROAD FROM ACKMAN ROAD TO ILLINOIS ROUTE 31
LIGHTING CONTROLLER PEDESTAL MOUNT

SCALE: NONE | SHEET NO. LT 25 OF 28 | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-00-WR	MCHENRY	606	399
	BE-210	CONTRACT NO. 63398		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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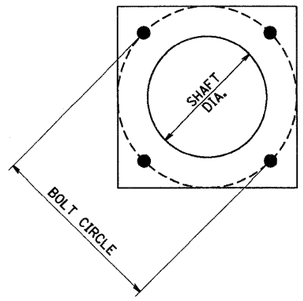

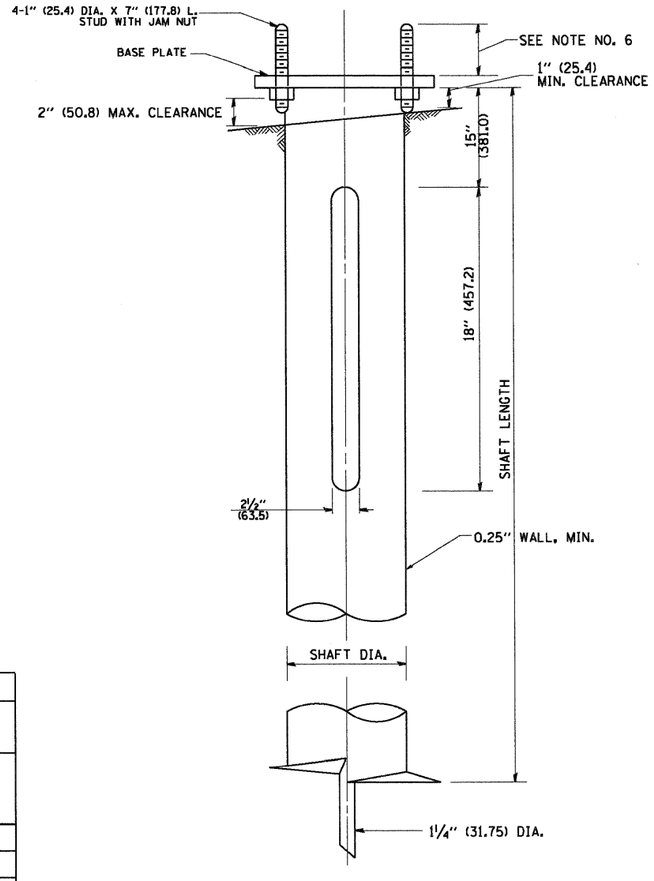

HELIX FOUNDATION SIZE

POLE MOUNTING HEIGHT	BOLT CIRCLE	SHAFT DIAMETER	SHAFT LENGTH	BASEPLATE
30 FT.	11½"	8⅝"	6 FT.	12"x12"x1"
31 FT.-35 FT.	11½"	8⅝"	6 FT.	12"x12"x1"
36 FT.-40FT.	15"	8⅝"	6 FT.	15"x15"x1¼"
41 FT.-45 FT.	15"	8⅝"	6 FT.	15"x15"x1¼"
46 FT.-50 FT.	15"	10"	8 FT.	15"x15"x1¼"

METAL HELIX FOUNDATION MATERIALS

ITEM	MATERIAL REQUIREMENT
BASEPLATE	AASHTO M 270M, GRADE 36 (M270M, GRADE 250)
SHAFT	ASTM A 252, GRADE 2 (PHOSPHOROUS 0.04% MAXIMUM, SULFUR 0.05% MAXIMUM)
HELIX SCREW	AASHTO M 183 (ASTM A 635)
PILOT POINT	AASHTO M 270 (ASTM A 575)
ANCHOR RODS/STUDS	AASHTO M 314 (ASTM F 1554)
HEXAGON NUTS	AASHTO M 291M (ASTM A 563) GRADE DH, OR AASHTO M 292 (ASTM A 194) GRADE 2H
WASHERS	AASHTO M 293 (ASTM F 436)

NOTES:

1. ALL DIMENSION IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.
2. ALL MATERIAL SHALL BE GALVINIZED ACCORDING TO AASHTO M111, UNLESS OTHERWISE SPECIFIED.
3. ALL WELDS SHALL BE CONTINUOUS AND NOT LESS THAN ¼" (6.35 mm) FILLET WELDS. THE WELDED FOUNDATION SHALL BE CAPABLE OF WITHSTANDING 10,000 FT/LBS (13558.18 n.m) OF INSTALLATION TORQUE APPLIED ABOUT THE AXIS OF THE FOUNDATION.
4. THE HELIX FOUNDATION SHAFT SHALL BE INSTALLED VERTICAL AND THE BASE PLATE SHALL BE IN LEVEL. THE BREAKAWAY COUPLINGS AND HARDWARE SHALL NOT BE USED TO ALIGN THE POLE INSTALLATION.
5. THE CABLE TRENCH SHALL BE BACKFILLED AND FIRMLY COMPACTED BEFORE THE INSTALLATION OF THE LIGHT POLE.
6. THE CONTRACTOR SHALL COORDINATE EXTENSION OF ANCHOR BOLTS ABOVE TOP OF THE BASE PLATE WITH THE BREAKAWAY DEVICE MANUFACTURER'S REQUIREMENTS.
7. ANY VOIDS WITHIN THE METAL FOUNDATION SHALL BE FILLED WITH FINE AGGREGATE.
8. METAL FOUNDATIONS SHALL BE INSTALLED IN UNDISTURBED SOIL. PREDRILLING A PILOT HOLE AND/OR BACKFILLING AROUND THE FOUNDTION IS NOT ALLOWED.
9. THE METAL FOUNDATION SHALL NOT BE INSTALLED TO A TORQUE WHICH EXCEEDS THE MANUFACTURER'S MAXIMUM TORQUE RATING NOR SHALL IT BE INSTALLED TO AN INSTALLATION TORQUE VALUE OF LESS THAN 3,500 FT LB (4,750 KNM). METAL FOUNDATIONS THAT ARE NOT INSTALLED TO FULL INSTALLATION DEPTH OR DO NOT ACHIEVE THE MINIMUM INSTALLATION TORQUE SHALL BE REMOVED AND REPLACED WITH A CONCRETE FOUNDATION AT NO ADDITIONAL COST.
10. THE BASEPLATE SHALL BE PERPENDICULAR TO THE SHAFT AXIS (± 1°) AND THE HOLE CENTERLINE SHALL BE CONCENTRIC (± 0.188) TO THE SHAFT AXIS.
11. THE PILOT POINT AND SHAFT AXIS SHALL BE CONCENTRIC (± 0.125) AND IN LINE (± 2°).
12. THE BASEPLATE SHALL BE STAMPED WITH THE MANUFACTURERS NAME AND DATE OF MANUFACTURE.

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LISLE, ILLINOIS

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PLOT DATE = 7/29/2010	DATE - 8/2/2010	REVISED -

RAKOW ROAD FROM ACKMAN ROAD TO ILLINOIS ROUTE 31
LIGHT POLE FOUNDATION METAL

SCALE: NONE | SHEET NO. LT 26 OF 28 | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0336	05-00308-00-WR	MCHENRY	606	400
	BE-305	CONTRACT NO. 63398		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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