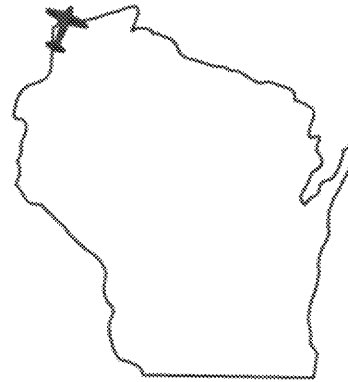
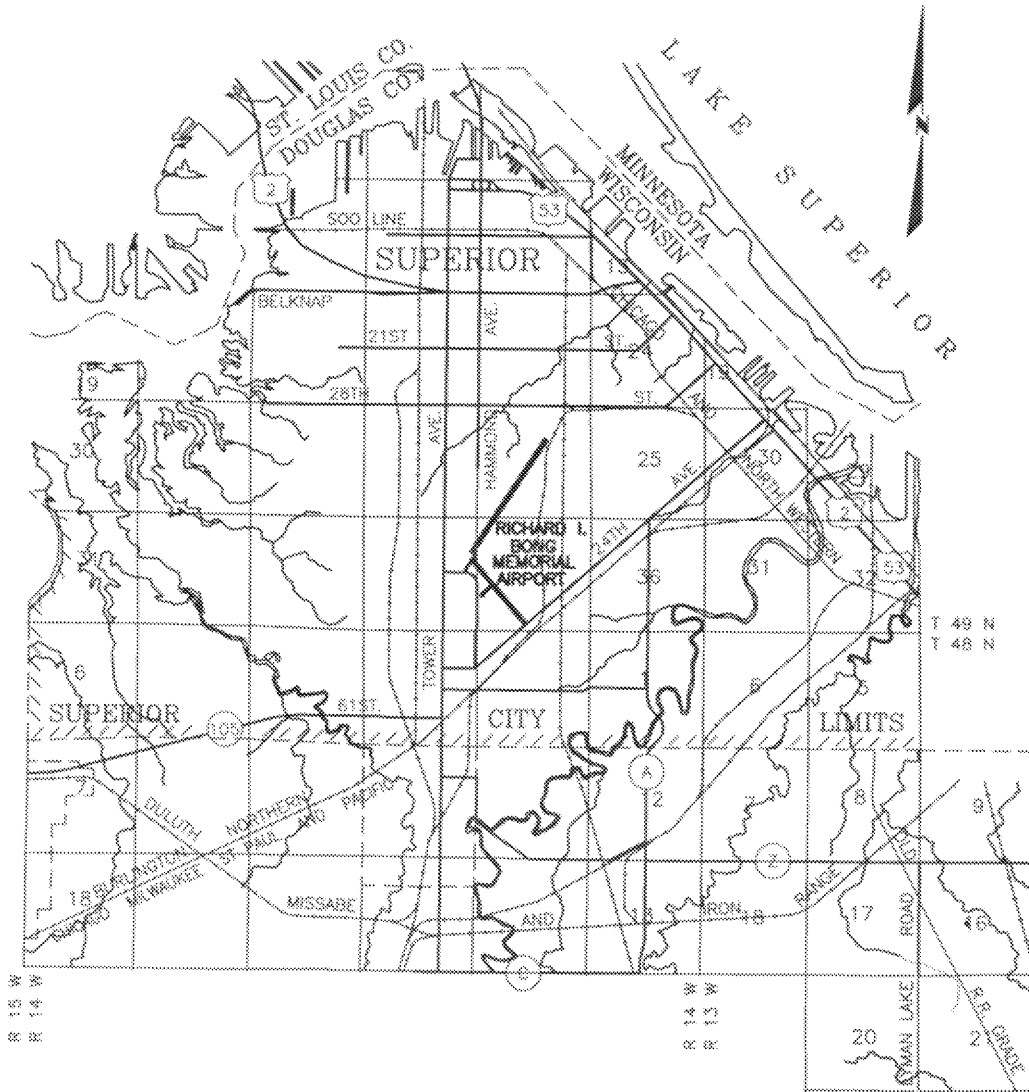


RICHARD I. BONG MEMORIAL AIRPORT SUPERIOR, WISCONSIN A.I.P. 3-55-0083-07

LATITUDE 46°-41'-23.01" NORTH

ELEVATION 674 M.S.L.

LONGITUDE 92°-05'-40.75" WEST



INDEX OF SHEETS

- 1 TITLE SHEET
- 2-4 QUANTITY SHEETS
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- 6 SOIL DATA
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- 15 PAVING LIMITS
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- 17-22 FINISHED PAVEMENT CONTOURS/EXISTING ELEVATIONS
- 23-24 STORM SEWER TRUNK PLAN & PROFILES
- 25-30 PLAN VIEWS
- E1 ELECTRICAL SITE PLAN
- E2 APRON ELECTRICAL DEMOLITION PLAN
- E3 PROPOSED WIRING PLAN
- E4 ELECTRICAL ROOM MODIFICATIONS PLAN
- E5 ELECTRICAL DETAILS
- E6-E8 STANDARD ELECTRICAL DETAIL DRAWINGS

PROJECT DESCRIPTION

- BASE BID: RECONSTRUCT/EXPAND THE EXISTING TERMINAL/FUELING/HANGAR RAMP. RECONSTRUCT THE TERMINAL BUILDING PARKING LOT AND CORPORATE HANGAR LANDSIDE PAVEMENTS. INSTALL A STORM SEWER SYSTEM TO DRAIN THE ABOVE IMPROVEMENTS. EXTEND WATERMAIN SOUTHWARD BEYOND AUTO LOT.
- ALT. NO. 1: EASTWARD WATERMAIN EXTENSION FOR FIRE PROTECTION IN FUELING AND HANGAR AREAS.
- ALT. NO. 2: CONCRETE PAVEMENT SECTION IN FUELING AREA OF THE RAMP.

RECORD DRAWINGS

PRIME: REUBEN JOHNSON AND SON, SUPERIOR
 SUBS: NORTHWOODS PAVING, TWIN PORTS ELECTRIC,
 MATTISON CONSTRUCTION, BERGMAN CO.,
 BRAUN PUMP

START DATE: 7/30/03
 SUBSTANTIAL COMPLETION DATE: 11/15/03

THIS PLAN SET CONTAINS A TOTAL OF 37 SHEETS.

FOR ADDITIONAL INFORMATION REGARDING AS-BUILT UNDERGROUND UTILITIES REFER TO "AIRPORT UNDERGROUND UTILITY SUMMARY" DRAWING, JULY 2005 - AVAILABLE FOR VIEWING AT AIRPORT, OR COPIES MAY BE PURCHASED FROM COOPER ENGINEERING CO., INC., RICE LAKE, WI PHONE (715) 234-7008

WISCONSIN DEPARTMENT OF TRANSPORTATION BUREAU OF AERONAUTICS		CONSULTANT DESIGN:	CONSULTANT RECORD DRAWINGS:	RICHARD I. BONG MEMORIAL AIRPORT SUPERIOR, WISCONSIN
DESIGN PHASE		RECORD DRAWING		TITLE SHEET
APPROVED: _____ P.E. DATE: _____	APPROVED: <i>[Signature]</i> P.E. DATE: 10/10/05	APPROVED: <i>[Signature]</i> DATE: 10/6/05		A.I.P. 3-55-0083-07
APPROVED: _____ P.E. DATE: _____		APPROVED: _____ P.E. DATE: _____		DESIGN M.W.K. 05-'03 FILE NO. _____ DRAWN J.T.B. 05-'03 P.B. _____ CHECKED R.B.V. 05-'03 SCALE: AS NOTED
APPROVED: _____ P.E. DATE: _____		APPROVED: _____ P.E. DATE: _____		310 WEST SOUTH STREET, P.O. BOX 230 RICE LAKE, WISCONSIN 54008-0230 TELEPHONE (715) 234-7008 FAX (715) 234-1025
PROJECT NO. 00852093		SHEET 1		PROJECT NO. 00852093 SHEET 1

SUMMARY OF ESTIMATED QUANTITIES

				AIRSIDE APRON RECONST. EXPANSION (80/20)		LAND-SIDE PAVT RECONST. & EXPANSION (50/50)		WATERMAIN EXTENSION TO S. & E. (80/20)		CONCRETE RAMP SECTION (80/20)	
				BASE BID		BASE BID		ALT. NO. 1 BID		ALT. NO. 2 BID	
ITEM NO.	SPECIAL PROVISION NO.	ITEM DESCRIPTION	UNIT	ESTIMATED PLAN QUANTITY	ACTUAL QUANTITY	ESTIMATED PLAN QUANTITY	ACTUAL QUANTITY	ESTIMATED PLAN QUANTITY	ACTUAL QUANTITY	ESTIMATED PLAN QUANTITY	ACTUAL QUANTITY
P15203	12	COMMON EXCAVATION	C.Y.	16600	15769	1800	1809				
P15203A	12	COMMON EXCAVATION (AIRSIDE)	L.S.	1	1						
P15203L	12	COMMON EXCAVATION (LANDSIDE)	L.S.			1	1				
P15205	12	BORROW EXCAVATION	C.Y.	19600	8780	1600	712				
X15206	13	DITCH MAINTENANCE EXCAVATION	STA.	55	50						
X15207	12	WASTE	C.Y.	35700	35700	4900	4900				
P15402	-	SUBBASE COURSE	C.Y.	3620	5428	700	1221				
X15403	14	SUBBASE COURSE (SALVAGED)	C.Y.	7300	2555	800	-				
X15404	15	BREAKER RUN STONE	TON	16000	14875						
P15601	-	TEMPORARY SEEDING	LR.	1220	250	220	50				
P15602	-	EROSION MAT, DELIVERED, CLASS I, TYPE A (URBAN)	S.Y.	700	300	100	100				
P15603	-	EROSION MAT, INSTALLED, CLASS I, TYPE A (URBAN)	S.Y.	700	300	100	100				
P15632	-	SILT FENCE, SILTY SOIL, DELIVERED	L.F.	1000	922	100	-				
P15634	-	SILT FENCE, SILTY SOIL, INSTALLED	L.F.	1000	922	100	-				
P15636	-	SILT FENCE, SILTY SOIL, MAINTAINED	L.F.	1000	500	100	-				
P15639	-	EROSION CONTROL MOBILIZATIONS	EACH	1	1	1	1				
P15640	-	EMERGENCY EROSION CONTROL MOBILIZATIONS	EACH	1	-	1	-				
62870	-	INLET PROTECTION, TYPE A	EACH	15	15	1	1				
X15842	26	FILTER BERM	EACH	3	3						
P15801	-	REMOVING RIGID PAVEMENT	S.Y.	250	484	150	86				
P15802	-	REMOVING BITUMINOUS PAVEMENT	S.Y.	27600	27540	5300	5230				
P15807	-	REMOVING CURB AND GUTTER	L.F.			100	94				
P15819	-	REMOVING INLETS	EACH	4	4	3	3				
P15830	16	REMOVING CULVERT UNDER 30" DIA.	L.F.	550	390	500	494				
P15801	-	SITE FINISHING	L.S.	1	1						
X16281	17	CHAIN LINK FENCE REMOVAL AND REINSTALLATION	L.F.	150	175	800	248				
X16282	17	CHAIN LINK FENCE GATE REMOVAL AND REINSTALLATION	EACH	2	-	4	2				
P20804	-	AGGREGATE BASE COURSE, GRADATION NO. 2	TON	21200	22194	2500	2600				
X40106 (1)	18	BITUMINOUS SURFACE COURSE, TYPE E-1, 1/2 INCH AGGREGATE	TON			950	907				
X40106 (3)	18	BITUMINOUS SURFACE COURSE, TYPE E-3, 1/2 INCH AGGREGATE	TON	9750	8640						
X40109 (A)	18	BITUMINOUS MATERIAL, PG 58-28	TON	290	253	30	26.5				
X40109 (B)	18	BITUMINOUS MATERIAL, PG 64-28	TON	290	247	30	26				
41506	-	CONCRETE PAVEMENT, 6-INCH	S.Y.	250	186						
41508	-	CONCRETE PAVEMENT, 8-INCH	S.Y.							270	267
P60301	-	BITUMINOUS TACK COAT	GAL.	1210	1300	200	200				
P60521	20	JOINT SEALING FILLER, TYPE 4	L.F.	300	140					425	340
P62009	-	PAINTING, YELLOW, WATERBORNE, TYPE I	S.F.	900	1205	500	540				
P62041	-	REFLECTIVE MEDIA, TYPE I, GRADATION A	LB.	60	75	40	50				
P62050	-	OBLITERATE EXISTING MARKING	S.F.	35	35						
P63001	-	SAW CUTTING BITUMINOUS PAVEMENT	L.F.	200	381	500	335				
P63202	-	FIELD OFFICE, TYPE B	L.S.	1	1						
P63401	19	TRAFFIC CONTROL	L.S.	1	1						
P63503	-	GEOTEXTILE FABRIC, TYPE DF	S.Y.	3000	3000	1630	1630				
P63505	-	GEOTEXTILE FABRIC, TYPE R	S.Y.	50	-						
P63804	-	MEDIUM RANDOM RIPRAP	C.Y.	25	-						
P64001	-	MOBILIZATION	L.S.	1	1						
P64201	-	MAINTENANCE AND REPAIR OF HAUL ROADS	L.S.	1	1						
P64202	-	MAINTENANCE AND REPAIR OF AIRPORT HAUL ROADS	L.S.	1	1						

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P64401	20	AIRCRAFT TIE DOWN	SET	36	36						
P64402	20	AIR CRAFT TIE DOWN (TEMPORARY)	SET	30	18						
D70101	21	STORM SEWER, 12-INCH, CLASS IV	LF.	352	348	192	189				
D70102	21	STORM SEWER, 15-INCH, CLASS IV	LF.	492	488	200	200				
D70104	21	STORM SEWER, 21-INCH, CLASS IV	LF.	180	179						
D70105	21	STORM SEWER, 24-INCH, CLASS III	LF.	492	492						
D70107	21	STORM SEWER, 30-INCH, CLASS III	LF.	1775	1775						
D70161	-	APRON ENDWALLS, 12-INCH, RC	EACH			2	2				
D70163	-	APRON ENDWALLS, 15-INCH, RC	EACH			2	2				
D70501	22	AIRPORT UNDERDRAIN, 6-INCH	LF.	1260	1266	1400	1412				
X70505	22	AIRPORT UNDERDRAIN, 6-INCH, SPECIAL	LF.	1350	1412	230	210				
D70513	22	AIRPORT UNDERDRAIN END SECTION	EACH	1	1	3	3				
D70514	22	AIRPORT UNDERDRAIN, UNPERFORATED, 6-INCH	LF.	80	69	70	70				
D75101	21	STORM WATER MANHOLE, TYPE 1	EACH	3	3						
D75102	21	STORM WATER MANHOLE, TYPE 2	EACH	7	6						
X75106	23	TEMPORARY STORM WATER LIFT STATION	L.S.	1	1						
X75107	21	FUTURE STORM INLET MANHOLE	L.S.	1	-						
D75122	-	STORM WATER INLET, TYPE 3	EACH	7	7	1	1				
X75144	-	MANHOLE COVER, TYPE G	EACH	2	1						
X75145	-	MANHOLE COVER, TYPE SL	EACH	4	3						
X75171	-	INLET COVER, TYPE AP	EACH	1	1						
X75172	-	INLET COVER, TYPE BP	EACH	11	11	1	1				
D75180	-	ADJUSTING COVER	EACH			1	3				
T90101	-	SEEDING, MIXTURE NO. 10	LB.	610	350	110	50				
T90201	-	FERTILIZER, TYPE A	CWT.	29	11.5	5	2.5				
T90503	-	SALVAGED TOPSOIL	S.Y.	45000	23861	8000	3352				
T90801	-	MULCHING	S.Y.	45000	23861	8000	3352				
X99001	24	DRAINAGE/ELECT. MARKER POSTS	EACH	30	30						
X99002	25	WATER MAIN, DUCTILE IRON, 6 INCH	LF.					650	-		
X99003	25	GATE VALVES, 6 INCH	EACH					2	-		
X99004	25	HYDRANT PACKAGES	EACH					1	-		
X99005	25	WATERMAIN FITTINGS (ELBOWS, TEES, REDUCERS, ETC.)	L.S.					1	-		
X99006	27	INSULATION, 4'x8'x2"	EACH	60	120						
X99007	28	TEMPORARY SIGNS	EACH	3	3						
X10731	30	RELOCATE EXISTING WINDCONE	EACH	1	1						
L10812	-	5000 VOLT CABLE, 1 NO. 8	LF.	2200	2200						
L10815	-	600 VOLT CABLE, NO.8	LF.	3000	3000						
L10820	-	CABLE MARKERS	EACH	2	2						
L11025	-	DUCT MARKERS	EACH	13	14						
X00001	E3	DISCONNECT AND REMOVE EXISTING VEHICLE GATE CONTROLLER N1	EACH	1	1						
X00002	E3	DISCONNECT AND REMOVE EXISTING VEHICLE GATE CONTROLLER S1	EACH			1	1				
X00003	E3	DISCONNECT AND REMOVE EXISTING VEHICLE GATE CONTROLLER S2	EACH			1	1				
X00004	E3	DISCONNECT AND REMOVE EXISTING VEHICLE GATE CONTROLLER S3	EACH			1	1				
X00005	E4	DISCONNECT AND REMOVE EXISTING DUCT BANK	L.S.	1	1						
X00006	E5	EXISTING FUEL DIPENSE SYSTEM DISCONNECTION	L.S.	1	1						
X00007	E6	EXISTING HANGAR B1 DISCONNECTION	L.S.	1	1						
X00008	E7	EXISTING HANGAR B2 DISCONNECTION	L.S.	1	1						
X00009	E8	EXISTING HANGAR B3 DISCONNECTION	L.S.	1	1						

SUMMARY OF ESTIMATED QUANTITIES

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X00010	E9	EXISTING HANGAR B4 DISCONNECTION	L.S.	1	1						
X00011	E10	EXISTING HANGAR B5 DISCONNECTION	L.S.	1	1						
X00012	E11	EXISTING HANGAR C1 DISCONNECTION	L.S.	1	1						
X00013	E12	EXISTING HANGAR C2 DISCONNECTION	L.S.	1	1						
X00014	E13	EXISTING HANGAR C3 DISCONNECTION	L.S.	1	1						
X00015	E14	EXISTING HANGAR A6 DISCONNECTION	L.S.	1	1						
X00016	E15	EXISTING HANGAR A7 DISCONNECTION	L.S.	1	1						
X00017	E16	EXISTING HANGAR A8 DISCONNECTION	L.S.	1	1						
X00018	E17	EXISTING POLE MOUNTED LIGHT FIXTURE DISCONNECTION	L.S.	1	1						
X00019	E18	EXISTING POLE MOUNTED RECEPTACLE DISCONNECTION	L.S.	1	1						
X00020	E19	6 4-INCH ELECTRICAL DUCT INSTALLATION	L.F.	390	390						
X00021	E20	2 4-INCH ELECTRICAL DUCT INSTALLATION	L.F.	1120	1120	110	110				
X00022	E21	GALVANIZED RIGID STEEL CONDUIT SYSTEM INSTALLATION	L.F.	20	40						
X00023	E22	POLE MOUNTED RECEPTACLE INSTALLATION	L.S.	1	1						
X00024	E23	EXISTING FUEL DISPENSE SYTEM RECONNECTION	L.S.	1	1						
X00025	E24	EXISTING AND NEW POLE MOUNTED LIGHT FIXTURE CONNECTION	L.S.	1	1						
X00026	E25	VEHICLE GATE CONTROLLER N1 INSTALLATION	EACH	1	1						
X00027	E25	VEHICLE GATE CONTROLLER S1 INSTALLATION	EACH			1	1				
X00028	E25	VEHICLE GATE CONTROLLER S2 INSTALLATION	EACH			1	1				
X00029	E25	VEHICLE GATE CONTROLLER S3 INSTALLATION	EACH			1	1				
X00030	E25	FUTURE VEHICLE GATE CONTROLLER S4 INSTALLATION	EACH			1	1				
X00031	E26	HAND HOLE NO.2, COMPOSITE TYPE	EACH	1	1						
X00032	E27	HAND HOLE NO.3 & NO.4, COMPOSITE TYPE	EACH	1	1	1	1				
X00033	E28	EXISTING HANGAR B1 ELECTRICAL POWER RECONNECTION	L.S.	1	1						
X00034	E29	METERING EQUIPMENT, LOCATION NO. 1	L.S.	1	1						
X00035	E30	METERING EQUIPMENT, LOCATION NO. 2	L.S.	1	1						
X00036	E31	EXISTING HANGAR B2 ELECTRICAL POWER RECONNECTION	L.S.	1	1						
X00037	E32	EXISTING HANGAR B3 ELECTRICAL POWER RECONNECTION	L.S.	1	1						
X00038	E33	EXISTING HANGAR B4 ELECTRICAL POWER RECONNECTION	L.S.	1	1						
X00039	E34	EXISTING HANGAR B5 ELECTRICAL POWER RECONNECTION	L.S.	1	1						
X00040	E35	EXISTING HANGAR C1 ELECTRICAL MODIFICATIONS	L.S.	1	1						
X00041	E36	EXISTING HANGAR C2 ELECTRICAL MODIFICATIONS	L.S.	1	1						
X00042	E37	EXISTING HANGAR C3 ELECTRICAL MODIFICATIONS	L.S.	1	1						
X00043	E38	EXISTING HANGAR A6 ELECTRICAL MODIFICATIONS	L.S.	1	1						
X00044	E39	EXISTING HANGAR A7 ELECTRICAL MODIFICATIONS	L.S.	1	1						
X00045	E40	EXISTING HANGAR A8 ELECTRICAL MODIFICATIONS	L.S.	1	1						
X00046	E41	1- 4 INCH FLEXIBLE POLYETHYLENE DUCT INSTALLATION	L.F.	750	750						
X00047	E42	LOCATE, TEST, PROTECT EXISTING AND NEW CIRCUITS	L.S.	1	1						

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OPERATIONS ON AIRPORT

A. CONTRACTOR OPERATIONS AND ACTIVITIES.

The Contractor shall conduct his operations on the Airport in a manner that will minimize interference with the normal operation of those Airport facilities that are designated under this Contract to remain open to air traffic and shall implement all specified and other appropriate measures to ensure the safety of all users of the airport.

When construction activities occur near active runways or taxiways, the Contractor shall provide sufficient flag persons to direct construction equipment and subsequent aircraft traffic. At the close of each work day, the Contractor shall leave the site in a safe condition for operation of aircraft. The Contractor shall furnish and place portable Type III barricades across runways or taxiways to keep aircraft from taxiing into areas under construction. At night, barricades shall be equipped with flashing lights.

B. RUNWAY ENDS.

The Contractor shall not allow any construction equipment to penetrate above the plane of the approach slope of any active runway.

C. RUNWAY EDGES.

Contractor shall not perform construction activities within 200 feet of the centerline of an active runway.

D. TAXIWAYS AND APRONS.

Except as provided on the Contract Plans or in the Contract Special Provisions or as may be authorized by the Engineer in writing, the Contractor shall not perform construction activities within 25 feet of the edge of an active taxiway or apron. When so authorized to perform construction activities within such areas, the Contractor shall first implement appropriate marking and lighting provisions. Construction equipment and materials shall not be allowed to project higher than any part of aircraft, using such taxiways and aprons, which may overhang such work areas.

E. EXCAVATIONS AND TRENCHES.

Excavations and open trenches located within 200 feet from the centerline of an active Runway shall not be permitted. Excavations and open trenches located adjacent to taxiway and apron pavements shall be adequately signed, marked, and lighted.

F. STORAGE OF EQUIPMENT AND MATERIALS.

Equipment and materials shall not be stored or parked within 450 feet from the centerline of an active Runway or within 200 feet from the centerline of an active taxiway unless specifically provided in the Contract Special Provisions or authorized in writing by the Engineer. Debris shall not be deposited on any portion of an operational runway, taxiway, or apron. Should debris be deposited accidentally, it shall be removed immediately.

G. CONTRACTOR'S VEHICLES.

All motorized vehicles operated by the Contractor on the Airport shall be equipped with a 3-foot square flag of a checkered pattern of international orange and white squares of not less than 1 foot on each side, displayed in full view above the vehicle. For periods of limited visibility or darkness, the vehicles shall also be equipped with light units appropriate for the purpose.

H. WARNING MARKERS.

The cost of furnishing, installing, and maintaining visible warning markers, flag persons, and other safety devices as herein required shall be included in the Pay Item for traffic control.

I. AIRPORT SECURITY.

Contractor's equipment operating on the airport shall be marked by identifying markings or features such as appropriate names or logos.

CONSTRUCTION OPERATIONS

Contractor shall be responsible for construction operations and shall comply with applicable requirements of the Wisconsin Department of Transportation, Bureau of Aeronautics, the Federal Aviation Administration (see FAA Advisory Circular 150/5370-2C, Operational Safety on Airports During Construction), and the City of Superior (Airport Owner). In addition to other requirements of the Contract, Contractor shall provide the following:

- A. Construction Schedule. Contractor shall submit a construction schedule in accordance with Subsection 95-03 of The General Requirements & Covenants.
- B. Operational Safety. Contractor shall comply with requirements of FAA Advisory Circular (AC) 150/5370-2C "Operational Safety on Airports During Construction." Advisory Circulars are available from FAA, WDOA, and Engineer.
- C. Runway and Taxiway Closing. Runways and taxiways shall be closed in accordance with Provisions of FAA AC 150/5370-2C. Runways and Taxiways shall only be closed as scheduled in accordance with the requirements previously stated. Closing runways and taxiways, including coordination with Airport Manager, providing, maintaining and removing Runway closing crosses and barricades for this work shall be included in the Pay Item for traffic control.
- D. Construction Equipment. Equipment height shall not exceed 15 feet without prior approval.
- E. Notices to Airmen (NOTAMs). Contractor shall provide notice to the Airport Manager and coordinate his construction schedule to allow the NOTAMs, required by FAA regulations, to be issued.
- F. Emergency Maintenance. Contractor shall have a superintendent on call 24 hours per day to provide maintenance of Airport construction hazard lighting and drums.

G. Construction Operation. Contractor's activities are limited to areas within the grading limits and other areas designated for Contractor's operations on the plans. Contractor's operations shall not travel along or across active runways, taxiways, or aprons without authorization from Airport Manager.

H. Temporary Construction Markings. Provide Airport/Runway closing crosses constructed so that they may be placed, removed, or repositioned on pavement or turf.

Crosses shall be constructed of wood, fabric, or other suitable material, dyed or painted yellow. Material or fabric shall consist of panels of a texture which will retain color brightness throughout the period of use.









Runway crosses, to temporarily close runways during construction, shall be positioned at both ends of the runway, as required by FAA Advisory Circular, 150/5370-2C, and shall be properly secured against wind.

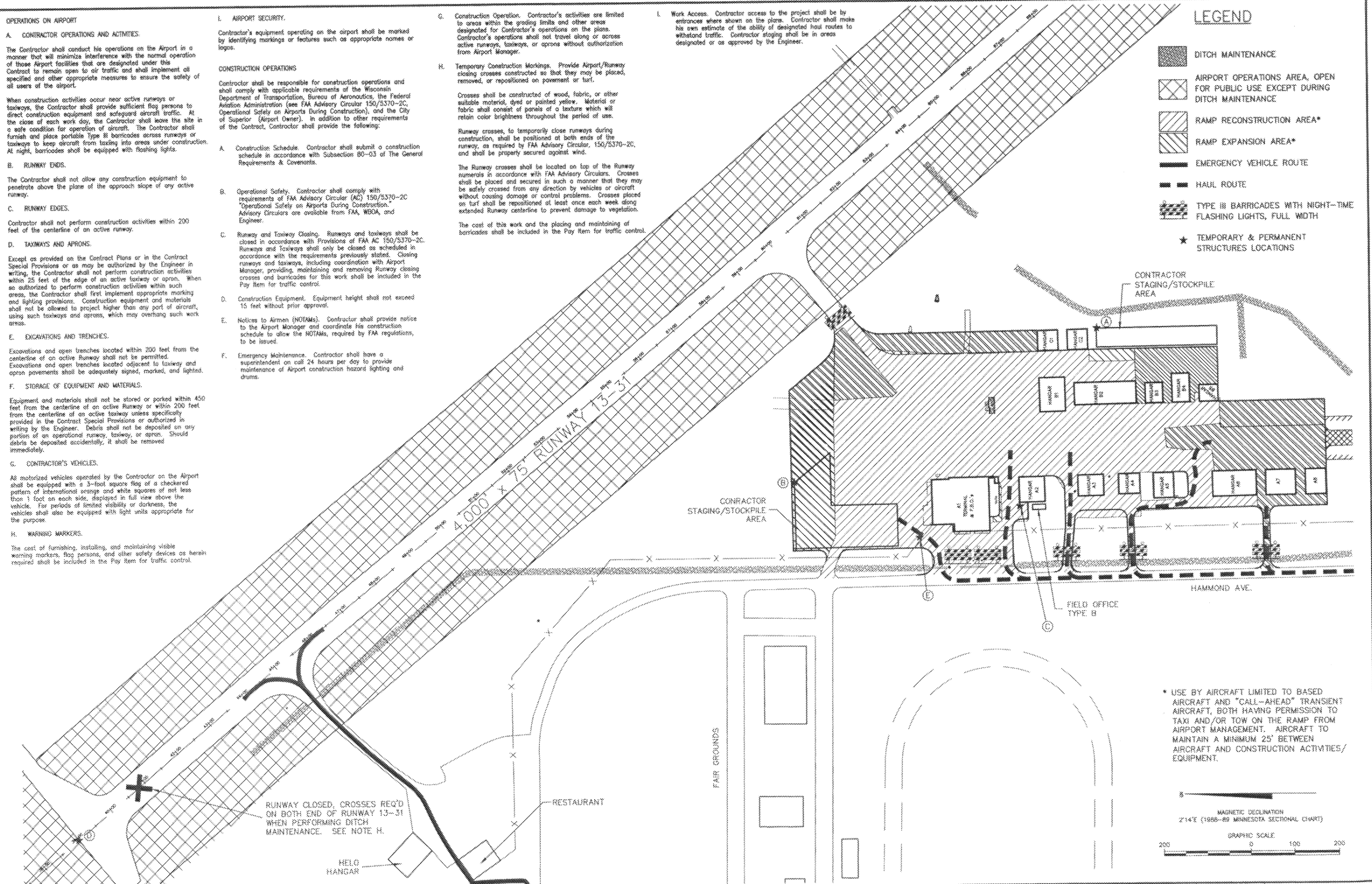
The Runway crosses shall be located on top of the Runway numerals in accordance with FAA Advisory Circulars. Crosses shall be placed and secured in such a manner that they may be safely crossed from any direction by vehicles or aircraft without causing damage or control problems. Crosses placed on turf shall be repositioned at least once each week along extended Runway centerline to prevent damage to vegetation.

The cost of this work and the placing and maintaining of barricades shall be included in the Pay Item for traffic control.

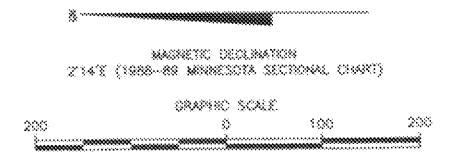
I. Work Access. Contractor access to the project shall be by entrances where shown on the plans. Contractor shall make his own estimate of the ability of designated haul routes to withstand traffic. Contractor staging shall be in areas designated or as approved by the Engineer.

LEGEND

-  DITCH MAINTENANCE
-  AIRPORT OPERATIONS AREA, OPEN FOR PUBLIC USE EXCEPT DURING DITCH MAINTENANCE
-  RAMP RECONSTRUCTION AREA*
-  RAMP EXPANSION AREA*
-  EMERGENCY VEHICLE ROUTE
-  HAUL ROUTE
-  TYPE III BARRICADES WITH NIGHT-TIME FLASHING LIGHTS, FULL WIDTH
-  TEMPORARY & PERMANENT STRUCTURES LOCATIONS

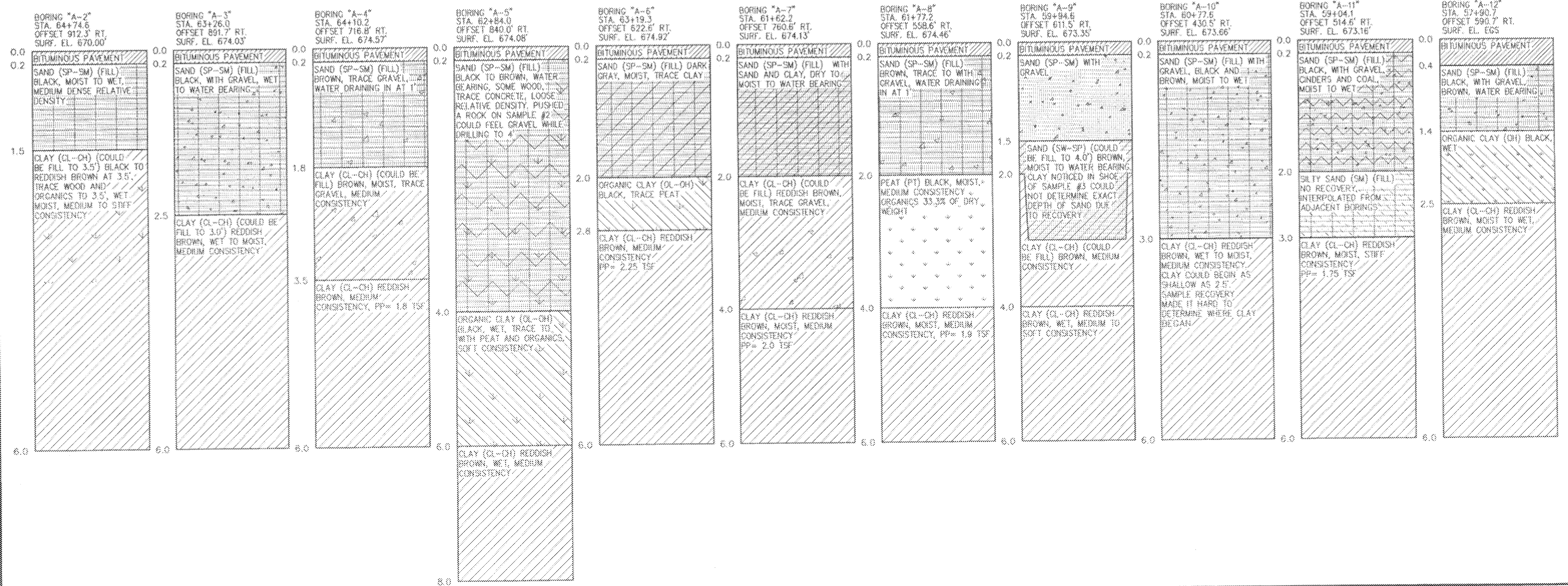
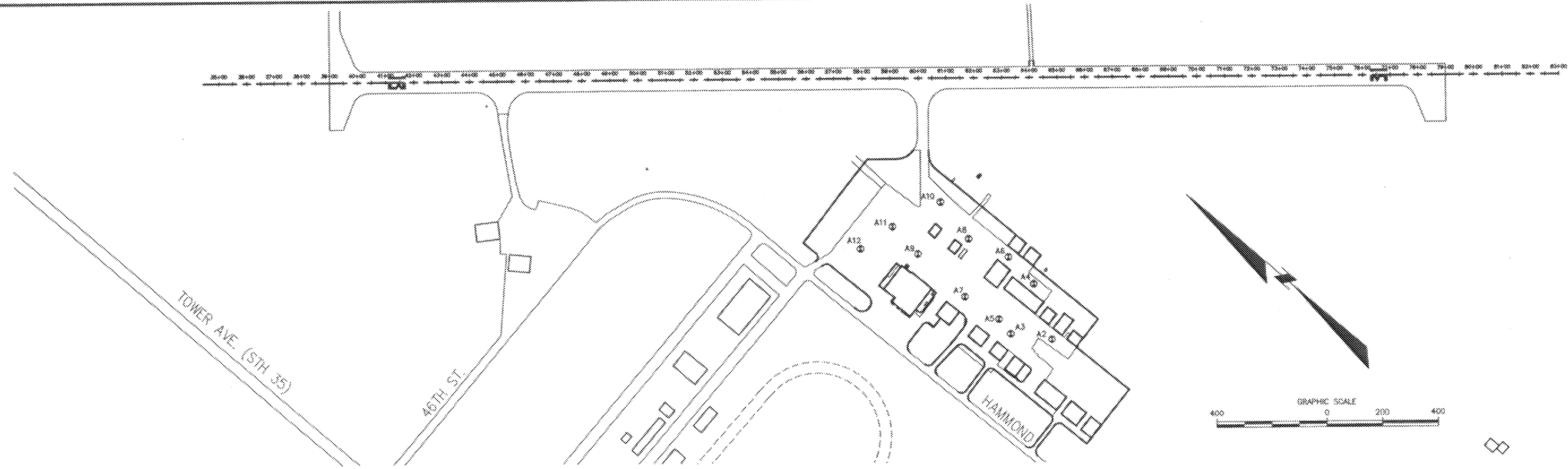


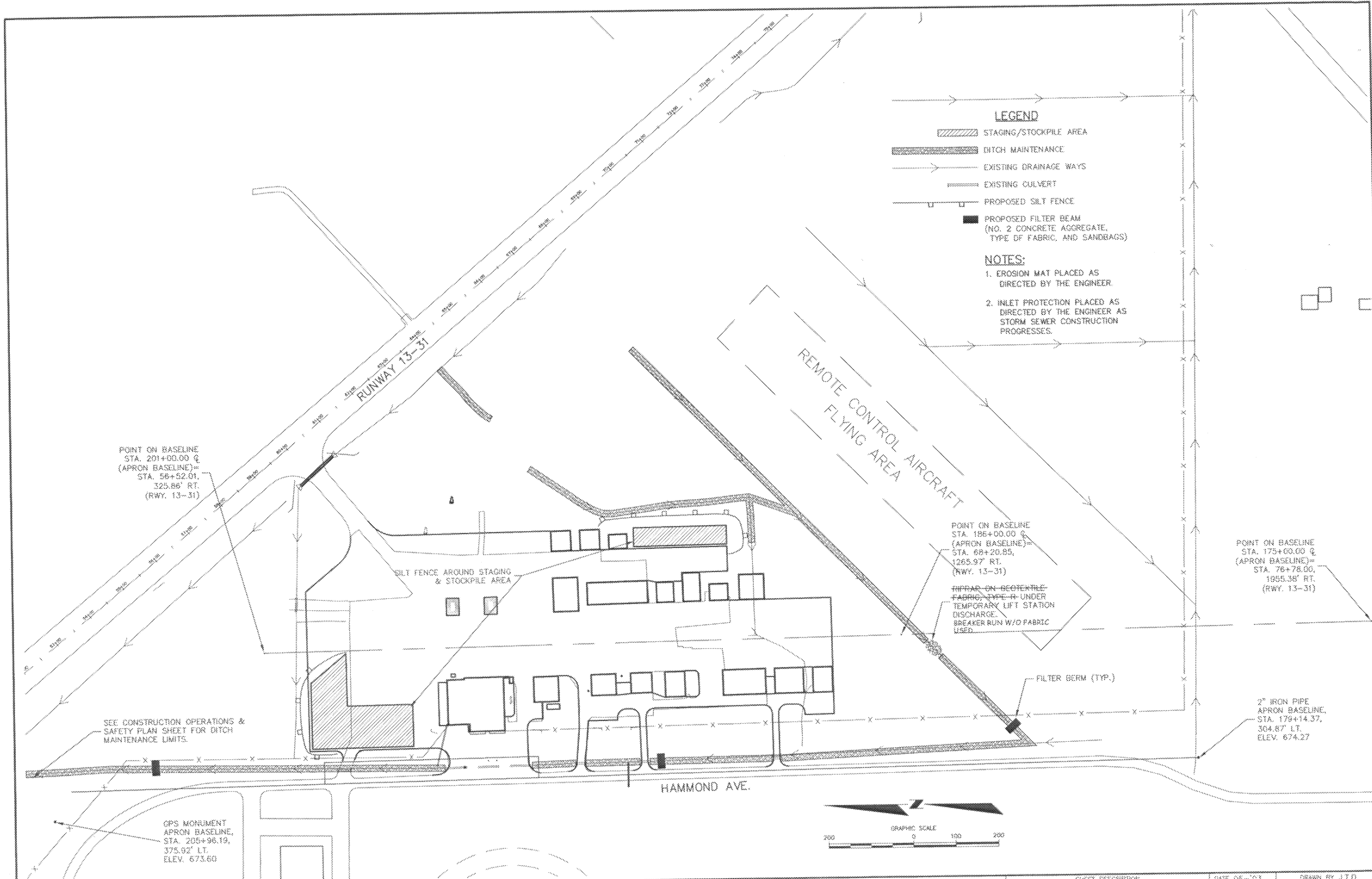
* USE BY AIRCRAFT LIMITED TO BASED AIRCRAFT AND "CALL-AHEAD" TRANSIENT AIRCRAFT, BOTH HAVING PERMISSION TO TAXI AND/OR TOW ON THE RAMP FROM AIRPORT MANAGEMENT. AIRCRAFT TO MAINTAIN A MINIMUM 25' BETWEEN AIRCRAFT AND CONSTRUCTION ACTIVITIES/EQUIPMENT.



PROJECT MANAGER BRAD VOLKER		310 WEST SOUTH STREET, P.O. BOX 230 RICE LAKE, WISCONSIN 54868-0230 TELEPHONE (715) 234-7008 FAX (715) 234-1025		RICHARD I. BONG MEMORIAL AIRPORT SUPERIOR, WISCONSIN		SHEET DESCRIPTION CONSTRUCTION OPERATIONS & SAFETY PLAN 3-55-0083-7		DATE 05-03		DRAWN BY J.T.D.	
CHECKED BY: W.R.		COOPER ENGINEERING				SCALE		PROJECT NO. 00552090		SHEET NO. 5	
APPROVED BY: B.R.M.						AS NOTED					

G:\2000PROJ\00552090\dwg\Apron\SOILDATA.dwg, 05/19/2003 07:13:36 AM, J.T.D.





LEGEND

- STAGING/STOCKPILE AREA
- DITCH MAINTENANCE
- EXISTING DRAINAGE WAYS
- EXISTING CULVERT
- PROPOSED SILT FENCE
- PROPOSED FILTER BEAM (NO. 2 CONCRETE AGGREGATE, TYPE OF FABRIC, AND SANDBAGS)

NOTES:

1. EROSION MAT PLACED AS DIRECTED BY THE ENGINEER.
2. INLET PROTECTION PLACED AS DIRECTED BY THE ENGINEER AS STORM SEWER CONSTRUCTION PROGRESSES.

POINT ON BASELINE
STA. 201+00.00 @
(APRON BASELINE)=
STA. 56+52.01,
325.86' RT.
(RWY. 13-31)

POINT ON BASELINE
STA. 186+00.00 @
(APRON BASELINE)=
STA. 68+20.85,
1265.97' RT.
(RWY. 13-31)

POINT ON BASELINE
STA. 175+00.00 @
(APRON BASELINE)=
STA. 76+78.00,
1855.36' RT.
(RWY. 13-31)

SEE CONSTRUCTION OPERATIONS &
SAFETY PLAN SHEET FOR DITCH
MAINTENANCE LIMITS.

REPAIR ON GEOTEXTILE-
FABRIC TYPE-R UNDER
TEMPORARY LIFT STATION
DISCHARGE.
BREAKER RUN W/O FABRIC
USED.

FILTER BERM (TYP.)

2" IRON PIPE
APRON BASELINE,
STA. 179+14.37,
304.67' LT.
ELEV. 674.27

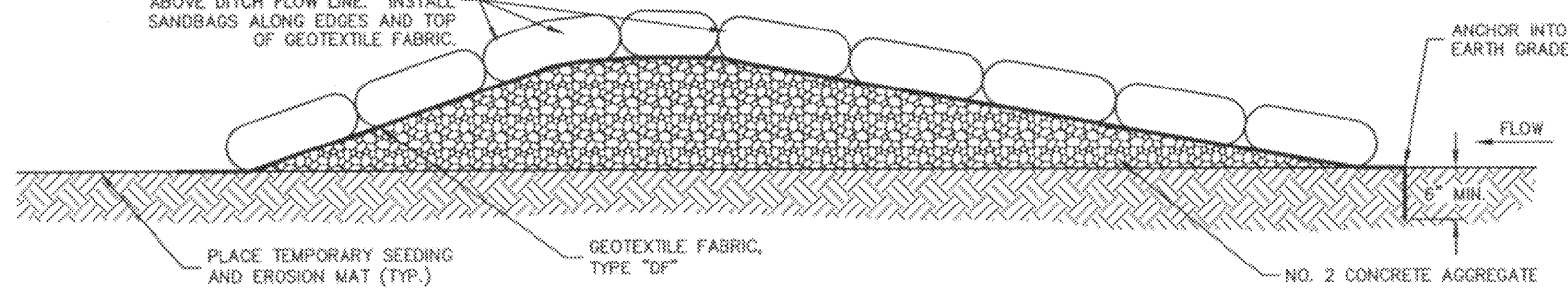
GPS MONUMENT
APRON BASELINE,
STA. 205+96.19,
375.92' LT.
ELEV. 673.60

HAMMOND AVE.

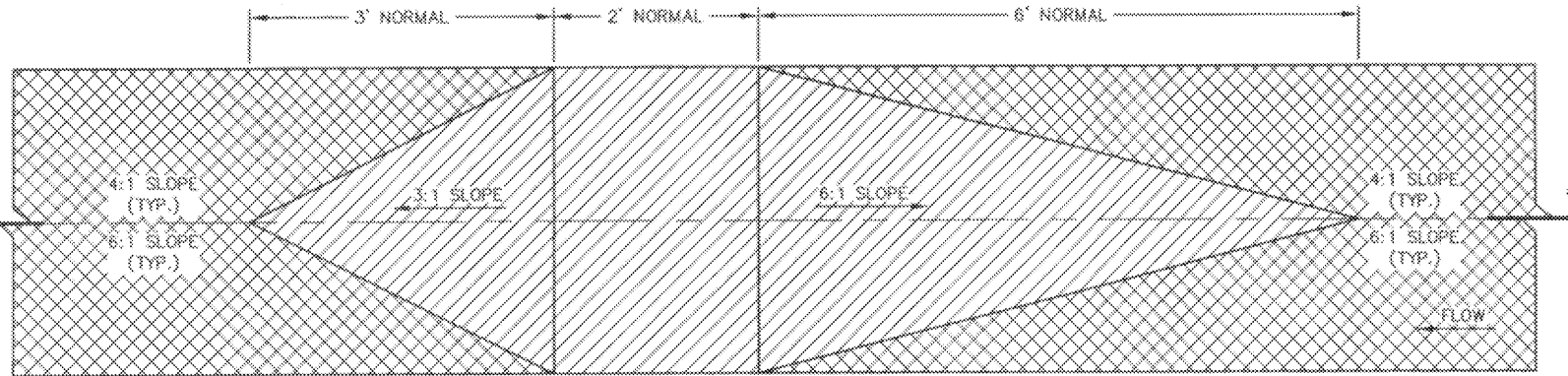


NO. BY DATE REVISIONS		PROJECT MANAGER BRAD VOLKER	CHECKED BY: W.R.	APPROVED BY: H.R.M.	COOPER ENGINEERING 316 WEST SOUTH STREET, P.O. BOX 230 PRICE LAKE, WISCONSIN 54995-0230 TELEPHONE: (715) 234-7008 FAX: (715) 234-1025	RICHARD I. BONG MEMORIAL AIRPORT SUPERIOR, WISCONSIN		SHEET DESCRIPTION DRAINAGE & EROSION CONTROL PLAN 3-55-0083-07		DATE 05-'03	SCALE AS NOTED	DRAWN BY J.T.D.	PROJECT NO. G0552090	SHEET NO. 7

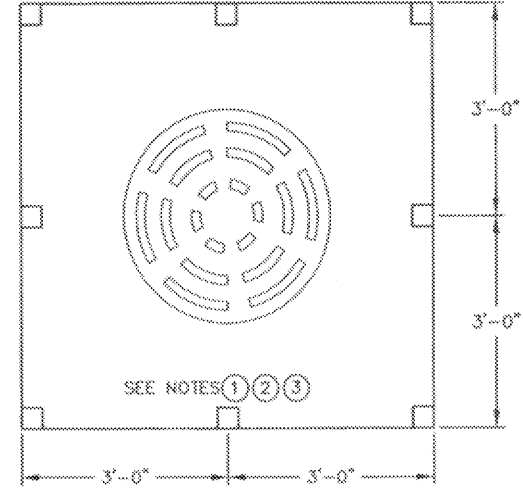
CONSTRUCT TOP OF BERM ELEVATION APPROXIMATELY 1' ABOVE DITCH FLOW LINE. INSTALL SANDBAGS ALONG EDGES AND TOP OF GEOTEXTILE FABRIC.



FILTER BERM SECTION



FILTER BERM PLAN



STORM SEWER SILT TRAP

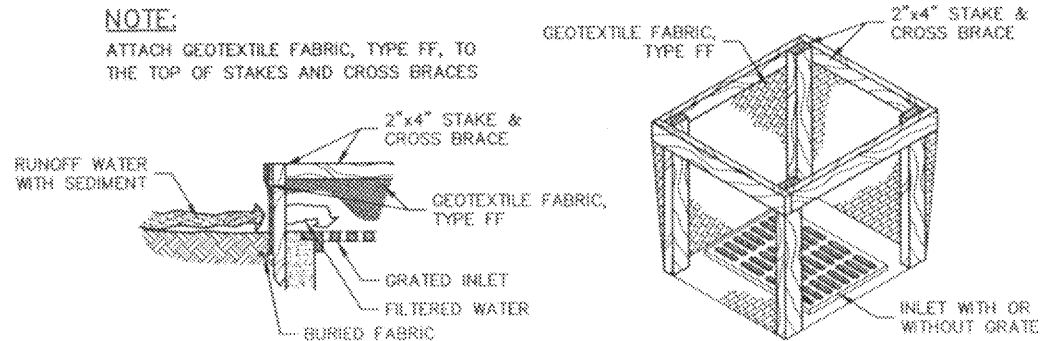
(SILT FENCE OR EROSION BALES)
INLET PROTECTION REQUIRED AT ALL INLETS WITHIN CONSTRUCTION AREA.

GENERAL NOTES

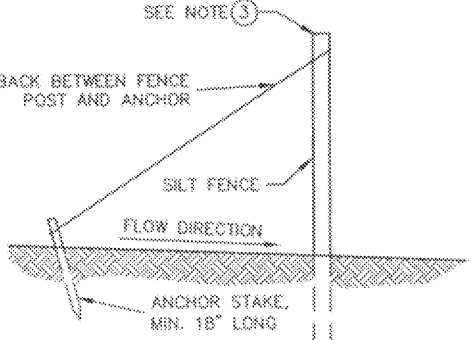
- ① HORIZONTAL BRACE WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS AS DIRECTED BY THE ENGINEER.
- ② SILT FENCE SHALL BE MACHINE SLICED OR TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1 1/2" X 1 1/2" OF OAK OR HICKORY.
- ④ DETAILS SHALL NOT BE SCALED.
- ⑤ PLAN SHEETS IDENTIFY RECOMMENDED LOCATION FOR EROSION & SEDIMENT CONTROL INSTALLATION. ACTUAL LOCATIONS SHALL BE AS DIRECTED BY THE ENGINEER.
- ⑥ FABRIC SHALL BE REPLACED AT THE ENGINEER'S DISCRETION.
- ⑦ THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX.
- ⑧ WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.
- ⑨ FABRIC SIZE SHALL BE 8" (MIN.) GREATER ON ALL SIDES OF THE INLET COVER TO PROVIDE A HAND HOLD WHEN MAINTENANCE OR REMOVAL IS REQUIRED.
- ⑩ FOR INLET PROTECTION, TYPE C, WITH A CURB BOX AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES.

NOTE:

ATTACH GEOTEXTILE FABRIC, TYPE FF, TO THE TOP OF STAKES AND CROSS BRACES

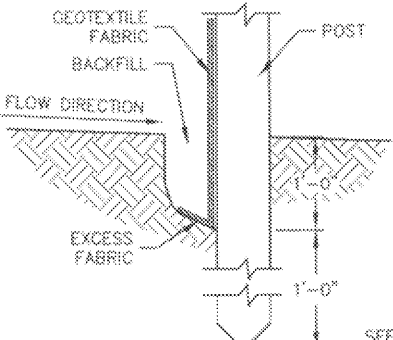


INLET PROTECTION, TYPE A

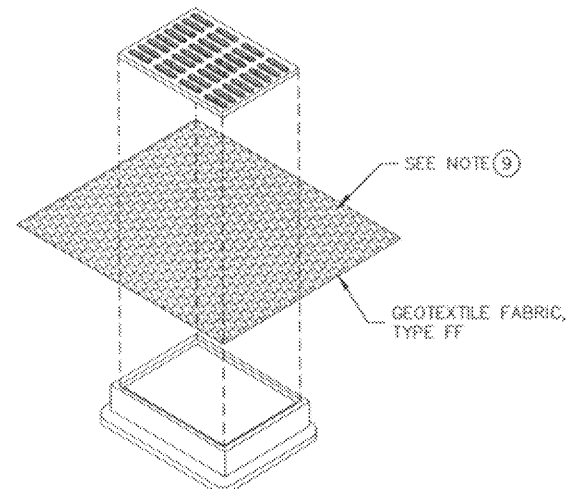


SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

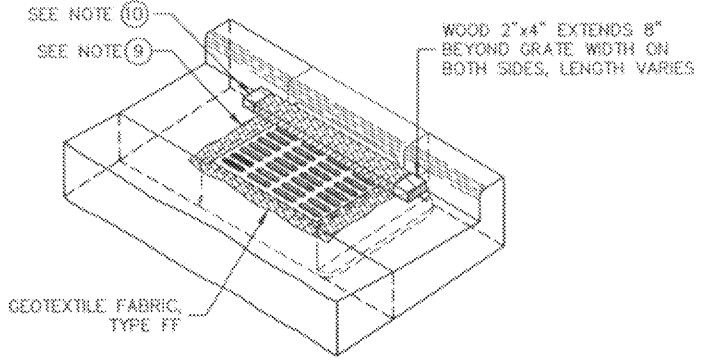


TRENCH DETAIL

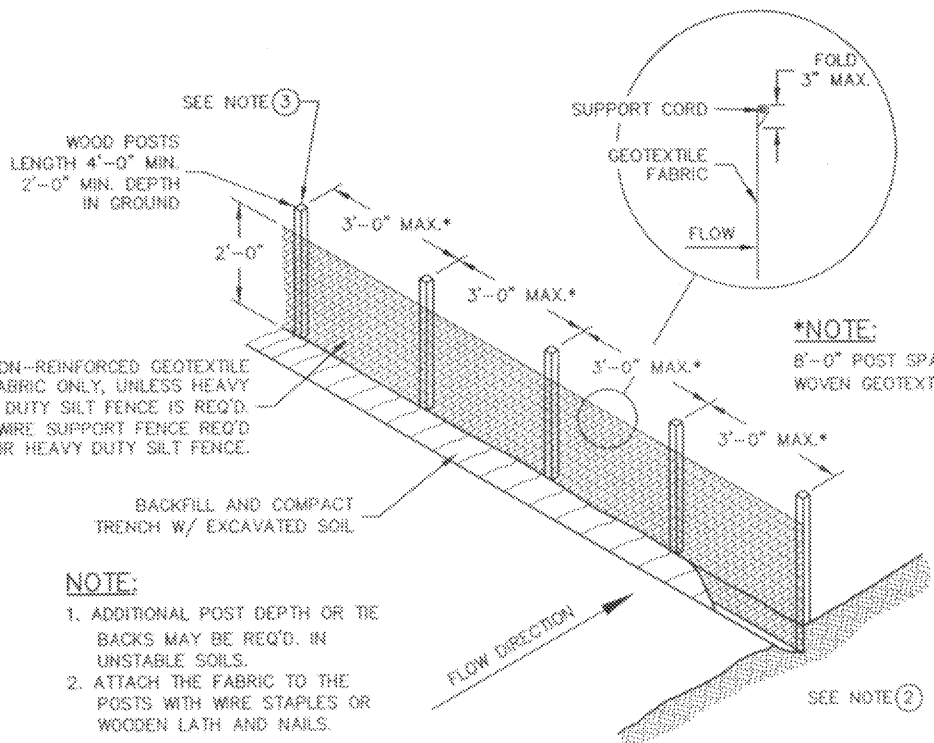


INLET PROTECTION, TYPE B

(CAN BE INSTALLED ON ANY INLET TYPE)



INLET PROTECTION, TYPE C



SILT FENCE

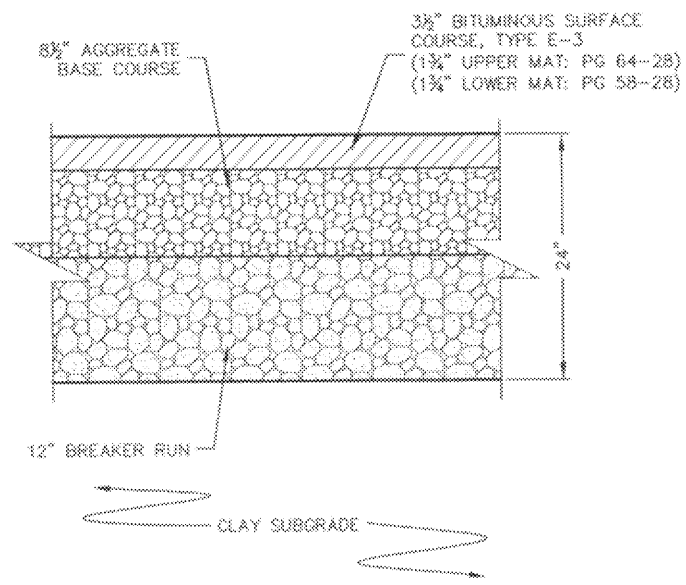
(NON-REINFORCED)

NOTE:

1. ADDITIONAL POST DEPTH OR TIE BACKS MAY BE REQ'D. IN UNSTABLE SOILS.
2. ATTACH THE FABRIC TO THE POSTS WITH WIRE STAPLES OR WOODEN LATH AND NAILS.

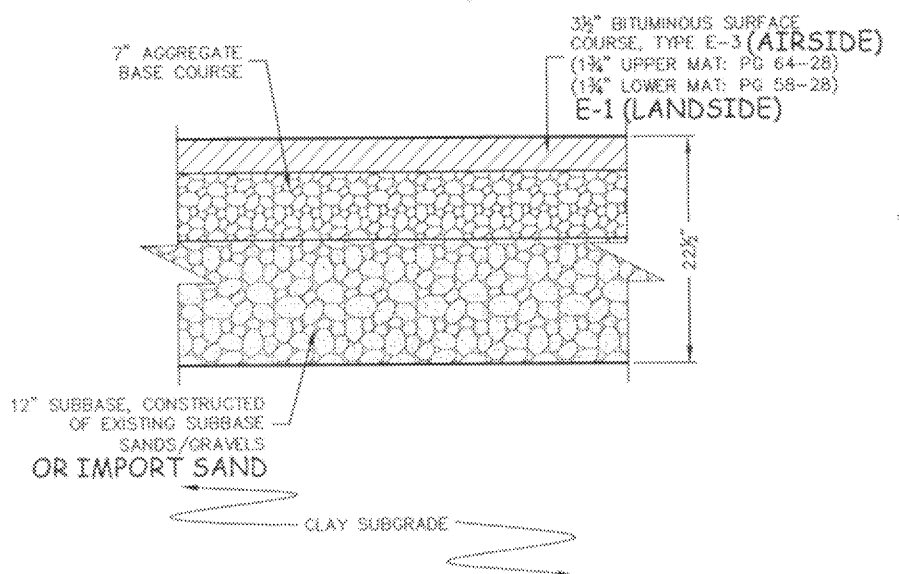
G:\2000PROJ\00552090\dwg\APRON-EROSION-DET.dwg, 05/19/2003 07:14:38 AM, J.T.D.

PROJECT MANAGER BRAD VOLKER		310 WEST SOUTH STREET, P.O. BOX 230 RICE LAKE, WISCONSIN 54886-0230 TELEPHONE (715) 234-7008 FAX (715) 234-1025	RICHARD I. BONG MEMORIAL AIRPORT SUPERIOR, WISCONSIN		SHEET DESCRIPTION EROSION CONTROL DETAILS 3-55-0083-07		DATE 05-03		DRAWN BY J.T.D.		
NO.	BY		DATE	REVISIONS	CHECKED BY	APPROVED BY	SCALE	NONE	PROJECT NO.	00552090	SHEET NO.



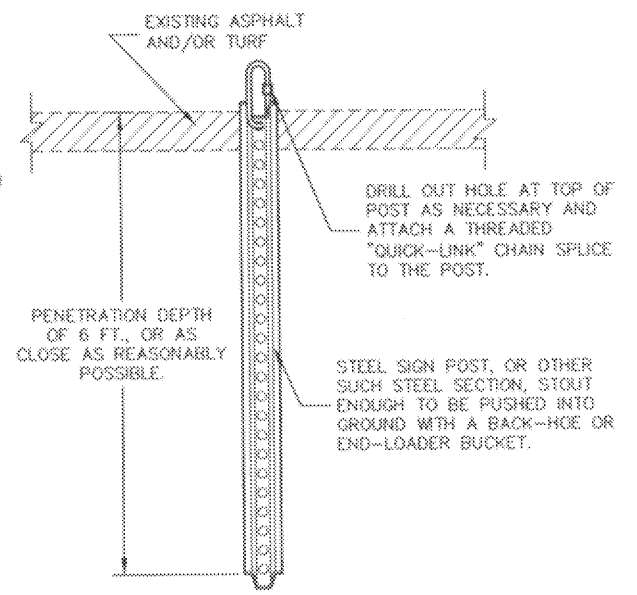
**PROPOSED TYPICAL SECTION
HEAVY TRAFFIC AREAS**

(AND AUTO PARKING LOT ON WEST SIDE OF TERMINAL BLDG.)
NOT TO SCALE



**PROPOSED TYPICAL SECTION
LIGHT TRAFFIC AREAS**

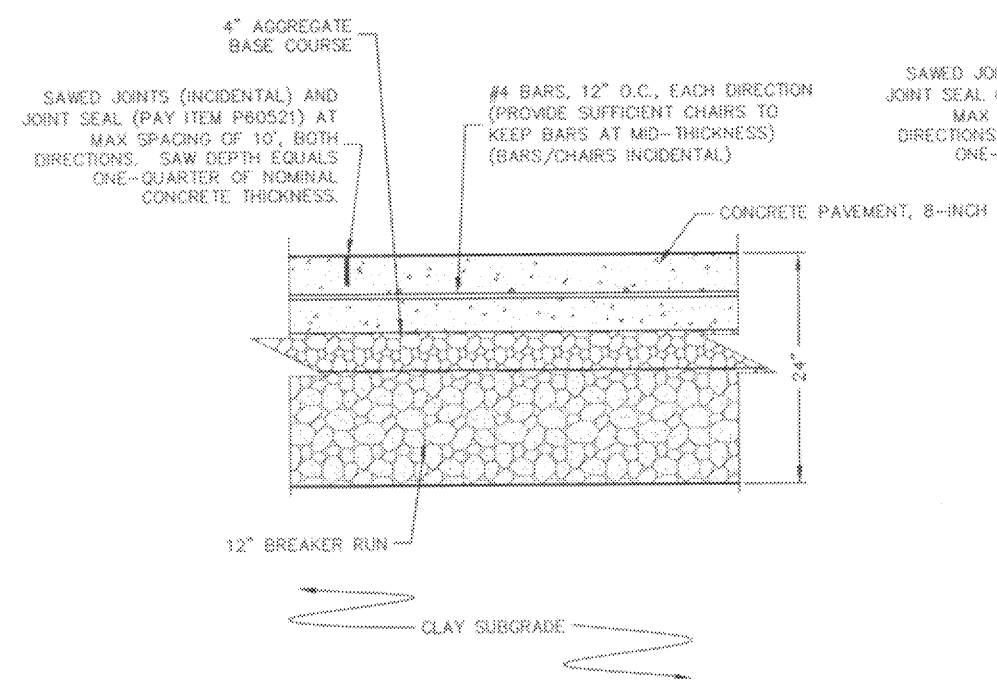
NOT TO SCALE



**TIE DOWN INSTALLATION
DETAIL (TEMPORARY)**

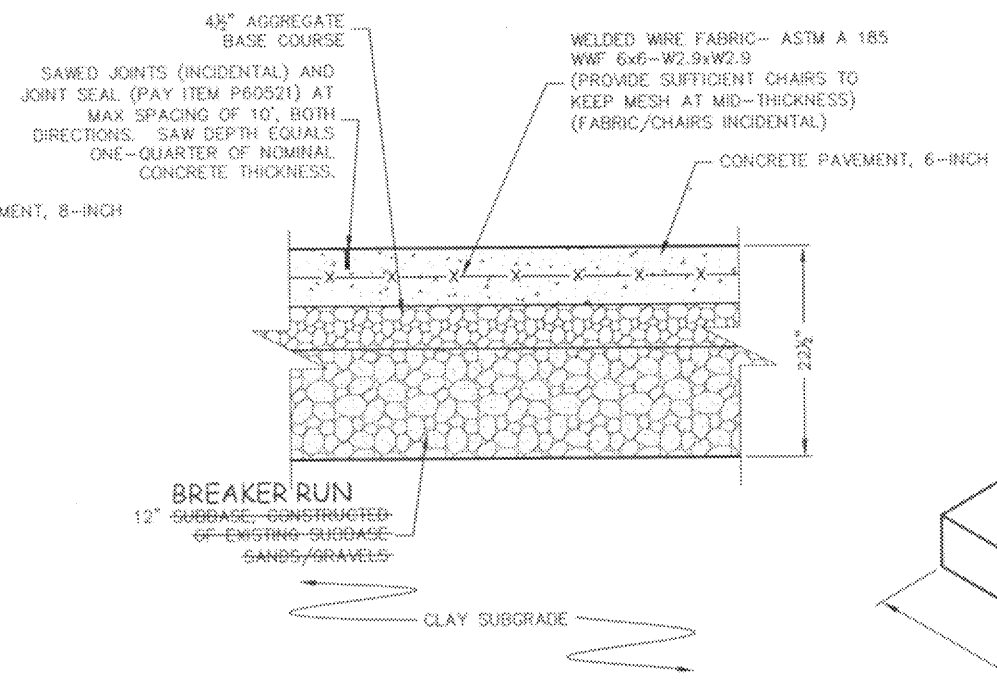
NOT TO SCALE

- NOTES:
- 1) EACH TIE DOWN SET CONSISTS OF THREE OF THE ABOVE INSTALLATIONS.
 - 2) LOCATIONS WILL BE DETERMINED BY ENGINEER OR AIRPORT MANAGER DURING CONSTRUCTION.



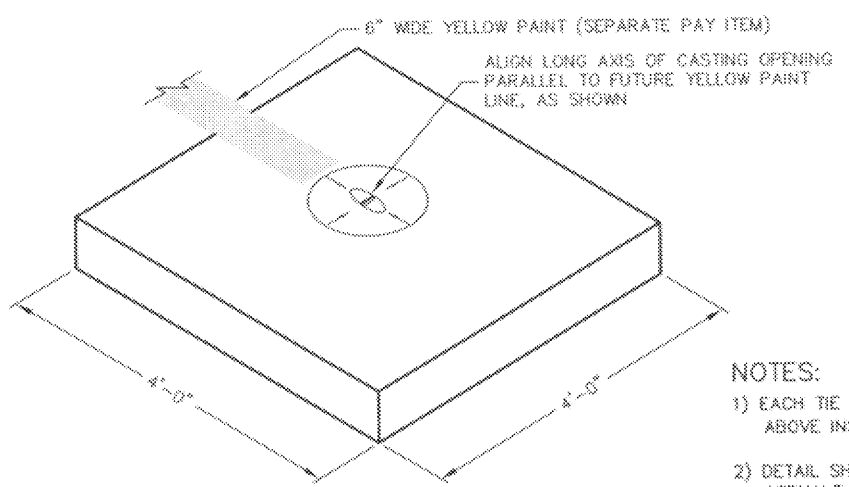
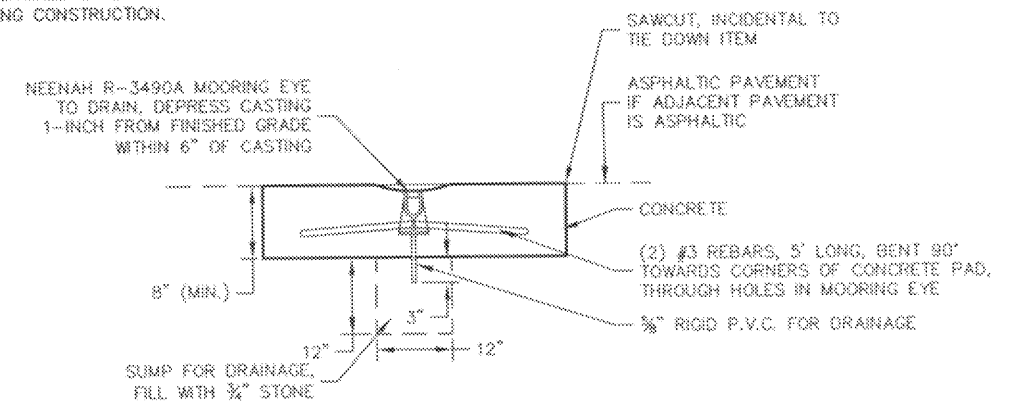
**PROPOSED TYPICAL SECTION
CONCRETE AIRCRAFT PAD IN
HEAVY PAVEMENT SECTIONS
(ALTERNATE NO. 2)**

NOT TO SCALE



**PROPOSED TYPICAL SECTION
CONCRETE HANGAR APRON
IN LIGHT PAVEMENT SECTIONS**

NOT TO SCALE



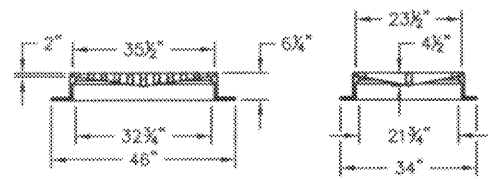
PROPOSED TIE DOWN ANCHOR DETAIL

NOT TO SCALE

- NOTES:
- 1) EACH TIE DOWN SET CONSISTS OF THREE OF THE ABOVE INSTALLATIONS.
 - 2) DETAIL SHOWN IS FOR CONSTRUCTING TIE DOWNS IN ASPHALT RAMP FULLY PAVED; FOR TIE DOWNS IN NEW CONCRETE PAVEMENT, INSTALL TIE CASTINGS PRIOR TO CONCRETE PAVING.

NO. 1 BY DATE REVISIONS		PROJECT MANAGER BRAD VOLKER	310 WEST SOUTH STREET, P.O. BOX 230 RICE LAKE, WISCONSIN 54883-0230 TELEPHONE (715) 234-7008 FAX (715) 234-1025	COOPER ENGINEERING	RICHARD I. BONG MEMORIAL AIRPORT SUPERIOR, WISCONSIN	SHEET DESCRIPTION TYPICAL SECTIONS/TIE-DOWNS 3-55-0083-07	DATE 05-03 SCALE NONE	DRAWN BY J.T.O. PROJECT NO. 00552090 SHEET NO. 9
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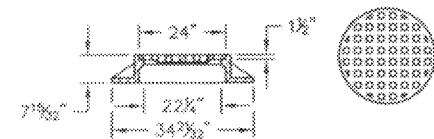
G:\2000PROJ\00552090\dwg\Apron\APRON-STORM SEWER DETAILS.dwg, 05/19/2003 07:18:01 AM, J.T.D.



INLET CASTING TYPE "AP"
 CASTINGS SHALL BE NEENAH R-3475 OR EQUAL WITH GRATE
 NOT TO SCALE



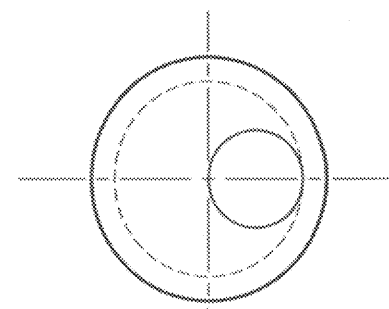
INLET CASTING TYPE "BP"
 CASTINGS SHALL BE NEENAH R-1878-B7G OR EQUAL WITH GRATE
 NOT TO SCALE



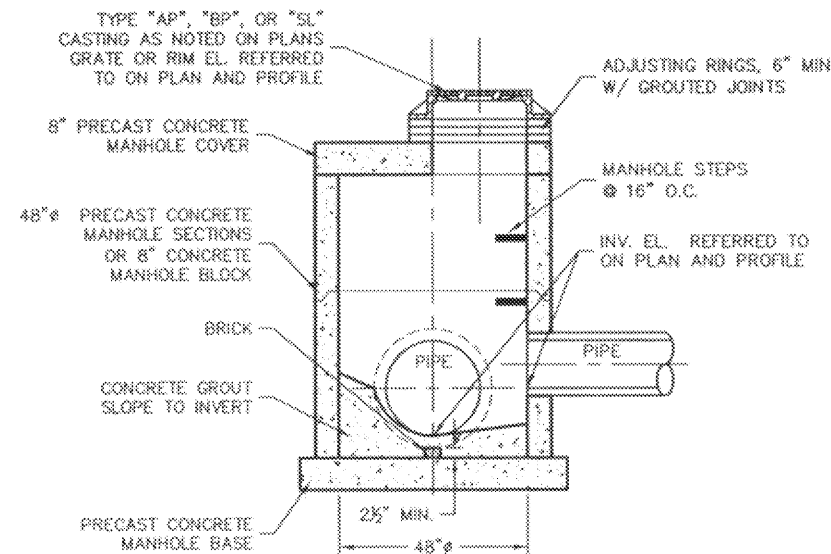
CASTING DETAIL TYPE "G"
 CASTINGS SHALL BE NEENAH R-2500 OR EQUAL, WITH GRATE, MACHINED BEARING SURFACES, ONE OPEN PICKHOLE
 NOT TO SCALE



CASTING DETAIL TYPE "SL"
 CASTINGS SHALL BE NEENAH R-1670-A OR EQUAL, WITH TYPE "B" LID LETTERED "STORM SEWER", MACHINED BEARING SURFACES, ONE OPEN PICKHOLE
 NOT TO SCALE

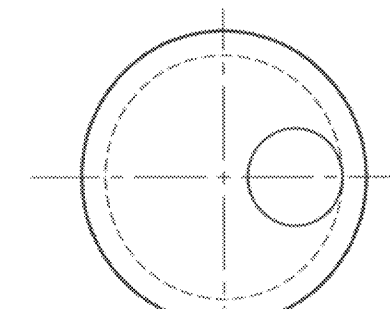


PLAN VIEW

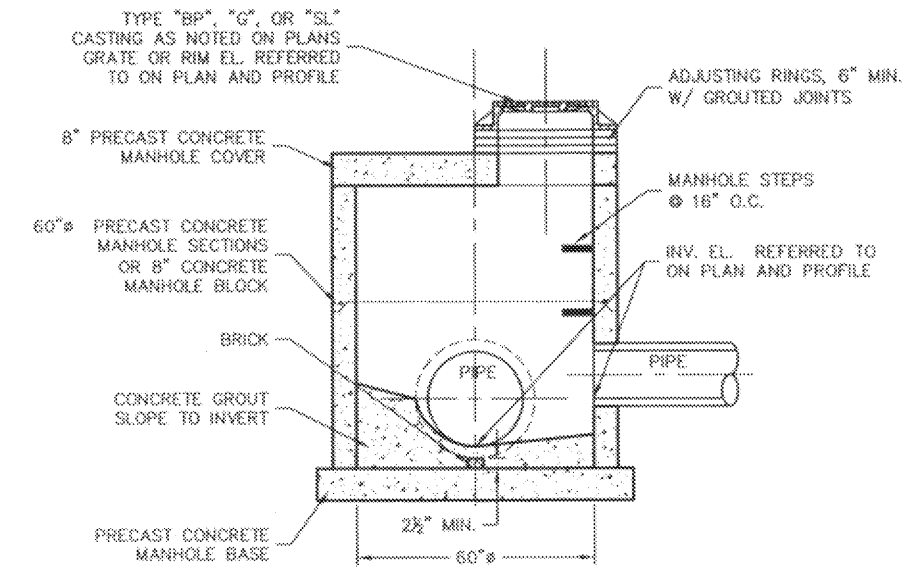


MANHOLE TYPE 1

NOT TO SCALE

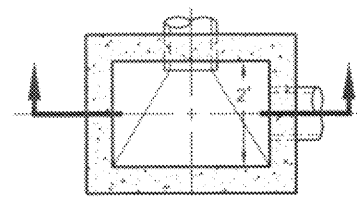


PLAN VIEW

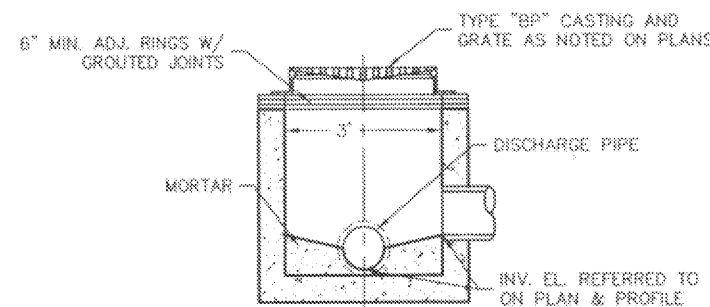


MANHOLE TYPE 2

NOT TO SCALE



PLAN VIEW



SECTION

PRECAST CONCRETE INLET BOX

TYPE 3 INLET

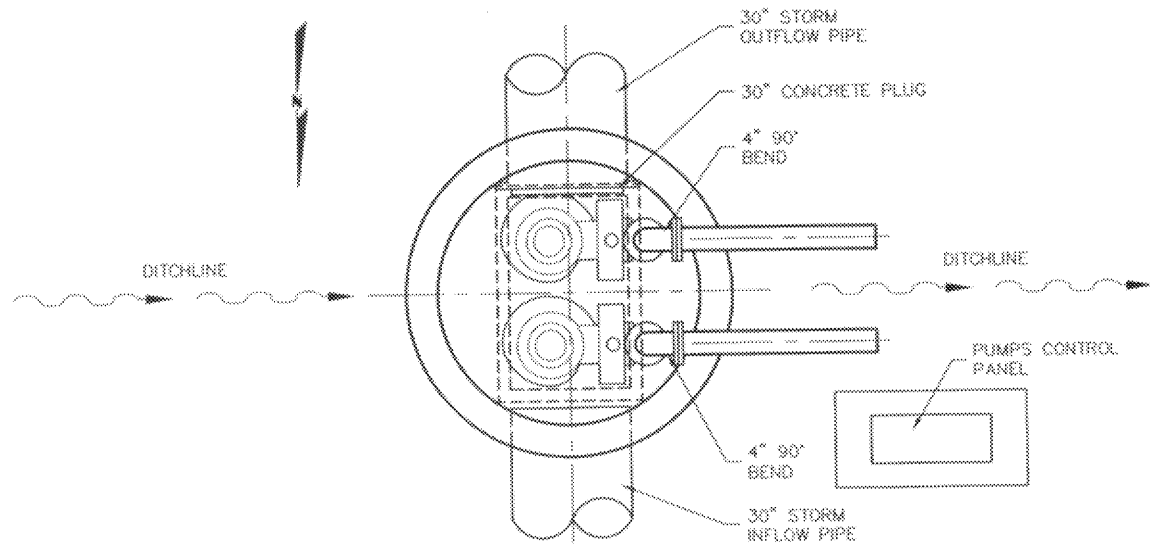
INV. AND GRATE ELEV. REFERRED TO ON PLAN AND PROFILE
 NOT TO SCALE

GENERAL NOTES

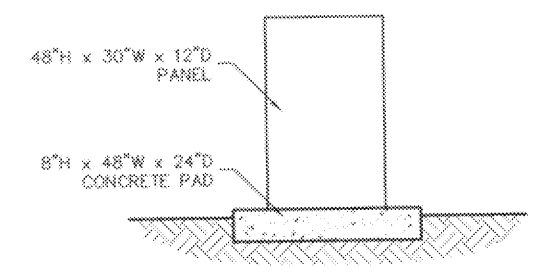
- 1) DETAILS SHALL NOT BE SCALED
- 2) THE LOCATION OF THE EXISTING UTILITIES AS SHOWN ON THE PLANS ARE APPROXIMATE, THERE MAY BE OTHER UTILITIES WITHIN THE PROJECT AREA THAT ARE NOT SHOWN. CONTRACTORS SHALL VERIFY THE ACTUAL LOCATION OF THE UTILITIES IN THE FIELD.

PROJECT MANAGER BRAD VOLKER	310 WEST SOUTH STREET, P.O. BOX 230 RICE LAKE, WISCONSIN 54868-0230 TELEPHONE (715) 234-7008 FAX (715) 234-1025	RICHARD I. BONG MEMORIAL AIRPORT SUPERIOR, WISCONSIN	SHEET DESCRIPTION STORM SEWER DETAILS 3-55-0083-07	DATE 05--03 SCALE NONE	DRAWN BY J.T.D. PROJECT NO. 00552090 SHEET NO. 10
CHECKED BY: W.R.					
APPROVED BY: B.R.M.					
DESIGNED BY					



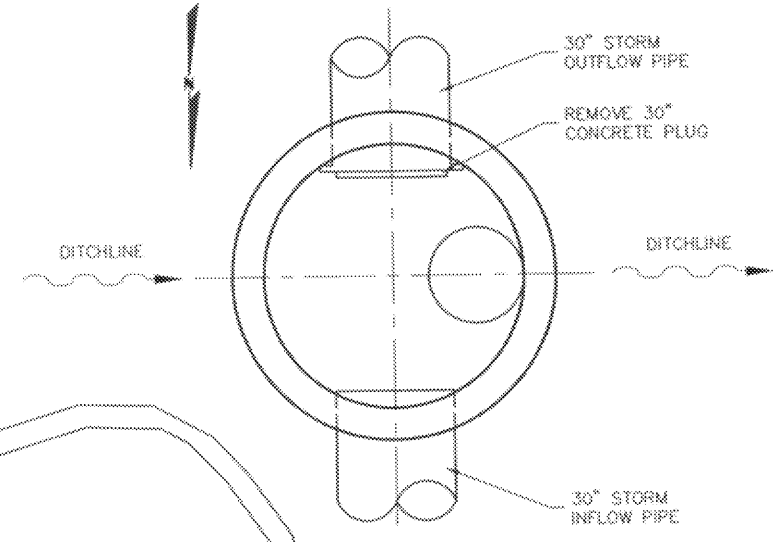


TEMPORARY STORM WATER LIFT STATION PLAN (#250)
NOT TO SCALE

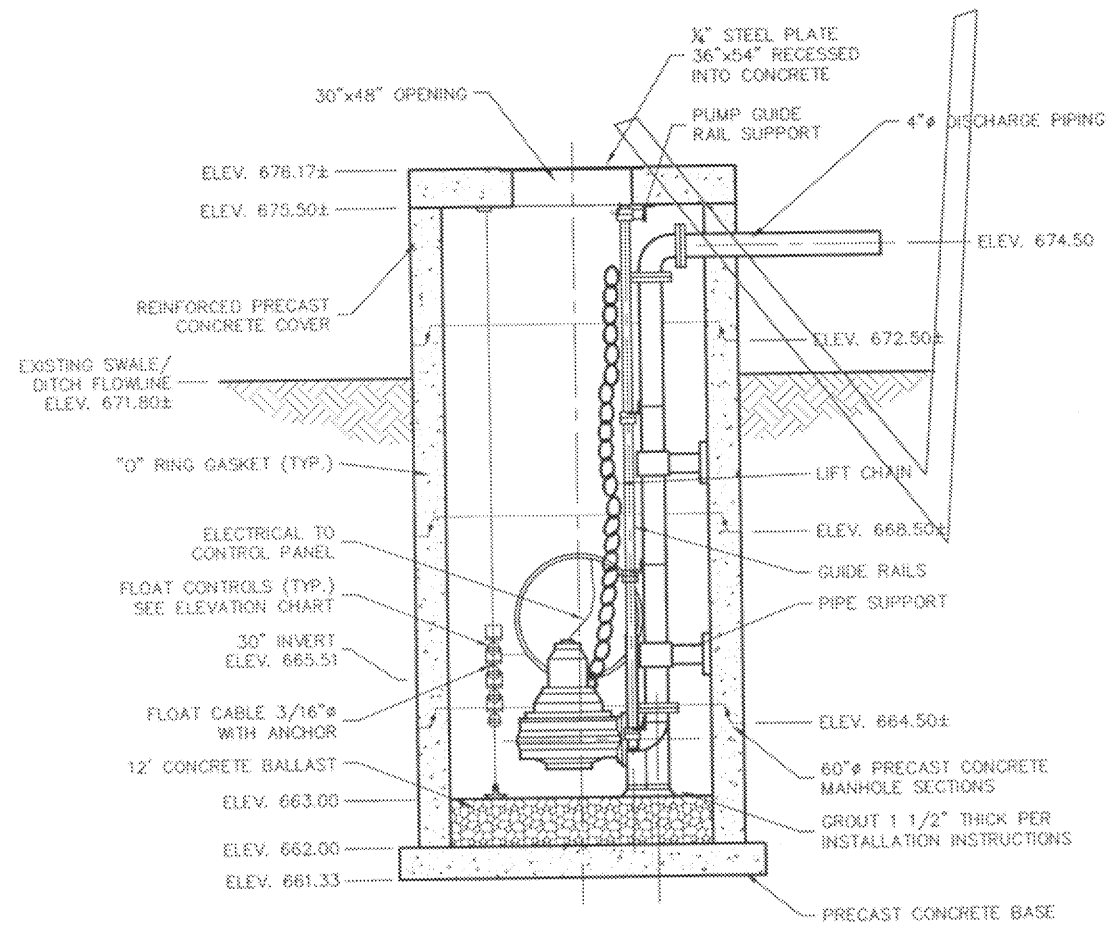


PUMPS CONTROL PANEL
NOT TO SCALE

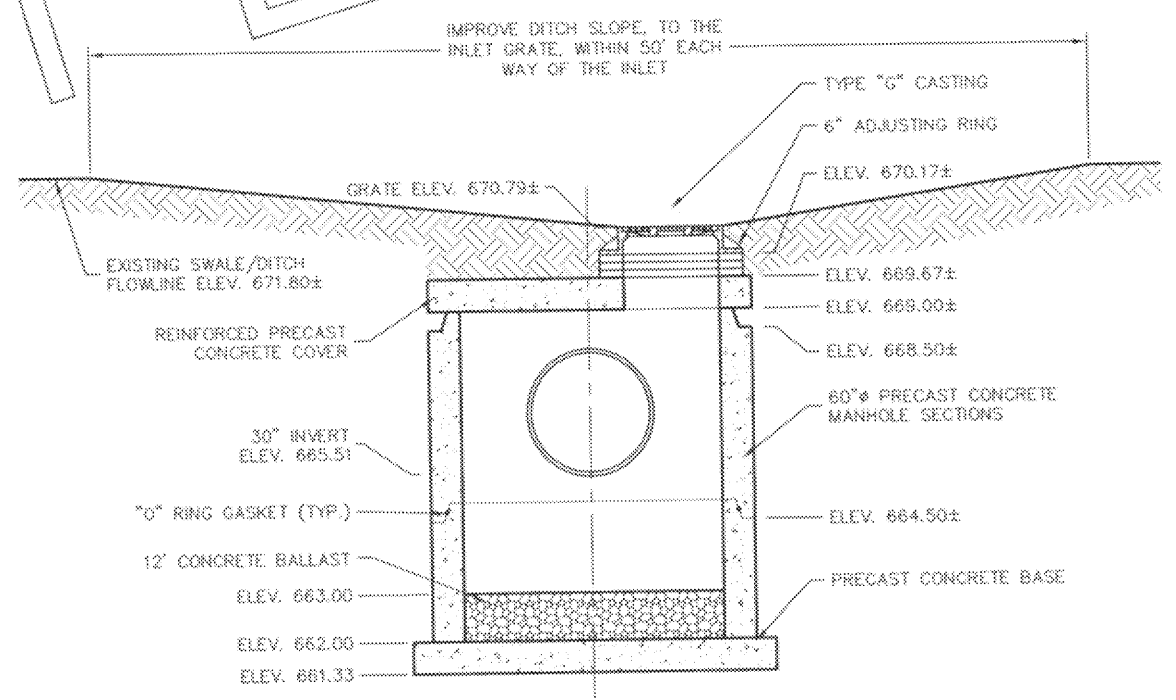
PUMPS OPERATION ELEVATIONS		
STATUS	INCHES FROM BOTTOM	ELEVATION
PUMP 2 ON	36"	EL. 668.00
PUMP 1 ON	30"	EL. 665.50
PUMPS OFF	24"	EL. 663.00
LOW ALARM	18"	EL. 664.50
BOTTOM	0"	EL. 663.00



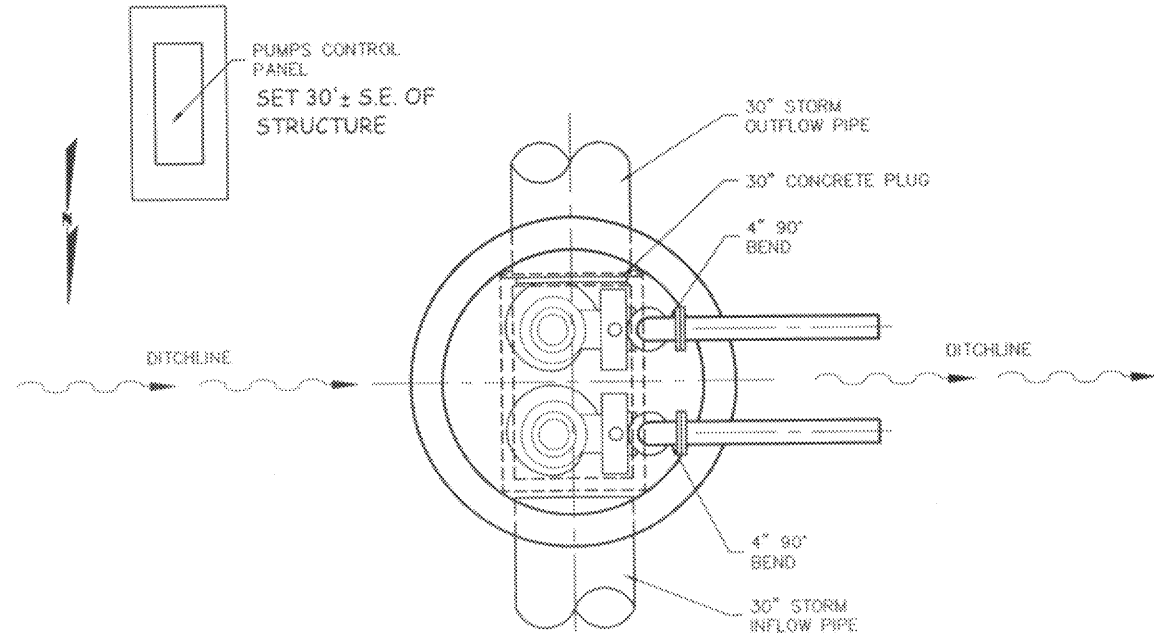
FUTURE STORM INLET MANHOLE PLAN (#250)
NOT TO SCALE



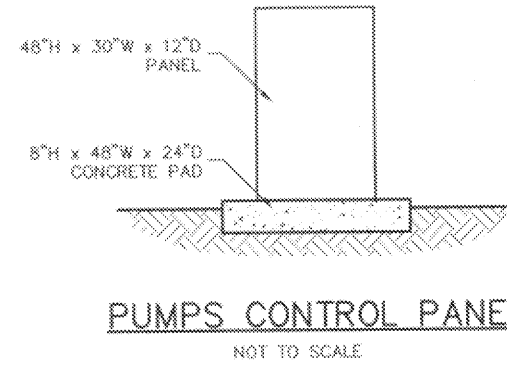
TEMPORARY STORM WATER LIFT STATION SECTION (#250)
NOT TO SCALE



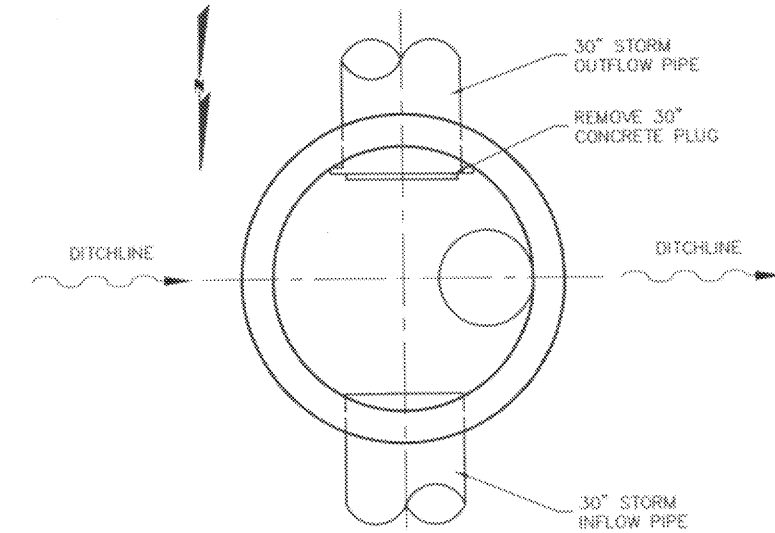
FUTURE STORM INLET MANHOLE SECTION (#250)
NOT TO SCALE



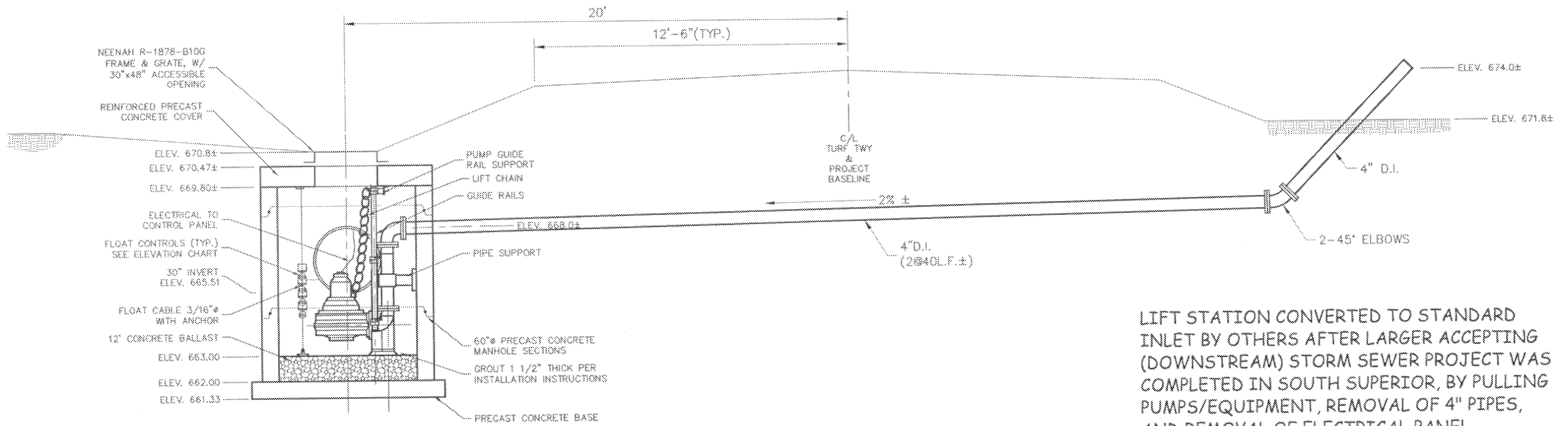
TEMPORARY STORM WATER LIFT STATION PLAN (#250)
NOT TO SCALE
STA 185+60, 20' RT.



PUMPS OPERATION ELEVATIONS		
STATUS	INCHES FROM BOTTOM	ELEVATION
PUMP 2 ON	36"	EL. 668.00' 667.25±
PUMP 1 ON	30"	EL. 666.00' 667.75±
PUMPS OFF	24"	EL. 665.00' 665.2±
LOW ALARM	18"	EL. 664.50±
BOTTOM	0"	EL. 663.00±



FUTURE STORM INLET MANHOLE PLAN (#250)
NOT TO SCALE
STA 185+60, 20' RT.

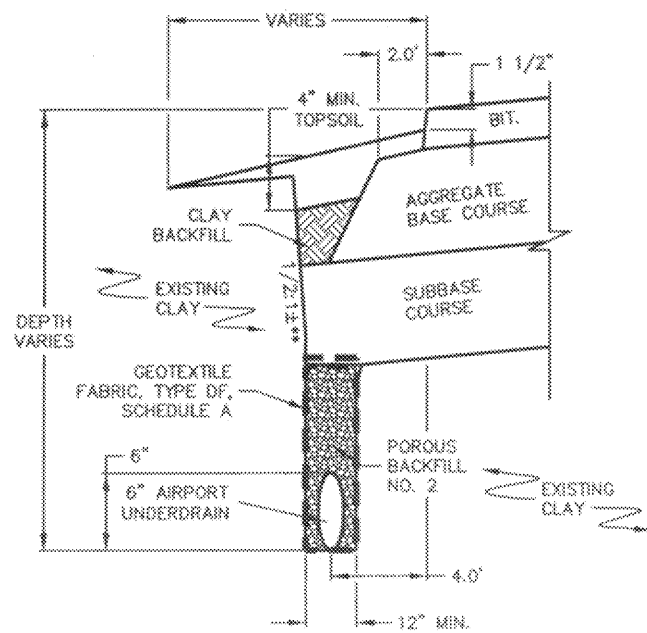


TEMPORARY STORM WATER LIFT STATION SECTION (#250)
NOT TO SCALE
LOOKING SOUTH, STA 185+60, 20' RT.

SHEET 11 - REVISED

LIFT STATION CONVERTED TO STANDARD INLET BY OTHERS AFTER LARGER ACCEPTING (DOWNSTREAM) STORM SEWER PROJECT WAS COMPLETED IN SOUTH SUPERIOR, BY PULLING PUMPS/EQUIPMENT, REMOVAL OF 4" PIPES, AND REMOVAL OF ELECTRICAL PANEL.

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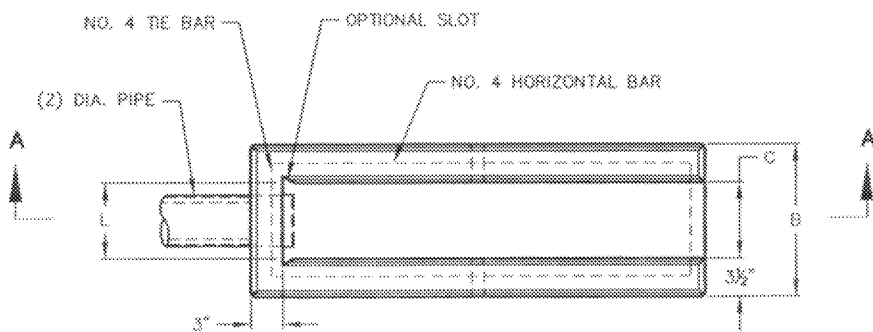
** APPROXIMATE ANTICIPATED SLOPES. IT IS DESIRED TO CUT THE SIDES OF THE UNDERDRAIN TRENCH AS CLOSE TO VERTICAL AS REASONABLY POSSIBLE.

UNDERDRAIN SECTION

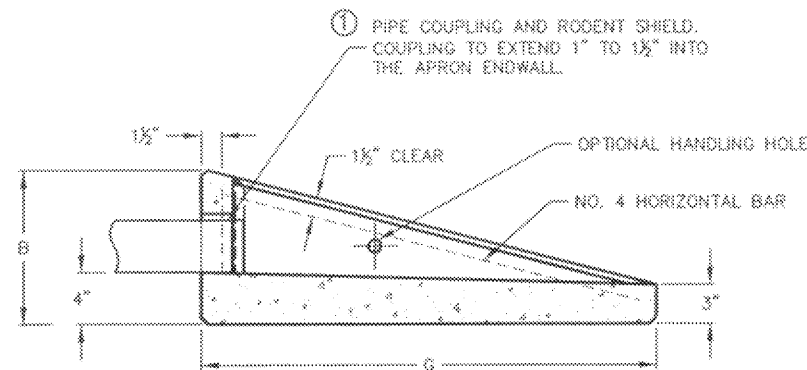
NOT TO SCALE

DIMENSIONS IN INCHES											
PIPE DIA.	A	B	C	D	E	F	G	H	J	L	Z
**4	6	12	5 1/4	9	8	32	36	11	6 3/8	6 3/8	4
6	8	14	7 3/8	11	10	42	44	13	8 3/8	8 3/8	6

** APRON ENDWALL FOR A 6 INCH DIAMETER PIPE MAY BE SUBSTITUTED FOR THE SIZE PROVIDED THE HOLE IN THE HEADWALL IS SIZED AND LOCATED TO CONFORM TO THE 4 INCH DIAMETER PIPE DIMENSIONS (C & J)

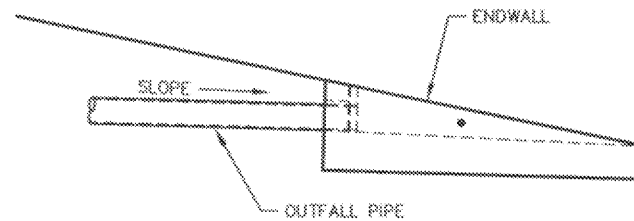


PLAN VIEW



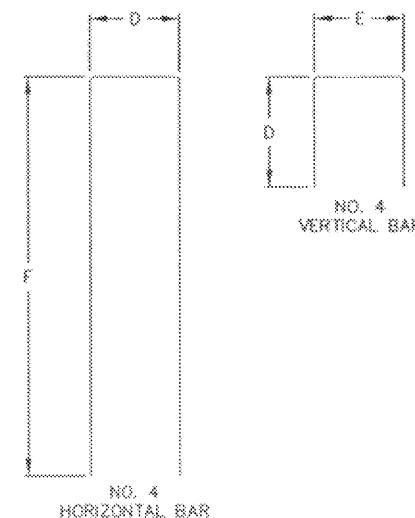
**SECTION A-A
CONCRETE APRON ENDWALL FOR UNDERDRAIN**

SCALE: NONE



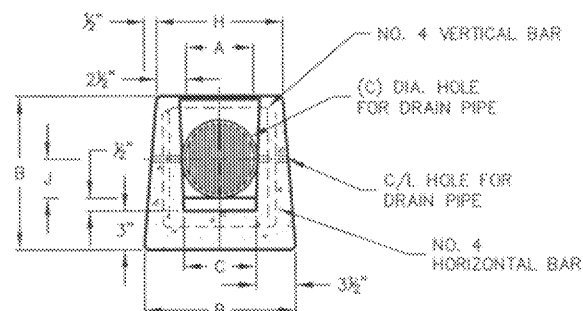
INSTALLATION DETAIL

SCALE: NONE



**BAR STEEL
REINFORCEMENT DETAILS**

SCALE: NONE



END VIEW

GENERAL NOTES

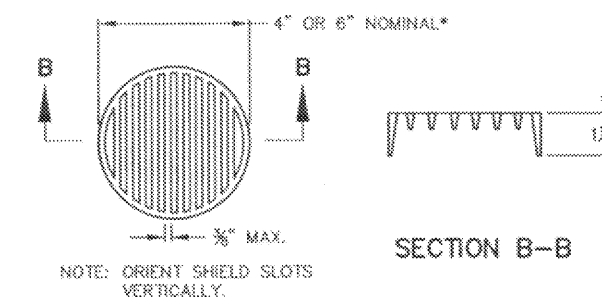
DETAILS OF CONSTRUCTION, MATERIALS, WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

ALTERNATE DESIGNS WHICH PROVIDE EQUIVALENT CAPACITY AND STRENGTH MAY BE USED WHEN APPROVED BY THE ENGINEER. ENDWALL MAY BE EITHER PRECAST OR CAST-IN-PLACE CONCRETE.

THE UNDERDRAIN PIPE SHALL BE FULLY INSERTED AND SEALED INTO THE ENDWALL WITH CEMENT MORTAR PRIOR TO BACKFILLING AROUND THE STRUCTURE.

THE UPPERMOST POINT OF THE ENDWALL SHALL BE PLACED FLUSH WITH THE ROADWAY SLOPE, ADJACENT EMBANKMENT SLOPES SHALL BE SHAPED TO FIT THE SIDES AND TOE OF THE ENDWALL. EXACT PLACEMENT OF THE OUTFALL PIPE AND ENDWALL SHALL BE DETERMINED BY THE ENGINEER TO MATCH THE ELEVATIONS AND FLOW DIRECTION OF THE ROADSIDE DITCH.

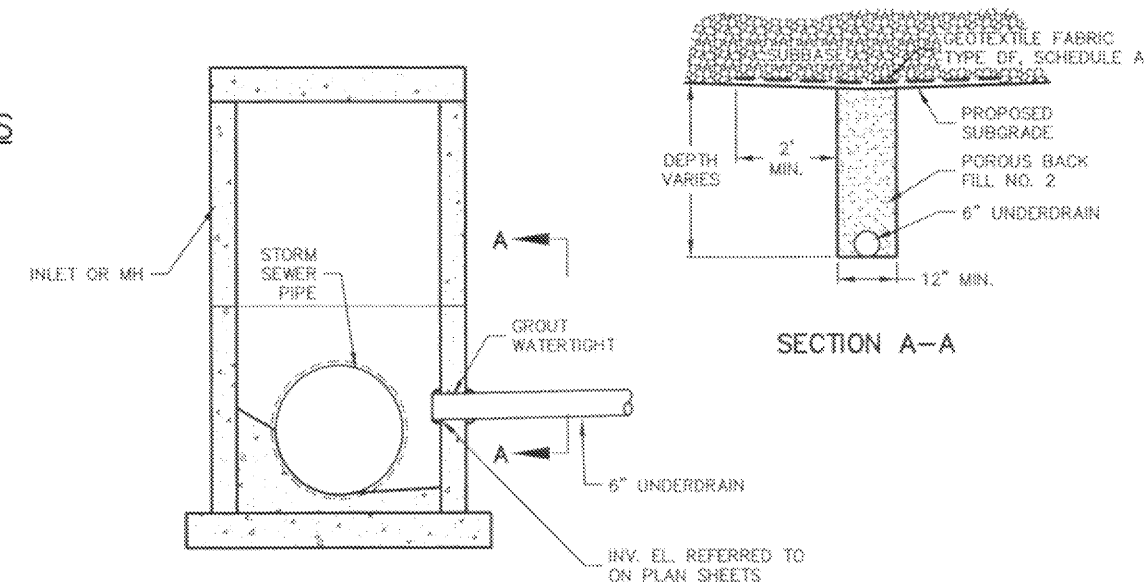
① THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE OUTFALL PIPE. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH STAINLESS STEEL SHEET METAL SCREWS.



① RODENT SHIELD

SCALE: NONE

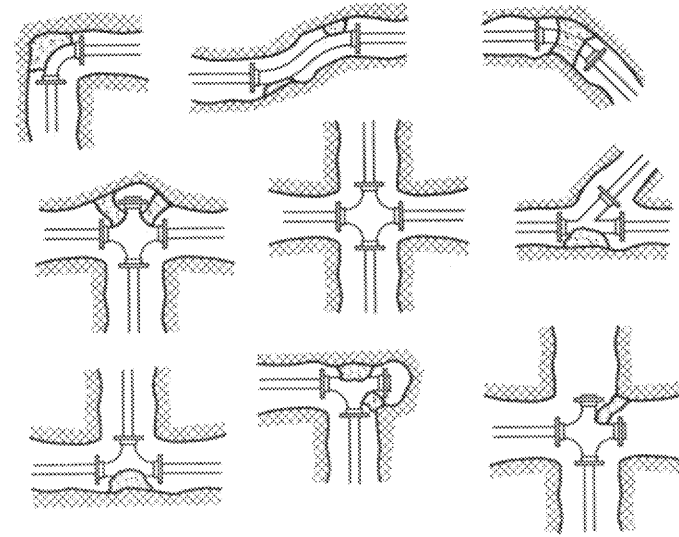
*NOTE: DIMENSIONS ARE APPROXIMATE, THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING.



UNDERDRAIN DETAIL

SCALE: NONE

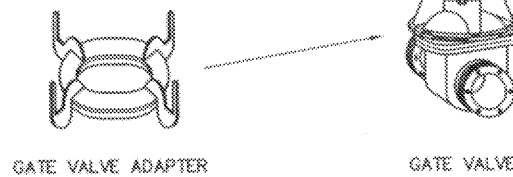
NO.	BY	DATE	REVISIONS	PROJECT MANAGER BRAD VOLKER	310 WEST SOUTH STREET, P.O. BOX 230 RICE LAKE, WISCONSIN 54888-0230 TELEPHONE: (715) 234-3008 FAX: (715) 234-1020	RICHARD I. BONG MEMORIAL AIRPORT SUPERIOR, WISCONSIN	SHEET DESCRIPTION UNDERDRAIN DETAILS	DATE 05-'03	DRAWN BY J.T.D.
				CHECKED BY: W.R.				SCALE NONE	PROJECT NO. 00552090
				APPROVED BY: B.K.M.					SHEET NO. 12



BLOCKING DETAILS

NO SCALE
 NOTE: ALL PLUGS, CAPS, TEES, AND BENDS SHALL BE PROVIDED WITH REACTION BACKING AS SHOWN ABOVE

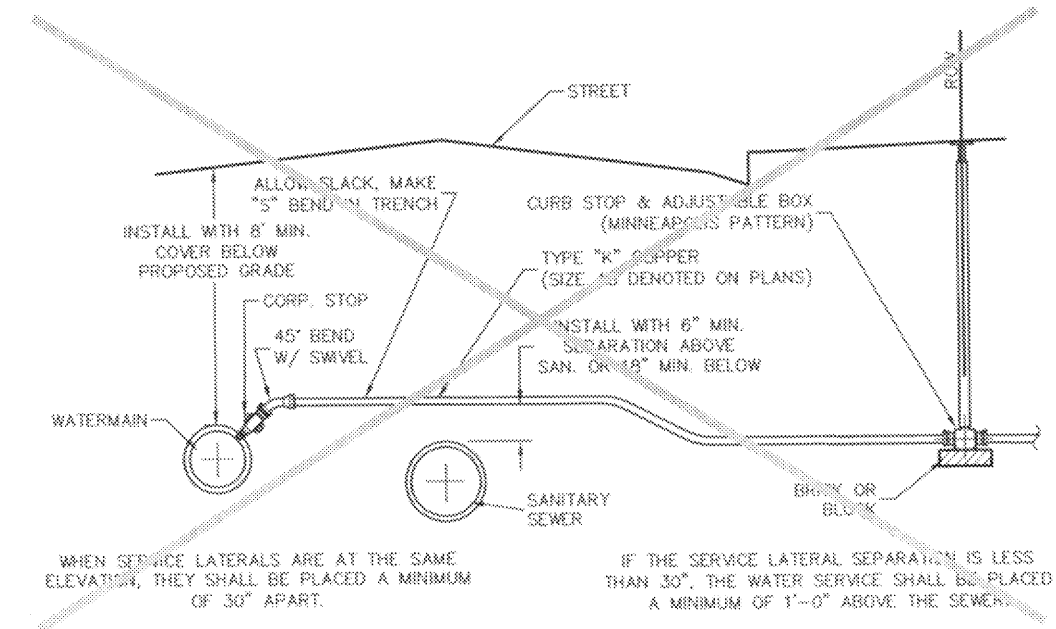
6" ADJUSTABLE SCREW TYPE VALVE BOX AND COVER. VALVE BOXES ARE (3) PIECE TYLER PIPE CO. 6860-G SERIES WITH #6 OR #8 BASE OR AMERICAN FLOW CONTROL "TRENCH ADAPTER".



GATE VALVE ADAPTER
 GATE VALVE
GATE VALVE ADAPTER DETAIL
 NO SCALE

GENERAL NOTES

1. DETAILS SHALL NOT BE SCALED
2. THE LOCATION OF THE EXISTING UTILITIES AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITIES WITHIN THE PROJECT AREA THAT ARE NOT SHOWN. CONTRACTOR SHALL VERIFY THE ACTUAL LOCATION OF THE UTILITIES IN THE FIELD.



TYPICAL WATER SERVICE CONNECTION

NO SCALE

TABLE 1
 THRUST DEVELOPED PER 100 PSI PRESSURE (LBS. FORCE)

PIPE SIZE	FITTING 90° ELBOW	FITTING 45° ELBOW	VALVES, TEES DEAD ENDS
1-1/2	300	200	200
2	500	300	400
3	1000	600	800
4	1800	1100	1300
6	4000	2300	2800
8	7200	4100	5100
10	11200	6300	7900
12	16000	9100	11300

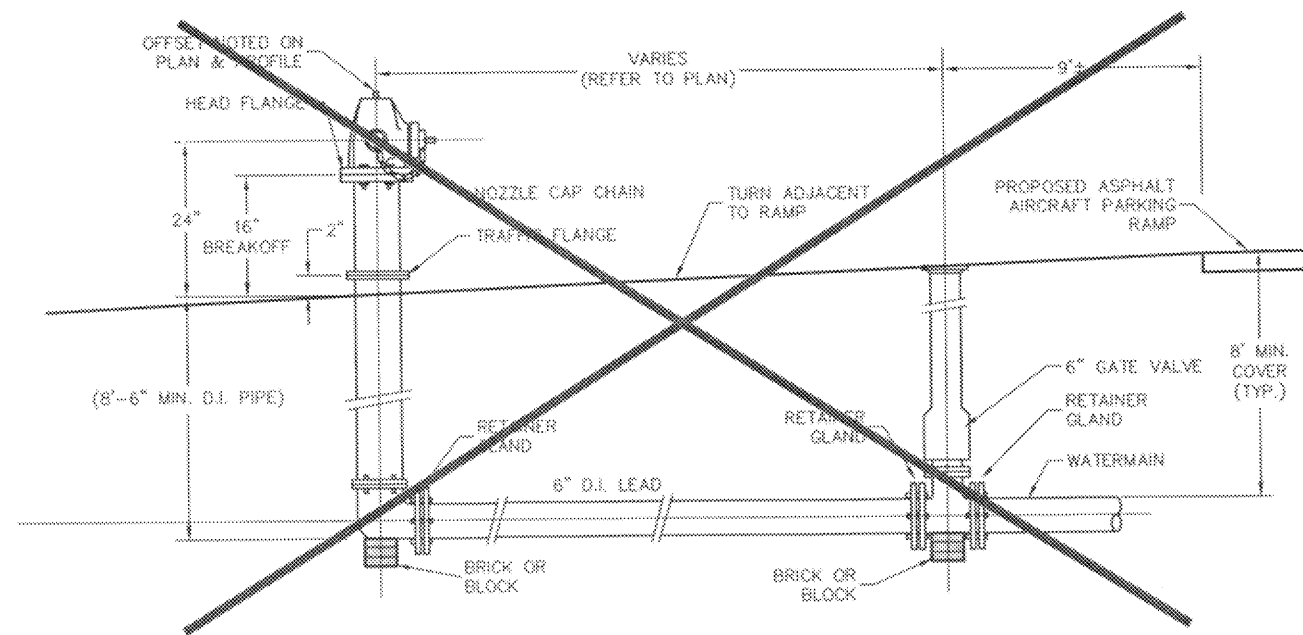
TABLE 2
 LOAD BEARING ESTIMATED

SOIL TYPE	LBS./SQ. FT.
MUCK, PEAT, ETC.	0
SOFT CLAY	500
SAND	1000
SAND AND GRAVEL	1500
SAND AND GRAVEL WITH CLAY	2000
SAND AND GRAVEL CEMENTED WITH CLAY	4000
HARD PAN	5000

EXAMPLE:
 REQUIRED, THRUST BLOCK 8" 90° ELBOW.
 MAXIMUM TEST PRESSURE= 200 PSI
 SOIL TYPE: SAND

-CALCULATE THRUST FROM TABLE 1
 THRUST 8" 90° ELBOW= 7,200 LBS. PER 100 PSI OPERATING PRESSURE.
 TOTAL THRUST= 2x7,200= 14,400 LBS.

-CALCULATE THRUST BLOCK SIZE FROM TABLE 2.
 SAFE BEARING LOAD FOR SAND= 1000 LBS./SQ. FT.
 TOTAL THRUST SUPPORT AREA= 14,400 / 1,000= 14.4 SQ. FT.



TYPICAL HYDRANT INSTALLATION

NO SCALE
 VALVE OPENING SIZE 5"
 NOZZLES (2) 2 1/2", (1) 4"
 BARREL STANDARD, OPEN LEFT
 WATER MAIN CONNECTION 6"
 OPERATING NUT--PENTAGON

HYDRANT NOT INSTALLED ON EAST SIDE OF RAMP

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EARTHWORK ESTIMATE SUMMARY					
	PAY ITEM NO.	FOOTNOTE	AIRSIDE (C.Y.)	LANDSIDE (C.Y.)	TOTALS (C.Y.)
A. COMMON EXCAVATION TO SUBGRADE	P15203A & P15203L	1	20,900	3,800	24,700
B. ESTIMATED COMMON EXCAVATION BELOW SUBGRADE	P15203	2	3,900	0	3,900
C. POSSIBLE ADDITIONAL COMMON EXCAVATION BELOW SUBGRADE	P15203	3	12,700	1,800	14,500
D. TOTAL COMMON EXCAVATION SUBTOTAL (A+B+C)			37,500	5,600	43,100
E. SALVAGABLE SUBBASE COURSE	X15463		7,200	800	8,100
F. WASTE SUBTOTAL (D-E)			30,200	4,800	35,000
G. EXCESS TOPSOIL		4	4,800	100	4,900
H. EXISTING TOPSOIL STOCKPILE			700		700
I. TOTAL WASTE (F+G+H)	X15207		35,700	4,900	40,600
J. FILL (B+C)		5	16,600	1,800	18,400
K. EXCAVATIONS FROM STORM PIPE AND UNDERDRAIN INSTALLATIONS			700	100	800
L. EXISTING CLAY STOCKPILE			1,300	700	2,000
M. BORROW EXCAVATION (I,J,K-L)	P15205		19,800	1,800	21,200

UTILITY CONTACTS:

CITY OF SUPERIOR DEPARTMENT OF PUBLIC WORKS
 PAUL KING
 (715) 394-0691

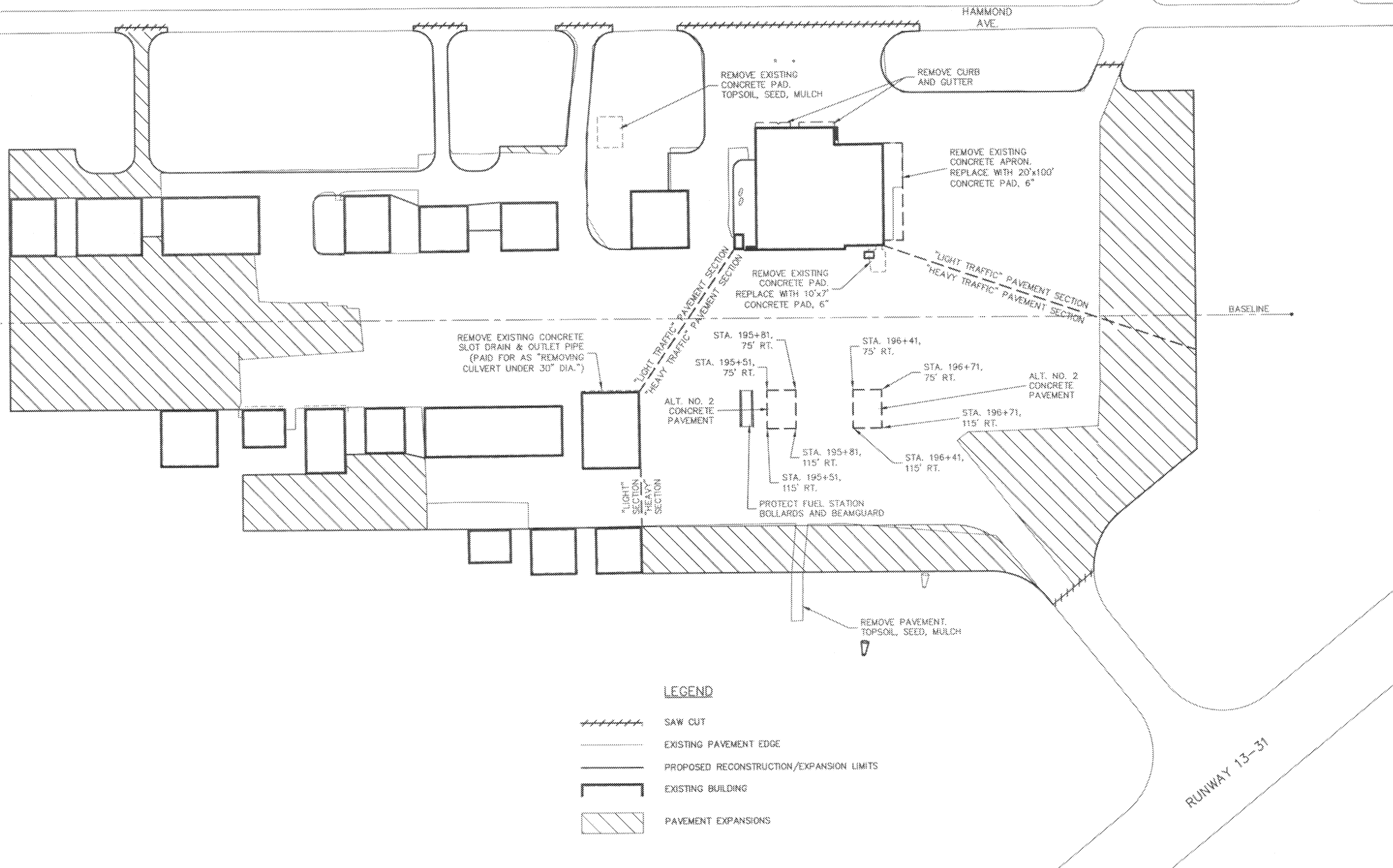
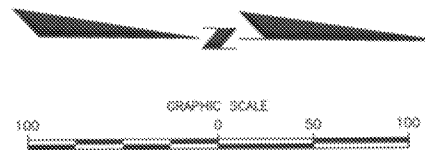
SUPERIOR WATER, LIGHT & POWER
 SCOTT URBAN
 (715) 395-6226

GENTURYTEL
 GARY ABRAHAMSON
 (715) 392-0025

CHEQUAMEGON COMMUNICATIONS
 COLLIN LABEREE
 (715) 798-3303

FOOTNOTES:

1. THESE QUANTITIES DO NOT INCLUDE THE REMOVAL OF THE EXISTING 3 INCHES OF ASPHALTIC PAVEMENT AND APPROXIMATELY ONE INCH OF UNDERLYING BASE COURSE PAID FOR UNDER THE PAVEMENT REMOVAL ITEM(S). QUANTITIES SHOWN FOR ITEMS P15203A & P15203L IN TABLE ABOVE ARE APPROXIMATE. ACTUAL PAYMENT FOR THESE ITEMS IS ON A LUMP SUM BASIS. CONTRACTOR IS ENCOURAGED TO PERFORM HIS OWN TAKE-OFF OF CUBIC YARDS TO BE EXCAVATED.
2. ESTIMATED E.B.S. OF UNSUITABLE S.G. MATERIAL.
3. POTENTIAL FOR ADDITIONAL SIGNIFICANT AMOUNTS OF UNSUITABLE MATERIALS BELOW SUBGRADE.
4. ASSUMED MAXIMUM EXISTING TOPSOIL DEPTH OF 12 INCHES.
5. FILL REQUIRED TO BRING CLAY UP TO PROPOSED SUBGRADE, ASSUMING SIGNIFICANT UNSUITABLE MATERIALS ARE FOUND/EXCAVATED BELOW SUBGRADE.



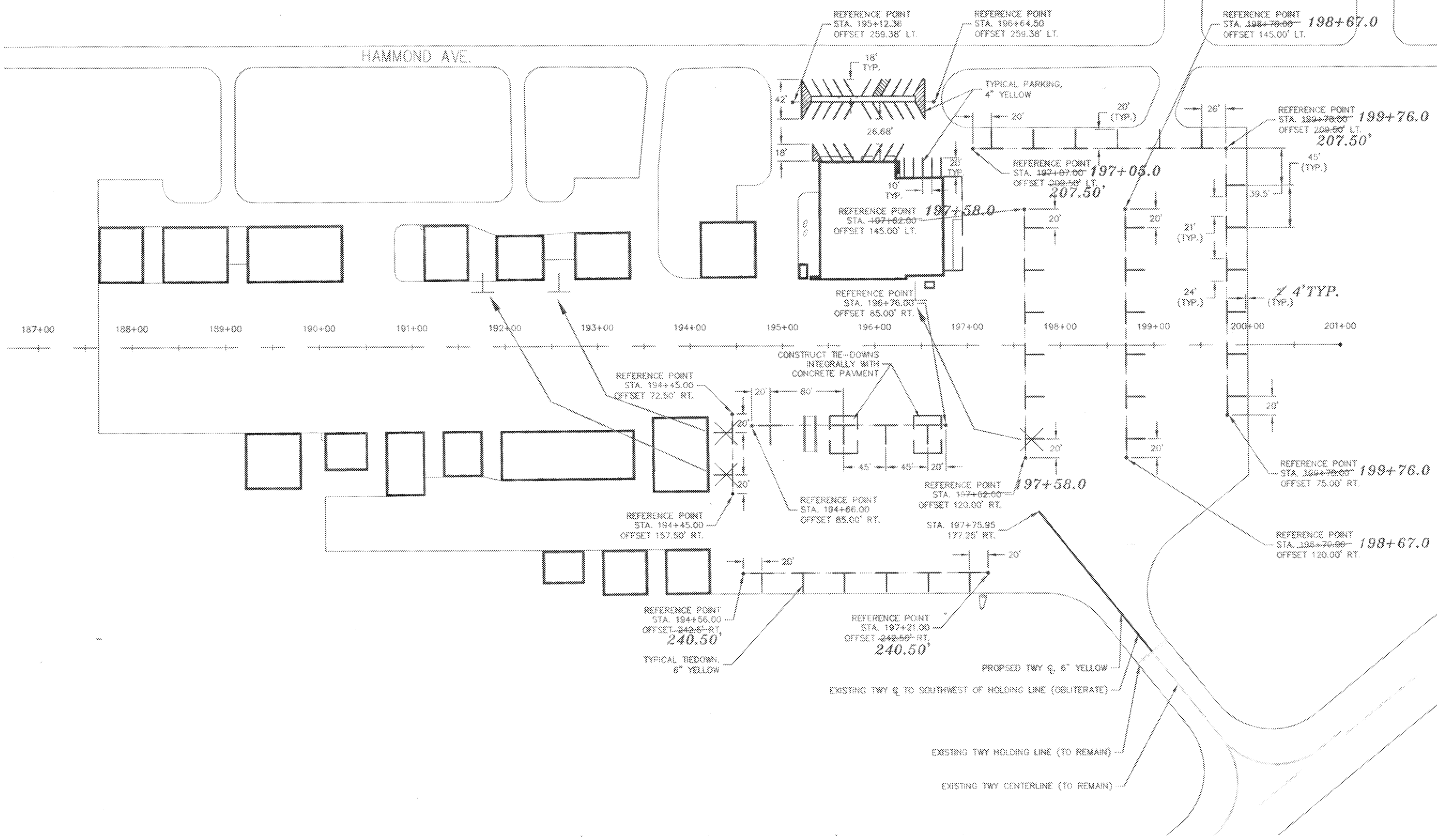
LEGEND

- ////// SAW CUT
- EXISTING PAVEMENT EDGE
- ===== PROPOSED RECONSTRUCTION/EXPANSION LIMITS
- ▭ EXISTING BUILDING
- ▨ PAVEMENT EXPANSIONS

	PROJECT MANAGER BRAD VOLKER	COOPER ENGINEERING	310 WEST SOUTH STREET, P.O. BOX 230 RICE LAKE, WISCONSIN 54869-0230 TELEPHONE (715) 234-7008 FAX (715) 234-1025	RICHARD I. BONG MEMORIAL AIRPORT SUPERIOR, WISCONSIN	SHEET DESCRIPTION PAVEMENT TYPE LIMITS 3-55-0083-07	DATE 05-'03 SCALE AS NOTED	DRAWN BY J.T.D. PROJECT NO. 00552090 SHEET NO. 15
NO. BY DATE REVISIONS	CHECKED BY W.R. APPROVED BY B.R.M.						



HAMMOND AVE.



NO.	BY	DATE	REVISIONS
PROJECT MANAGER: BRAD VOLKER			
CHECKED BY: W.R.			
APPROVED BY: R.R.M.			

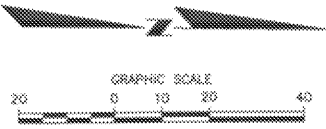
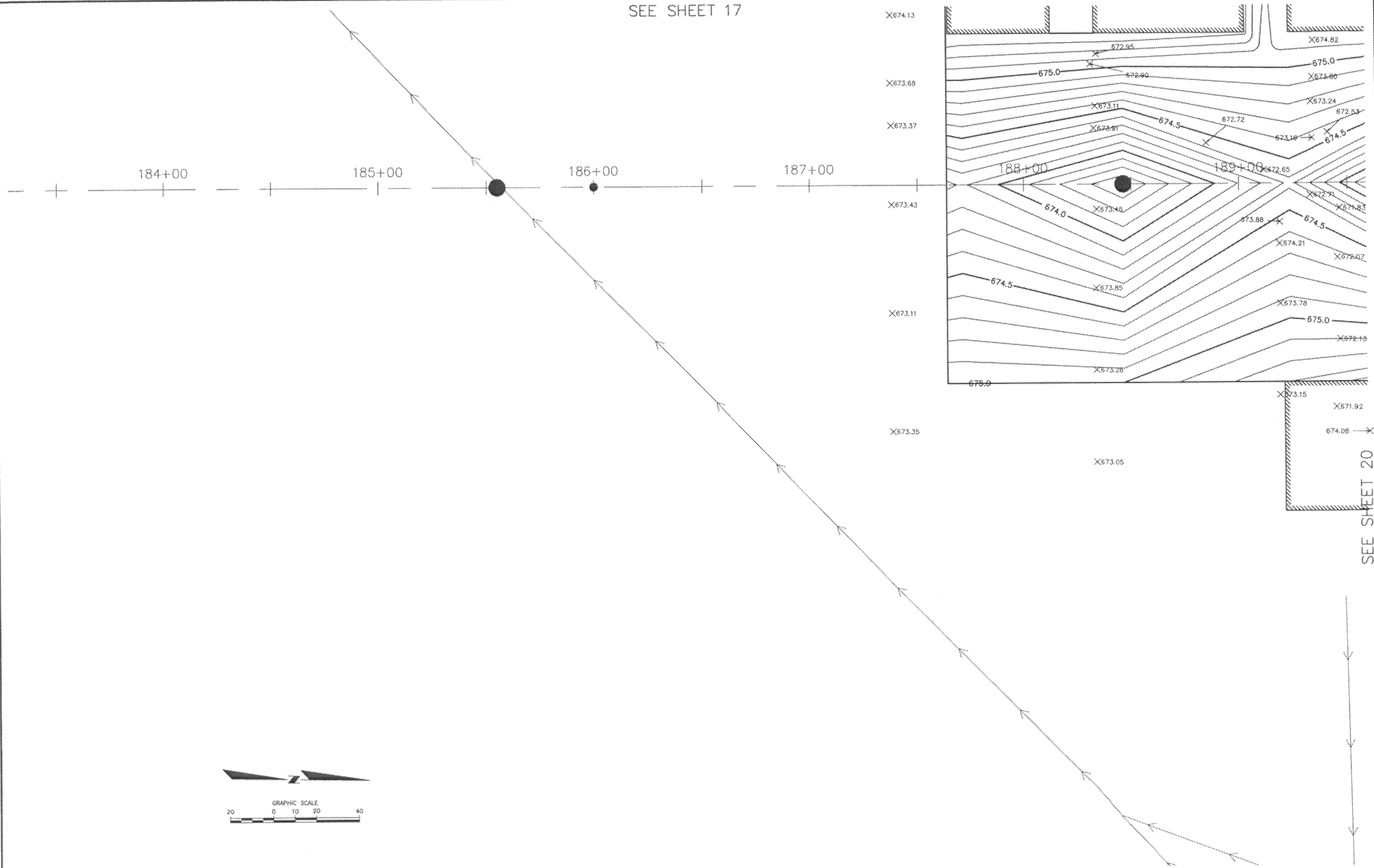
COOPER ENGINEERING
 310 WEST SOUTH STREET, P.O. BOX 230
 RICE LAKE, WISCONSIN 54881-0230
 TELEPHONE: (715) 234-7008
 FAX: (715) 234-1025

RICHARD I. BONG MEMORIAL AIRPORT
 SUPERIOR, WISCONSIN

SHEET DESCRIPTION
 PAVEMENT MARKINGS
 3-55-0083-07

DATE: 05-03	DRAWN BY: J.T.D.
SCALE: AS NOTED	PROJECT NO: 00552080
	SHEET NO: 16

SEE SHEET 17



SEE SHEET 20

NO.	BY	DATE	REVISIONS	PROJECT MANAGER		310 WEST SOUTH STREET, P.O. BOX 230 RICE LAKE, WISCONSIN 54088-0230 TELEPHONE (715) 234-7008 FAX (715) 234-1021	RICHARD I. BONG MEMORIAL AIRPORT SUPERIOR, WISCONSIN	SHEET DESCRIPTION	DATE	DRAWN BY	
				CHECKED BY				3-55-0083-07	05-'03	J.T.D.	
				APPROVED BY			FINISHED PAV'T CONTOURS/EX. ELEV'S		SCALE	PROJECT NO.	SHEET NO.
				B.R.M.			AS NOTED		AS NOTED	00552090	18

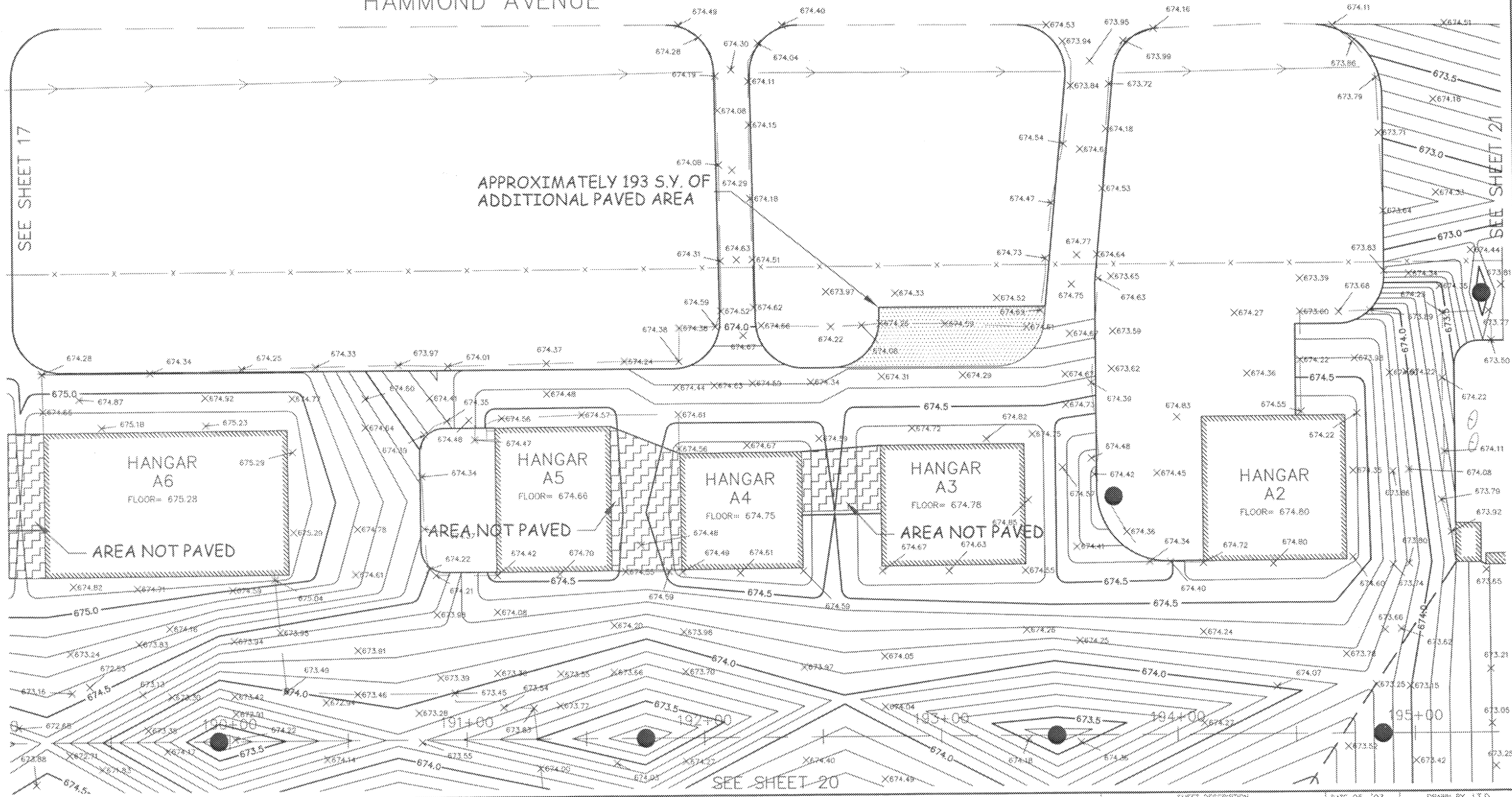


HAMMOND AVENUE

APPROXIMATELY 193 S.Y. OF
ADDITIONAL PAVED AREA

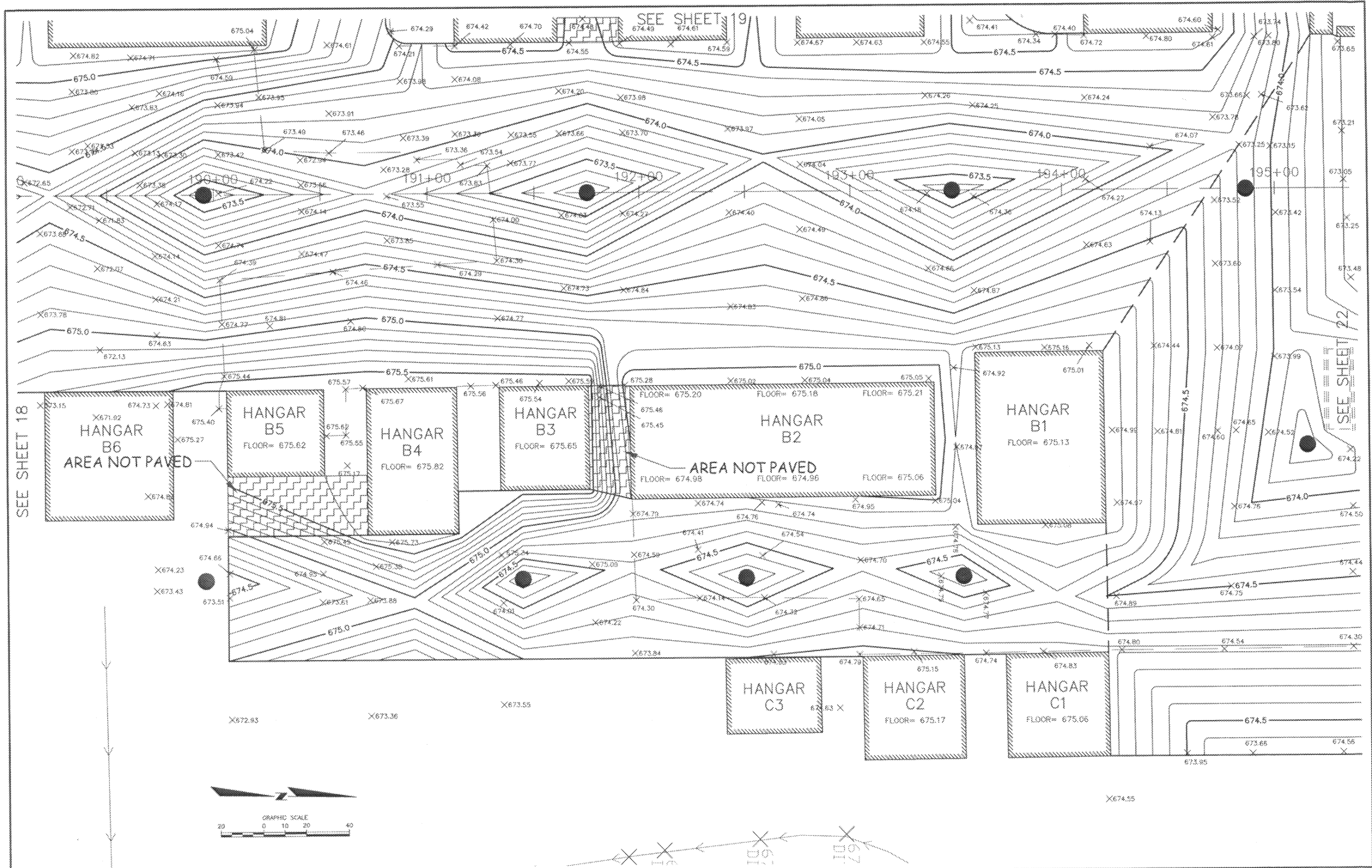
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SEE SHEET 20

PROJECT MANAGER BRAD VOLKER		 310 WEST SOUTH STREET, P.O. BOX 230 RICE LAKE, WISCONSIN 54989-0230 TELEPHONE (715) 234-7000 FAX (715) 234-1025	RICHARD I. BONG MEMORIAL AIRPORT SUPERIOR, WISCONSIN		SHEET DESCRIPTION FINISHED PAV'T CONTOURS/EX. ELEV'S 3-55-0083-07		DATE 05-103	DRAWN BY J.T.O.	
CHECKED BY W.R.			SCALE AS NOTED	PROJECT NO. 00552090		SHEET NO. 19			



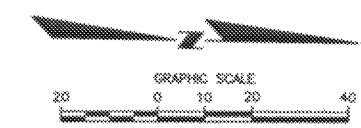
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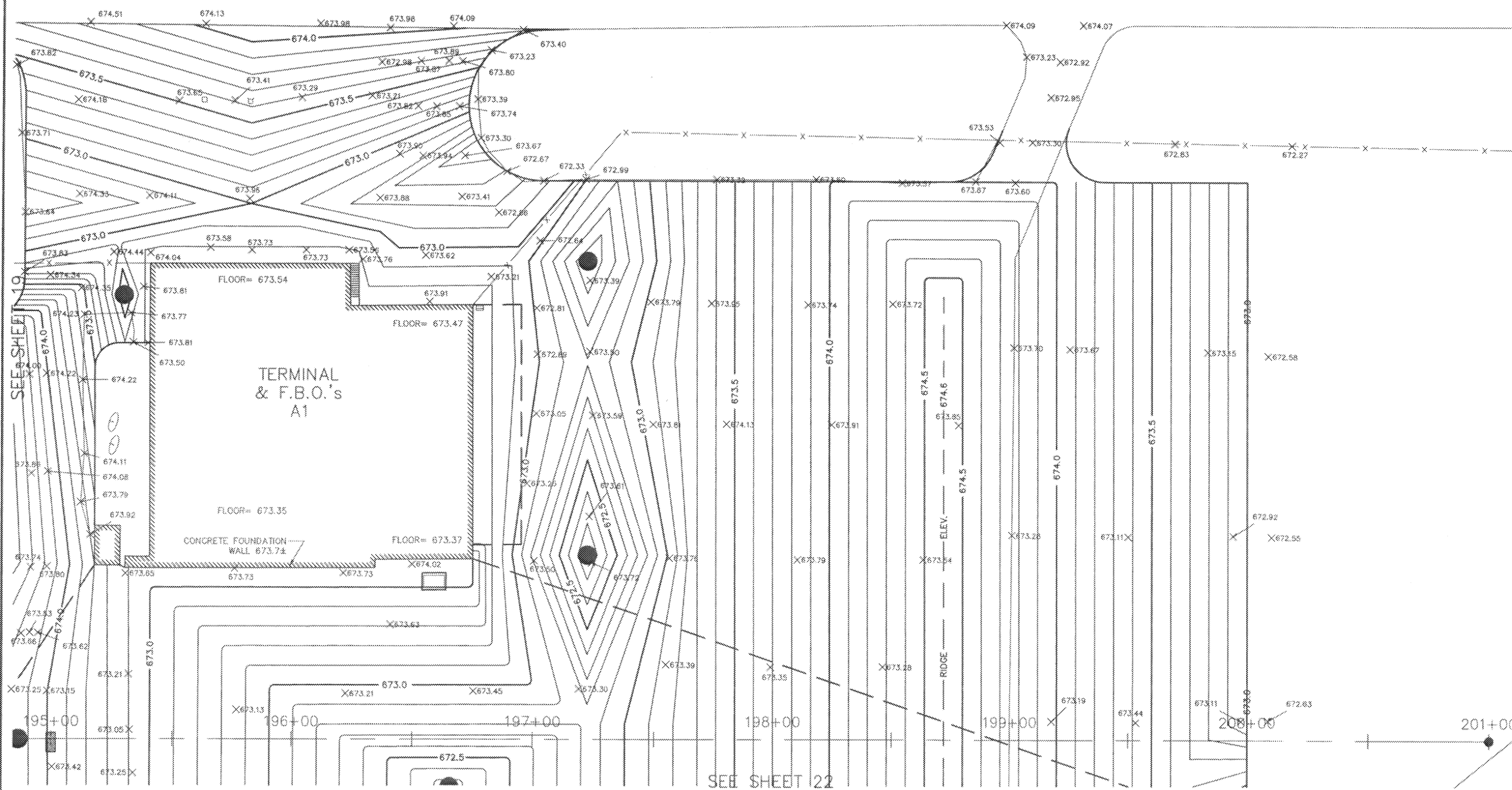
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PROJECT MANAGER: BRAD VOLKER CHECKED BY: W.P. APPROVED BY: B.R.W.		310 WEST GLENN STREET, P.O. BOX 230 RICE LAKE, WISCONSIN 54882-0230 TELEPHONE (715) 234-7028 FAX (715) 234-1025		RICHARD I. BONG MEMORIAL AIRPORT SUPERIOR, WISCONSIN		SHEET DESCRIPTION: FINISHED PAV'T CONTOURS/EX. ELEV'S 3-55-0083-07		DATE: 05-03 SCALE: AS NOTED		DRAWN BY: J.T.D. PROJECT NO.: 00552096 SHEET NO.: 20	
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HAMMOND AVENUE



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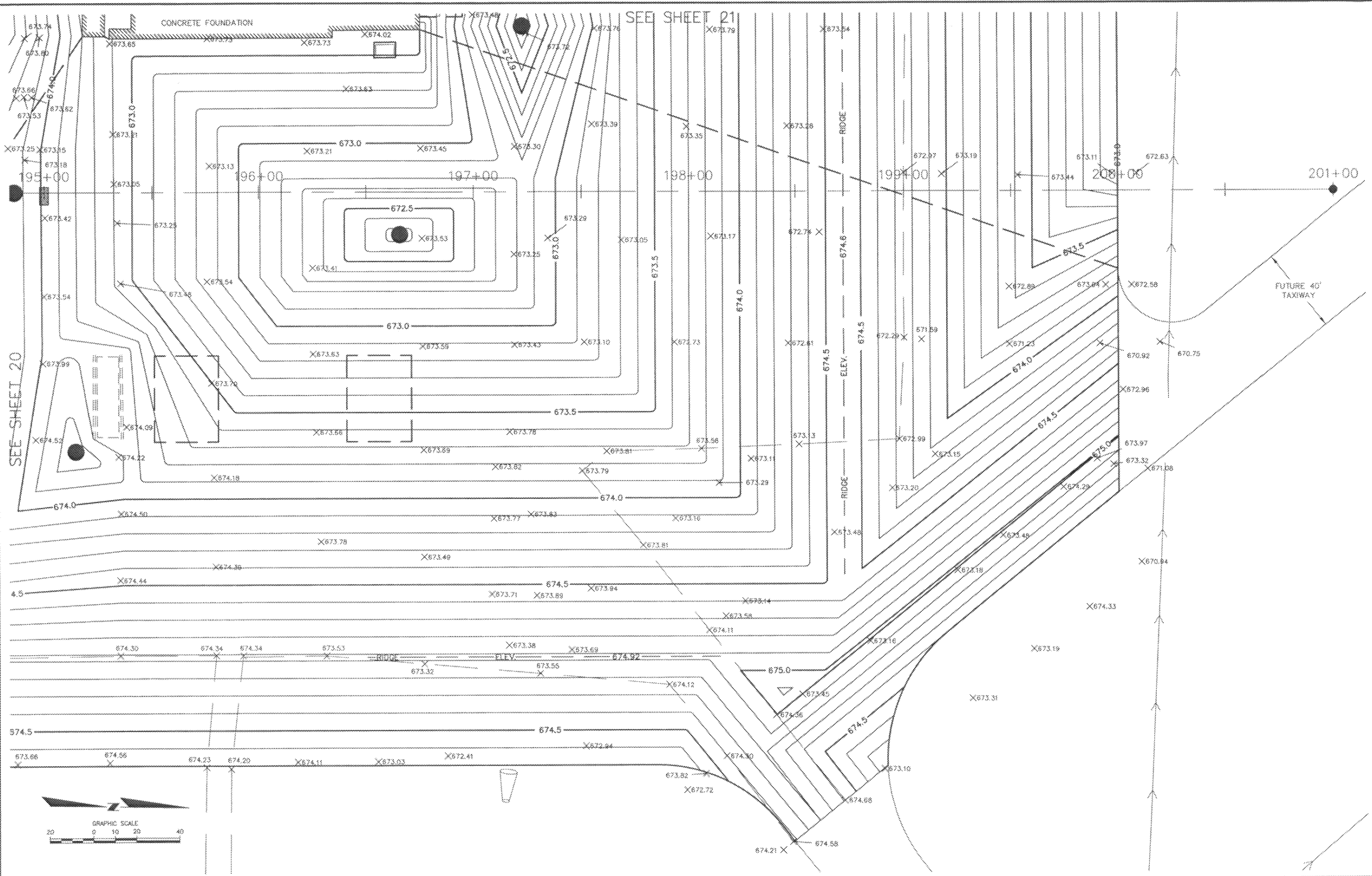
SEE SHEET 10

SEE SHEET 22

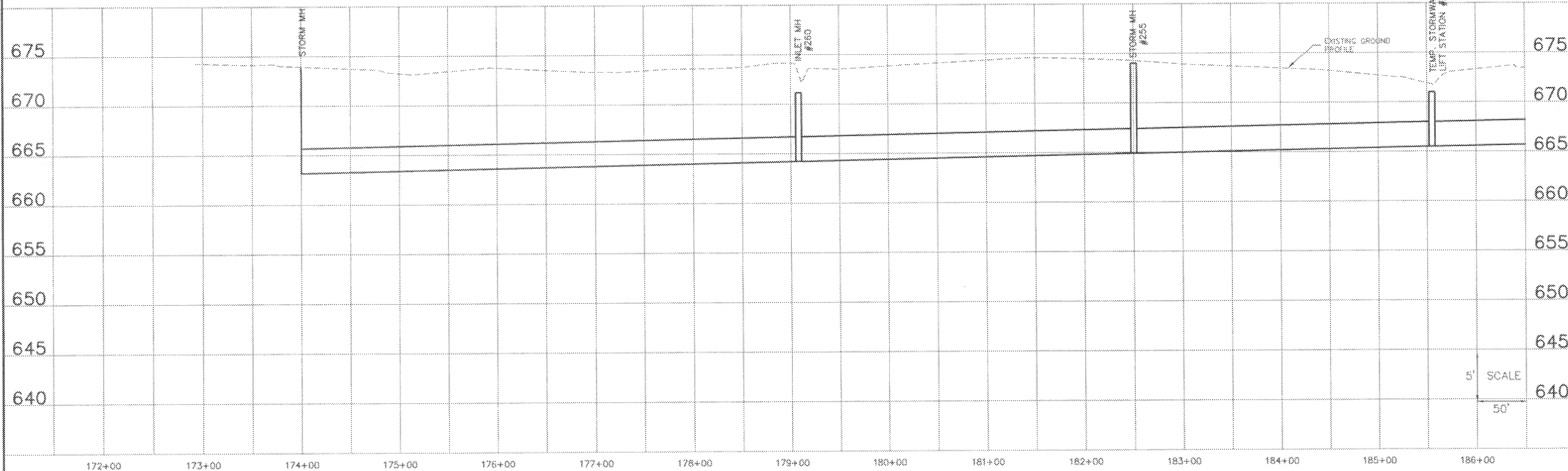
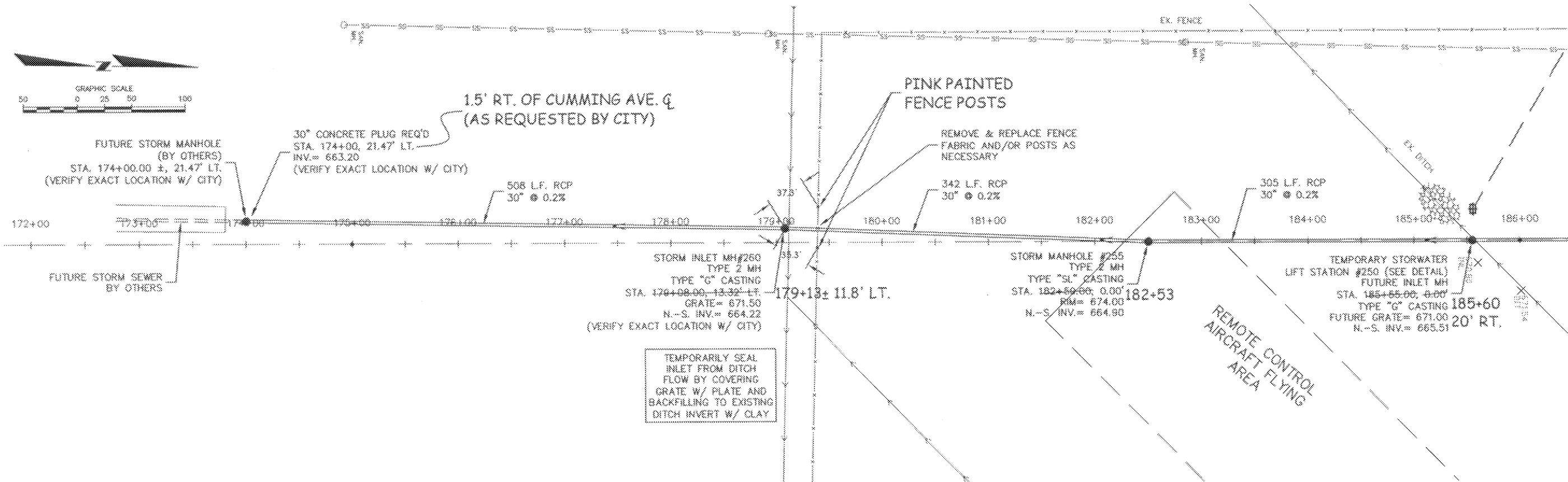
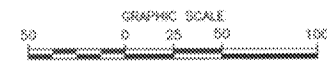
PROJECT MANAGER BRAD VOLKER		COOPER ENGINEERING <small>310 WEST SOUTH STREET, P.O. BOX 230 RICE LAKE, WISCONSIN 54888-0230 TELEPHONE (715) 234-7008 FAX (715) 234-1025</small>	RICHARD I. BONG MEMORIAL AIRPORT SUPERIOR, WISCONSIN		SHEET DESCRIPTION FINISHED PAV'T CONTOURS/EX. ELEV'S 3-55-0083-07		DATE 05-'03	DRAWN BY J.T.D.	
CHECKED BY: W.R.							SCALE	PROJECT NO. SHEET NO.	
APPROVED BY: B.P.M.							AS NOTED	G0552090 21	

SEE SHEET 21

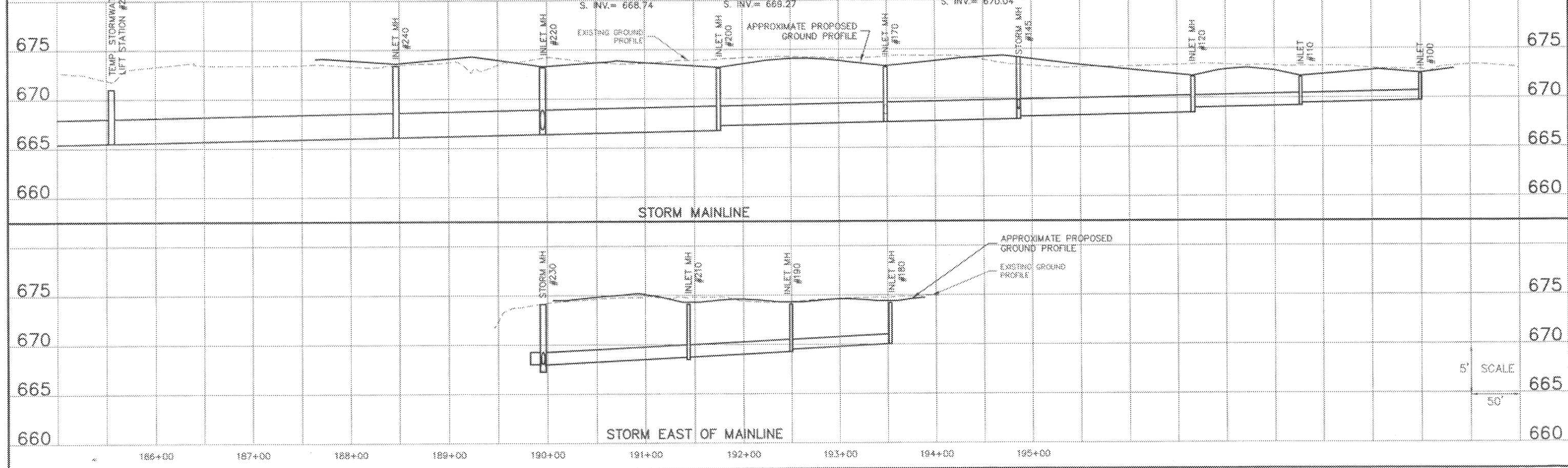
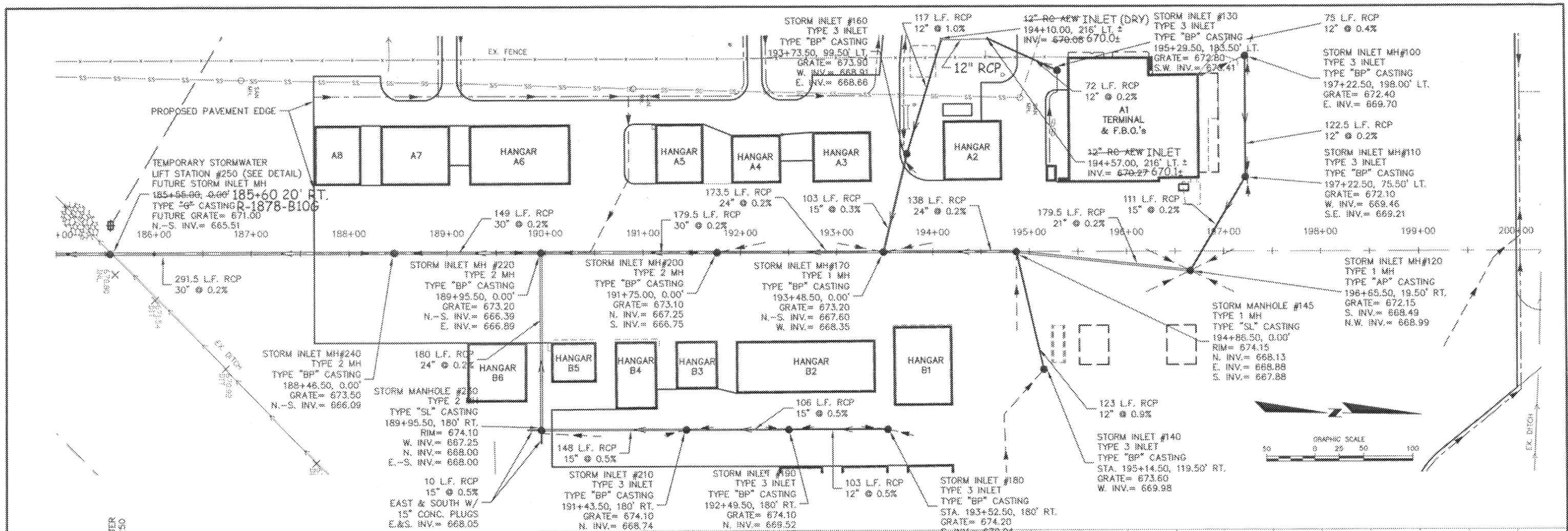
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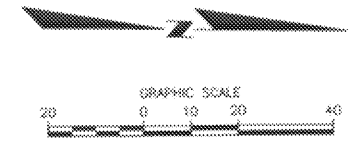


PROJECT MANAGER BRAD VOLKER		 310 WEST SOUTH STREET, P.O. BOX 230 RICE LAKE, WISCONSIN 54868-0230 TELEPHONE (715) 234-7008 FAX (715) 234-1625	RICHARD I. BONG MEMORIAL AIRPORT SUPERIOR, WISCONSIN		SHEET DESCRIPTION FINISHED PAVT'MT CONTOURS/EX. ELEV'S 3-55-0083-07		DATE 05-'03	DRAWN BY J.T.D.	
CHECKED BY: W.R.			SCALE	PROJECT NO.		SHEET NO.		AS NOTED	
APPROVED BY: B.R.M.			00552090		22				

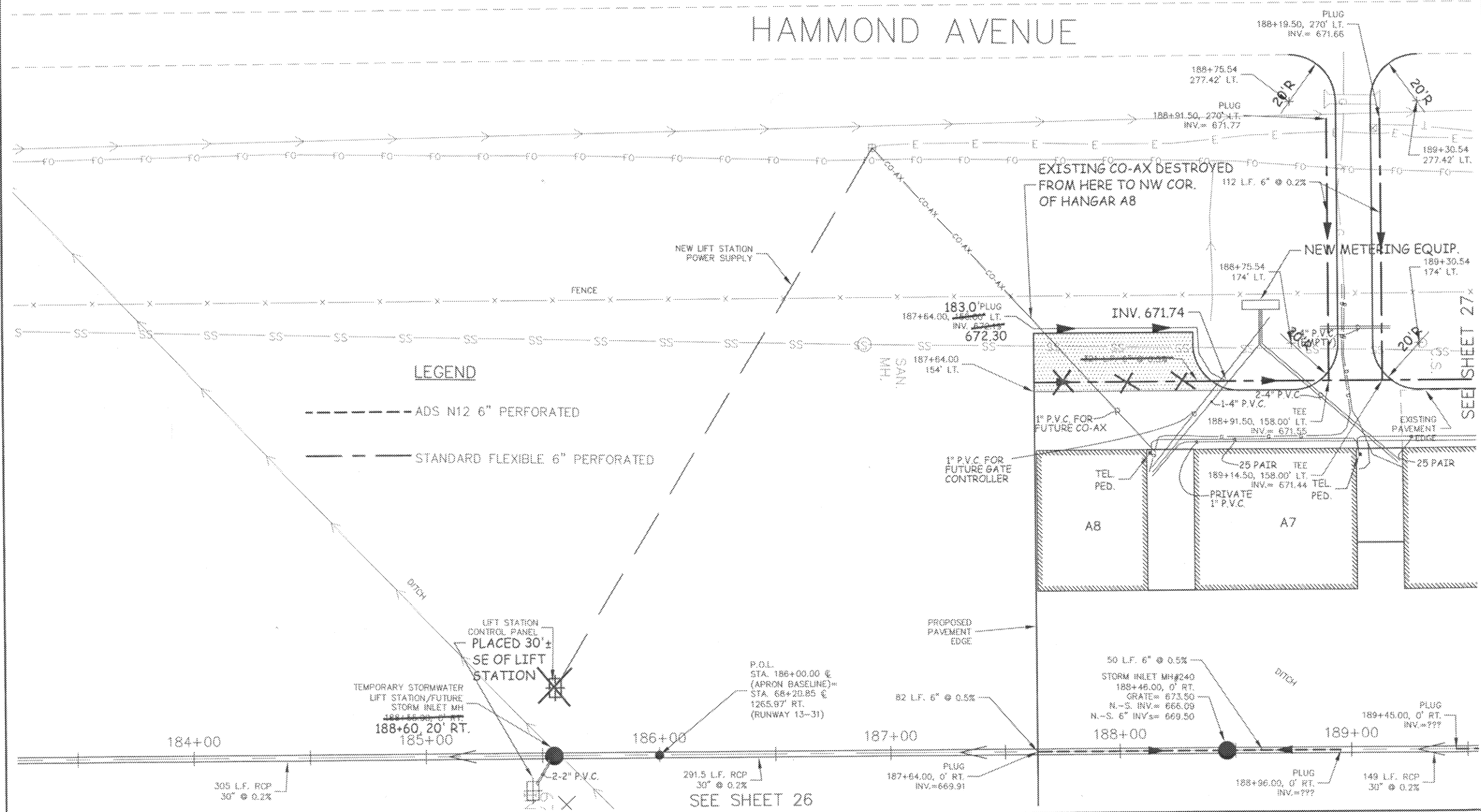


PROJECT MANAGER BRAD VOLKER		COOPER ENGINEERING <small>310 WEST SOUTH STREET, P.O. BOX 230 RICE LAKE, WISCONSIN 54868-0230 TELEPHONE (715) 234-7000 FAX (715) 234-1025</small>	RICHARD I. BONG MEMORIAL AIRPORT SUPERIOR, WISCONSIN		SHEET DESCRIPTION PLAN & PROFILE 3-55-0083-07		DATE 05-10-13	DRAWN BY J.T.D.
NO.	BY				DATE	REVISIONS	SCALE AS NOTED	PROJECT NO. 00552090





HAMMOND AVENUE



- LEGEND**
- ADS N12 6" PERFORATED
 - STANDARD FLEXIBLE 6" PERFORATED

LIFT STATION CONTROL PANEL
 PLACED 30'±
 SE OF LIFT STATION

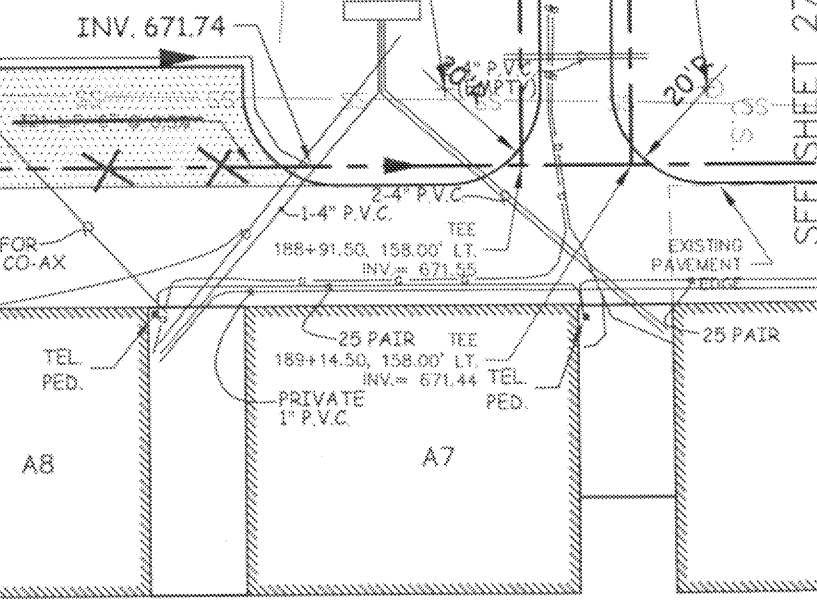
TEMPORARY STORMWATER
 LIFT STATION/FUTURE
 STORM INLET MH
 188+60, 20' RT.
 185+00

P.O.L.
 STA. 186+00.00 @
 (APRON BASELINE)=
 STA. 68+20.85 @
 1265.97' RT.
 (RUNWAY 13-31)

SEE SHEET 26

EXISTING CO-AX DESTROYED
 FROM HERE TO NW COR.
 OF HANGAR A8

NEW METERING EQUIP.
 188+30.54
 174' LT.



50 L.F. 6" @ 0.5%
 STORM INLET MH#240
 188+46.00, 0' RT.
 GRATE= 673.50
 N.-S. INV.= 666.09
 N.-S. 6" INV.= 669.50

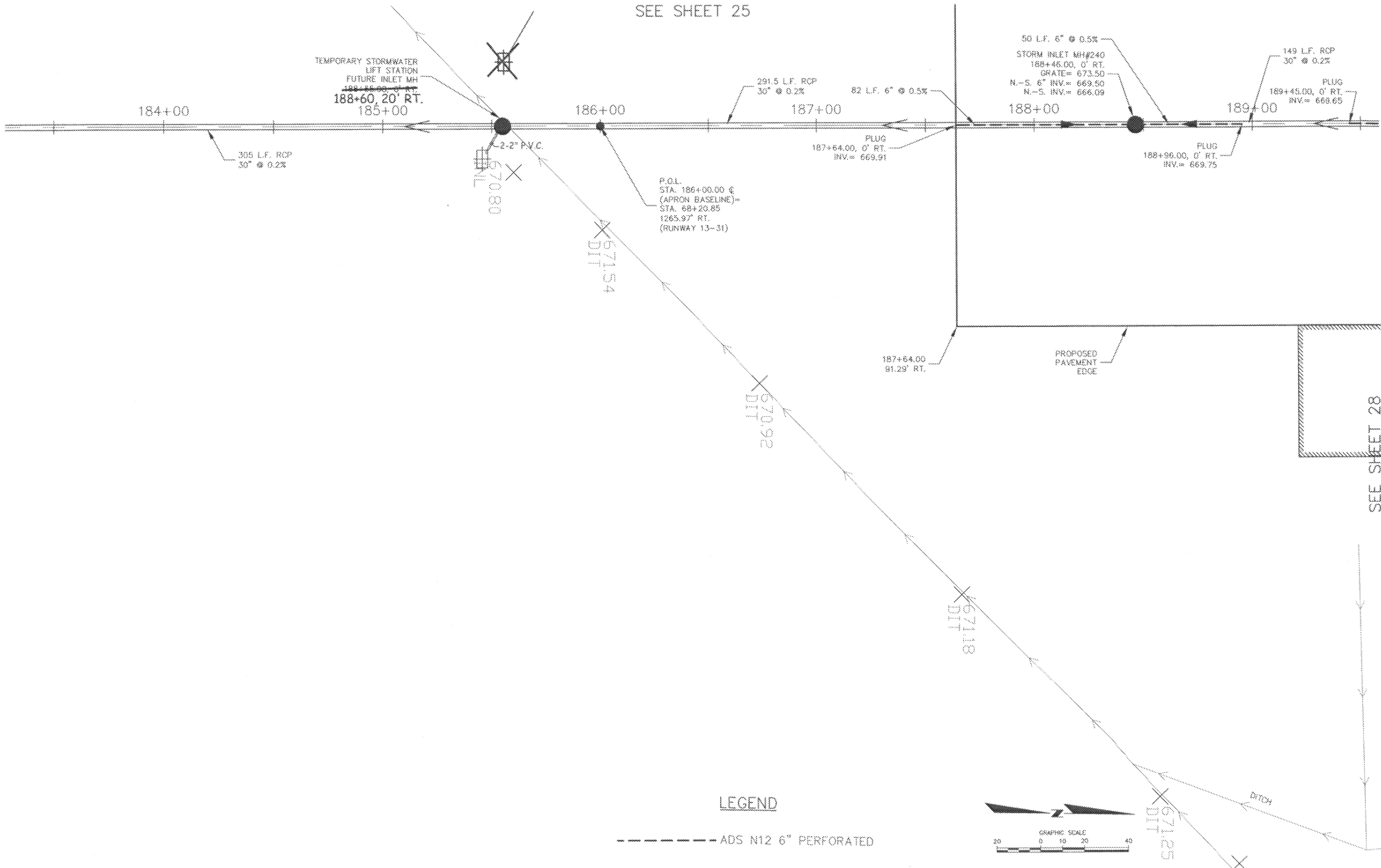
189+45.00, 0' RT.
 INV.= ???

188+96.00, 0' RT.
 INV.= ???

149 L.F. RCP
 30" @ 0.2%

PROJECT MANAGER BRAD VOLKER		<p>310 WEST SOUTH STREET, P.O. BOX 230 RICE LAKE, WISCONSIN 54988-0230 TELEPHONE (715) 234-7008 FAX (715) 234-1925</p>	RICHARD I. BONG MEMORIAL AIRPORT SUPERIOR, WISCONSIN		SHEET DESCRIPTION PLAN SHEETS 3-55-0083-07		DATE 05-03	DRAWN BY J.T.D.		
CHECKED BY: W.R.			SCALE	PROJECT NO. 00552090		SHEET NO. 25				
APPROVED BY: B.R.M.			AS NOTED							

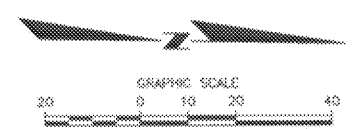
SEE SHEET 25



SEE SHEET 28

LEGEND

----- ADS N12 6" PERFORATED



PROJECT MANAGER	BRAD VOLKER
CHECKED BY	W.B.
APPROVED BY	B.R.M.

COOPER ENGINEERING
 310 WEST GOUGH STREET, P.O. BOX 230
 RICE LAKE, WISCONSIN 54869-0230
 TELEPHONE (715) 234-7008
 FAX (715) 234-1025

RICHARD I. BONG MEMORIAL AIRPORT
 SUPERIOR, WISCONSIN

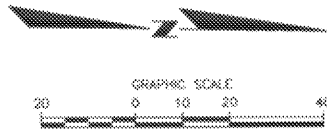
SHEET DESCRIPTION
 PLAN SHEETS
 3-55-0083-07

DATE 5-03
 SCALE AS NOTED

DRAWN BY J.T.D.
 PROJECT NO. 00552080
 SHEET NO. 26

LEGEND

- ADS N12 6" PERFORATED
- STANDARD FLEXIBLE 6" PERFORATED
- STANDARD FLEXIBLE 6" NON-PERFORATED

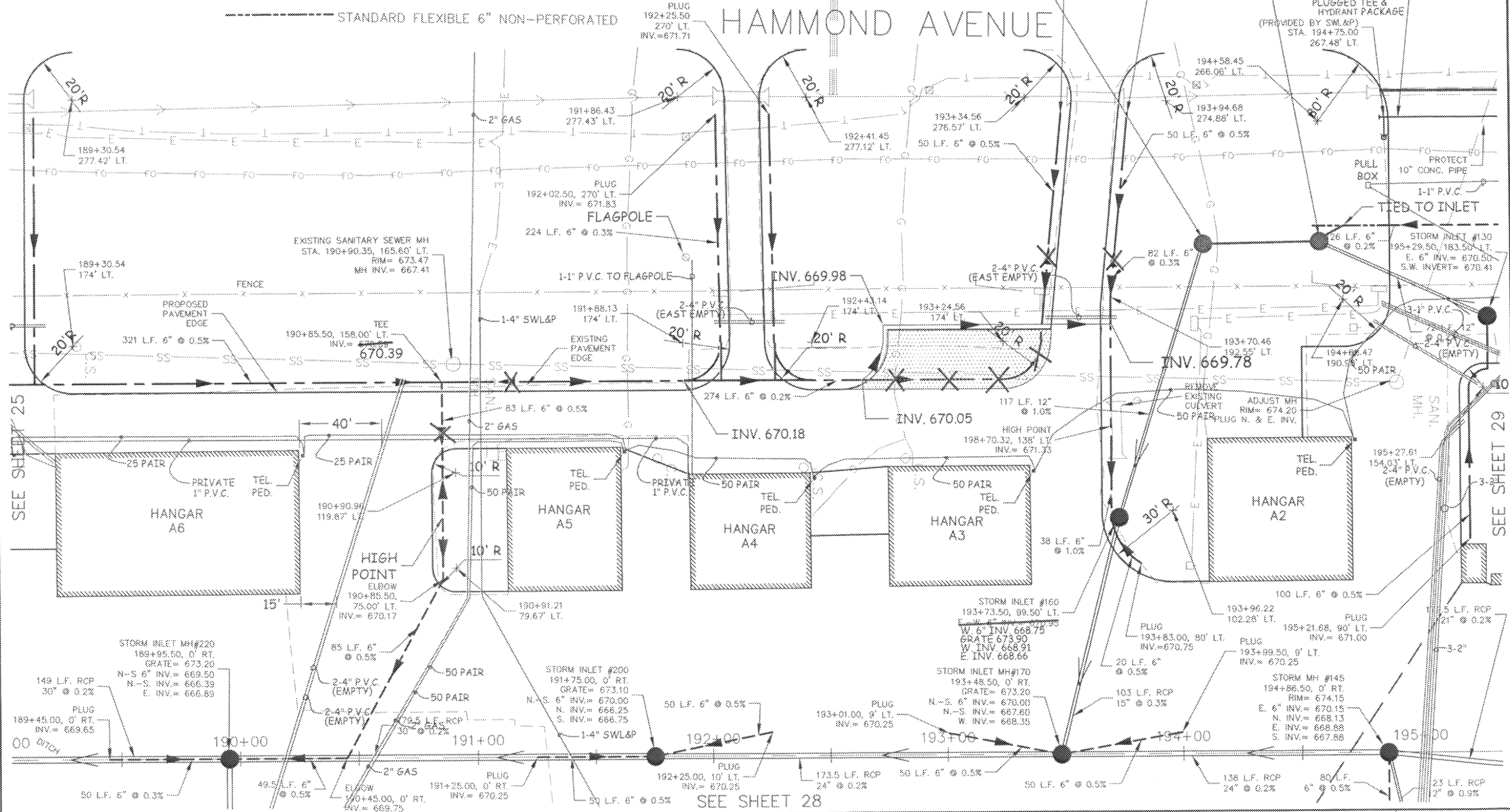


HAMMOND AVENUE

TYPE 3 INLET (DRY)
GRATE: 673.9±
INVERT IN/OUT: 670.00

TYPE 3 INLET
GRATE: 671.6±
INVERT IN/OUT: 670.10

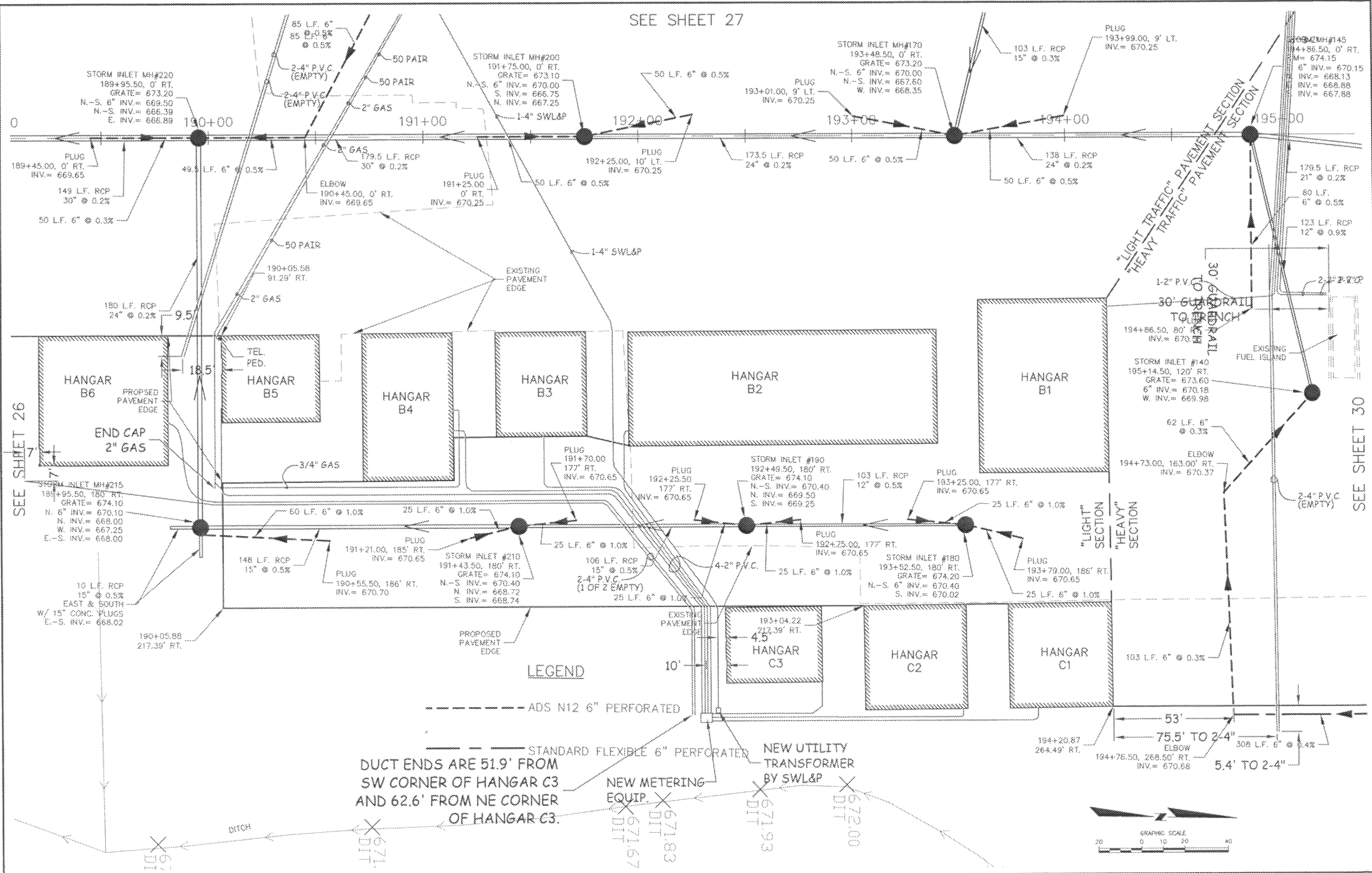
8" 210
L.F. OF
WATERMAIN



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PROJECT MANAGER BRAD VOLKER		310 WEST SOUTH STREET, P.O. BOX 230 RICE LAKE, WISCONSIN 54868-0230 TELEPHONE (715) 234-7000 FAX (715) 234-1024		RICHARD I. BONG MEMORIAL AIRPORT SUPERIOR, WISCONSIN		SHEET DESCRIPTION PLAN SHEETS 3-55-0083-07		DATE 05-'03		DRAWN BY J.T.D.	
CHECKED BY: W.R.		COOPER ENGINEERING						SCALE AS NOTED		PROJECT NO. 00552090	
APPROVED BY: B.R.M.										SHEET NO. 27	

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NO.	BY	DATE	REVISIONS

PROJECT MANAGER
BRAD VOLKER

CHECKED BY
W.R.

APPROVED BY
B.R.M.

COOPER ENGINEERING

310 WEST SIXTH STREET, P.O. BOX 230
RICE LAKE, WISCONSIN 54868-0230
TELEPHONE (715) 234-7000
FAX (715) 234-1005

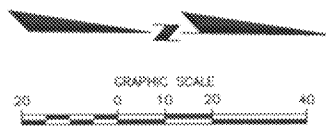
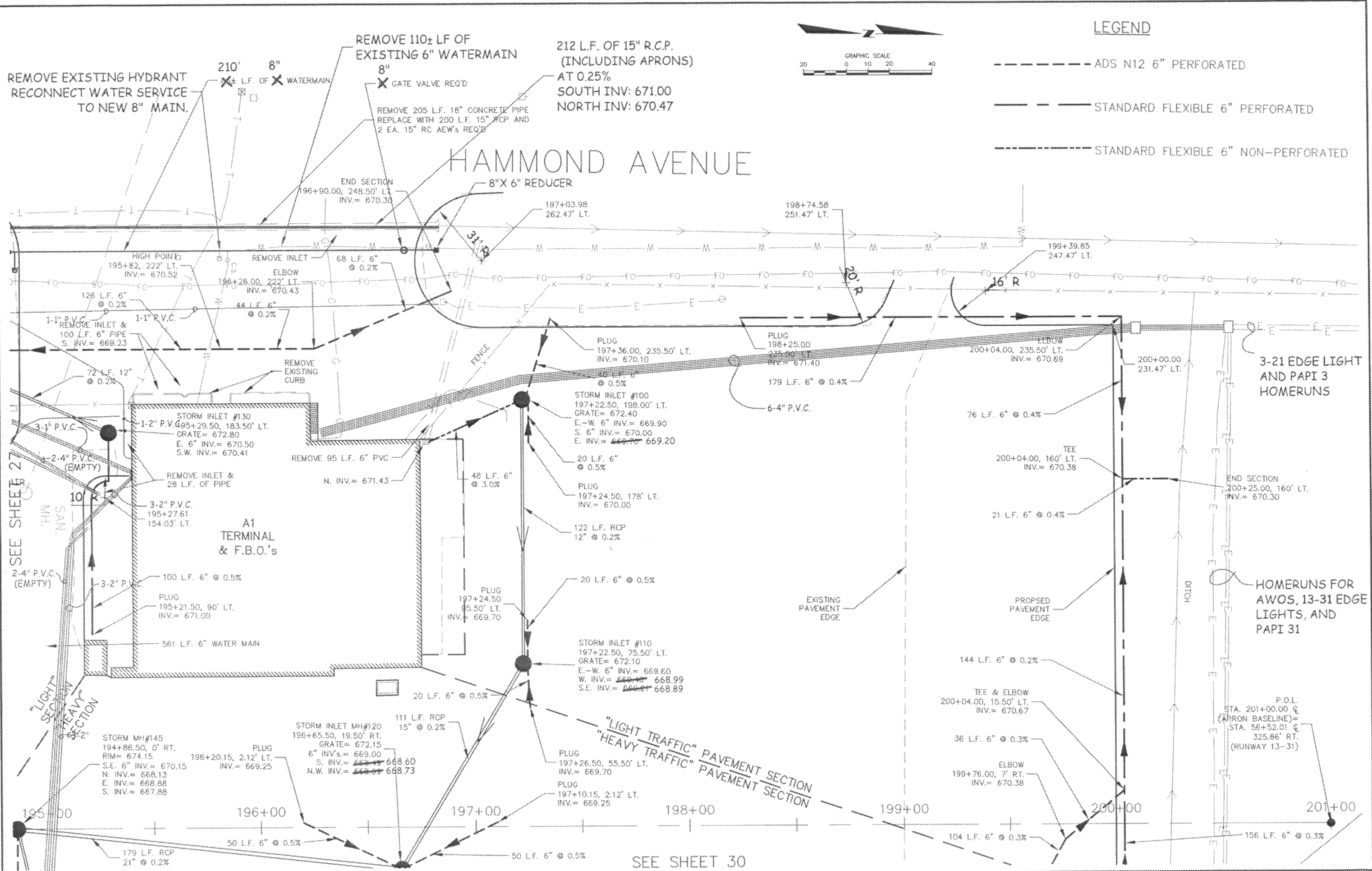
RICHARD I. BONG MEMORIAL AIRPORT
SUPERIOR, WISCONSIN

SHEET DESCRIPTION
PLAN SHEETS
3-55-0083-07

DATE	SCALE	AS NOTED	PROJECT NO.	SHEET NO.
5/02	AS NOTED		00552090	28

DRAWN BY J.T.O.

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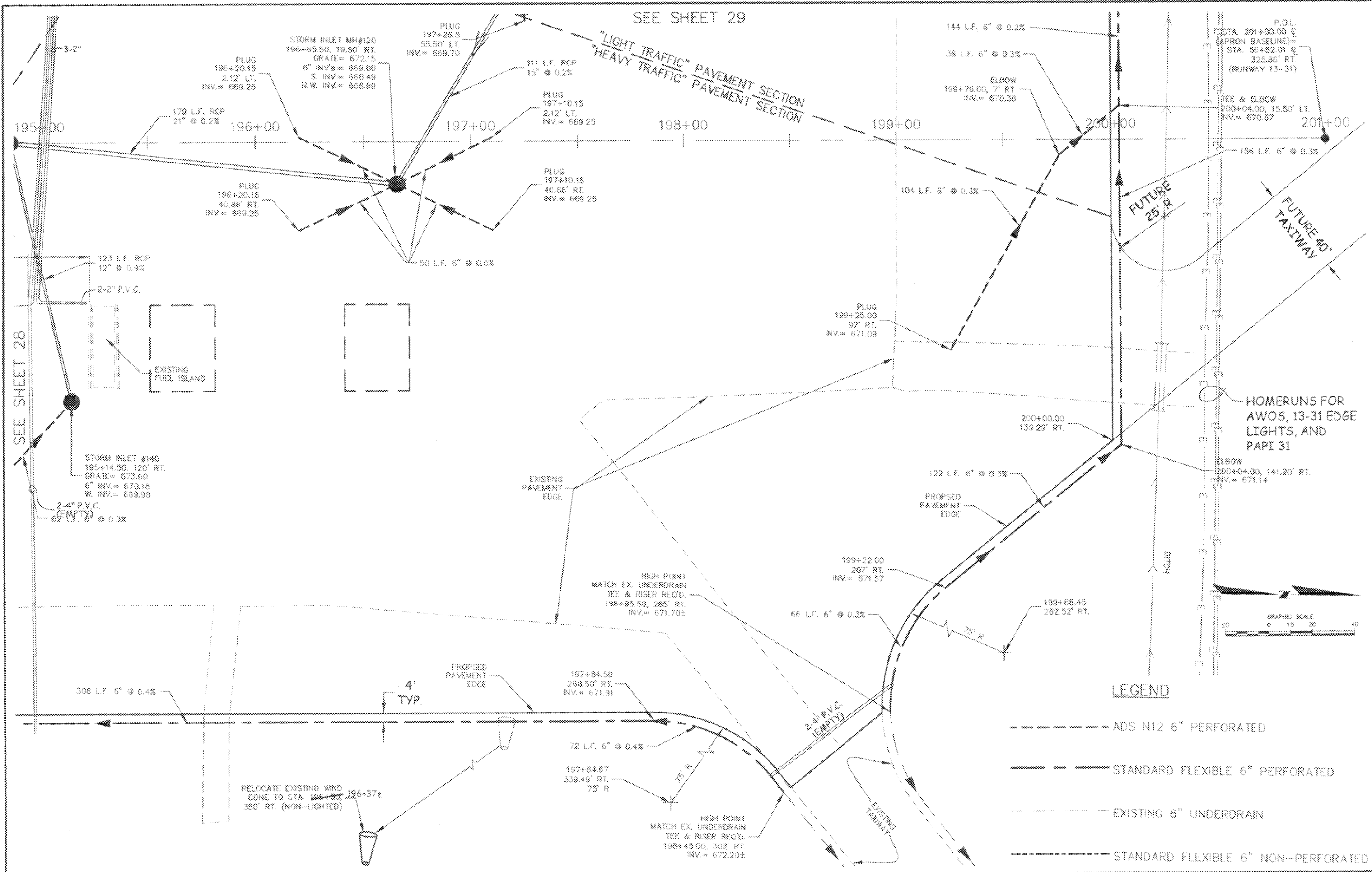


LEGEND

- ADS N12 6" PERFORATED
- STANDARD FLEXIBLE 6" PERFORATED
- STANDARD FLEXIBLE 6" NON-PERFORATED

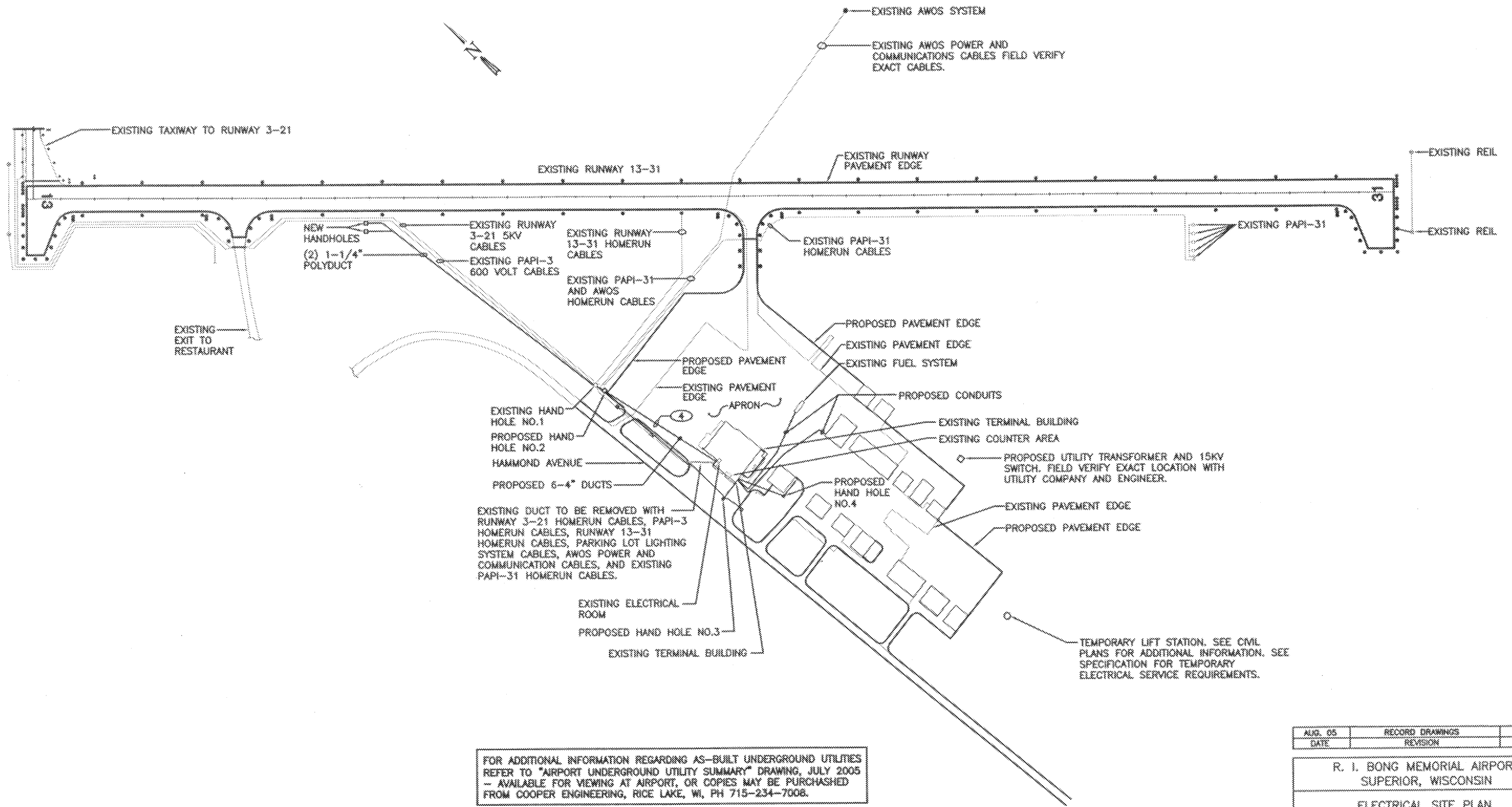
PROJECT MANAGER BRAD VOLKER		310 WEST SOUTH STREET, P.O. BOX 230 RICE LAKE, WISCONSIN 54868-0230 TELEPHONE (715) 234-7008 FAX (715) 234-1025		RICHARD I. BONG MEMORIAL AIRPORT SUPERIOR, WISCONSIN		SHEET DESCRIPTION PLAN SHEETS 3-55-0083-07		DATE 05-'03		DRAWN BY J.T.D.	
CHECKED BY: W.R.		COOPER ENGINEERING						SCALE AS NOTED		PROJECT NO. 00552090	
APPROVED BY: B.R.M.										SHEET NO. 29	

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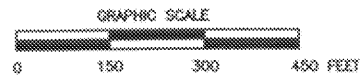


PROJECT MANAGER BRAD VOLKER		310 WEST SOUTH STREET, P.O. BOX 230 RICE LAKE, WISCONSIN 54868-0230 TELEPHONE (715) 234-7008 FAX (715) 234-1020		RICHARD I. BONG MEMORIAL AIRPORT SUPERIOR, WISCONSIN		SHEET DESCRIPTION PLAN SHEETS 3-55-0083-07		DATE 05--03 SCALE AS NOTED		DRAWN BY J.T.D. PROJECT NO. 00552090 SHEET NO. 30	
NO.	BY	DATE	REVISIONS	CHECKED BY: W.R. APPROVED BY: B.R.M.							

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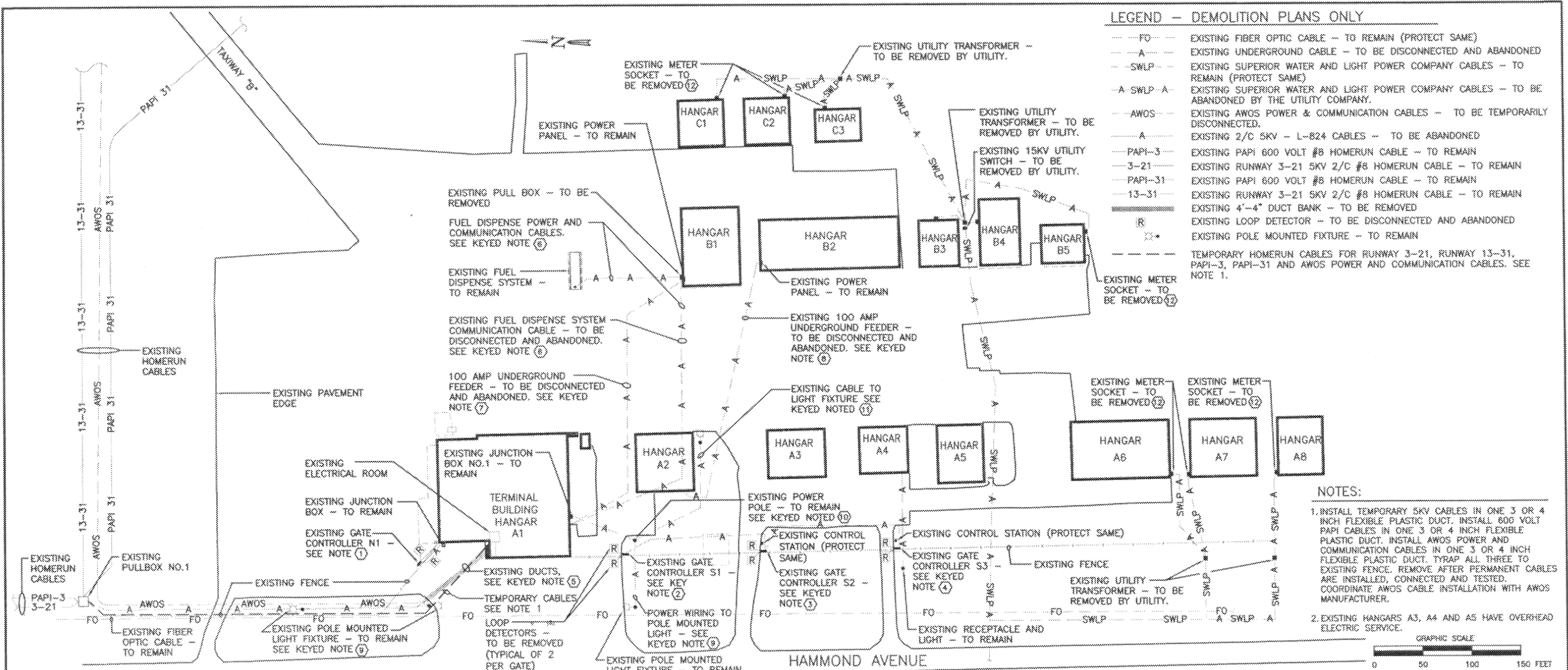


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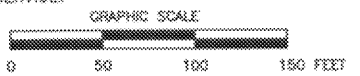
POWTEK ENGINEERING, INC.
WAUKESHA WISCONSIN

AUG. 05	RECORD DRAWINGS	B.F.
DATE	REVISION	BY
R. I. BONG MEMORIAL AIRPORT SUPERIOR, WISCONSIN		
ELECTRICAL SITE PLAN		
A.I.P. 3-55-0083-06		
DESIGN	R.J.B. 5-22-03	FILE NO.
DRAWN	A.D.C. 5-22-03	F.B. L.L.
CHECKED	G.W.S. 5-22-03	SCALE: AS SHOWN
APPROVED		
COOPER ENGINEERING RICE LAKE, WISCONSIN		
PROJECT NO.	00552090	SHEET E1



- LEGEND - DEMOLITION PLANS ONLY**
- FO--- EXISTING FIBER OPTIC CABLE - TO REMAIN (PROTECT SAME)
 - A--- EXISTING UNDERGROUND CABLE - TO BE DISCONNECTED AND ABANDONED
 - SWLP--- EXISTING SUPERIOR WATER AND LIGHT POWER COMPANY CABLES - TO REMAIN (PROTECT SAME)
 - A-SWLP-A- EXISTING SUPERIOR WATER AND LIGHT POWER COMPANY CABLES - TO BE ABANDONED BY THE UTILITY COMPANY.
 - AWOS--- EXISTING AWOS POWER & COMMUNICATION CABLES - TO BE TEMPORARILY DISCONNECTED.
 - A--- EXISTING 2/C 5KV - L-824 CABLES - TO BE ABANDONED
 - PAPI-3--- EXISTING PAPI 600 VOLT #8 HOMERUN CABLE - TO REMAIN
 - 3-21--- EXISTING RUNWAY 3-21 5KV 2/C #8 HOMERUN CABLE - TO REMAIN
 - PAPI-31--- EXISTING PAPI 600 VOLT #8 HOMERUN CABLE - TO REMAIN
 - 13-31--- EXISTING RUNWAY 3-21 5KV 2/C #8 HOMERUN CABLE - TO REMAIN
 - (R)--- EXISTING 4'-4" DUCT BANK - TO BE REMOVED
 - (LD)--- EXISTING LOOP DETECTOR - TO BE DISCONNECTED AND ABANDONED
 - (PF)--- EXISTING POLE MOUNTED FIXTURE - TO REMAIN
 - (T)--- TEMPORARY HOMERUN CABLES FOR RUNWAY 3-21, RUNWAY 13-31, PAPI-3, PAPI-31 AND AWOS POWER AND COMMUNICATION CABLES. SEE NOTE 1.

- NOTES:**
1. INSTALL TEMPORARY 5KV CABLES IN ONE 3 OR 4 INCH FLEXIBLE PLASTIC DUCT. INSTALL 600 VOLT PAPI CABLES IN ONE 3 OR 4 INCH FLEXIBLE PLASTIC DUCT. INSTALL AWOS POWER AND COMMUNICATION CABLES IN ONE 3 OR 4 INCH FLEXIBLE PLASTIC DUCT. TYRAP ALL THREE TO EXISTING FENCE. REMOVE AFTER PERMANENT CABLES ARE INSTALLED, CONNECTED AND TESTED. COORDINATE AWOS CABLE INSTALLATION WITH AWOS MANUFACTURER.
 2. EXISTING HANGARS A3, A4 AND A5 HAVE OVERHEAD ELECTRIC SERVICE.

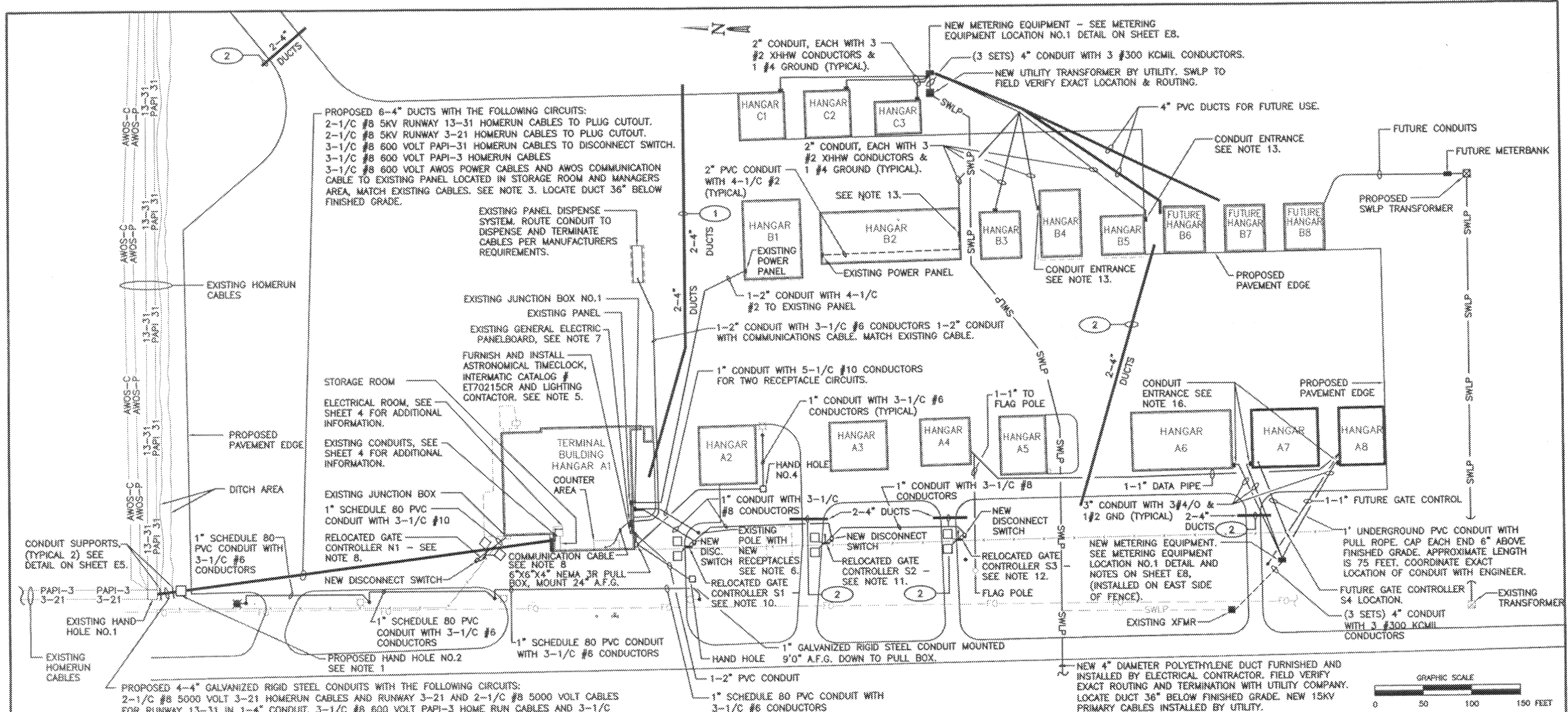


KEYED NOTES: THIS SHEET ONLY.

- ① DISCONNECT EXISTING GATE CONTROLLER AND REFLECTOR SUPPORT(S) N-1 AS FOLLOWS:
 - A. EXISTING GATE CONTROLLER IS MANUFACTURED BY OSCO, MODEL #GSLG-A-121, 240 VOLTS, SINGLE PHASE.
 - B. TURN OFF POWER TO GATE CONTROLLER. REMOVE EXISTING UNDERGROUND CONDUCTORS AND CONDUIT TO JUNCTION BOX.
 - C. DISCONNECT POWER AT BUILDING JUNCTION BOX LOCATED ON TERMINAL BUILDING FROM GATE CONTROLLER.
 - D. DISCONNECT EACH LOOP DETECTOR AT GATE CONTROLLER.
 - E. PLACE EXISTING EQUIPMENT INTO TEMPORARY STORAGE AND PROTECT SAME.
- ② DISCONNECT AND REMOVE EXISTING GATE CONTROLLER S-1 AND REFLECTOR SUPPORT(S) AS FOLLOWS:
 - A. EXISTING GATE CONTROLLER IS MANUFACTURED BY OSCO, MODEL #GSLG-A-121, 240 VOLTS, SINGLE PHASE.
 - B. TURN OFF POWER TO GATE CONTROLLER. NOTE THAT CIRCUIT SUPPLIES POWER TO GATE CONTROLLERS S-1, S-2 AND S-3. REMOVE EXISTING UNDERGROUND CONDUCTORS AND CONDUIT WERE SHOWN.
 - C. EXISTING UNDERGROUND CIRCUIT CONDUCTORS ARE ROUTED FROM EXISTING JUNCTION BOX NO.1 LOCATED ON TERMINAL BUILDING TO GATE CONTROLLER S-1 AND THEN TO GATE CONTROLLER S-2 AND THEN ON TO GATE CONTROLLER S-3.
 - D. DISCONNECT EACH LOOP DETECTOR AT GATE CONTROLLER.
 - E. PLACE EXISTING EQUIPMENT INTO TEMPORARY STORAGE AND PROTECT SAME.
- ③ DISCONNECT EXISTING GATE CONTROLLER S-2 AND REFLECTOR SUPPORTS AS FOLLOWS:
 - A. EXISTING GATE CONTROLLER IS MANUFACTURED BY OSCO, MODEL #GSLG-A-121, 240 VOLTS, SINGLE PHASE. KEY PADS TO REMAIN IN PLACE.
- ④ DISCONNECT EXISTING GATE CONTROLLER S-3 AND REFLECTOR SUPPORTS AS FOLLOWS:
 - A. EXISTING GATE CONTROLLER IS MANUFACTURED BY OSCO, MODEL #GSLG-A-121, 240 VOLTS, SINGLE PHASE.
 - B. TURN OFF POWER TO GATE CONTROLLER. REMOVE EXISTING UNDERGROUND CONDUCTORS AND CONDUIT.
 - C. DISCONNECT EACH LOOP DETECTOR AT GATE CONTROLLER.
 - D. EXISTING UNDERGROUND CIRCUIT CONDUCTORS ARE ROUTED FROM EXISTING GATE CONTROLLER S2.
 - E. EXISTING KEYPAD STATION TO REMAIN, PROTECT AREA. EXISTING WIRING TO KEYPAD STATION TO BE REMOVED.
- ⑤ EXISTING DUCTS SHALL BE DISCONNECTED AND REMOVED FROM TERMINAL BUILDING TO DITCH AREA AS FOLLOWS: NOTE, SEE PROPOSED PLANS FOR ADDITIONAL INFORMATION AND NOTE 1 ON THIS SHEET.
 - A. DISCONNECT THE DUCTS THAT INCLUDES RUNWAY 3-21 AND 13-31 5000 VOLT HOMERUN CONDUCTORS, AND PREPARE FOR NEW DUCT INSTALLATION AS SHOWN ON THE PROPOSED PLANS.
 - B. DISCONNECT THE DUCT THAT INCLUDES RUNWAY 3-21 PAPI AND RUNWAY 13-31 PAPI 600 VOLT HOMERUN CONDUCTORS, AND PREPARE FOR NEW DUCT INSTALLATION AS SHOWN ON THE PROPOSED PLANS.
- ⑥ DISCONNECT EXISTING UNDERGROUND FUEL DISPENSE SYSTEM POWER AND COMMUNICATIONS CABLES FROM HANGAR B1 TO FUEL DISPENSE EQUIPMENT AS FOLLOWS:
 - A. TURN OFF POWER AT PANELBOARD LOCATED IN HANGAR B1 AND DISCONNECT 600 VOLT POWER CABLES AND REMOVE CONDUIT AND PREPARE AREA FOR NEW WIRING PER PROPOSED WIRING PLANS.
 - B. DISCONNECT COMMUNICATION CABLES AT THE SOURCE LOCATED IN HANGAR A2 TO FUEL DISPENSE SYSTEM AND TO TERMINAL BUILDING. REMOVE CONDUCTORS FROM EXISTING HANGAR A2. COORDINATE WORK WITH OWNER.
 - C. DISCONNECT COMMUNICATION CABLES FROM HANGAR B1 TO HANGAR A2 AND FROM HANGAR A2 TO TERMINAL BUILDING. PREPARE FOR NEW WIRING PER PROPOSED WIRING PLANS.
- ⑦ DISCONNECT EXISTING UNDERGROUND POWER WIRING AND CONDUIT IN 1 1/2" PVC CONDUIT WITH 100 AMP CONDUCTORS FROM TERMINAL BUILDING WHERE CONDUIT IS STUBBED OUT ON EXTERIOR WALL TO "LB" AND REMOVE CONDUCTORS TO POWER PANEL. PREPARE FOR NEW WIRING PER PROPOSED WIRING PLANS.
- ⑧ DISCONNECT EXISTING UNDERGROUND POWER WIRING IN 1-1/2" PVC CONDUIT WITH 100 AMP CONDUCTORS FROM HANGAR A2 TO HANGAR B2. THE CONDUIT IS STUBBED OUT ON THE EXTERIOR WALL OF HANGAR A2 AND REMOVE CONDUCTORS FROM EACH POWER PANEL.
- ⑨ DISCONNECT THE DUCT THAT INCLUDES THE AWOS HOMERUN COMMUNICATION CONDUCTORS, AND PREPARE FOR NEW DUCT INSTALLATION AS SHOWN ON THE PROPOSED PLANS.
- ⑩ DISCONNECT THE DUCT THAT INCLUDES THE AWOS HOMERUN 600 VOLT POWER CABLE, AND WIRING TO NORTH LIGHTING UNIT AND PREPARE FOR NEW DUCT INSTALLATION AS SHOWN ON THE PROPOSED PLANS. DISCONNECT WIRING TO FIXTURE POLE AND REMOVE CONDUIT TO CONSTRUCTION LIMITS. NEW WIRING BY OTHERS.
- ⑪ DISCONNECT THE PARKING LOT LIGHTING CIRCUIT AND PREPARE FOR RE-ROUTING INTO NEW CONDUIT.
- ⑫ DISCONNECT THE UNDERGROUND POWER WIRING FEEDING THE EXISTING SOUTH LIGHTING UNITS AT THE EXISTING DUCT BANK AND AT THE TERMINAL BUILDING. FIELD VERIFY EXACT CIRCUITS. FIELD VERIFY POWER SOURCE. PREPARE FOR NEW WIRING PER PROPOSED WIRING PLANS.
- ⑬ DISCONNECT THE UNDERGROUND POWER WIRING AND CONDUITS SUPPLYING POLE MOUNTED RECEPTACLES FROM JUNCTION BOX LOCATED ON TERMINAL BUILDING TO POLE. PREPARE FOR NEW WIRING PER PROPOSED WIRING PLANS.
- ⑭ DISCONNECT THE UNDERGROUND POWER WIRING AND CONDUIT SUPPLYING THE POLE MOUNTED FIXTURE AT THE JUNCTION BOX LOCATED ON POLE. PREPARE FOR NEW WIRING PER PROPOSED WIRING PLANS. SEE KEYED NOTE ⑩ ABOVE.
- ⑮ THE UTILITY COMPANY TO DISCONNECT THE UNDERGROUND SERVICE ENTRANCE CONDUCTORS AT THE METER SOCKET AND REMOVE THE METER, ELECTRICAL CONTRACTOR TO DISCONNECT AND REMOVE THE METER SOCKET, AND GROUNDING AT PANEL AND PREPARE FOR NEW WIRING PER PROPOSED WIRING PLAN.

POWRTEK ENGINEERING, INC.
WALKESHA WISCONSIN

AUG 05		RECORD DRAWINGS		B.F.	
DATE		REVISION		BY	
R. I. BONG MEMORIAL AIRPORT SUPERIOR, WISCONSIN					
APRON ELECTRICAL DEMOLITION PLAN					
A.I.P. 3-55-0083-06					
DESIGN	R.J.B.	5-22-03	FILE NO.		
DRAWN	A.D.C.	5-22-03	F.B.	L.L.	
CHECKED	G.W.S.	5-22-03	SCALE:	AS SHOWN	
APPROVED					
			COOPER ENGINEERING RICE LAKE, WISCONSIN		
			PROJECT NO. 00552080 SHEET E2		



PROPOSED 6-4" DUCTS WITH THE FOLLOWING CIRCUITS:
 2-1/C #8 SKV RUNWAY 13-31 HOMERUN CABLES TO PLUG CUTOFF.
 2-1/C #8 SKV RUNWAY 3-21 HOMERUN CABLES TO PLUG CUTOFF.
 3-1/C #8 600 VOLT PAPI-31 HOMERUN CABLES TO DISCONNECT SWITCH.
 3-1/C #8 600 VOLT PAPI-3 HOMERUN CABLES
 3-1/C #8 600 VOLT AWOS POWER CABLES AND AWOS COMMUNICATION CABLE TO EXISTING PANEL LOCATED IN STORAGE ROOM AND MANAGERS AREA, MATCH EXISTING CABLES. SEE NOTE 3. LOCATE DUCT 36" BELOW FINISHED GRADE.

PROPOSED 4-4" GALVANIZED RIGID STEEL CONDUITS WITH THE FOLLOWING CIRCUITS:
 2-1/C #8 5000 VOLT 3-21 HOMERUN CABLES AND RUNWAY 3-21 AND 2-1/C #8 5000 VOLT CABLES FOR RUNWAY 13-31 IN 1-4" CONDUIT. 3-1/C #8 600 VOLT PAPI-3 HOME RUN CABLES AND 3-1/C 600 VOLT #8 PAPI 31 HOMERUN IN 1-4" CONDUIT WITH 2 SPARE CONDUITS. SEE NOTE 2.

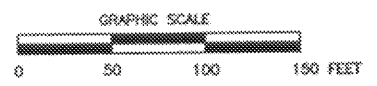
NOTES:

- LOCATE EXISTING AWOS POWER AND COMMUNICATION CABLES, CUT AND PULL BACK TO PROPOSED HAND HOLE NO.2, ROUTE NEW POWER AND COMMUNICATION CABLES FROM TERMINAL BUILDING AND SPLICE EXISTING AND NEW CABLES AND TEST FOR PROPER OPERATION. COORDINATE WORK WITH ENGINEER. USE ONLY APPROVED SPLICE KIT AS DETERMINED BY AWOS MANUFACTURER.
- FURNISH AND INSTALL 4-4" GALVANIZED RIGID STEEL CONDUITS FROM PROPOSED HAND HOLE NO.2 TO EXISTING HAND HOLE NO.1 PER DETAIL. INSTALL 4-1/C #8 SKV CABLES FROM EXISTING PLUG CUTOFF IN ELECTRICAL ROOM FOR RUNWAY 3-21 AND RUNWAY 13-31 HOMERUN CIRCUIT AND 8-1/C #8 600 VOLT PAPI CABLES THROUGH PROPOSED HAND HOLE NO.2 AND INTO EXISTING HAND HOLE NO.1. RECONNECT NEW AND EXISTING CABLES WITH L-823 PLUG SPLICES, PER DETAILS. INSTALL CONDUITS SUCH THAT TWO CONDUITS ARE FOR SKV CIRCUITS AND TWO CONDUITS ARE FOR 600 VOLT CIRCUITS AS SHOWN ON THE DETAILS. SEE SHEET 5 FOR HAND HOLE NO.2 DETAIL AND CONDUIT SUPPORT DETAIL.
- FURNISH AND INSTALL 8-4 SCHEDULE 80 PVC CONDUITS, THREE FOR SKV CIRCUITS, TWO CONDUITS FOR 600 VOLT CIRCUITS, ONE CONDUIT FOR AWOS POWER AND COMMUNICATIONS CIRCUITS. FOUR CONDUITS SHALL BE CONNECTED TO THE EXISTING INTERIOR CONDUITS. ONE NEW SKV AND ONE 600 VOLT CONDUIT SHALL BE STUBBED INTO EXISTING BUILDING AND CAPPED FOR FUTURE. INSTALL 1/4" POLYETHYLENE PULL ROPE INTO UNUSED CONDUITS.
- FURNISH AND INSTALL 3-1/C #8 WITH 3-1/C #10 (SPARES) FOR FUTURE SIGN. COIL 25' OF EXTRA CABLE IN HAND HOLE, INCLUDING GROUNDING CONDUCTOR.
- FURNISH AND INSTALL TIMECLOCK ADJACENT EXISTING POWER PANEL. TIMECLOCK INCLUDES TWO 20 AMP, 1 POLE OUTPUT CIRCUITS, CONNECT THE 30 AMP 3 POLE CONTACTOR TO OUTPUT NO.1 AND THE SIGN LIGHTING TO OUTPUT NO.2. PROGRAM TIMER PER OWNER'S REQUIREMENTS. INSTALL NEW CIRCUIT BREAKERS AND WIRING FROM PANEL TO TIMECLOCK AND LIGHTING CONTACTOR. PROVIDE AN ALLEN BRADLEY CONTACTOR WITH NEMA 1 ENCLOSURE AND HOA FRONT PANEL MOUNTED SWITCH. SEE TIMECLOCK CONTROL DIAGRAM.
- FURNISH AND INSTALL 4 QUADPLEX GFCI RECEPTACLES ON EXISTING POLE AT 48" ABOVE FINISHED GRADE. PROVIDE LOCKABLE IN-USE ALUMINUM WEATHERPROOF COVERS FOR EACH.
- INSTALL FOUR(4) NEW 20 AMP, 1 POLE CIRCUIT BREAKERS INTO EXISTING GENERAL ELECTRIC PANEL FOR SUPPLYING POWER TO EXISTING POLE MOUNTED LIGHT FIXTURES, SIGN CIRCUIT, TIMER AND GAS PUMP. TIMER CONTROL CIRCUIT SHALL BE WIRED TO A DEDICATED 20 AMP CIRCUIT.
- ROUTE NEW FUEL DISPENSE COMMUNICATION CABLE INTO TERMINAL BUILDING TO COUNTER AREA. COORDINATE EXACT LOCATION AND ROUTING WITH ENGINEER AND OWNER. TERMINATE PER MANUFACTURER'S RECOMMENDATION.
- ALL DUCTS THAT DO NOT CONTAIN CABLES SHALL BE PROVIDED WITH A 1/4" DIAMETER POLYETHYLENE PULL ROPE INSTALLED. PROVIDE CAPS AT EACH END FOR EACH UNUSED CONDUIT. DUCT TAPE THE ROPE TO THE INSIDE OF THE CONDUIT NEAR THE CAP.
- REINSTALL GATE CONTROLLER, INSTALL NEW 30 AMP, 250 VOLT, 2 POLE, NEMA 3R FUSIBLE DISCONNECT SWITCH WITH 20 AMP FUSES, TWO NEW LOOP DETECTORS, PHOTO ELECTRIC WIRING AND INSTALLATION. CONNECT WIRING TO EQUIPMENT AND KEYPAD AND TEST FOR PROPER OPERATION.

- REINSTALL GATE CONTROLLER, INSTALL NEW 30 AMP, 250 VOLT, 2 POLE, NEMA 3R FUSIBLE DISCONNECT SWITCH WITH 20 AMP FUSES, TWO NEW LOOP DETECTORS, PHOTO ELECTRIC WIRING AND INSTALLATION. CONNECT WIRING TO EQUIPMENT AND KEYPAD AND TEST FOR PROPER OPERATION.
- REINSTALL GATE CONTROLLER, INSTALL NEW 30 AMP, 250 VOLT, 2 POLE, NEMA 3R FUSIBLE DISCONNECT SWITCH WITH 20 AMP FUSES, TWO NEW LOOP DETECTORS, PHOTO ELECTRIC WIRING AND INSTALLATION. CONNECT WIRING TO EQUIPMENT AND KEYPAD AND TEST FOR PROPER OPERATION.
- ROUTE 2" PVC CONDUIT FROM METERING EQUIPMENT TO PANEL LOCATED IN HANGAR. INSTALL AN "LB" FITTING TO CONNECT NEW CONDUIT TO THE EXISTING PANEL. CONNECT CONDUCTORS AND TEST FOR PROPER OPERATION, COORDINATE ALL WORK WITH OWNER AND ENGINEER.
- ALL DUCTS SHALL EXTEND 10" BEYOND THE PAVEMENT EDGE UNLESS OTHERWISE SHOWN.
- ALL GROUNDING CONDUCTORS SHALL BE INSULATED.
- ROUTE 3" PVC CONDUIT FROM METERING EQUIPMENT TO PANEL LOCATED IN HANGAR. INSTALL AN "LB" FITTING TO CONNECT NEW CONDUIT TO THE EXISTING PANEL. CONNECT CONDUCTORS AND TEST FOR PROPER OPERATION, COORDINATE ALL WORK WITH OWNER AND ENGINEER.

LEGEND - PROPOSED WIRING PLANS

- FO EXISTING FIBER OPTIC CABLE
- SWLP EXISTING SUPERIOR WATER AND LIGHT POWER COMPANY CABLES
- AWOS-C EXISTING AWOS COMMUNICATION CABLES
- AWOS-P EXISTING AWOS POWER CABLES
- PAPI-3 EXISTING PAPI 600 VOLT #8 HOMERUN CABLE
- 3-21 EXISTING RUNWAY 3-21 5KV 2/C #8 CABLE
- PAPI-31 EXISTING PAPI 600 VOLT #8 HOMERUN CABLE
- 13-31 EXISTING RUNWAY 3-21 5KV 2/C #8 CABLE
- + EXISTING POLE MOUNTED FIXTURE
- + PROPOSED DUCT BANK, QUANTITY, SIZE AND TYPE AS SHOWN
- NEW FIXTURE/POLE, FURNISHED BY OWNER, INSTALLED BY E.C.
- PROPOSED LOOP DETECTOR, SEE DETAILS
- SWLP APPROXIMATE LOCATION OF SUPERIOR WATER AND LIGHT POWER COMPANY CABLES, BY UTILITY.
- (X) REFERENCE TO DUCT/CONDUIT ARRANGEMENT PER STANDARD DETAILS FOR "UNDERGROUND CABLE AND CONDUIT INSTALLATION."

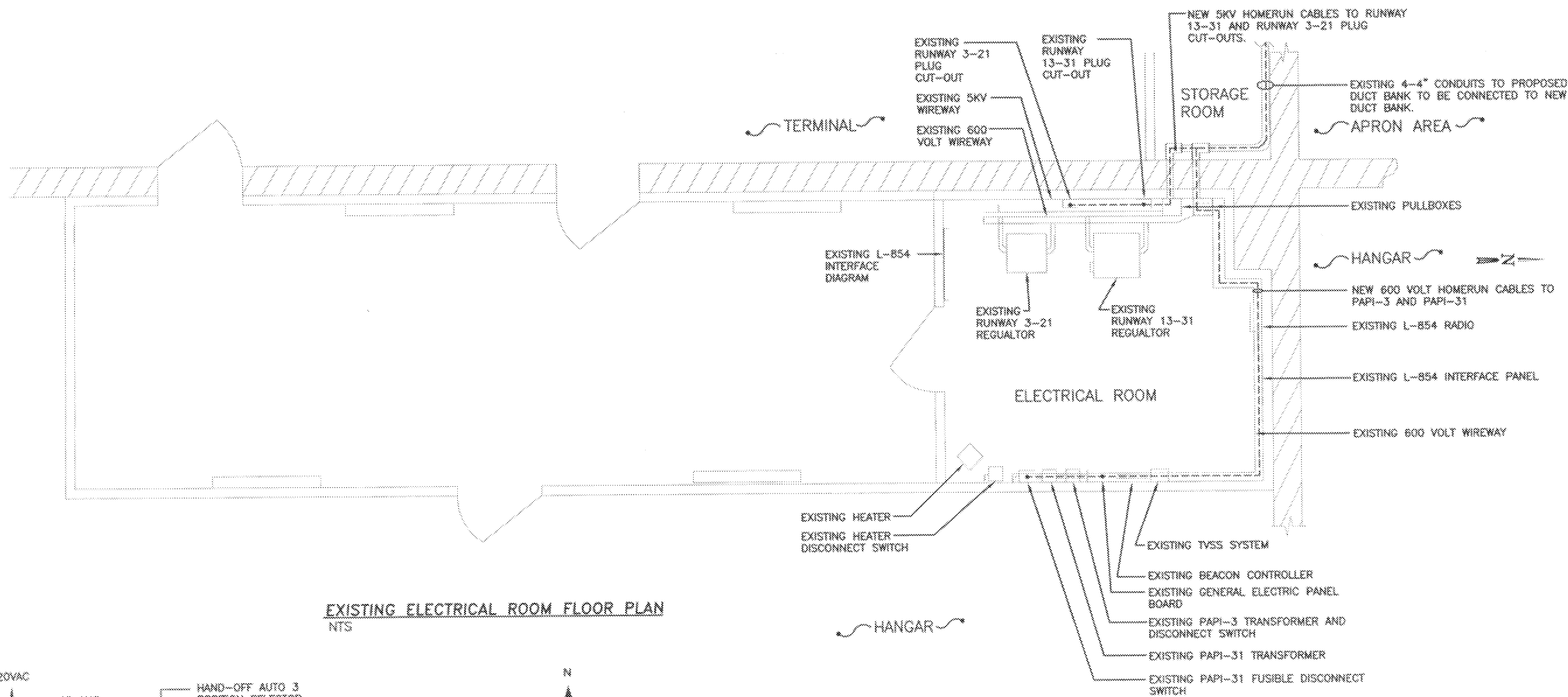


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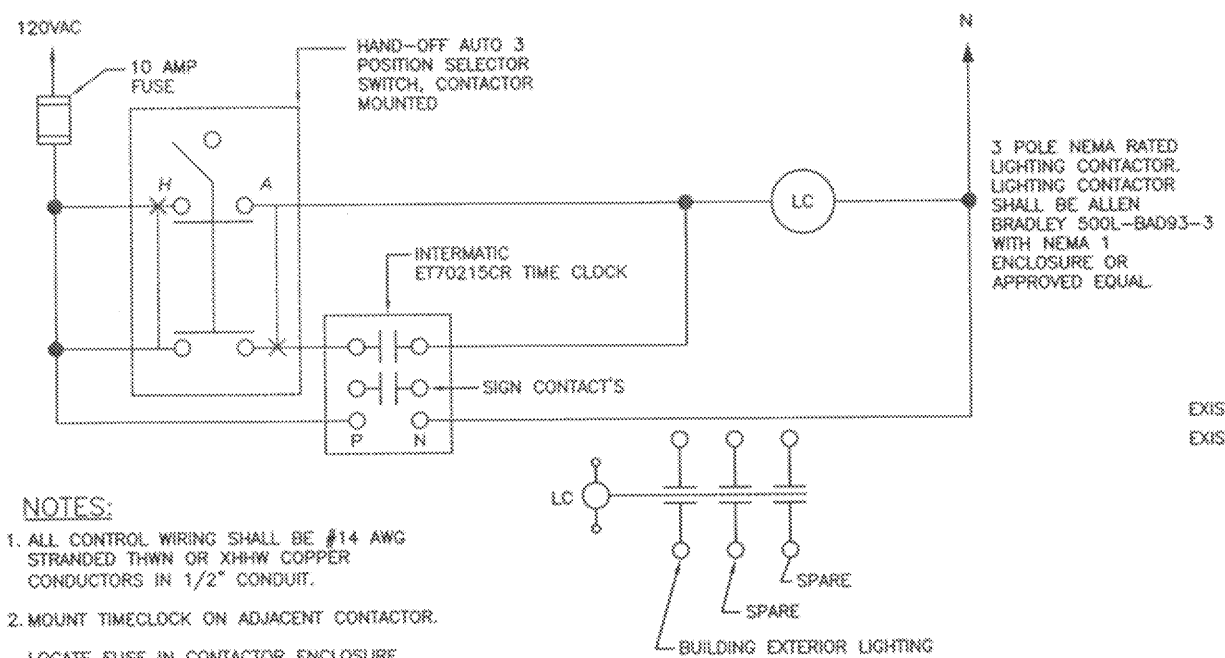
AUG. 05	RECORD DRAWINGS	B.F.
DATE	REVISION	BY
R. I. BONG MEMORIAL AIRPORT SUPERIOR, WISCONSIN PROPOSED WIRING PLAN		
A.I.P. 3-55-0083-06		
DESIGN	R.J.B. 5-22-03	FILE NO.
DRAWN	A.D.C. 5-22-03	F.B.
CHECKED	G.W.S. 5-22-03	SCALE: AS SHOWN
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COOPER ENGINEERING RICE LAKE, WISCONSIN		
PROJECT NO. 00552080		SHEET E3

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 WAUKESHA WISCONSIN

PROJECT 1645 - BONG AIRPORT POWER/TELECOM/DWG. 8/11/2005 2:40:04 PM

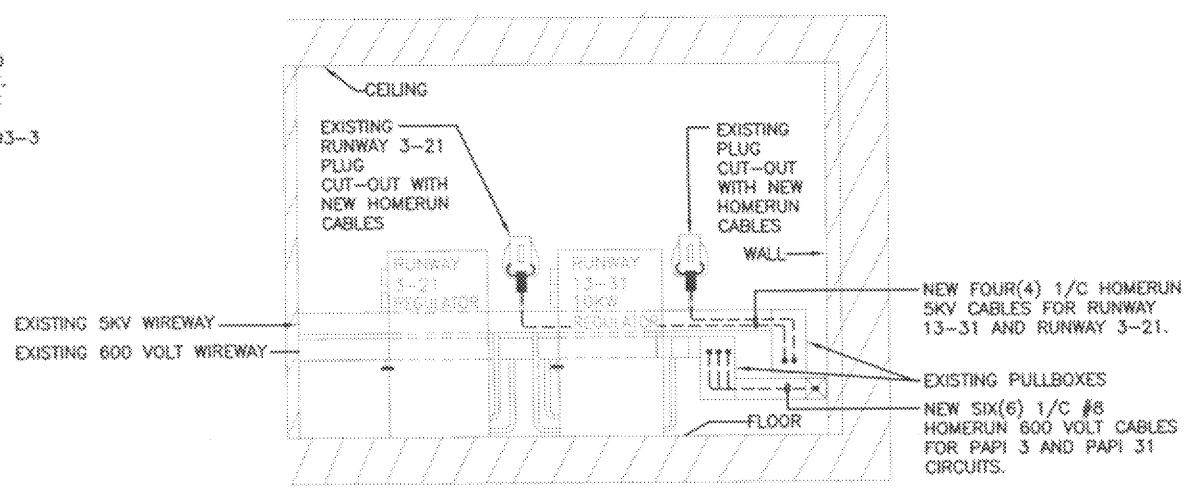


EXISTING ELECTRICAL ROOM FLOOR PLAN
NTS



- NOTES:**
1. ALL CONTROL WIRING SHALL BE #14 AWG STRANDED THWN OR XHHW COPPER CONDUCTORS IN 1/2" CONDUIT.
 2. MOUNT TIMECLOCK ON ADJACENT CONTACTOR. LOCATE FUSE IN CONTACTOR ENCLOSURE.
 - 3.

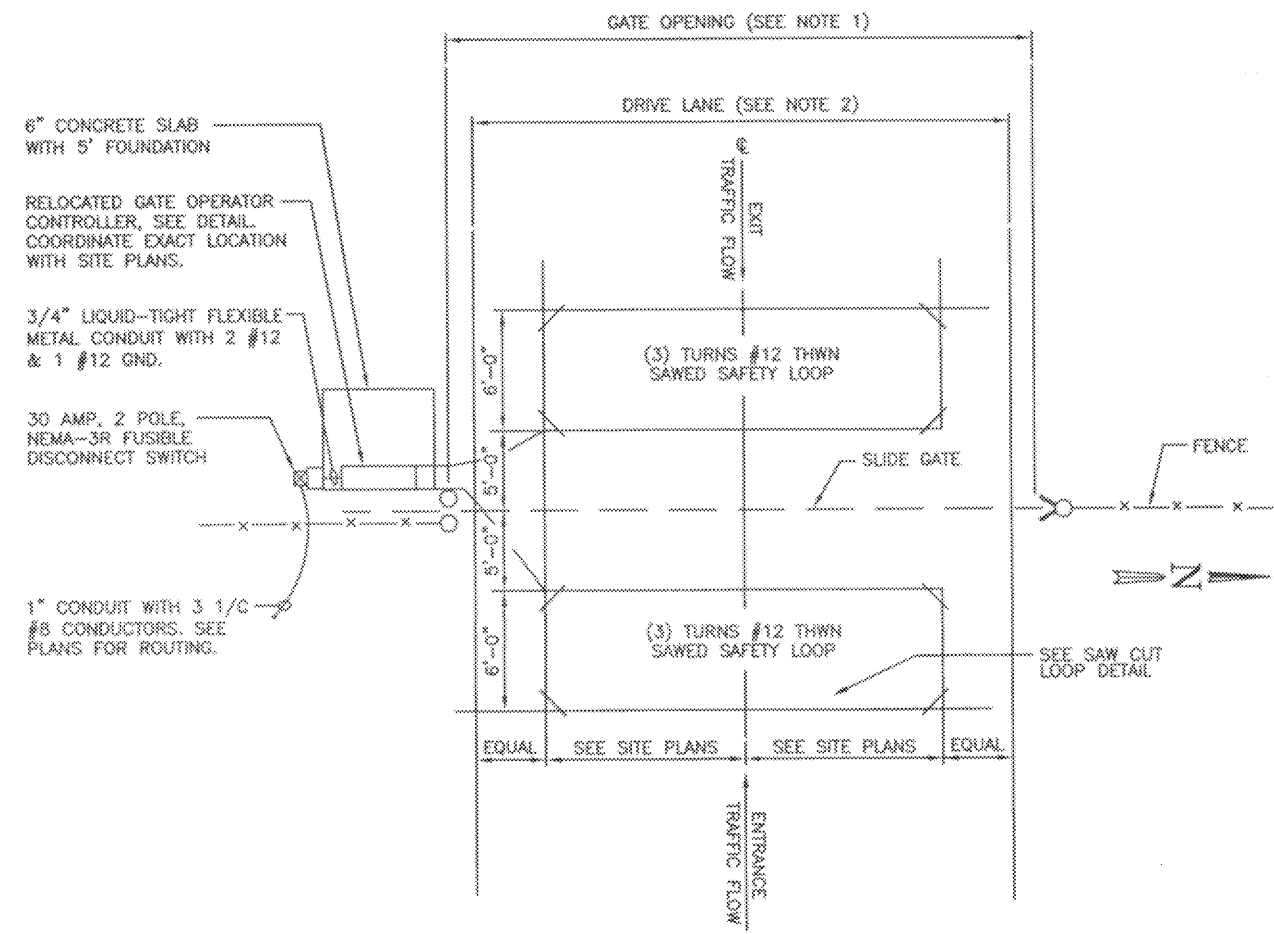
TIMECLOCK CONTROL DIAGRAM
NTS



EXISTING ELECTRICAL ROOM (WEST ELEVATION)
NTS

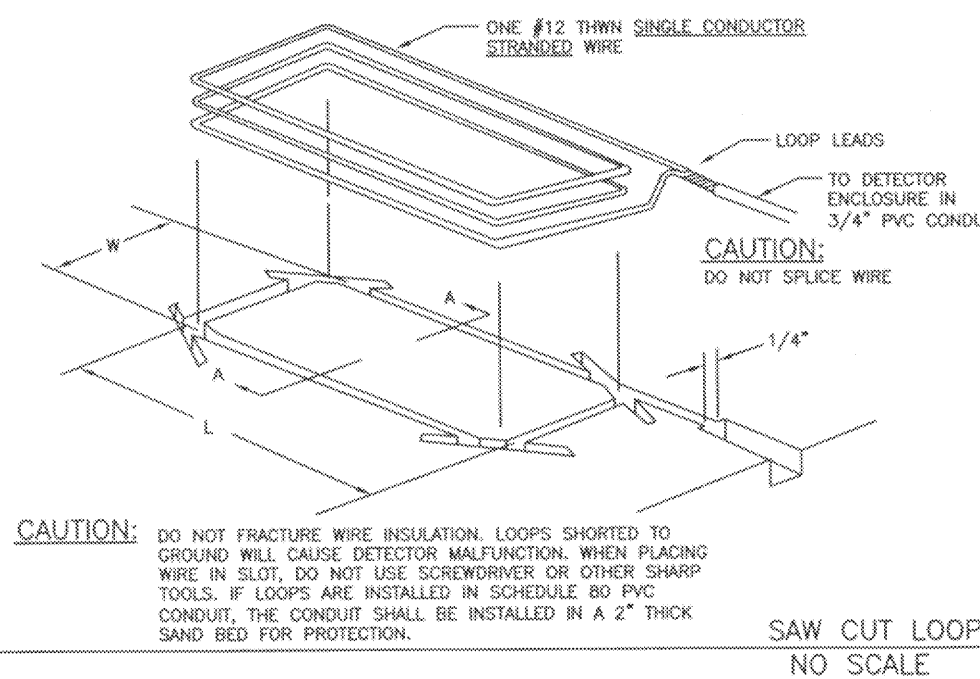
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WAUKESHA WISCONSIN

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DATE	REVISION	BY
R. I. BONG MEMORIAL AIRPORT SUPERIOR, WISCONSIN		
ELECTRICAL ROOM MODIFICATIONS PLAN		
A.I.P. 3-55-0083-06		
DESIGN	R.J.B. 5-22-03	FILE NO.
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PROJECT NO.	00552090	SHEET E4



TYPICAL LAYOUT FOR LOOPS

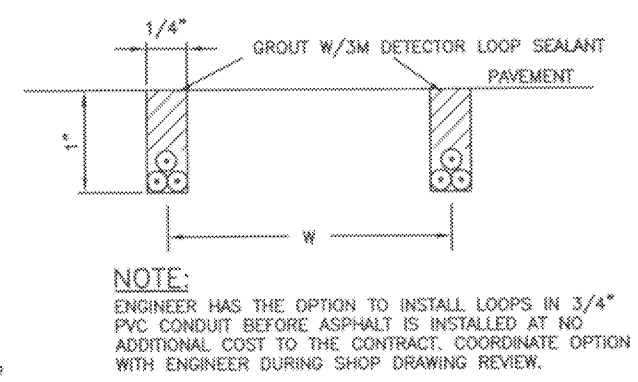
SAW SLOT 1/4" X 1" DEEP. MAKE RECTANGULAR SHAPE TO SPECIFIED LOOP DIMENSIONS. FILL SAW CUT WITH 3M LOOP SEALANT. SEE SHEET 16 FOR EXACT DIMENSIONS.



NOTES:

1. LOOP LEADS ARE LIMITED TO 100 FEET.
2. LOOP LEADS MUST HAVE 4 TWISTS PER FOOT MIN.
3. LOOP AND LOOP LEADS MUST BE LOCATED AT LEAST 18" FROM ANY ELECTRICAL POWER SERVICE OR RUNS.
4. LOOP LEADS MUST BE IN SEPARATE CONDUIT BETWEEN LOOP AND DETECTOR. THEY MUST NOT SHARE CONDUIT WITH OTHER WIRING OR LEADS FROM OTHER LOOPS.
5. USE #12 THWN SINGLE CONDUCTOR STRANDED WIRE.
6. ALL WIRE TO BE CONTINUOUS WITHOUT SPLICING.
7. DO NOT SPAN EXPANSION JOINT WITH LOOP.

SECTION A WITH WIRE PLACEMENT

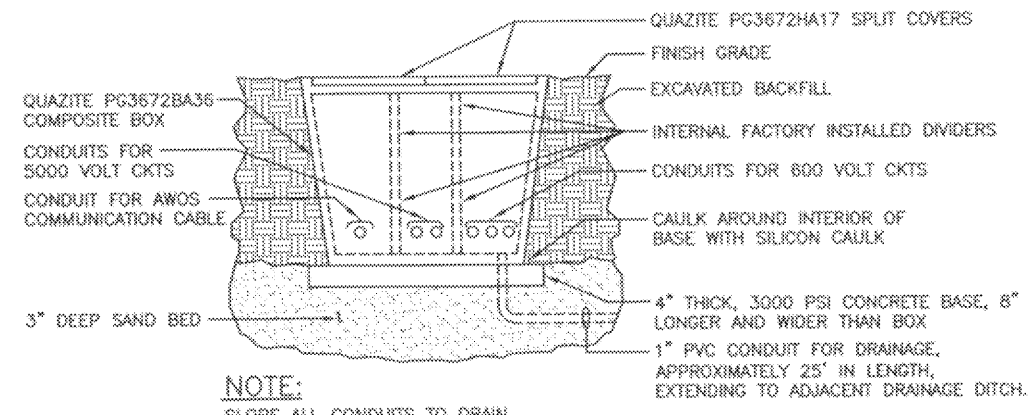
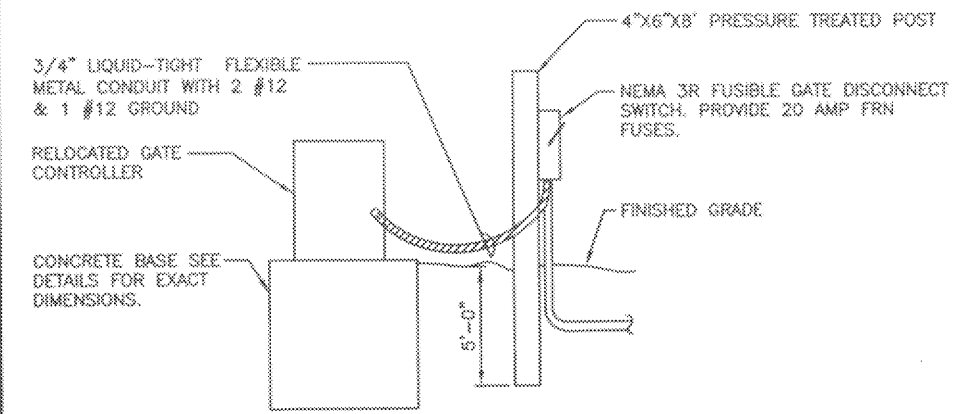
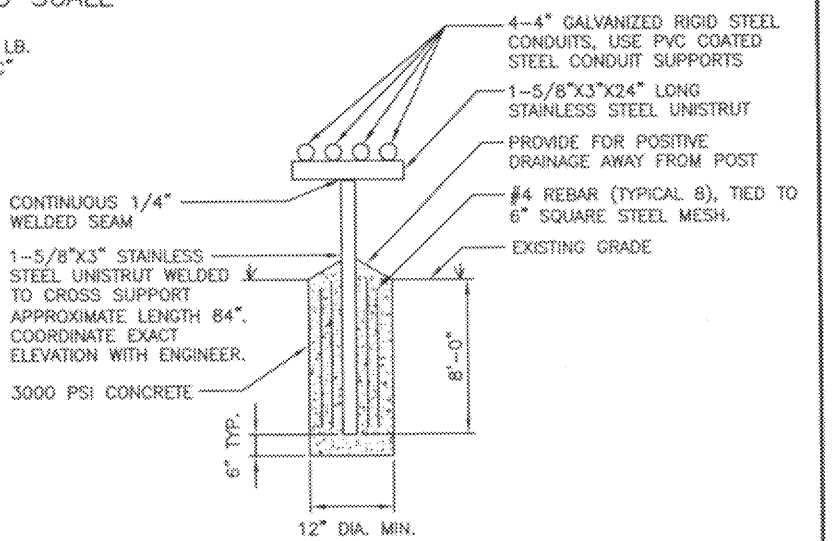
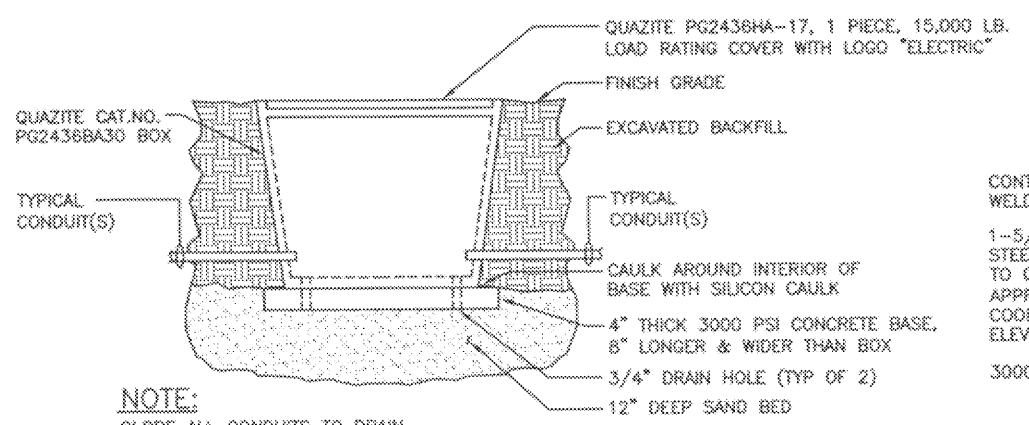


TYPICAL POWER OPERATED GATE INSTALLATION

NO SCALE

NOTES:

1. ALL GATE LOOPS ARE 6' X 20'.
2. ALL CONDUCTORS SHALL BE 600 VOLT STRANDED COPPER WITH TYPE XHNW INSULATION.



POWRTEK ENGINEERING, INC.
WAUKESHA WISCONSIN

AUG. 05	RECORD DRAWINGS	B.F.
DATE	REVISION	BY
R. I. BONG MEMORIAL AIRPORT SUPERIOR, WISCONSIN ELECTRICAL DETAILS		
A.I.P. 3-55-0083-06		
DESIGN	R.J.B. 5-22-03	FILE NO.
DRAWN	A.D.C. 5-22-03	F.B. LL
CHECKED	G.W.S. 5-22-03	SCALE: AS SHOWN
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COOPER ENGINEERING RICE LAKE, WISCONSIN		
PROJECT NO.	00852090	SHEET E5

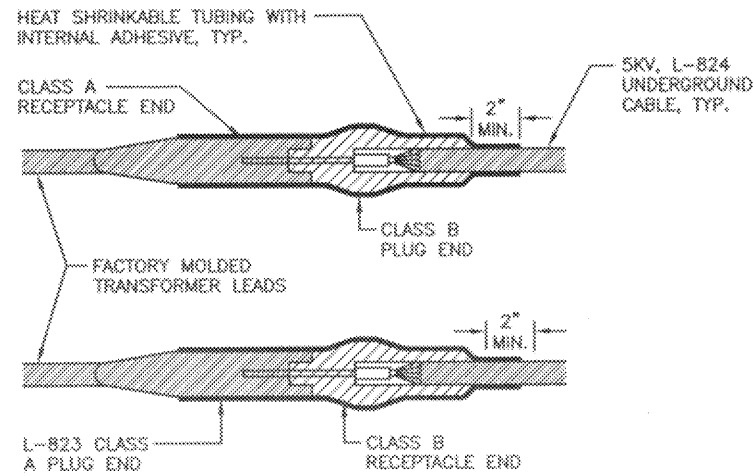


FIGURE A
FOR L-823 CONNECTORS USED AT L-830 ISOLATION
TRANSFORMER JUNCTION WITH 5KV LOOP CIRCUIT

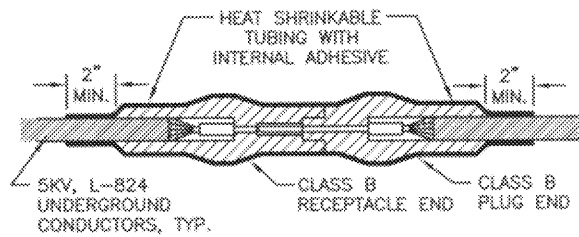


FIGURE B
FOR L-823 PLUG SPLICES IN 5KV HOMERUN CIRCUITS
AND FOR EXTENSIONS OF NEW AND EXISTING 5KV CIRCUITS

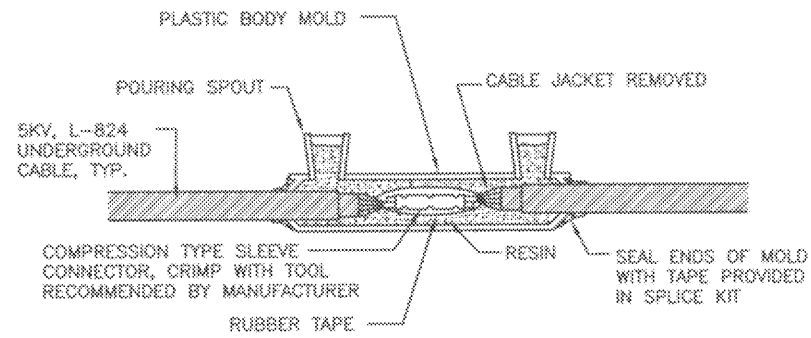
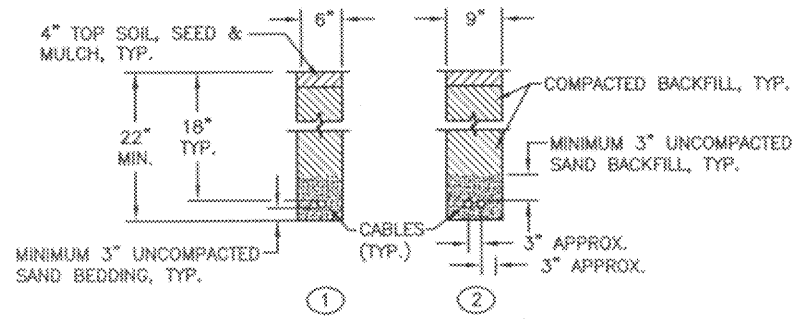
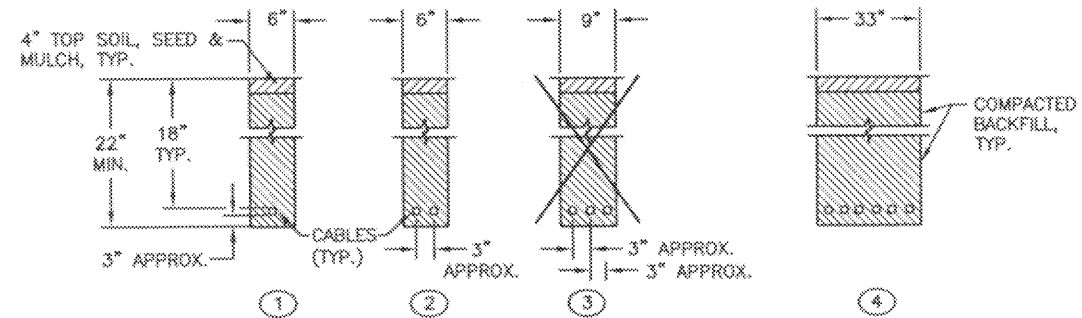


FIGURE C
FOR CAST SPLICES IN HOMERUN CIRCUITS AND FOR
EXTENSIONS OF NEW AND EXISTING CIRCUITS

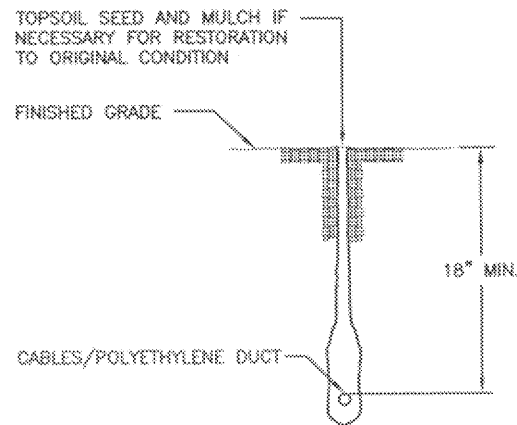
5KV CABLE SPLICE WATERPROOFING DETAILS
NOT TO SCALE



CABLE IN TRENCH DETAILS
NOT TO SCALE



POLYETHYLENE DUCT/CONDUIT IN TRENCH DETAILS
NOT TO SCALE



NOTE:
FOR TEMPORARY LIFT STATION ONLY.

PLOWED CABLE/POLYETHYLENE DUCT DETAIL
NOT TO SCALE

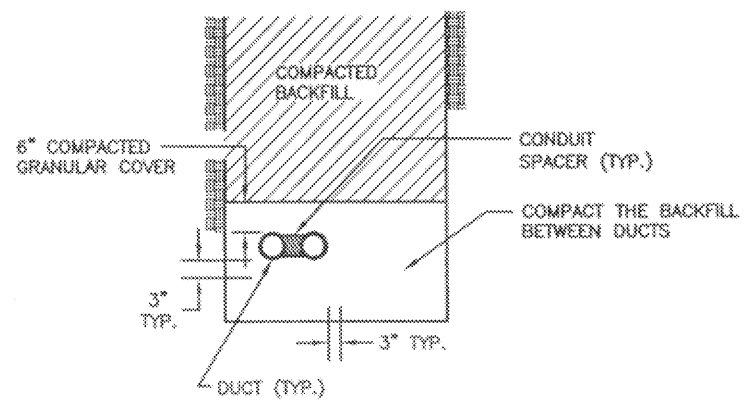
NOTES:

1. CABLE/TRENCH DEPTH DIMENSIONS ARE SHOWN FOR UG CABLE(S) WITHOUT CONSIDERATION OF OTHER VERTICALLY STACKED CABLES. REFER TO STANDARD SPECIFICATIONS FOR DIMENSION REQUIREMENTS FOR CABLES STACKED VERTICALLY IN TRENCH.
2. DETAIL NUMBERS INDICATE NUMBER OF CABLES OR CONDUITS. TRENCHES FOR MORE THAN 2 CABLES AND MORE THAN 3 POLYETHYLENE DUCTS OR CONDUITS SHALL BE INCREASED 3 INCHES IN WIDTH FOR EACH ADDITIONAL CABLE AND POLYETHYLENE DUCT OR CONDUIT.
3. TRENCHES, PLOWING, CABLE, CONDUIT AND POLYETHYLENE DUCT REQUIRED SHALL BE AS SHOWN ON PLAN SHEETS.
4. PROVIDE 6 INCH SPACE BETWEEN 5KV AND 600 VOLT CABLES, AND POLYETHYLENE DUCTS AND TRENCH ON BORED DUCTS.

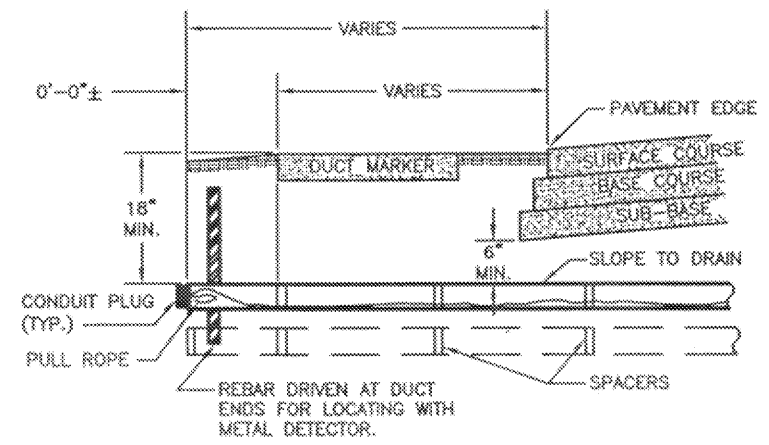
AUG. 05	RECORD DRAWINGS	B.F.
DATE	REVISION	BY
R. I. BONG MEMORIAL AIRPORT SUPERIOR, WISCONSIN		
UNDERGROUND CABLE AND CONDUIT INSTALLATION		
A.I.P. 3-55-0083-06		
DESIGN	R.J.B. 5-22-03	FILE NO.
DRAWN	A.D.C. 5-22-03	F.R. L.L.
CHECKED	G.W.S. 5-22-03	SCALE: AS SHOWN
APPROVED		
COOPER ENGINEERING RICE LAKE, WISCONSIN		
PROJECT NO.	00552090	SHEET EB

POWRTEK ENGINEERING, INC.
WALKESHA WISCONSIN

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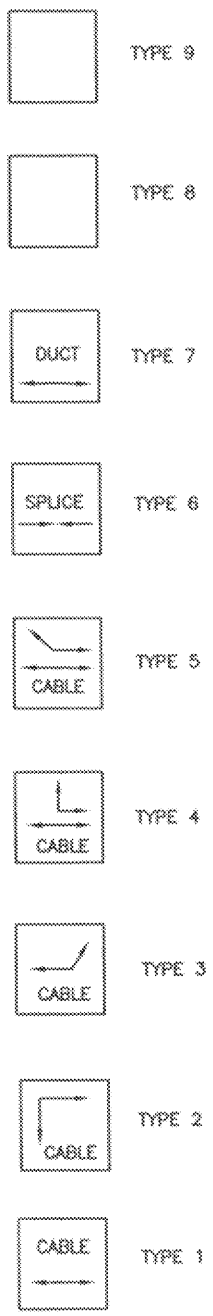


TYPICAL MULTIPLE BANK LAYOUT



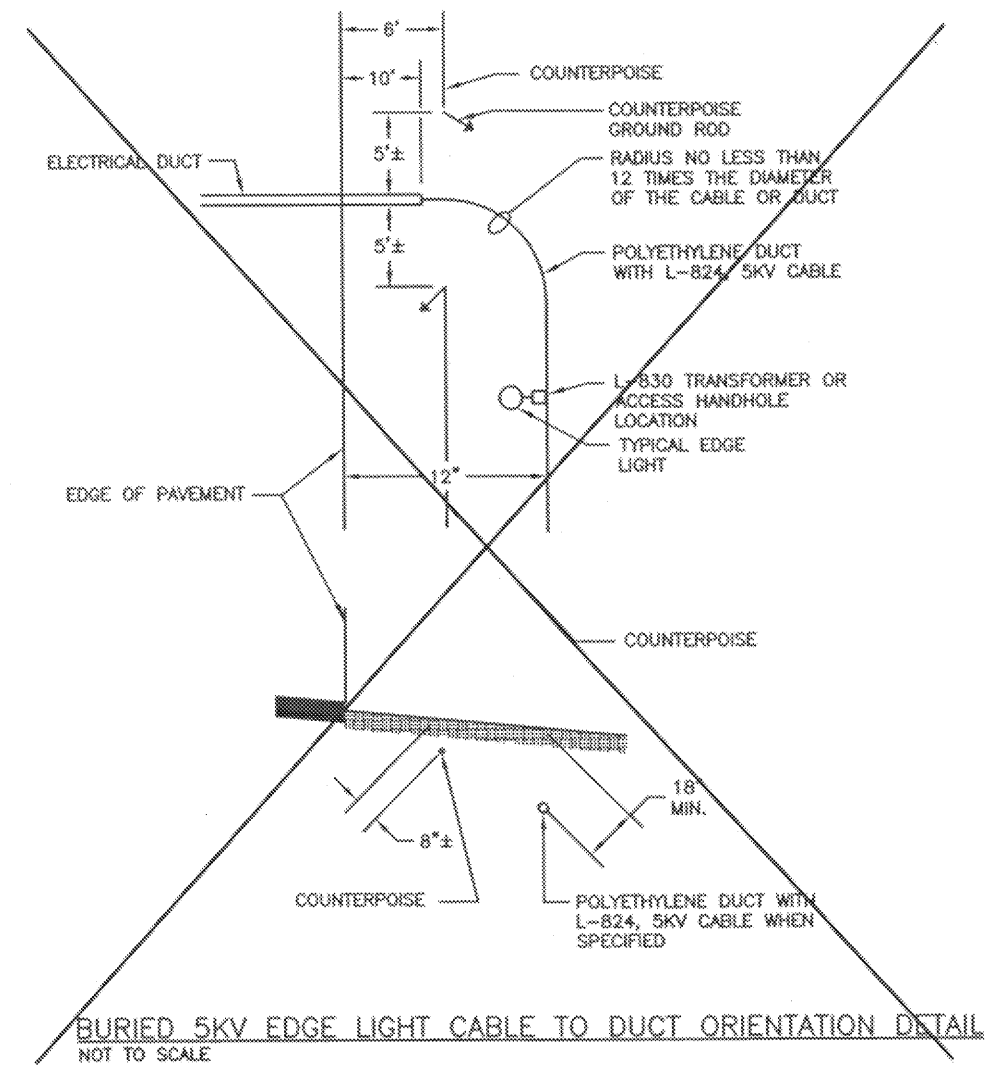
ELECTRICAL DUCT DETAIL
NOT TO SCALE

- NOTES:
1. DETAILS SHOWN ARE FOR TYPE II DUCTS (WITHOUT CONCRETE ENCASUREMENT). FOR TYPE I DUCTS (WITH CONCRETE ENCASUREMENT), SUBSTITUTE 6" COMPACTED GRANULAR COVER WITH 3000 PSI AIR ENTRAINED CONCRETE.
 2. CONDUIT SPACERS ARE REQUIRED FOR ALL DUCTS PLACED HORIZONTALLY ONLY.
 3. DUCT TYPE, SIZE AND QUANTITIES SHALL BE AS SHOWN ON PLAN SHEETS.

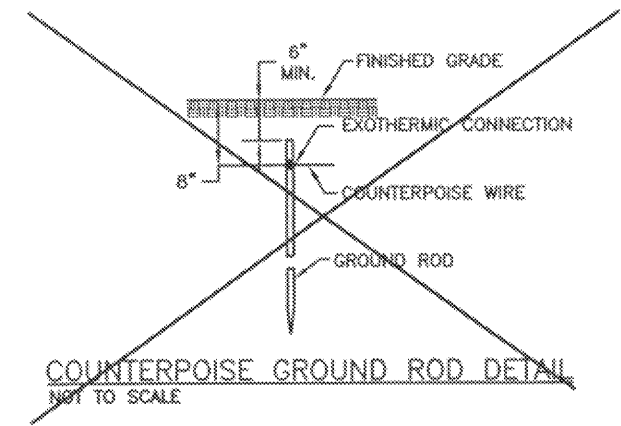


DUCT, CABLE & SPLICE MARKER DETAILS
NOT TO SCALE

- NOTES:
1. MARKERS SHALL BE 24 INCHES SQUARE BY 4 INCHES THICK PLACED WHERE SHOWN ON THE PLAN DRAWINGS, EXCEPT FOR DUCT MARKERS, WHICH SHALL BE PLACED ACCORDING TO THE ELECTRICAL DUCT DETAIL.



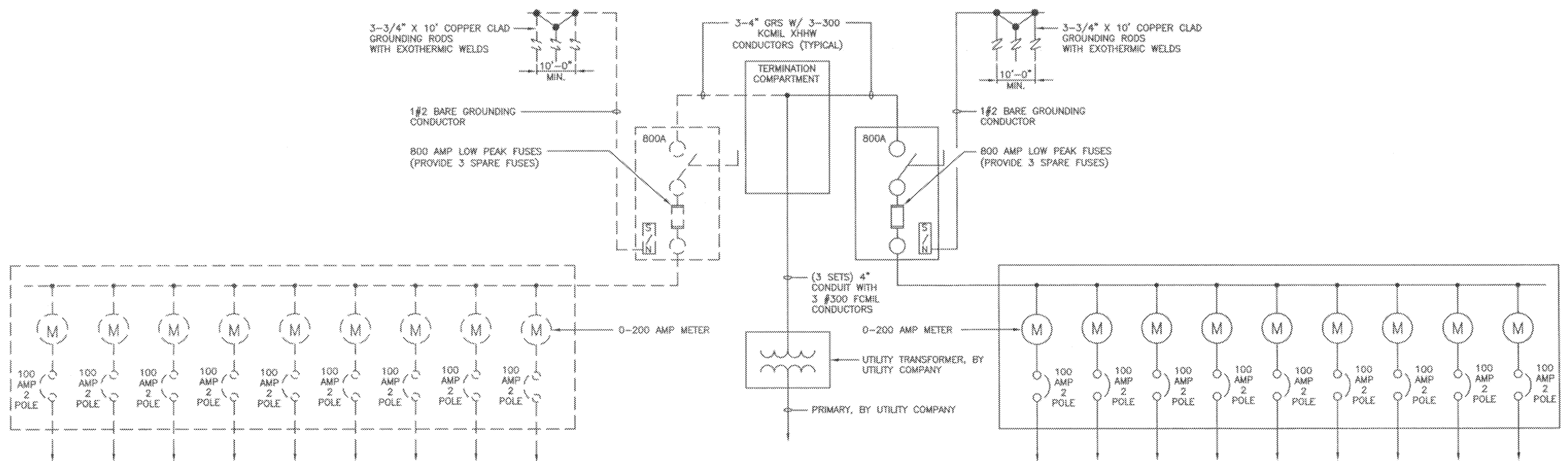
BURIED 5KV EDGE LIGHT CABLE TO DUCT ORIENTATION DETAIL
NOT TO SCALE



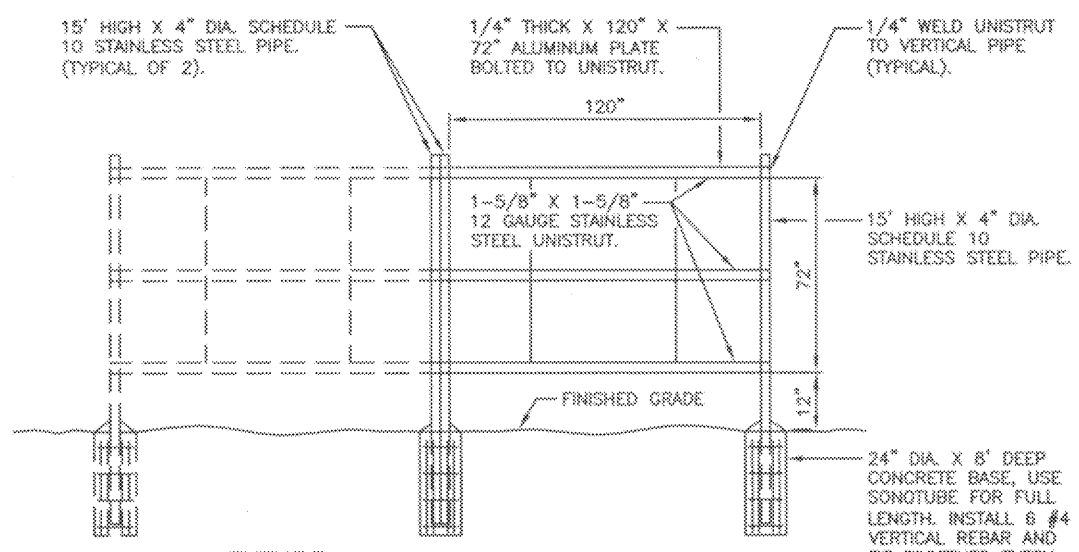
COUNTERPOISE GROUND ROD DETAIL
NOT TO SCALE

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DATE	REVISION	BY
R. I. BONG MEMORIAL AIRPORT SUPERIOR, WISCONSIN		
UNDERGROUND CABLE AND CONDUIT INSTALLATION		
A.I.P. 3-55-0083-06		
DESIGN	R.J.B. 5-22-03	FILE NO.
DRAWN	A.D.C. 5-22-03	F.B. L.L.
CHECKED	G.W.S. 5-22-03	SCALE: AS SHOWN
APPROVED		
COOPER ENGINEERING RICE LAKE, WISCONSIN		
PROJECT NO. 00552080	SHEET E7	



ONE-LINE DIAGRAM
NO SCALE



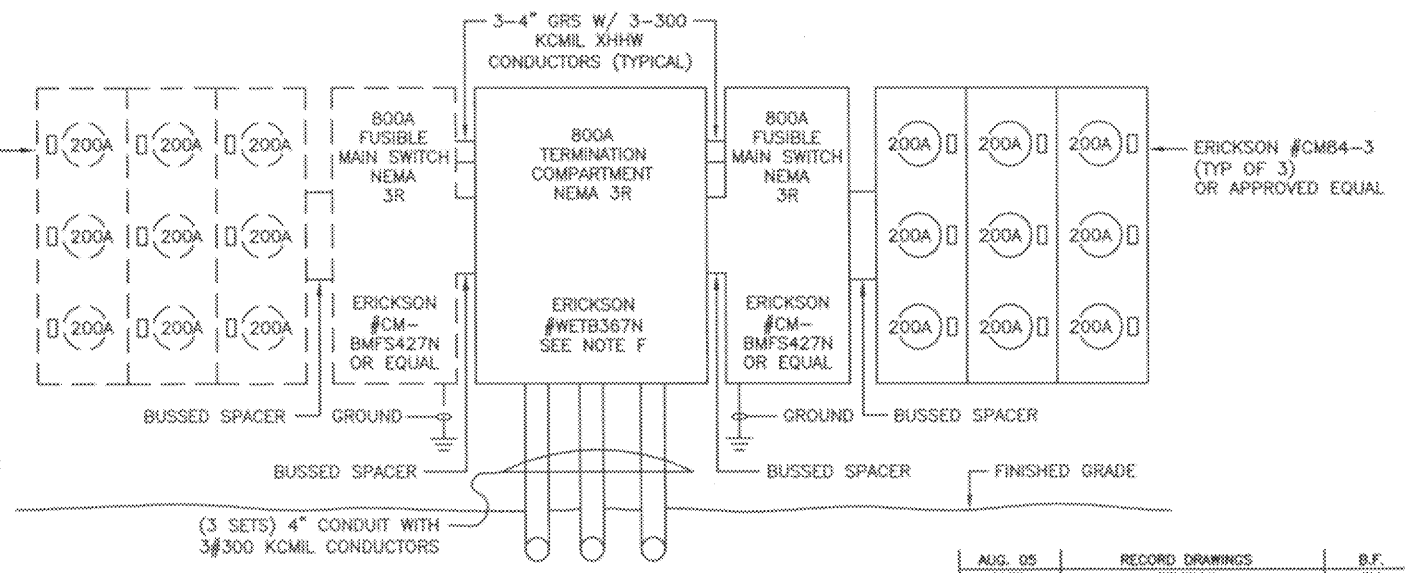
FUTURE

NOTE:
A. USE STAINLESS STEEL HARDWARE ONLY.
B. DIMENSIONS SHOWN SHALL BE PROVIDED AT EACH LOCATION.

TYPICAL METERING EQUIPMENT SUPPORT DETAIL
NO SCALE

- NOTES:
- THE SERVICE SHALL BE 120/240 VOLT, 1-PHASE, 3-WIRE
 - EXTEND CONDUCTORS INTO METERING PANELS VIA 4" SPACER (SHOWN) FROM LOAD SIDE OF MAIN DISCONNECT.
 - CONDUCTOR AMPACITY SHALL BE 800 AMPS.
 - CONTRACTOR TO INSTALL (3) 4" CONDUITS TO UTILITY TRANSFORMER PAD FROM TERMINATION CABINET.
 - CONTRACTOR TO COORDINATE AIC RATING OF EQUIPMENT WITH UTILITY COMPANY.
 - PROVIDE TERMINATION COMPARTMENT WITH 3 LUGS PER PHASE & NEUTRAL OR APPROVED EQUAL.

- NOTES:
- SOLID LINES DENOTE NEW EQUIPMENT, DASHED LINES DENOTE FUTURE EQUIPMENT. THIS SHEET ONLY.
 - METERING LOCATION NO.2 SHOWN ON SHEET E-3 IS SIMILAR TO LOCATION NO.1, EXCEPT THAT THE INSTALLATION REQUIRES SIX (6) 0-200 AMP METERS, NOT NINE AS SHOWN, EACH CIRCUIT BREAKER SHALL BE RATED FOR 200 AMP, 2 POLE, NOT 100 AMPS.
 - METER SOCKETS SHALL BE EQUIPPED WITH LEVER OPERATED MANUAL BYPASS.
 - USE ERICKSON LUG KIT D-34818 FOR 3 CONDUCTOR/PHASE INSTALLATION.



FUTURE

LOCATION NO.1 - SERVICE EQUIPMENT ELEVATION
NO SCALE

POWRTEK ENGINEERING, INC.
WALKESHA WISCONSIN

AUG. 05 DATE	RECORD DRAWINGS REVISION	B.F. BY
R. I. BONG MEMORIAL AIRPORT SUPERIOR, WISCONSIN		
ELECTRICAL DETAILS		
A.I.P. 3-55-0083-06		
DESIGN R.I.B. 5-22-03	FILE NO. F.B.	LL
DRAWN A.D.C. 5-22-03	SCALE: AS SHOWN	
CHECKED G.W.S. 5-22-03	COOPER ENGINEERING RICE LAKE, WISCONSIN	
APPROVED	PROJECT NO. 00552080	SHEET EB