

IOWA
DEPARTMENT OF TRANSPORTATION
OFFICE OF AVIATION
PLANS OF PROPOSED IMPROVEMENTS TO THE
AVIATION SYSTEM
STATEWIDE
AIRPORT PAVEMENT
MARKINGS

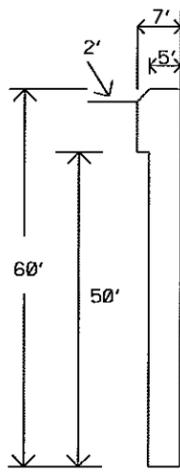
SHEET ID	DESCRIPTION
A.01	TITLE SHEET
B.01 - B.04	PAINTING LAYOUTS AND DETAILS
C.01 - C.02	ESTIMATE OF QUANTITIES AND DETAILS
D.01	MARKING DIAGRAM - DECORAH (DEH)
D.02	MARKING DIAGRAM - FAIRFIELD (FFL)
D.03	MARKING DIAGRAM - HUMBOLDT (ØK7)
D.04	MARKING DIAGRAM - IOWA FALLS (IFA)
D.05	MARKING DIAGRAM - STORM LAKE (SLB)

Federal Aviation Advisory Circulars 150/5340-1L, and AC 150/5370-10G, Item P-620, plus current Supplemental Specifications and Special Provisions shall apply to construction work on this project.

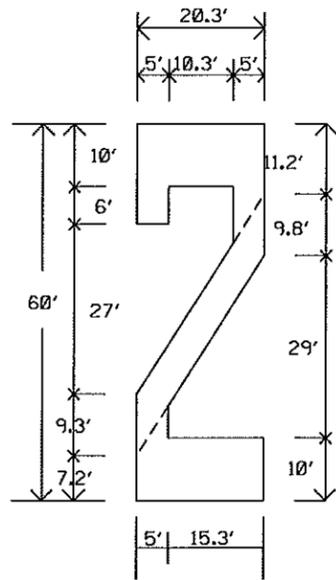
REVISIONS

STATEWIDE AIRPORT PAVEMENT MARKINGS AIP-IA15(001)--91-00

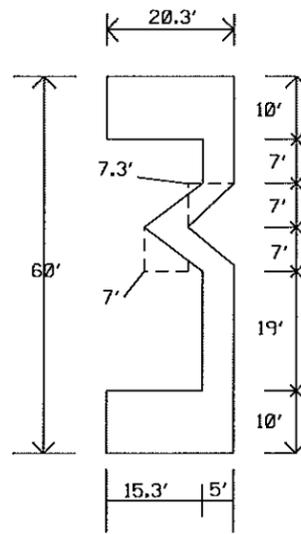
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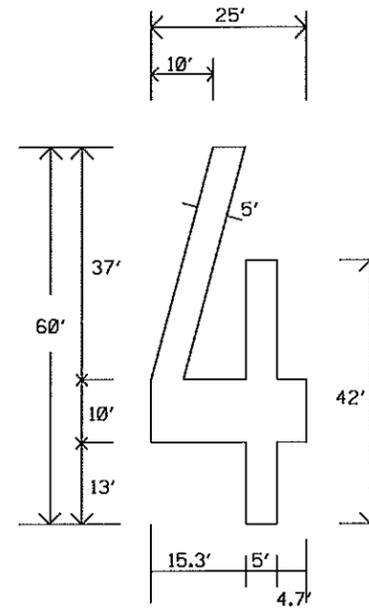
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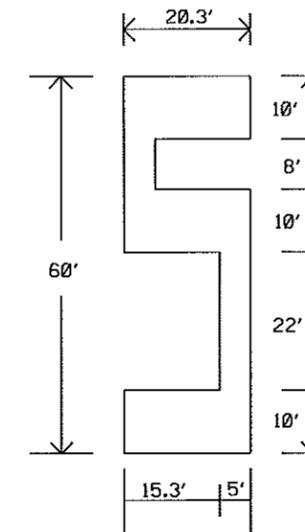
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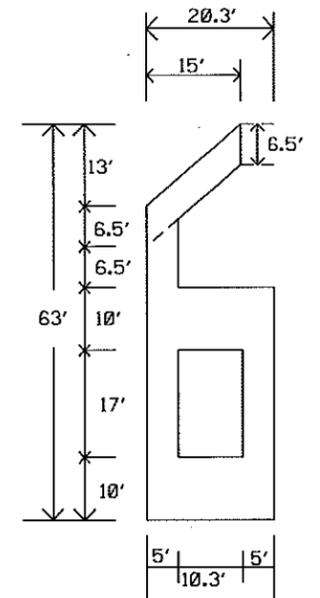
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Solid - 759 S.F.



Solid - 716 S.F.

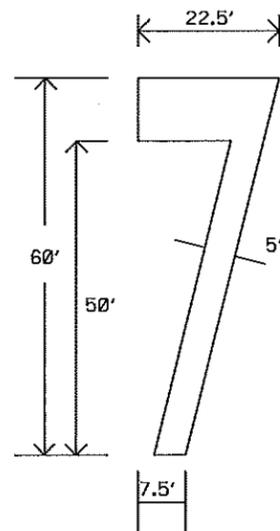


Notes:

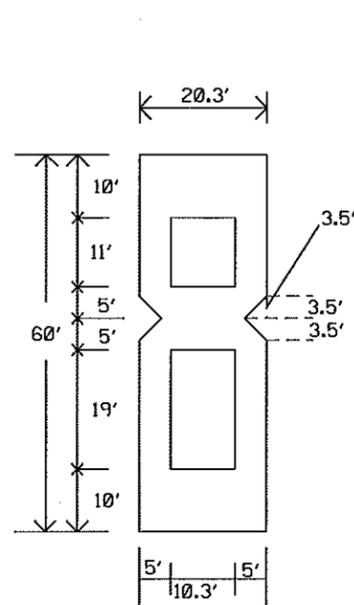
1. All numerals except the number eleven (11) are horizontally spaced 15' apart.
2. The number 11 is horizontally spaced 27' apart.
3. Dimensions are expressed in feet and decimals of feet.

4. The number one (1), when used alone, contains a horizontal bar to differentiate it from the runway centerline.
5. Single designations are centered on the runway pavement centerline.

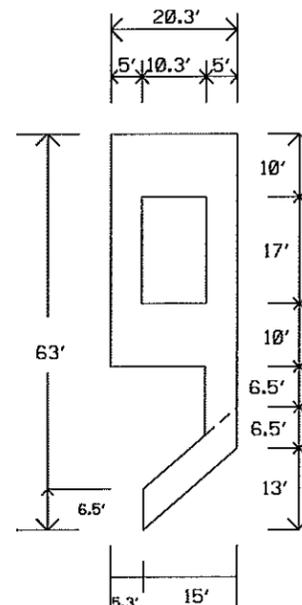
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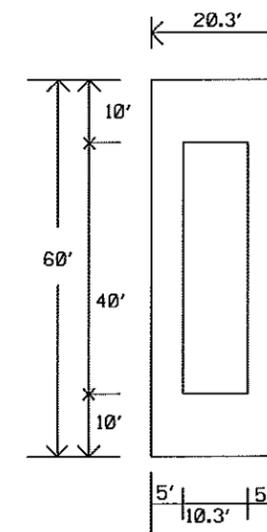
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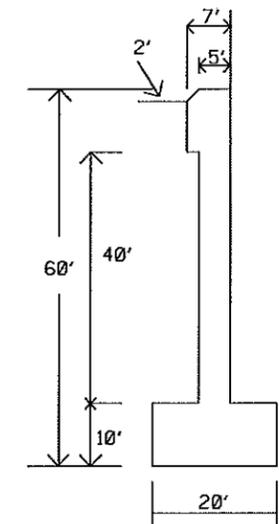
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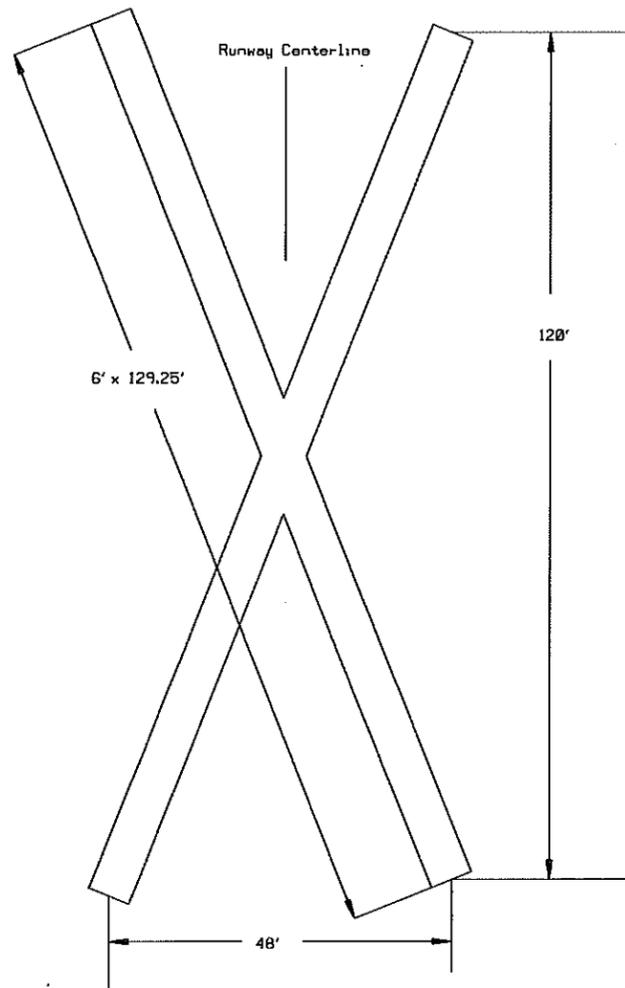


Solid - 806 S.F.

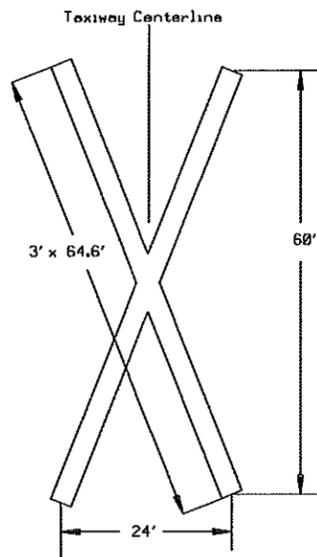


Solid - 468 S.F.



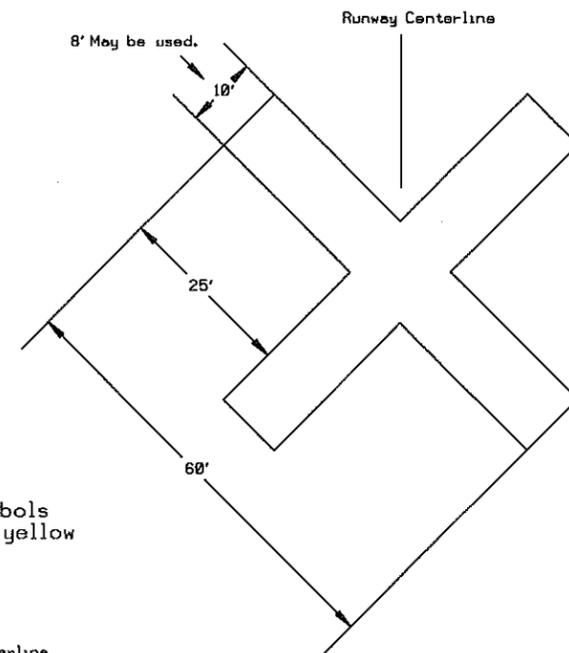


Alternate Temporary Closed Runway Symbol

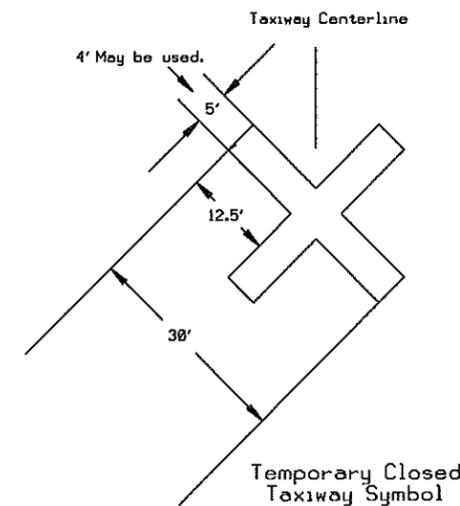


Alternate Temporary Closed Taxiway Symbol

Note: Symbols are always yellow



Temporary Closed Runway Symbol



Temporary Closed Taxiway Symbol

Notes:

The Contractor shall close the runway with Temporary Closure Markers by placing a symbol at each end of the runway and/or close taxiways with low profile barricades.

All symbols shall conform to specifications in AC 150/5340-1L. Symbols shall stay in place until all work, including drying or curing time, on the specific runway and/or taxiway is complete.

Night time closures will not be allowed.

Entry to and exit from work areas shall not cross a runway or utilize a taxiway which is not closed.

The Contractor must verify with the airport manager that all appropriate NOTAMS are in place prior to closing the runway.

Iowa Department of Transportation
Office of Aviation

Temporary Closed Runway and Taxiway Symbol Details

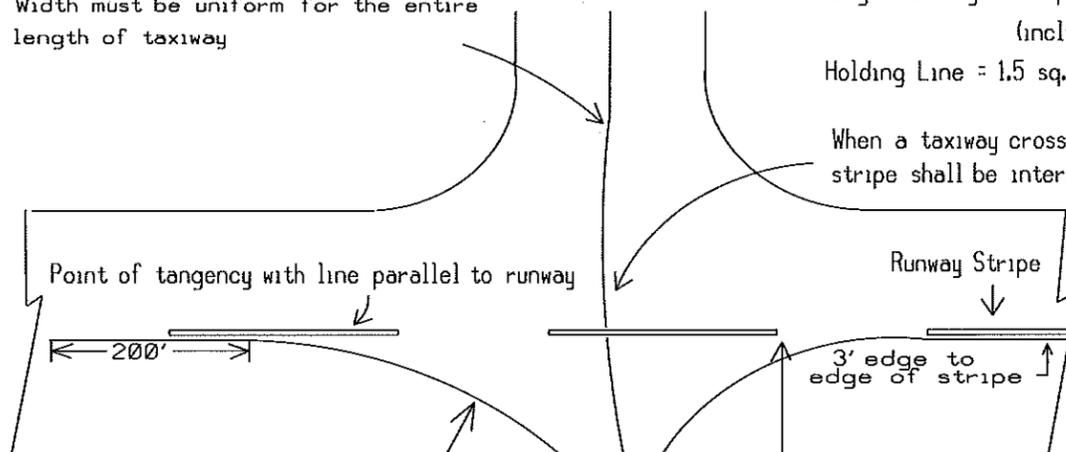
2015 Year

Sheet No. B.02

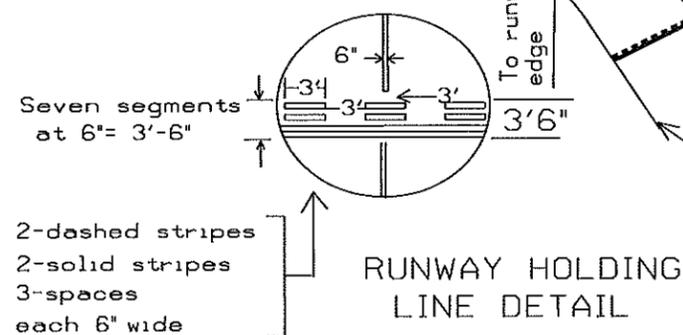
TAXIWAY MARKING

At taxiway intersections with runway end, taxiway centerline stripes terminate at the nearest edge of the runway as shown on the runway marking details.

Centerline width may vary from 6-12".
Width must be uniform for the entire length of taxiway



Not less than 1/2 taxiway width-use largest radius curve practical for taxiway stripe (typical)

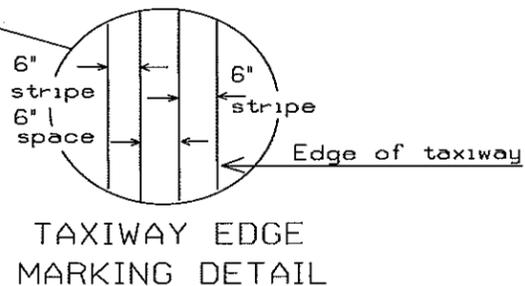


TAXIWAY MARKING AREAS

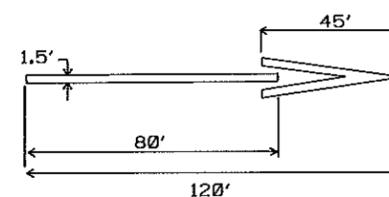
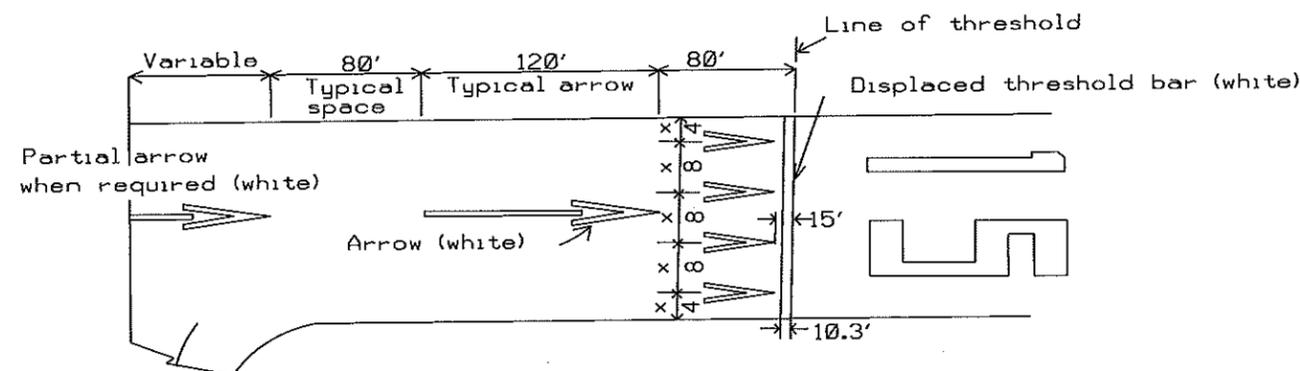
Centerline = .5 sq. ft. per linear foot of taxiway
Edge marking = 2 sq. ft. per linear foot of taxiway (includes both edges)
Holding Line = 1.5 sq. ft. per foot of taxiway width

When a taxiway crosses a runway, the taxiway centerline stripe shall be interrupted by runway markings.

Taxiway holding line is perpendicular to taxiway centerline

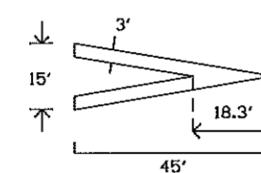


Displaced Threshold Marking



ARROW DETAIL

Center on runway centerline
Area for each chevron = 218 sq. ft.
Area for each arrow shaft = 120 sq. ft.



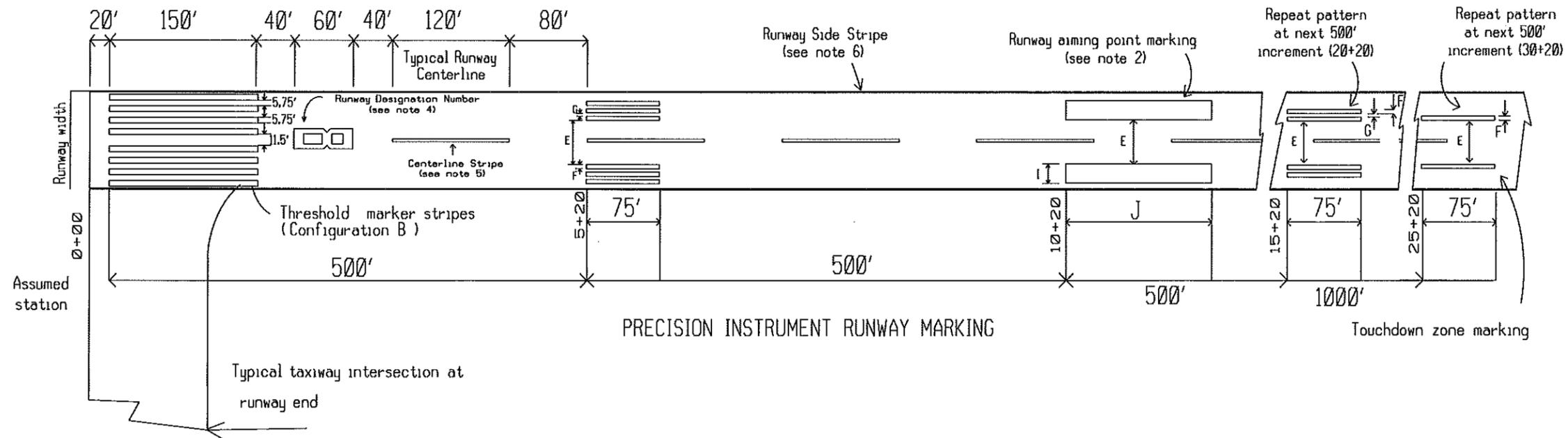
ARROW HEAD DETAIL

Runway Width (W)	Number of Arrow Heads	Spacing between Arrow Heads	Spacing to Runway Edge
≥ 100'	4	W/4	W/8
< 100'	3	W/3	W/6
< 60'	2	W/2	W/4

Iowa Department of Transportation
Office of Aviation

Pavement Marking
Detail Plans

2015 YEAR



PRECISION INSTRUMENT RUNWAY MARKING

1) RUNWAY MARKING PRECEDENCE

1st. Precision Instrument
 2nd. Non-precision Instrument
 3rd. Basic (VFR)
 Marking of lesser precedence runways shall be interrupted at the edge of higher precedence runways at intersections and common ends. (see typical marking plans)

2) RUNWAY AIMING POINT MARKING

Runway Aiming Point Markings are placed on runways 4,200 feet and longer used by jet aircraft.

3) TOUCHDOWN ZONE MARKERS

For runways having touchdown zone markings on both ends, those pairs of markings which extend within 900 ft. of the runway midpoint are eliminated. No touchdown zone markings are to be eliminated when installed on only one end of the runway.

4) RUNWAY DESIGNATION NUMBERS

The runway designation number assigned each runway end is the whole number nearest one-tenth of the magnetic azimuth measured along the runway centerline. Numbers are determined from approach directions. Numbers are centered on the runway centerline. The numerals of two-digit standard sized numbers are spaced at 15 feet apart, except the numerals in number 11, which are spaced 27 ft. apart at the base. Numeral 1, when used alone, contains a horizontal bar to differentiate it from the runway centerline marking.

5) BLACK OUTLINE MARKINGS

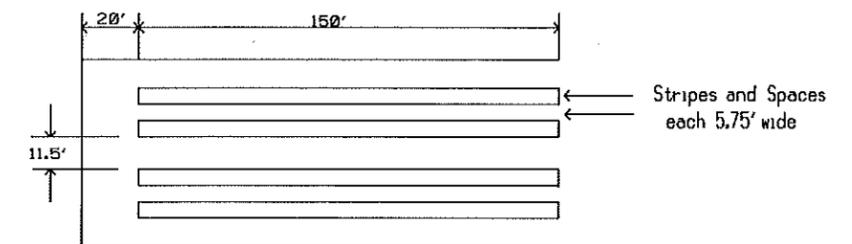
6" black border along the perimeter of the marking

6) RUNWAY CENTERLINE MARKING

Runway centerline stripes shall be laid out from runway direction numbers toward the middle. Any non-standard length stripes or space required shall be at the middle of the runway.
 36' centerline stripe for precision runways
 18' centerline stripe for non-precision runways
 12' centerline stripe for visual runways

7) RUNWAY SIDE STRIPING

Minimum width is equal to the centerline marking.
 36' side stripes for runways 100' or wider
 18' side stripes for runways 75' wide or less

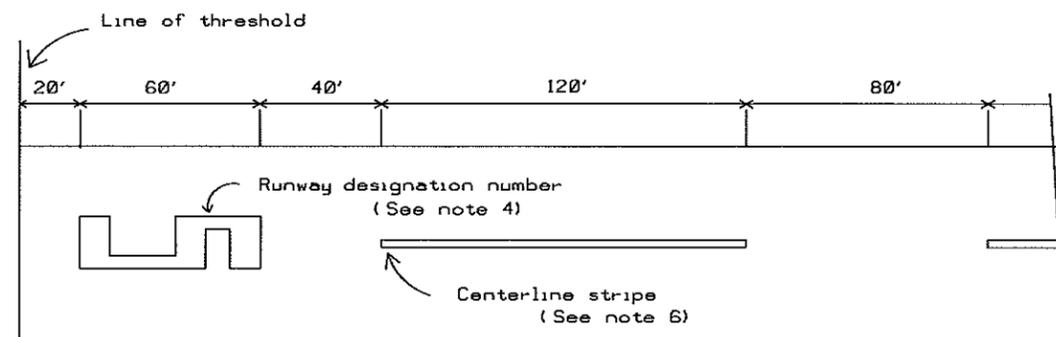


The stripes extend laterally to within 10 feet of the edge of a runway or to a distance of 92 feet on either side of a runway centerline, whichever results in the smaller lateral distance.

EXPLANATION OF TABLE

Dimensions are in feet and decimals of feet
 Areas are in square feet. Measured for area of paint only.

RUNWAY WIDTH	Threshold Marking Stripes (per runway end)		TOUCHDOWN ZONE MARKING						RUNWAY AIMING POINT MARKING		
	Stripes	Area for Stripes	DIMENSIONS			AREAS			DIMENSIONS		AREA FOR 2 MARKERS
			E	F	G	6 STRIPES	4 STRIPES	2 STRIPES	I	J	
150	12	10,350	72	6	5	2700	1800	900	30	150	9000
100	8	6,900	48	4	3.3	1800	1200	600	20	150	6000
75	6	5,175	36	3	2.5	1350	900	450	15	150	4500
60	4	3,450	28.8	2.4	2	1080	720	360	12	150	3600



BASIC RUNWAY MARKING

Other elements of non-precision or precision instrument marking may be included.

Iowa Department of Transportation
 Office of Aviation
 Pavement Marking Detail Plans
 2015 YEAR

ESTIMATED PROJECT QUANTITIES

100-1C
Modified

CONSTRUCTION USE ONLY	ITEM CODE	ITEM	UNIT	QUANTITIES				
				ESTIMATED				
				DIVISION 1	DIVISION 2	DIVISION 3	DIVISION 4	DIVISION 5
	2533-4980005	Mobilization	LS	1	1	1	1	1
	2527-9263100	Painted Airport Pavement Markings	SF	22,940	56,531	17,290	34,370	38,823
	2527-9263104	Airport Pavement Markings Removed	SF	53	0	11,834	9,053	0

ACTUAL PROJECT QUANTITIES

100-1C
Modified

CONSTRUCTION USE ONLY	ITEM CODE	ITEM	UNIT	QUANTITIES				
				AS BUILT				
				DIVISION 1	DIVISION 2	DIVISION 3	DIVISION 4	DIVISION 5
	2533-4980005	Mobilization	LS					
	2527-9263100	Painted Airport Pavement Markings	SF					
	2527-9263104	Airport Pavement Markings Removed	SF					

- DIVISION 1 DECORAH (DEH)
- DIVISION 2 FAIRFIELD (FFL)
- DIVISION 3 HUMBOLDT (OK7)
- DIVISION 4 IOWA FALLS (IFA)
- DIVISION 5 STORM LAKE (SLB)

GENERAL NOTES

The Contractor is required to contact each airport owner, a minimum of 48 hours prior to arriving on site.

The contract unit price per square foot for Painted Airport Pavement Markings shall be full compensation for all surface preparation, glass beads, material placement, labor, and clean up. Surface preparation shall include use of a firm nylon rotary broom on all surfaces prior to painting.

Payment shall be made at the contract unit price per square foot. This work will be measured by the contractor and verified by the contracting authority.

Airport runways shall not be closed for more than 8 hours a day unless prior authorization is attained from the airport owner and contract authority.

No more than one runway may be closed at a time.

Any vehicle operating in airport operations area shall be equipped with a flashing yellow (amber) beacon.

During painting operations, aviation specific two-way radios will be required in all vehicles operating in the airport operations area. All vehicles are to monitor the local airport frequency and give way to aircraft.

Where Glass Beads are required, the application rate shall be 7 pounds per gallon of paint. (unless otherwise noted).

For locations of placement see FAA AC: 150/5340-1L

Costs for runway and taxiway closure markings in each division shall be included in the price bid for Mobilization.

Iowa Department
of Transportation
Office of Aviation

Estimate of Project
Quantities

2015 YEAR

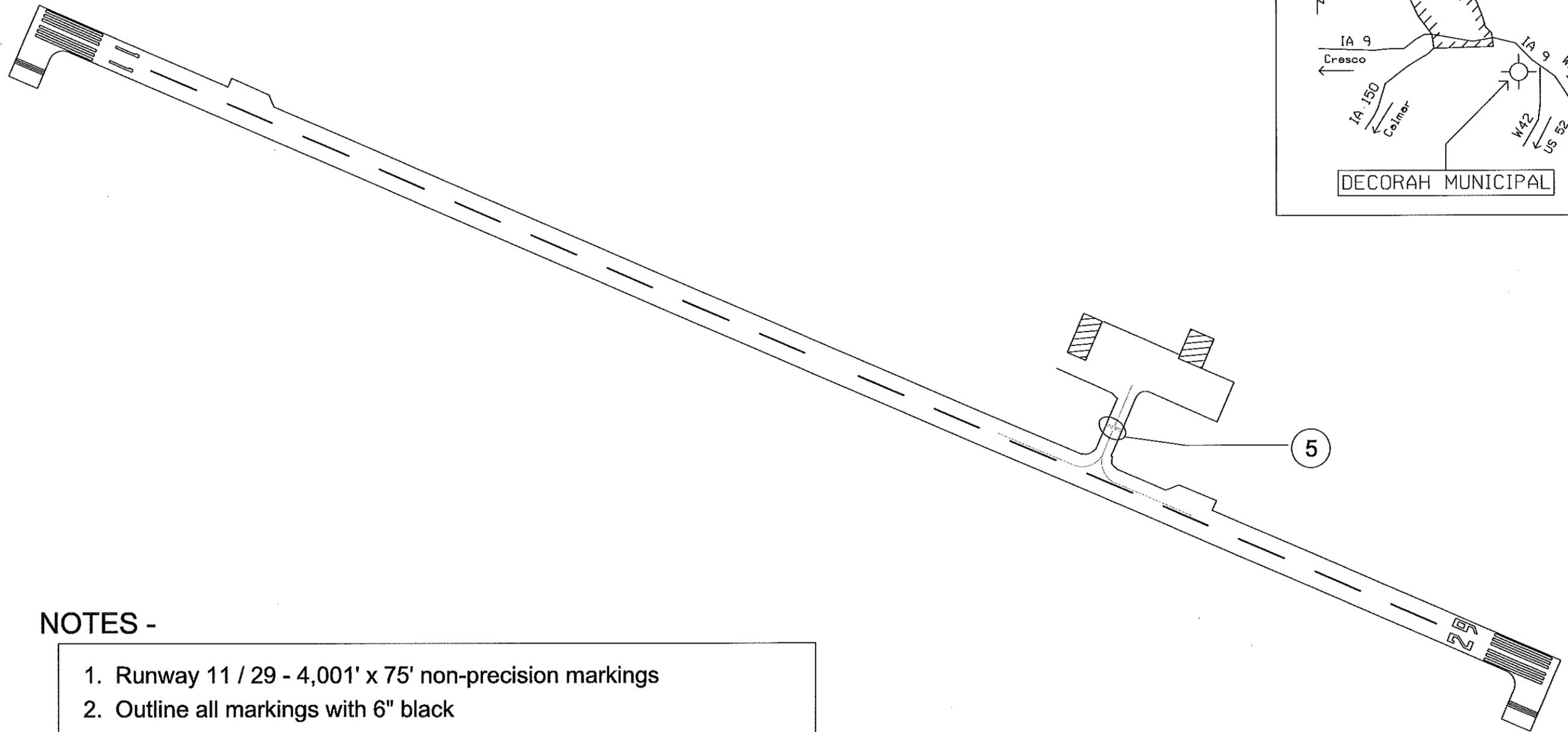
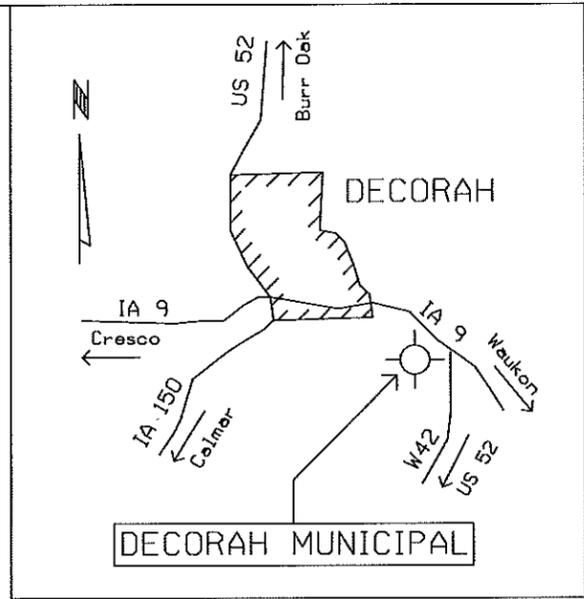
Sheet No. C.01

Statewide

Project No. AIP-IA15(001)--91-00

Airport	Runway Length/width	Runway Designation Markings										WHITE PAINT										YELLOW PAINT										TOTALS				
		1	2	3	4	5	6	7	8	9	0	Centerline stripes Width(in.) No.	Runway Edgeline Length	Sets of threshold Markings Stripes	Sets of 6-stripe t/chdown marking	Sets of 4-stripe t/chdown marking	Sets of 2-stripe t/chdown marking	Sets of runway aiming points	No. of Displaced Threshold Arrow Shafts	No. of Displaced Threshold Arrow Heads	No. of Displaced Threshold Bars	Blast Pad Chevron	Taxiway Arrow Heads	Taxiway centerline length	Taxiway Edgeline length	No. of Taxiway Hold Lines	New Black Paint (ft^2)	New White Paint (ft^2)	New Yellow Paint (ft^2)	Total New Paint (ft^2)	Total New Paint (gal.)	Glass Beads 7lbs/gal.	Glass Beads 10lbs./gal.	Total Paint Removal		
Decorah (DEH)	4,001										17														740	3										
Paint Count Rwy 11/29	75	2	1							1	18"		2											740	550	6,220	16,430	1,290	22,940	199	1,366	1,995	53			
Paint Square Feet		636	666							718	3,060		10,350																							
Fairfield (FFL)	5,500										25													8,035	5											
Paint Count Rwy 18/36	100	1		1			1		1		36"		2				2							4,017	525	14,646	37,343	4,542	56,531	492	3,441	4,916	0			
Paint Square Feet		318		624			716		885		9,000		13,800				12,000																			
Humbolt (OK7)	3,412										14													850	1											
Paint Count Rwy 12/30	60	1	1	1						1	18"		2											850	105	4,501	11,834	655	17,290	150	1,052	1,503	11,834			
Paint Square Feet		318	666	624						806	2,520		6,900																							
Iowa Falls (IFA)	4,600										21													1,700	3											
Paint Count Rwy 13/31	75	2		2							18"		2				2							1,700	420	7,236	25,014	2,120	34,370	299	2,092	2,989	9,053			
Paint Square Feet		636		1,248							3,780		10,350				9,000																			
Storm Lake (SLB)	5,000										22													1,990	4											
Paint Count Rwy 17/35	75	1		1		1		1			36"		2				2							995	250	6,139	29,439	1,245	38,823	338	2,363	3,376	0			
Paint Square Feet		318		624		750		468			7,920		10,350				9,000																			
																										40,742	119,060	10,152	169,954	1,478	10,345	14,779	20,940			

* Glass Beads Not Required



NOTES -

1. Runway 11 / 29 - 4,001' x 75' non-precision markings
2. Outline all markings with 6" black
3. See sheet C.02 for quantities
4. See item P-620 for specifications
5. Remove and repaint existing 6" hold short marking with 1' lines

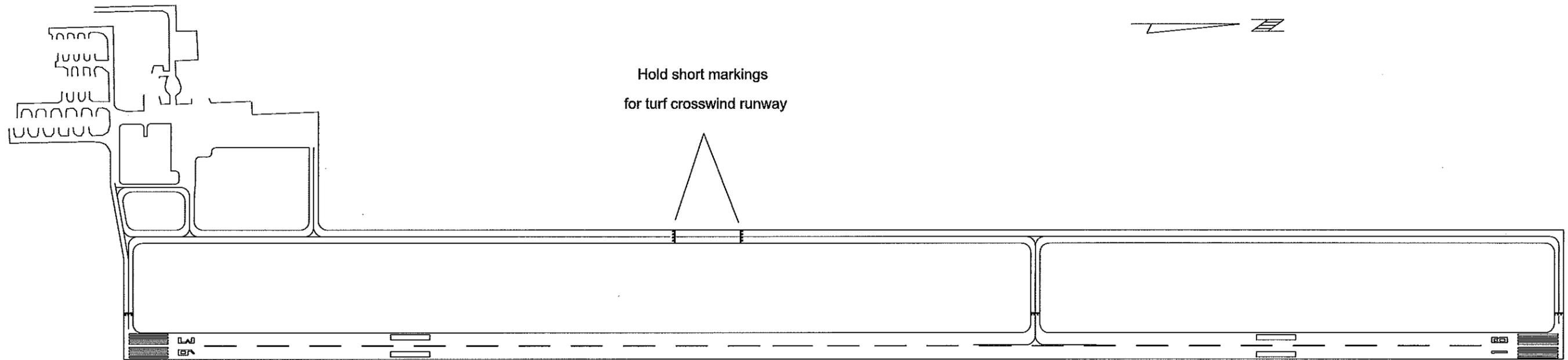
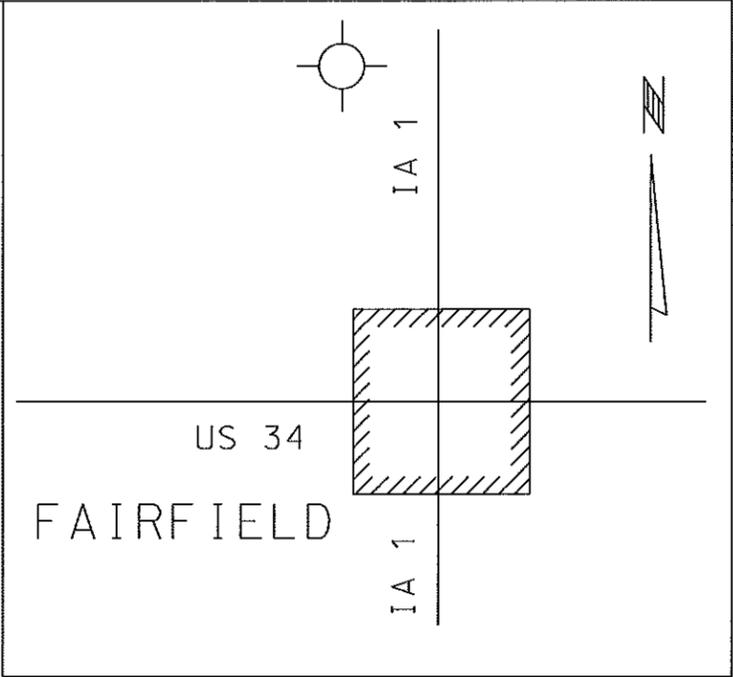
Iowa Department
of Transportation
Office of Aviation

Decorah Municipal Airport
Pavement Marking Diagram

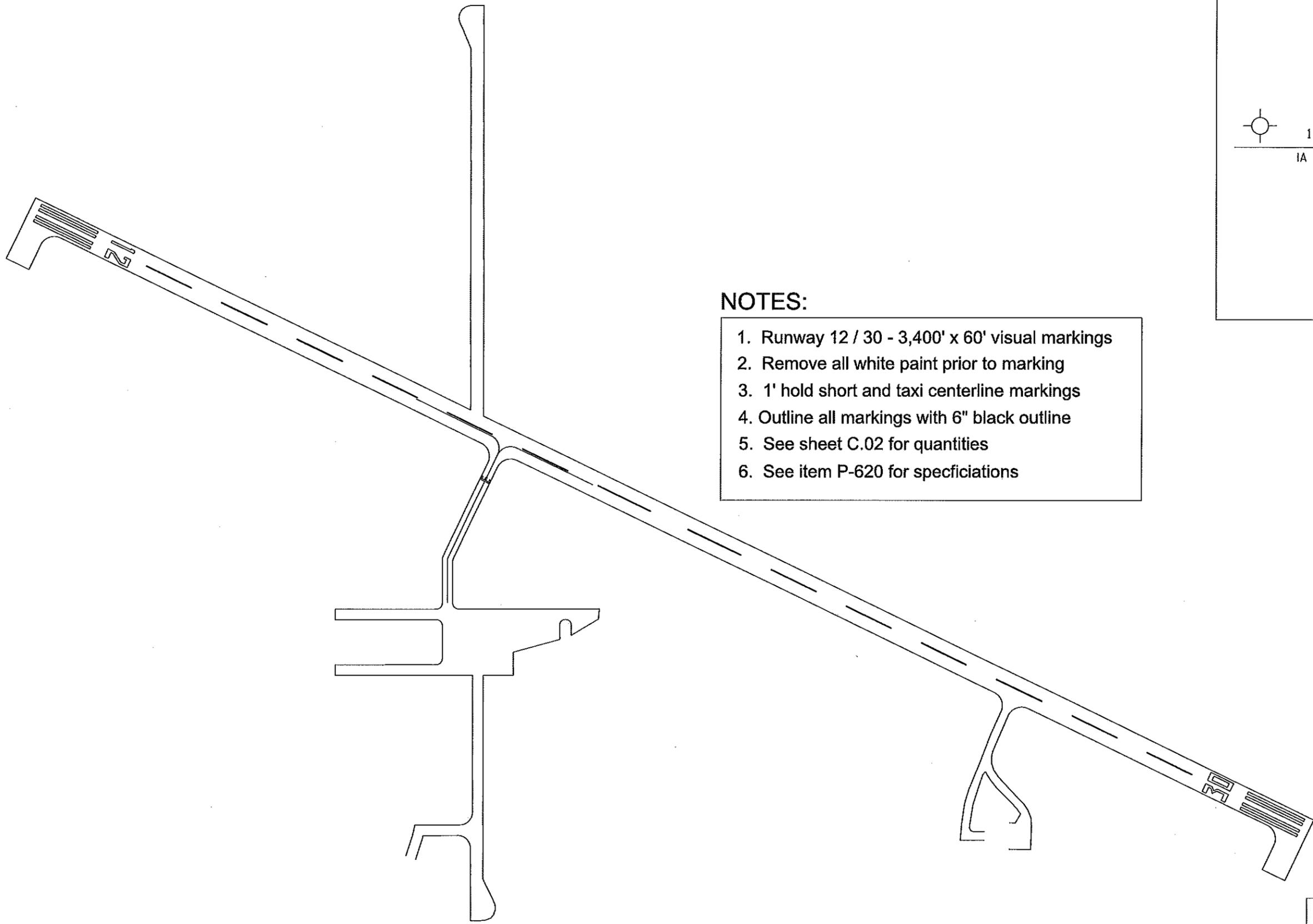
Sheet No. D.01

NOTES:

- 1. Runway 18 / 36 - 5,500' x 100' non precision markings
- 2. Outline all markings with 6" black outline
- 3. See sheet C.02 for quantities
- 4. See item P-620 for specifications

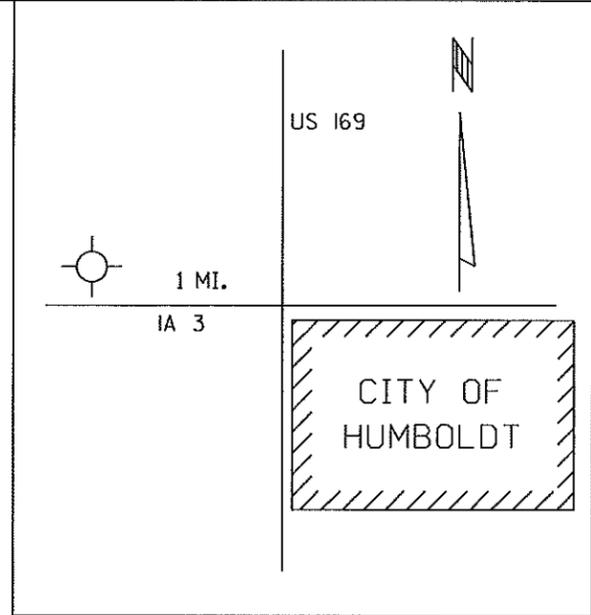


Iowa Department of Transportation Office of Aviation
Fairfield Municipal Airport Pavement Marking Diagram
Sheet No. D.02

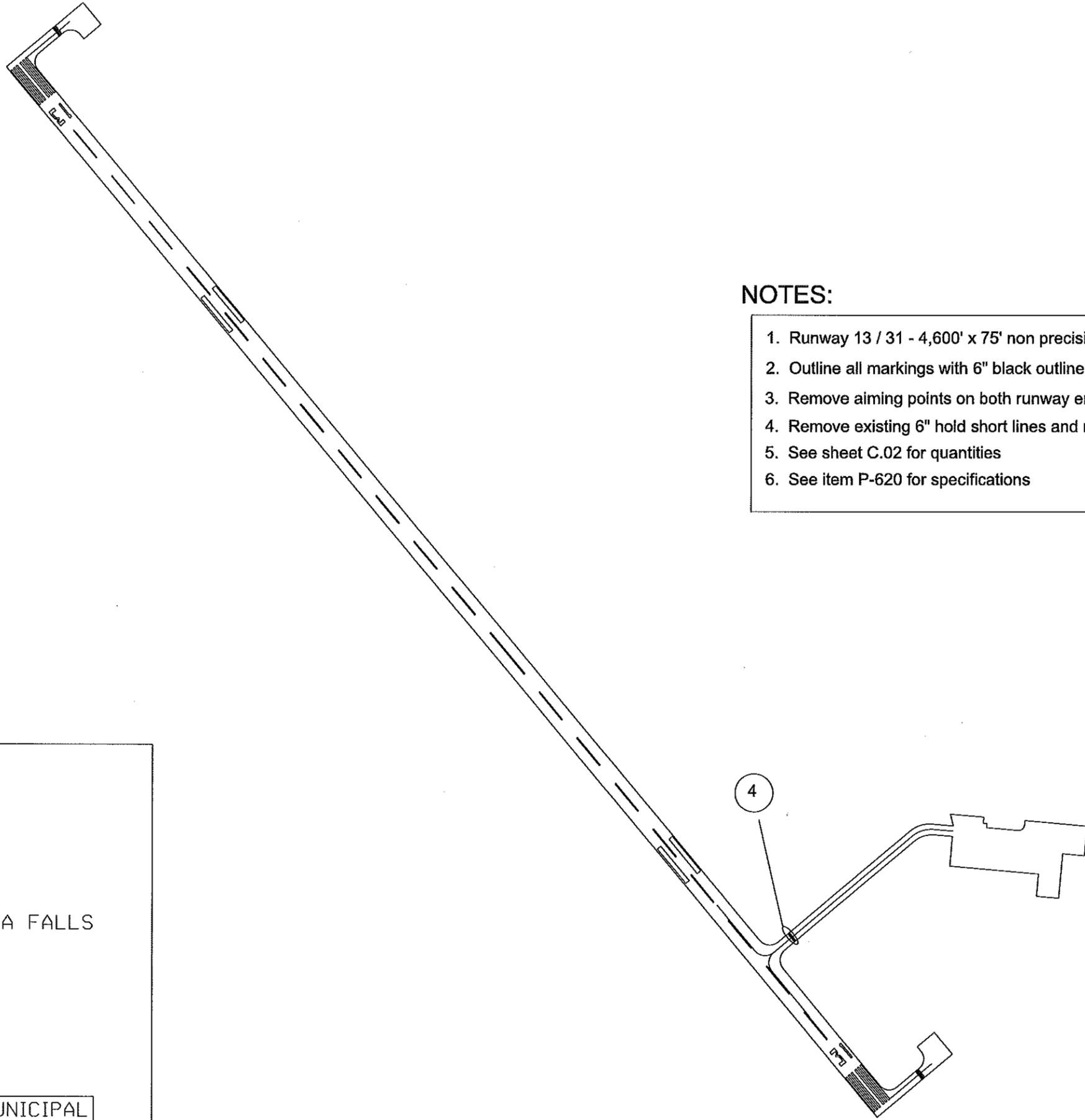


NOTES:

1. Runway 12 / 30 - 3,400' x 60' visual markings
2. Remove all white paint prior to marking
3. 1' hold short and taxi centerline markings
4. Outline all markings with 6" black outline
5. See sheet C.02 for quantities
6. See item P-620 for specifications

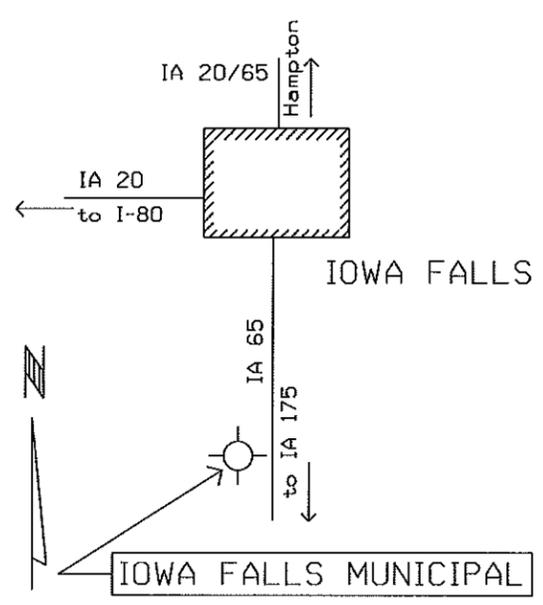


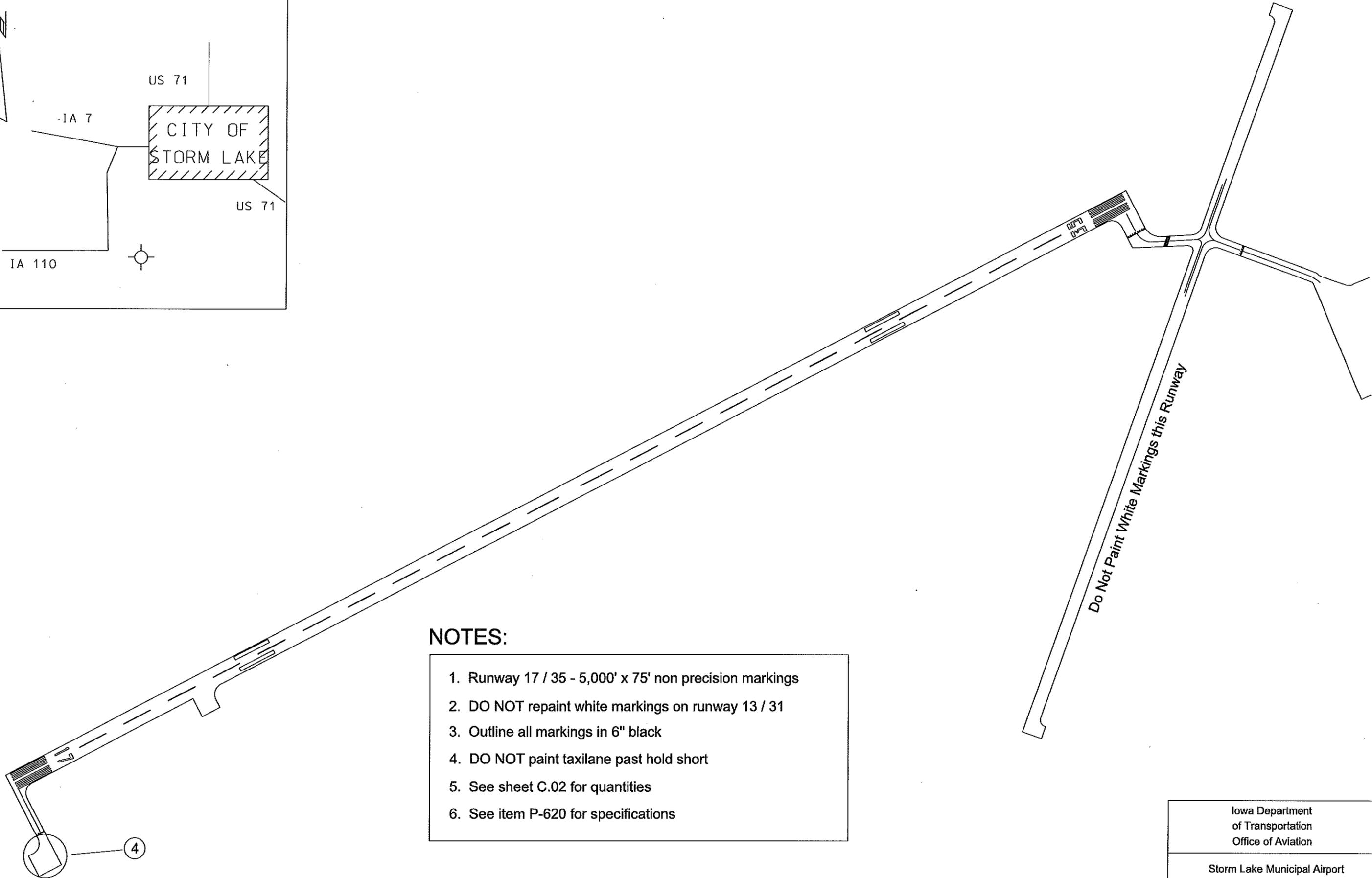
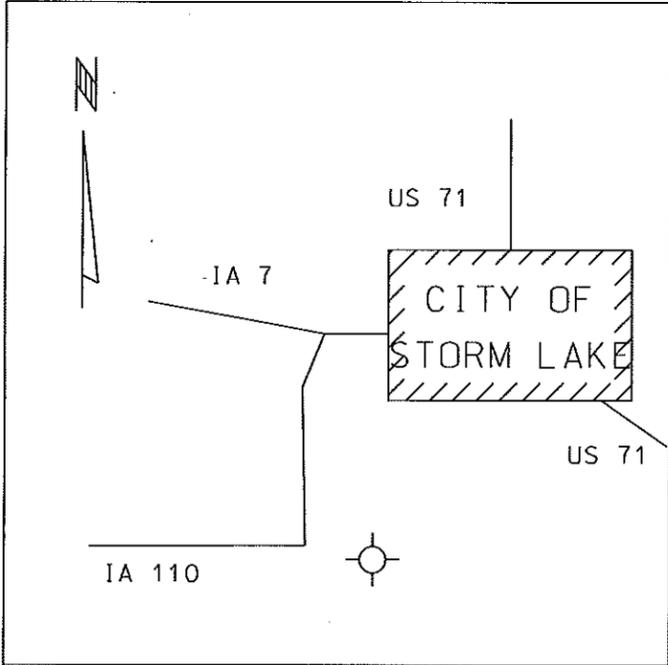
Iowa Department of Transportation Office of Aviation
Humboldt Municipal Airport Pavement Marking Diagram
Sheet No. D.03



NOTES:

1. Runway 13 / 31 - 4,600' x 75' non precision markings
2. Outline all markings with 6" black outline
3. Remove aiming points on both runway ends before repainting
4. Remove existing 6" hold short lines and remark 1' outlined in black
5. See sheet C.02 for quantities
6. See item P-620 for specifications





NOTES:

- 1. Runway 17 / 35 - 5,000' x 75' non precision markings
- 2. DO NOT repaint white markings on runway 13 / 31
- 3. Outline all markings in 6" black
- 4. DO NOT paint taxilane past hold short
- 5. See sheet C.02 for quantities
- 6. See item P-620 for specifications

Iowa Department
of Transportation
Office of Aviation

Storm Lake Municipal Airport
Pavement Marking Diagram