

PALWAUKEE MUNICIPAL AIRPORT COMMISSION WHEELING/PROSPECT HEIGHTS, ILLINOIS

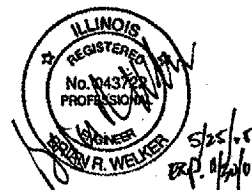


CONSTRUCTION PLANS FOR PALWAUKEE MUNICIPAL AIRPORT

CONSTRUCT SOUTHEAST QUADRANT FIRE PROTECTION SYSTEM

ILLINOIS PROJECT: PWK-2899

MAY 25, 2005



SUMMARY OF QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	RECORD QUANTITY
AR150510	ENGINEER'S FIELD OFFICE	L.S.	1	
AR401910	REMOVE & REPLACE BIT. PVMTS.Y.		20	
AR701004	4" PVC STORM SEWER	L.F.	30	
AR701008	6" PVC STORM SEWER	L.F.	45	
AR701008	8" PVC STORM SEWER	L.F.	35	
AR701515	15" RCP, CLASS IV	L.F.	25	
AR701830	TRENCH BACKFILL	C.Y.	30	
AR701900	REMOVE PIPE	L.F.	120	
AR760508	8" DUCTILE IRON WATER MAIN	L.F.	760	
AR760800	FIRE HYDRANT	EACH	1	
AR760830	WATER VALVE	EACH	1	
AR760850	VALVE VAULT	EACH	1	
AR800020	BORING AND JACKING	L.F.	345	
AR800074	REMOVE & REPLACE CLASS E FENCE 6'	L.F.	80	
AR800109	DETECTOR CHECK VALVE AND VAULT	EACH	1	
AR901510	SEEDING	ACRE	0.40	
AR905530	TOPSOILING	S.Y.	1775	
AR908520	EXCELSIOR BLANKET	S.Y.	1775	

INDEX TO SHEETS

- COVER SHEET
- SITE PLAN/SEQUENCE OF CONSTRUCTION
- SEQUENCE OF CONSTRUCTION GENERAL NOTES AND DETAILS
- PLAN AND PROFILE, STA 0+28.79 TO STA 3+50
- PLAN AND PROFILE, STA 3+50 TO STA 7+50
- PLAN AND PROFILE, STA 7+50 TO STA 11+13
- RESTORATION PLAN
- ILLINOIS-AMERICAN WATER COMPANY DETAILS

PALWAUKEE MUNICIPAL AIRPORT

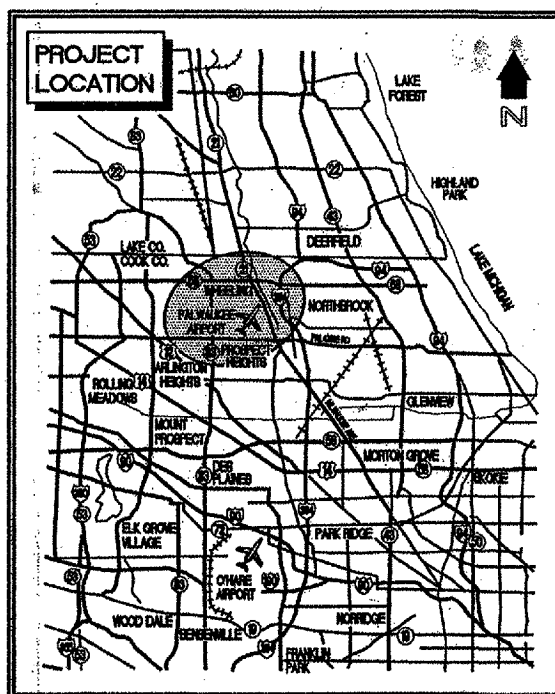
TOWNSHIP: 42 NORTH
RANGE: 11 EAST
COOK COUNTY

WHEELING TOWNSHIP
(SECTION: 13)

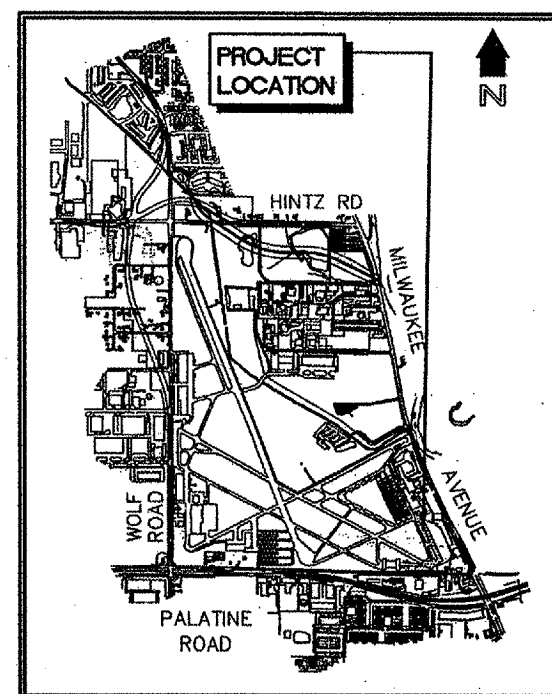
CALL JULIE
BEFORE EXCAVATING
1-800-892-0123

DESIGN AIRCRAFT

GULFSTREAM V
APPROACH CATEGORY: D
AIRCRAFT GROUP: III



LOCATION MAP



SITE PLAN

CMT 00290-02
CRAWFORD MURPHY & TILLY, INC.
CONSULTING ENGINEERS

SUBMITTED BY Brian Welker, P.E.
DATE MAY 25, 2005

PALWAUKEE MUNICIPAL AIRPORT
APPROVED Dennis G. Rouleau AIRPORT MANAGER
DATE 5-25-2005

8A

BM#	LOCATION	ELEVATION
B60	NOAA BRASS DISK N.E. OF RUNWAY 12/30	639.09
B61	IRON PIN IN AREA 3	639.98
79	CHISELED "X"	639.87

EXISTING LEGEND

- WVV WATER VALVE VAULT
- WV WATER VALVE
- ⊕ FH FIRE HYDRANT
- ⊙ INLET
- ⊙ SS STORM SEWER MANHOLE
- SS— STORM SEWER
- ⊙ SIGN
- ⊙ POWER POLE
- ⊙ TELEPHONE MANHOLE
- ⊙ TELEPHONE BOX
- TREE
- E — ELECTRIC
- T — TELEPHONE
- OHE — OVERHEAD ELECTRIC
- G — GAS
- X — FENCE
- ⊕ LIGHT
- ⊕ TRAFFIC SIGNAL
- P — PROPERTY LINE
- ⊙ MAIL BOX
- ⊙ GV GAS VALVE
- ⊕ W WELL
- ⊕ HEADWALL
- ⊙ SAN SANITARY MANHOLE
- AIR OPERATIONS AREA (A.O.A.)
ACTIVE RUNWAYS 200' CENTERLINE TO A.O.A.
ACTIVE TAXIWAYS 72' CENTERLINE TO A.O.A.
- CONCRETE PAVEMENT
- BITUMINOUS PAVEMENT

PROPOSED LEGEND

- W WATER VAULT
- ⊕ FIRE HYDRANT
- W — WATERMAIN
- SELECT GRANULAR BACKFILL
- CASING
- BITUMINOUS PAVEMENT
REMOVAL & REPLACEMENT
- AIRCRAFT MOVEMENT AREA
- CONTRACTOR'S ACCESS/HAUL ROAD
- BARRICADE W/ FLASHING LIGHTS
AND SIGNS ("DO NOT ENTER" AND
"AIRCRAFT MOVEMENT AREA")

PHASING NOTES (ALL PHASES)

PA046

- THE INTENT OF THE PHASING PLANS IS TO MINIMIZE THE IMPACT OF CONSTRUCTION ON THE OPERATION OF THE AIRPORT. THE CONTRACTOR SHALL CONSTRUCT THE PROJECT IN CONSECUTIVE PHASES AS OUTLINED IN THE PLANS UNLESS OTHERWISE APPROVED BY THE ENGINEER.
- PRIOR TO REOPENING A CLOSED RUNWAY, THE ENTIRE RUNWAY SAFETY AREA (200 FEET FROM CENTERLINE) MUST MEET FAA CRITERIA. FAA CRITERIA REQUIRES THAT THERE BE NO OPEN EXCAVATIONS OR TRENCHES, THE MAXIMUM PAVEMENT DROPOFF BE 3 INCHES, AND ALL GRADES IN ANY DIRECTION BE LESS THAN 5 PERCENT. TEMPORARY WEDGING OF BASE COURSE AND BITUMINOUS CONCRETE WILL BE REQUIRED TO MEET CRITERIA.
- THE CONTRACTOR SHALL SUBMIT A CONSTRUCTION SCHEDULE. STRICT ADHERENCE TO THE APPROVED SCHEDULE WILL BE ENFORCED TO AVOID CONFLICTS WITH OTHER CONSTRUCTION ACTIVITIES ON THE AIRPORT AND THE ADVERSE EFFECTS THEY COULD HAVE ON AIRPORT OPERATIONS.
- THE CONTRACTOR SHALL COORDINATE CLOSELY WITH THE AIRPORT STAFF TO SCHEDULE THE RUNWAY/TAXIWAY CLOSURES. ITEMS SUCH AS THE EXTENDED WEATHER FORECAST, MATERIAL AVAILABILITY, EQUIPMENT DEPENDABILITY AND MANPOWER AVAILABILITY SHALL BE DISCUSSED PRIOR TO SCHEDULING THIS CRITICAL CLOSURE. THE ACTING AIRPORT MANAGER AND THE CONTRACTOR SHALL MUTUALLY AGREE ON THE EXACT DATE OF THE CLOSURE.
- CONTRACTOR MUST MAINTAIN ACCESS TO THE MAIN RAMP AT ALL TIMES. CONTRACTOR SHALL RELOCATE EQUIPMENT AT NO ADDITIONAL COST TO CONTRACT TO ALLOW AIRCRAFT TO PASS. CONTRACTOR SHOULD COORDINATE CONSTRUCTION OPERATIONS AT THE MAIN RAMP TO PROVIDE MINIMAL DISRUPTIONS TO AIRCRAFT MOVEMENT IN THAT AREA.
- THIS SHEET IS INTENDED TO SHOW THE GENERAL OVERALL LAYOUT OF THE PROJECT AND TO SERVE AS A REFERENCE PAGE TO DETERMINE SHEET LOCATIONS. CONTRACTOR SHOULD REFER TO SHEETS AS INDICATED FOR SPECIFIC CONSTRUCTION DETAILS.

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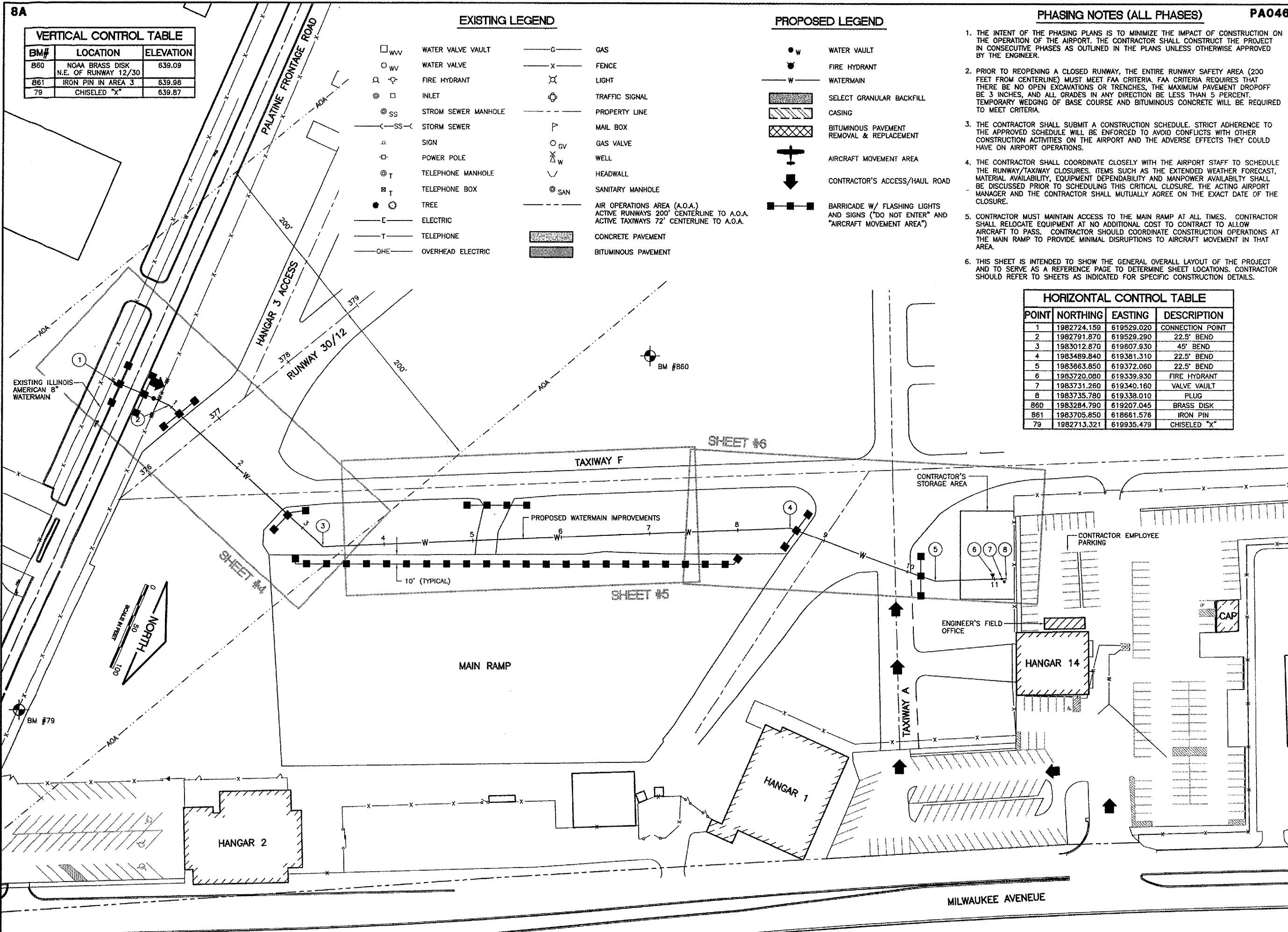
REVISIONS

NUMBER	BY	DATE
1	MAB	12/5/01

0 1 2
 THIS BAR IS EQUAL TO 2"
 AT FULL SCALE (34X22).

HORIZONTAL CONTROL TABLE

POINT	NORTHING	EASTING	DESCRIPTION
1	1982724.199	619529.020	CONNECTION POINT
2	1982791.870	619529.290	22.5' BEND
3	1983012.870	619607.930	45' BEND
4	1983489.840	619381.310	22.5' BEND
5	1983663.850	619372.060	22.5' BEND
6	1983720.080	619339.930	FIRE HYDRANT
7	1983731.260	619340.160	VALVE VAULT
8	1983735.780	619338.010	PLUG
B60	1983284.790	619207.045	BRASS DISK
B61	1983705.850	618661.576	IRON PIN
79	1982713.321	619935.479	CHISELED "X"



**PALWAUKEE MUNICIPAL AIRPORT
 CONSTRUCT SOUTHEAST QUADRANT FIRE
 PROTECTION SYSTEM
 SITE PLAN/
 SEQUENCE OF CONSTRUCTION**

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 CRAWFORD MURPHY & TILLY, INC.
 CONSULTING ENGINEERS
 License No. 184-000613

DESIGN BY:	MAB
DRAWN BY:	MAB/JRO
CHECKED BY:	DJK
APPROVED BY:	BDH
DATE:	05/25/05
JOB No:	00290-02

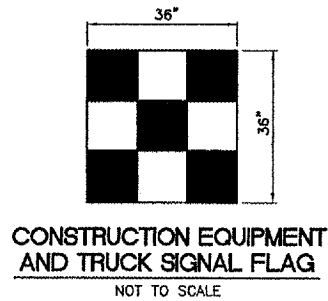
GENERAL NOTES

1. THE SUGGESTED SEQUENCE OF CONSTRUCTION SHOWN IS INTENDED TO ALLOW FOR THE ORDERLY CONSTRUCTION OF THE PROPOSED IMPROVEMENTS WHILE MAINTAINING AIRCRAFT ACCESS AT ALL TIMES. THE PHASING SHOWN IS A SUGGESTED SEQUENCE OF CONSTRUCTION ONLY. THIS SEQUENCE MAY BE MODIFIED HOWEVER, ALTERNATE STAGING PLANS MUST MAINTAIN AIRPORT OPERATIONS TO THE SATISFACTION OF THE AIRPORT MANAGER AND RESIDENT ENGINEER AND BE APPROVED BY THE DIVISION OF AERONAUTICS AND FEDERAL AVIATION ADMINISTRATION.
2. ALL OPERATIONS SHALL BE IN CONFORMANCE WITH AC 150/5370-2C (LATEST EDITION) SAFETY DURING CONSTRUCTION.
3. CONTRACTOR'S EQUIPMENT SHALL BE STORED IN THE EQUIPMENT AND MATERIAL STORAGE/STAGING AREA WHEN CONSTRUCTION IS NOT IN PROGRESS.
4. THE AIRPORT MANAGER IN CONSULTATION WITH THE RESIDENT ENGINEER SHALL HAVE FINAL SAY IN THE APPROVAL OF THE CONSTRUCTION OPERATING SEQUENCE AS IT RELATES TO PEDESTRIAN, VEHICULAR AND AIRCRAFT SAFETY.
5. ALL EXISTING PAVEMENTS, DRIVES OR ANY OTHER AREAS USED AS A HAUL ROAD OR STORAGE AREA BY THE CONTRACTOR SHALL BE RESTORED IN KIND TO THEIR PRE-CONSTRUCTION CONDITION OR TO THE SATISFACTION OF THE RESIDENT ENGINEER AND AIRPORT MANAGER. THE COST OF MAINTAINING, REPAIRING OR CONSTRUCTING THESE PAVEMENTS AND AREAS SHALL BE INCIDENTAL TO THE CONTRACT. EXISTING AREAS OUTSIDE THE PROJECT LIMITS WHICH ARE DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY HIM AT HIS EXPENSE TO THE SATISFACTION OF THE RESIDENT ENGINEER AND THE AIRPORT MANAGER.
6. THE CONTRACTOR SHALL KEEP ALL TRUCKS, EQUIPMENT AND MATERIALS OFF OF THE EXISTING TAXIWAYS, APRONS AND RUNWAYS OUTSIDE OF THE PROJECT LIMITS EXCEPT AS SHOWN OR WITH THE PRIOR PERMISSION OF THE ENGINEER.
7. WORK PERFORMED BY THE CONTRACTOR OUTSIDE OF DAYLIGHT HOURS SHALL BE DONE UNDER SUFFICIENT ARTIFICIAL LIGHTING TO ALLOW FOR PROPER CONSTRUCTION METHODS AND INSPECTIONS. LIGHT SHALL CONSIST OF MOVABLE POLE MOUNTED FLOODLIGHTS AND/OR SPOTLIGHTS OF SUFFICIENT NUMBER TO ILLUMINATE THE WORK AREA. VEHICLE HEADLIGHTS WILL BE ALLOWED ONLY IN ADDITION TO OTHER LIGHTS MENTIONED ABOVE. LIGHTING SHALL BE AS APPROVED BY THE ENGINEER AND SHALL NOT BE USED IF THEY AFFECT FLIGHT SAFETY. CONTRACTOR'S WORK HOURS SHALL BE IN ACCORDANCE WITH LOCAL ORDINANCES.
8. THE CONTRACTOR SHALL PROVIDE PORTABLE FLOOD LIGHTING FOR NIGHTTIME CONSTRUCTION. SUFFICIENT UNITS SHALL BE PROVIDED SO THAT WORK AREAS ARE ILLUMINATED TO A LEVEL OF FIVE HORIZONTAL FOOT CANDLES. THE LIGHTING LEVELS SHALL BE CALCULATED AND MEASURED IN ACCORDANCE WITH THE CURRENT STANDARDS OF THE ILLUMINATION ENGINEERING SOCIETY. LIGHTS SHALL BE POSITIONED SO AS NOT TO INTERFERE WITH AIRPORT OPERATIONS.
9. THE CONTRACTOR WILL BE REQUIRED TO HAVE A SWEEPER AVAILABLE FOR USE AT ALL TIMES. WHEN ACTIVE AIRFIELD PAVEMENTS ARE UTILIZED AS HAUL ROADS BY THE CONTRACTOR, MATERIAL TRACKED ON TO THE PAVEMENT SHALL BE CONTINUALLY REMOVED WITH SAID SWEEPER. THIS SWEEPING SHALL NOT BE PAID FOR SEPARATELY BUT SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT.
10. MATERIALS REMOVED FROM THE PROJECT WILL BE DISPOSED OF OFF AIRPORT PROPERTY, UNLESS NOTED OTHERWISE.
11. PAYMENT FOR TRAFFIC CONTROL INCLUDING, BUT NOT LIMITED TO BARRICADES, SIGNING, RUNWAY CLOSED MARKERS, AIR OPERATIONS AREA (A.O.A.) LATHE AND RIBBON, ETC. SHALL NOT BE PAID SEPARATELY, BUT SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT. BARRICADES AT 10-FOOT CENTERS WITH ONE ORANGE FLAG (24" x 24") BETWEEN EACH SET OF BARRICADES SHALL BE PLACED AT THE LOCATIONS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER. BARRICADES SHALL BE WEIGHTED TO PREVENT BLOWING OVER. BARRICADES SHALL HAVE A FLASHING YELLOW LIGHT AND CONFORM TO IDOT STANDARD 702001, TYPE II. BARRICADE INSTALLATION WILL BE REQUIRED PRIOR TO ACCESS TO THE A.O.A. BY CONTRACTOR'S WORKERS. EQUIPMENT OR MATERIAL SIGNS SHALL BE PLACED AT EACH TAXIWAY/RUNWAY CLOSURE LOCATION AND SHALL BE ATTACHED TO THE BARRICADES. EACH BARRICADE LOCATION SHALL CONSIST OF ONE "DO NOT ENTER" SIGN AND ONE "AIRCRAFT MOVEMENT AREA" SIGN. SIGNS SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT. IN CONJUNCTION WITH IDOT TYPE II BARRICADES, THE CONTRACTOR SHALL SUPPLY AND USE AS DIRECTED BY THE AIRPORT, SUPERDOME REFLECTIVE LOW PROFILE BARREL TYPE BARRICADES AS MANUFACTURED BY BENT MANUFACTURING INC. OR EQUAL.
12. THE CONTRACTOR SHALL CONTACT THE AIRPORT MANAGER TEN (10) WORKING DAYS IN ADVANCE OF THE START OF CONSTRUCTION SO THAT THE APPROPRIATE NOTAMS MAY BE ISSUED.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING ALL CONSTRUCTION ACCESS GATES CLOSED DURING NON WORKING HOURS. THE CONTRACTOR SHALL PROVIDE A SIGN AT THE ACCESS GATE SAYING "AUTHORIZED PERSONNEL ONLY". THE CONTRACTOR SHALL CLOSE AND LOCK THE ACCESS GATE UPON LEAVING THE SITE. THROUGHOUT THE DURATION OF THE CONTRACT, ANY DAMAGES TO THE ACCESS ROAD, ACCESS GATE OR FENCING ADJACENT TO THE PROJECT SHALL BE REPAIRED BY THE CONTRACTOR TO THE SATISFACTION OF THE RESIDENT ENGINEER. ALL COST RELATING TO CONTRACTOR'S ACCESS AND SECURITY SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
14. CONTRACTOR WILL BE REQUIRED TO PUT AIRPORT FLAGS AND HAVE BEACON LIGHTS ON ALL EQUIPMENT AT ALL TIMES DURING CONSTRUCTION. SEE FLAG DETAIL, THIS SHEET.
15. IN THE CASE OF AN EMERGENCY, CONTRACTOR SHALL NOTIFY AIRPORT MANAGER AND THE ENGINEER IMMEDIATELY.
16. DURING ADVERSE WEATHER, THE CONTRACTOR SHALL MAKE PROVISIONS FOR ACCESS TO THE WORK AT NO ADDITIONAL COST TO THE CONTRACT. NO EXTENSION OF CONTRACT TIME WILL BE CONSIDERED FOR DELAYS DUE TO LACK OF ADEQUATE ACCESS TO THE WORK.
17. THE TALLEST PIECE OF CONSTRUCTION EQUIPMENT IS ANTICIPATED TO BE AN ASPHALT/STONE TRUCK WHICH HAS A MAXIMUM HEIGHT OF 25 FEET IN A DUMP POSITION.
18. IF RUNWAY NUMERALS ARE PRESENT DURING CONSTRUCTION THEN CONTRACTOR SHALL PLACE CLOSED RUNWAY MARKER OVER NUMERALS AS DETAILED, OTHERWISE PLACE RUNWAY CLOSED MARKER IN TURF AT ENDS OF RUNWAY AS DETAILED.
19. PALWAUKEE MUNICIPAL AIRPORT WILL BE IN OPERATION DURING THE CONSTRUCTION OF THIS PROJECT. COORDINATION OF WORK WITH THE AIRPORT IS MANDATORY SO AS TO MINIMIZE IMPACTS ON AIRPORT OPERATIONS.
20. APPROXIMATE LOCATION OF HAUL ROUTES ON THE AIRPORT SITE ARE SHOWN ON THE GENERAL PROJECT LAYOUT AND THE PHASING PLANS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE OFF-SITE HAUL ROUTES (STATE HIGHWAYS, COUNTY ROADS OR CITY STREETS) WITH THE APPROPRIATE OWNER WHO HAS JURISDICTION OVER THE AFFECTED ROUTE. ON-SITE ROADS USED AS HAUL ROUTES SHALL BE MAINTAINED BY THE CONTRACTOR AND SHALL BE RESTORED AT THE CONTRACTOR'S EXPENSE TO THEIR ORIGINAL CONDITION UPON COMPLETION OF BEING USED AS A HAUL ROUTE. THE BEFORE AND AFTER CONDITION OF ON-SITE HAUL ROUTES SHALL BE JOINTLY INSPECTED AND DETERMINED BY THE CONTRACTOR AND THE ENGINEER. FENCING, DRAINAGE, GRADING AND OTHER MISCELLANEOUS CONSTRUCTION REQUIRED TO CONSTRUCT TEMPORARY HAUL ROUTES OR ACCESS POINTS ON THE AIRPORT WILL BE THE CONTRACTOR'S TOTAL RESPONSIBILITY AND SHALL BE APPROVED BY THE ENGINEER PRIOR TO THE WORK. ALL ON-SITE ACCESS ROADS TO AIRPORT FACILITIES SHALL REMAIN OPEN AND MAINTAINED AT ALL TIMES.

21. MOBILIZATION/EQUIPMENT STORAGE AREA WILL BE MADE AVAILABLE FOR CONTRACTOR'S MOBILIZATION AND STORAGE AS SHOWN ON THE PLANS. THIS AREA SHALL BE RESTORED TO THE ORIGINAL CONDITION UPON COMPLETION OF THE PROJECT AT THE CONTRACTOR'S EXPENSE.
22. LOCATION OF KNOWN EXISTING AIRPORT UNDERGROUND CABLES ARE SHOWN ON THE PLANS AND MUST BE VERIFIED BY THE CONTRACTOR. REPAIR OF DAMAGED CABLE MUST BE STARTED IMMEDIATELY AND CONTINUED UNTIL COMPLETED. ALL SUCH REPAIRS SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS, OR AS DIRECTED BY THE OWNER OF THE CABLE, AND SHALL BE AT THE CONTRACTOR'S EXPENSE. IF FAA CABLES ARE DAMAGED, REPAIRS SHALL BE DONE FROM POINT TO POINT IN ACCORDANCE WITH FAA REQUIREMENTS AND IN THE PRESENCE OF A FAA REPRESENTATIVE. THE OWNER MAY ELECT TO HAVE THE REPAIR PERFORMED BY OTHERS IN WHICH CASE THE CONTRACTOR SHALL BE RESPONSIBLE FOR PAYING THE INCURRED COSTS OF REPAIRS.
23. COORDINATION MEETINGS - THE CONTRACTOR SHALL CONDUCT WEEKLY COORDINATION MEETINGS TO DISCUSS WORK AREAS AND SCHEDULING, ETC. WITH THE ENGINEER, AIRPORT OPERATIONS, FAA, AND OTHER APPROPRIATE OFFICIALS. MINUTES FROM THE WEEKLY MEETINGS SHALL BE PREPARED BY THE CONTRACTOR, FURNISHED TO ALL ATTENDEES PRIOR TO THE SUBSEQUENT MEETING, AND KEPT ON FILE AT THE FIELD OFFICE. THE COORDINATION MEETING COSTS SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.
24. THE CONTRACTOR SHALL PROVIDE THE PHONE NUMBERS OF THREE PERSONNEL, INCLUDING THE PROJECT SUPERINTENDENT, WHO MAY BE CONTACTED IN AN EMERGENCY. PERSONNEL SHALL BE ON CALL 24 HOURS PER DAY FOR MAINTAINING AIRPORT HAZARD LIGHTING AND BARRICADES.
25. DRAINAGE MODIFICATIONS SHALL BE SEQUENCED TO PROVIDE POSITIVE DRAINAGE AT ALL TIMES AT NO ADDITIONAL COST TO THE CONTRACT.
26. VEHICLES AND EQUIPMENT SHALL NOT BE ALLOWED WITHIN 72' FROM ACTIVE TAXIWAYS AND 200' FROM ACTIVE RUNWAYS UNLESS OTHERWISE APPROVED BY THE AIRPORT MANAGER.
27. CONTRACTOR SHALL STORE EQUIPMENT AND MATERIALS IN SUCH A MANNER AS NOT TO VIOLATE FEDERAL AVIATION ADMINISTRATION PART 77 IMAGINARY SURFACES OR RUNWAY AND TAXIWAY SAFETY AREAS.
28. ALL EXISTING TAXIWAY AND RUNWAY AIRFIELD LIGHTING CIRCUITS, FAA CABLES AND OTHER ELECTRICAL CABLES SHALL REMAIN IN SERVICE AT ALL TIMES. ALL EXISTING LIGHTING AND VAULT EQUIPMENT SHALL REMAIN IN SERVICE UNTIL PROPOSED IMPROVEMENTS ARE INSTALLED AND OPERATIONAL, UNLESS OTHERWISE APPROVED BY THE ENGINEER. ANY CABLES DAMAGED BY THE CONTRACTOR SHALL BE IMMEDIATELY REPAIRED AT HIS EXPENSE.
29. COORDINATION BY THE CONTRACTOR WITH THE EXISTING UTILITIES SHALL BE COMPLETED BEFORE CONSTRUCTION IS STARTED. CONTRACTOR IS REFERRED TO SECTION 50-17 OF THE SPECIAL PROVISIONS FOR SPECIFIC REQUIREMENTS. THE LOCATION OF UNDERGROUND UTILITIES AS INDICATED ON THE PLANS HAS BEEN OBTAINED FROM EXISTING RECORDS. NEITHER THE OWNER OR THE DESIGN ENGINEER ASSUME ANY RESPONSIBILITY WHATSOEVER IN RESPECT TO THE ACCURACY, COMPLETENESS OR SUFFICIENCY OF THE INFORMATION. THERE IS NO GUARANTEE, EITHER EXPRESSED OR IMPLIED THAT THE LOCATIONS, SIZE AND TYPE MATERIAL OF EXISTING UNDERGROUND UTILITIES AS INDICATED ARE REPRESENTATIVE OF THOSE TO BE ENCOUNTERED DURING CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING SERVICE CONNECTIONS TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANY OF HIS OPERATIONAL PLANS. THE CONTRACTOR SHALL MAKE ARRANGEMENTS FOR DETAILED INFORMATION AND ASSISTANCE IN LOCATING UTILITIES. IN THE EVENT AN UNEXPECTED UTILITY INTERFERENCE IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY COMPANY, THE RESIDENT ENGINEER AND THE AIRPORT MANAGER. ANY SUCH MAINS AND/OR SERVICES DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED IMMEDIATELY AT HIS EXPENSE TO THE SATISFACTION OF THE RESIDENT ENGINEER AND AIRPORT MANAGER.
30. ALL AIRFIELD LIGHTING AND LIGHTING GUIDANCE SYSTEMS (NAVAIDS) LOCATED WITHIN AND IMMEDIATELY ADJACENT TO THE CONTRACTOR'S WORK ZONE SHALL BE CHECKED FOR OPERATIONAL CONDITION PRIOR TO THE DEPARTURE FROM THE AIRPORT WITH THE ACTING AIRPORT MANAGER. ANY DEFICIENCIES IN THESE SYSTEMS DUE TO THE ACTS OF CONTRACTOR OR HIS SUBCONTRACTORS, SUPPLIERS OR CONSULTANTS SHALL BE REPAIRED IMMEDIATELY.
31. ORANGE CONES SHALL BE PLACED AT 25' CENTERS ALONG THE PAVEMENT EDGE DURING CONCRETE POURING OPERATIONS OF THE CLOSURE LANES TO PREVENT VEHICLES FROM ENTERING PLASTIC CONCRETE. IN THE EVENT A VEHICLE ENTERS THE CONCRETE BEFORE A MINIMUM COMPRESSIVE STRENGTH OF 3,500 PSI HAS BEEN OBTAINED, SAID PAVEMENT SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.

CONTRACTOR CROSSING RUNWAY AND TAXIWAY AIR OPERATIONS AREA (A.O.A.)

32. ANYTIME THE CONTRACTOR IS REQUIRED TO UTILIZE OR CROSS ACTIVE AIRFIELD PAVEMENTS FOR ACCESS TO AND FROM THE WORK ZONE, A FULL TIME CROSSING GUARD IN RADIO CONTACT WITH THE CONTROL TOWER SHALL BE FURNISHED BY THE CONTRACTOR FOR MOVEMENTS OF VEHICLES OR EQUIPMENT TO AND FROM THE WORK ZONE. THE RADIO OPERATOR SHALL BE FAMILIAR WITH AIRPORT GROUND CONTROL PROCEDURES AND DEMONSTRATE KNOWLEDGE OF SAME TO THE AIRPORT. THE AIRPORT RESERVES THE RIGHT TO APPROVE THE CROSSING GUARDS. THE CONTRACTOR SHALL PROVIDE THEIR OWN RADIOS. THIS COST SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PAYMENT OF MUNICIPAL FINES (\$500 PER OCCURRENCE) DUE TO AIRFIELD INCURSIONS BY HIS EMPLOYEES, SUBCONTRACTORS, SUPPLIERS, CONSULTANTS AND/OR AGENTS.
33. ANY PAVEMENT DAMAGED BY CONTRACTOR'S OPERATIONS SHALL BE REPAIRED IMMEDIATELY BY HIM TO THE SATISFACTION OF THE RESIDENT ENGINEER AND AIRPORT MANAGER AT NO ADDITIONAL COST TO THE OWNER. PAVEMENT SHALL BE CONTINUALLY SWEEPED TO PROVIDE DEBRIS FREE SURFACE DURING ALL HAUL ROAD OPERATIONS. THIS COST SHALL NOT BE PAID SEPARATELY BUT SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT.
34. WORK WITHIN THE A.O.A. SHALL BE EXPEDITED. ANY DROP OFF SHALL BE ADEQUATELY LIGHTED, SIGNED AND BARRICADED. NO MATERIAL SHALL BE STOCKPILED WITHIN THE A.O.A. SHOULD IT BE NECESSARY FOR THE CONTRACTOR TO TEMPORARILY RELOCATE EQUIPMENT TO ALLOW AIRCRAFT TO PASS, THEY SHALL DO SO AT NO EXTRA COST TO THE PROJECT. THE CONTRACTOR SHALL NOTIFY THE RESIDENT ENGINEER AND AIRPORT MANAGER TEN (10) WORKING DAYS IN ADVANCE OF ANY PLANNED CONSTRUCTION WITHIN THESE LIMITS.



PA046
RUNWAY 16/34
DESIGN AIRCRAFT APPROACH CATEGORY: D
DESIGN AIRPORT GROUP: III

RUNWAY 12/30
DESIGN AIRCRAFT APPROACH CATEGORY: B
DESIGN AIRPORT GROUP: II

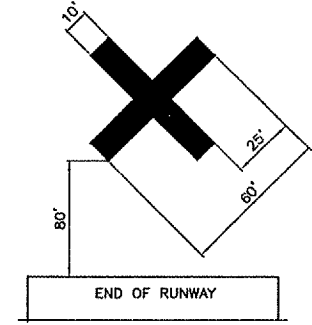
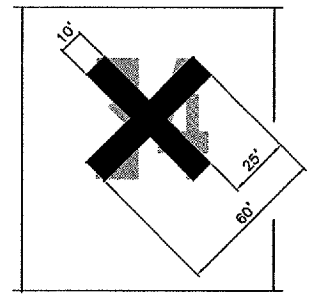
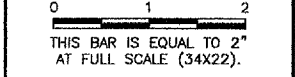
CLOSEST CONSTRUCTION POINT
RUNWAY 12/30
LATITUDE: 42°06'35" (NAD83)
LONGITUDE: 87°53'34" (NAD83)
ELEVATION: 639.60

GROUND CONTROL FREQUENCY: 121.7
AIR CONTROL FREQUENCY: 119.9
MAXIMUM ANTICIPATED HEIGHT OF CONSTRUCTION EQUIPMENT: 25'

CONTRACTOR SHALL PLAN AND PERFORM HIS WORK SO AS NOT TO INTERFERE OR HINDER THE PROGRESS, WORK OR HAUL ROAD ACCESS OF OTHER CONTRACTORS (SEE SPECIAL PROVISIONS SECTION 30-05). THE PRIME CONTRACTOR WILL BE RESPONSIBLE TO COORDINATE CONSTRUCTION ACTIVITIES AND ACCESS BETWEEN ALL ON-SITE CONTRACTORS SUBCONTRACTORS.

PATH: K:\0029002\draw\01-11-02\
FILE: seq notes.dwg
UPDATE BY: johse
SURVEY BOOK #
XREF DWG:
DATE: Mon 2/4/02 8:42am

REVISIONS		
NUMBER	BY	DATE



CLOSED RUNWAY MARKER DETAIL NOTES

1. CLOSED RUNWAY MARKERS SHALL BE YELLOW.
2. MARKERS SHALL BE MATERIAL APPROVED BY THE ENGINEER.
3. CONTRACTOR SHALL MAINTAIN AND RELOCATE MARKERS AS SHOWN ON THE PLANS OR AS NEEDED TO FACILITATE CONSTRUCTION
4. MARKERS ON PAVEMENT SHALL BE PLACED OVER EXISTING RUNWAY NUMERALS AS SHOWN.
5. COST OF FURNISHING, INSTALLING, MAINTAINING AND REMOVING MARKERS SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT.
6. DURING VARIOUS PHASES OF WORK, IT WILL BE NECESSARY TO CLOSE RUNWAYS TO AIR TRAFFIC ON A TEMPORARY BASIS AS COORDINATED WITH THE AIRPORT AND TOWER PERSONNEL THE CONTRACTOR SHALL MARK THE RUNWAYS TO BE CLOSED BY PLACING A YELLOW CROSS AT THE LOCATION AND DIMENSIONS DETAILED ON THIS SHEET. THE CROSSES ARE SHOWN ON THE RESPECTIVE RUNWAYS ACCORDING TO THE VARIOUS PHASES OF WORK AS DELINEATED IN THE SUGGESTED SEQUENCE OF CONSTRUCTION.

LIMITATIONS ON CONSTRUCTION WITHIN AIRPORT OPERATIONS AREA (A.O.A.)

RUNWAYS:
ON ANY DAY WHEN CONSTRUCTION IS WITHIN 200' OF THE CENTERLINE OF THE RUNWAY, THE RUNWAY SHALL BE CLOSED. THE CONTRACTOR SHALL NOTIFY THE RESIDENT ENGINEER AND AIRPORT MANAGER TEN (10) WORKING DAYS IN ADVANCE OF ANY PLANNED CONSTRUCTION WITHIN THESE LIMITS. WORK SHALL BE EXPEDITED IN THESE AREAS AND AT THE END OF EACH WORKING DAY THESE AREAS SHALL BE SMOOTHLY RAISED TO ALLOW THE RUNWAY TO BE REOPENED. AT LEAST ONE OF THE RUNWAYS SHALL REMAIN IN OPERATION AT ALL TIMES. IF NECESSARY STEEL PLATES SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR TO COVER ANY OPEN TRENCHES OR EXCAVATION WITHIN THE A.O.A. IF DURING RUNWAY CLOSURE AN EMERGENCY IS DECLARED, THE CONTRACTOR SHALL IMMEDIATELY CLEAR THE RUNWAY OF ALL VEHICLES, MEN AND EQUIPMENT.

TAXIWAYS:
ANY WORK WITHIN 72' OF THE TAXIWAY CENTERLINE WILL REQUIRE A TAXIWAY CLOSURE. CONSTRUCTION WILL BE ALLOWED UP TO THE EDGE OF THE TAXIWAY PAVEMENTS WITHOUT CLOSURE ON A LIMITED BASIS AS DETERMINED BY THE AIRPORT MANAGER. WORK WITHIN THE A.O.A. SHALL BE EXPEDITED. ANY DROP OFF SHALL BE ADEQUATELY LIGHTED, SIGNED AND BARRICADED. NO MATERIAL SHALL BE STOCKPILED WITHIN THE A.O.A. SHOULD IT BE NECESSARY FOR THE CONTRACTOR TO TEMPORARILY RELOCATE EQUIPMENT TO ALLOW AIRCRAFT TO PASS, THEY SHALL DO SO AT NO EXTRA COST TO THE PROJECT. THE CONTRACTOR SHALL NOTIFY THE RESIDENT ENGINEER AND AIRPORT MANAGER FIVE (5) WORKING DAYS IN ADVANCE OF ANY PLANNED CONSTRUCTION WITHIN THESE LIMITS.

NOTE - ALL PHASES
ALL EXISTING TAXIWAY AND RUNWAY AIRFIELD LIGHTING CIRCUITS, FAA CABLES AND OTHER AIRPORT ELECTRICAL CABLES SHALL REMAIN IN SERVICE UNTIL REPLACED AS ACCEPTABLE TO THE RESIDENT ENGINEER. ALL TEMPORARY CABLING AND SPLICING NECESSARY TO KEEP THE CIRCUITS IN OPERATION SHALL BE CONSIDERED INCIDENTAL TO CONTRACT.

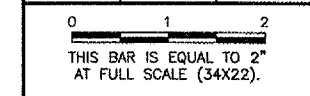
PALWAUKEE MUNICIPAL AIRPORT
CONSTRUCT SOUTHEAST QUADRANT FIRE
PROTECTION SYSTEM
SEQUENCE OF CONSTRUCTION
GENERAL NOTES AND DETAILS

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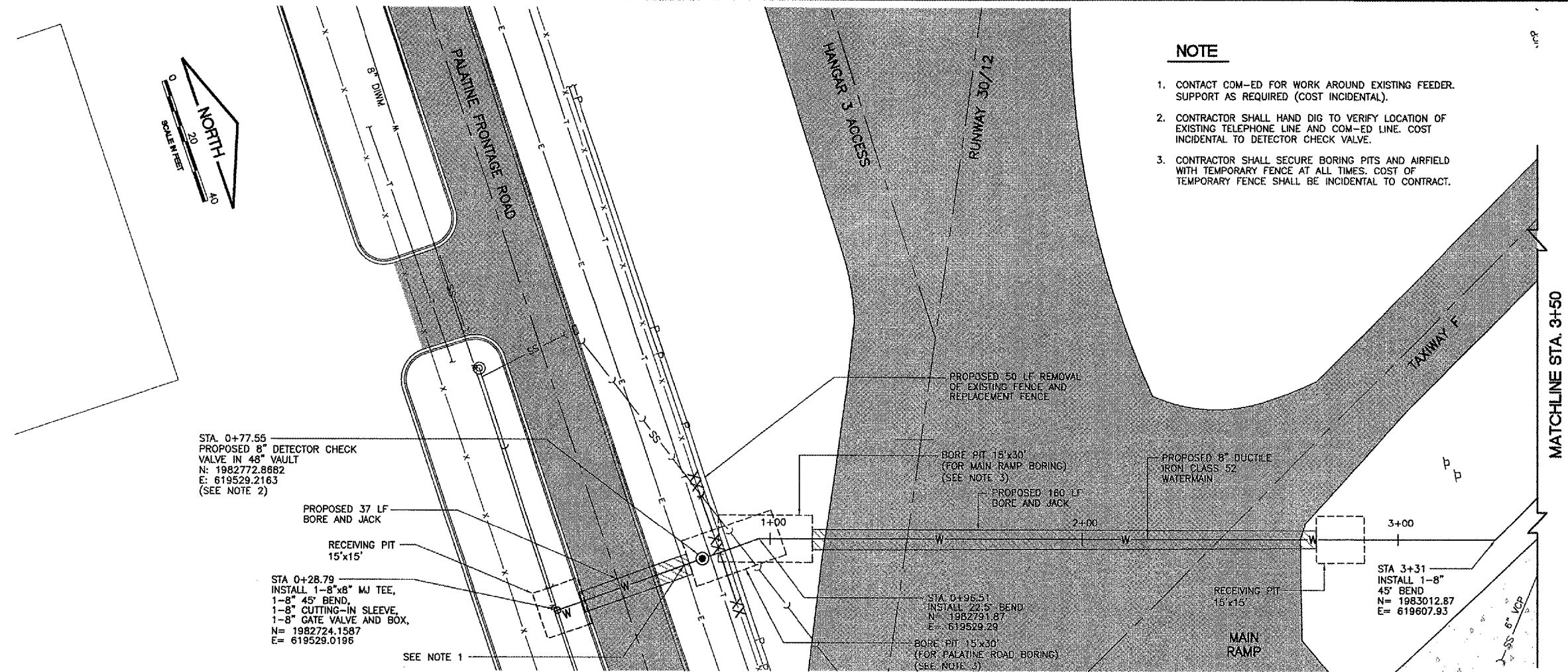
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 UPDATE BY: johse
 SURVEY BOOK #
 XREF DWG:
 XREF DWG:
 DATE: Mon 2/4/02 11:40am

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NOTE

- CONTACT COM-ED FOR WORK AROUND EXISTING FEEDER. SUPPORT AS REQUIRED (COST INCIDENTAL).
- CONTRACTOR SHALL HAND DIG TO VERIFY LOCATION OF EXISTING TELEPHONE LINE AND COM-ED LINE. COST INCIDENTAL TO DETECTOR CHECK VALVE.
- CONTRACTOR SHALL SECURE BORING PITS AND AIRFIELD WITH TEMPORARY FENCE AT ALL TIMES. COST OF TEMPORARY FENCE SHALL BE INCIDENTAL TO CONTRACT.



STA. 0+77.55
 PROPOSED 8" DETECTOR CHECK
 VALVE IN 48" VAULT
 N= 1982772.8682
 E= 619529.2163
 (SEE NOTE 2)

PROPOSED 37 LF
 BORE AND JACK

RECEIVING PIT
 15'x15'

STA 0+28.79
 INSTALL 1-8" X 8" MJ TEE,
 1-8" 45° BEND,
 1-8" CUTTING-IN SLEEVE,
 1-8" GATE VALVE AND BOX,
 N= 1982724.1587
 E= 619528.0196

SEE NOTE 1

PROPOSED 50 LF REMOVAL
 OF EXISTING FENCE AND
 REPLACEMENT FENCE

BORE PIT 15'x30'
 (FOR MAIN RAMP BORING)
 (SEE NOTE 3)

PROPOSED 8" DUCTILE
 IRON CLASS 52
 WATERMAIN

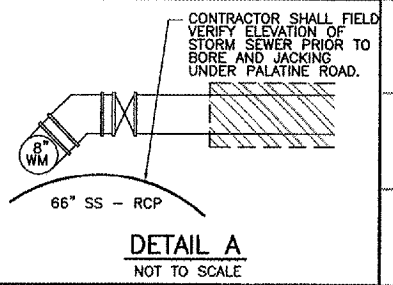
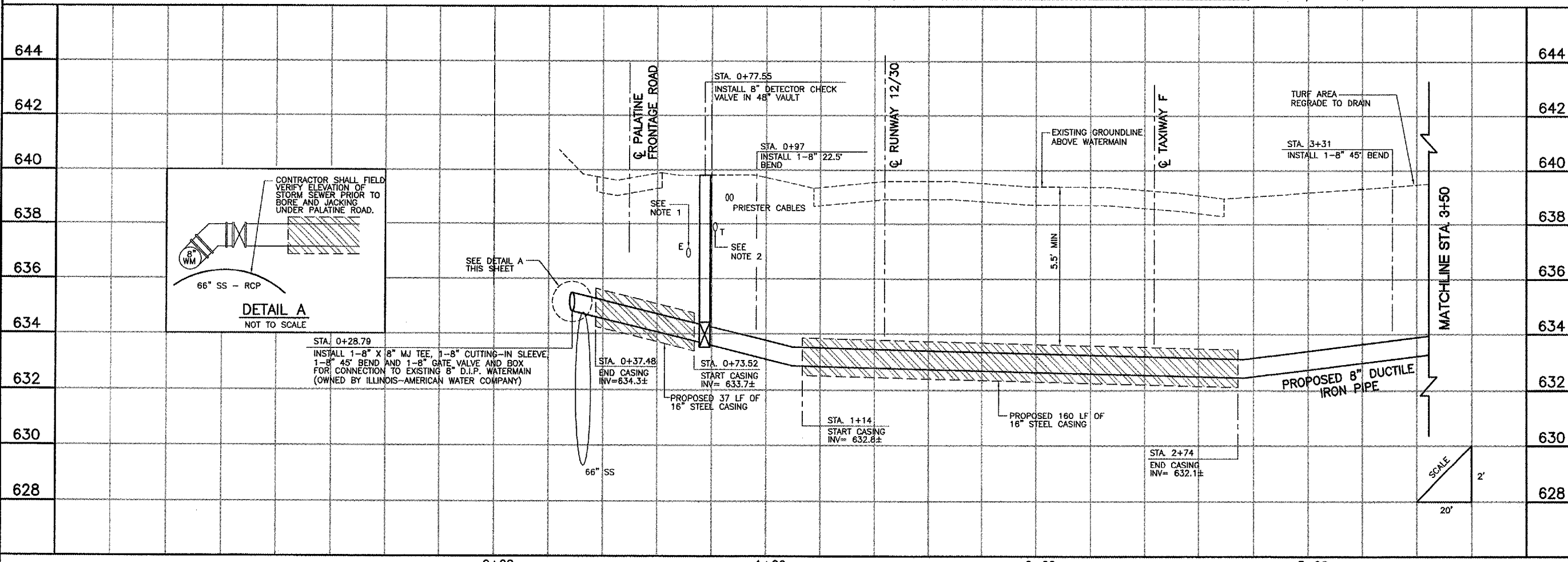
PROPOSED 180 LF
 BORE AND JACK

RECEIVING PIT
 15'x15'

STA. 0+96.51
 INSTALL 22.5° BEND
 N= 1982791.87
 E= 619529.29

BORE PIT 15'x30'
 (FOR PALATINE ROAD BORING)
 (SEE NOTE 3)

STA 3+31
 INSTALL 1-8"
 45° BEND
 N= 1983012.87
 E= 619607.93



STA. 0+28.79
 INSTALL 1-8" X 8" MJ TEE, 1-8" CUTTING-IN SLEEVE,
 1-8" 45° BEND AND 1-8" GATE VALVE AND BOX
 FOR CONNECTION TO EXISTING 8" D.I.P. WATERMAIN
 (OWNED BY ILLINOIS-AMERICAN WATER COMPANY)

STA. 0+37.48
 END CASING
 INV= 634.3±

STA. 0+73.52
 START CASING
 INV= 633.7±

STA. 1+14
 START CASING
 INV= 632.8±

STA. 2+74
 END CASING
 INV= 632.1±

SCALE
 2"
 20'

**PALWAUKEE MUNICIPAL AIRPORT
 CONSTRUCT SOUTHEAST QUADRANT FIRE
 PROTECTION SYSTEM**

**PLAN AND PROFILE
 STA. 0+28.79 TO STA. 3+50**

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APPROVED BY:	BDH
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JOB No:	00290-02

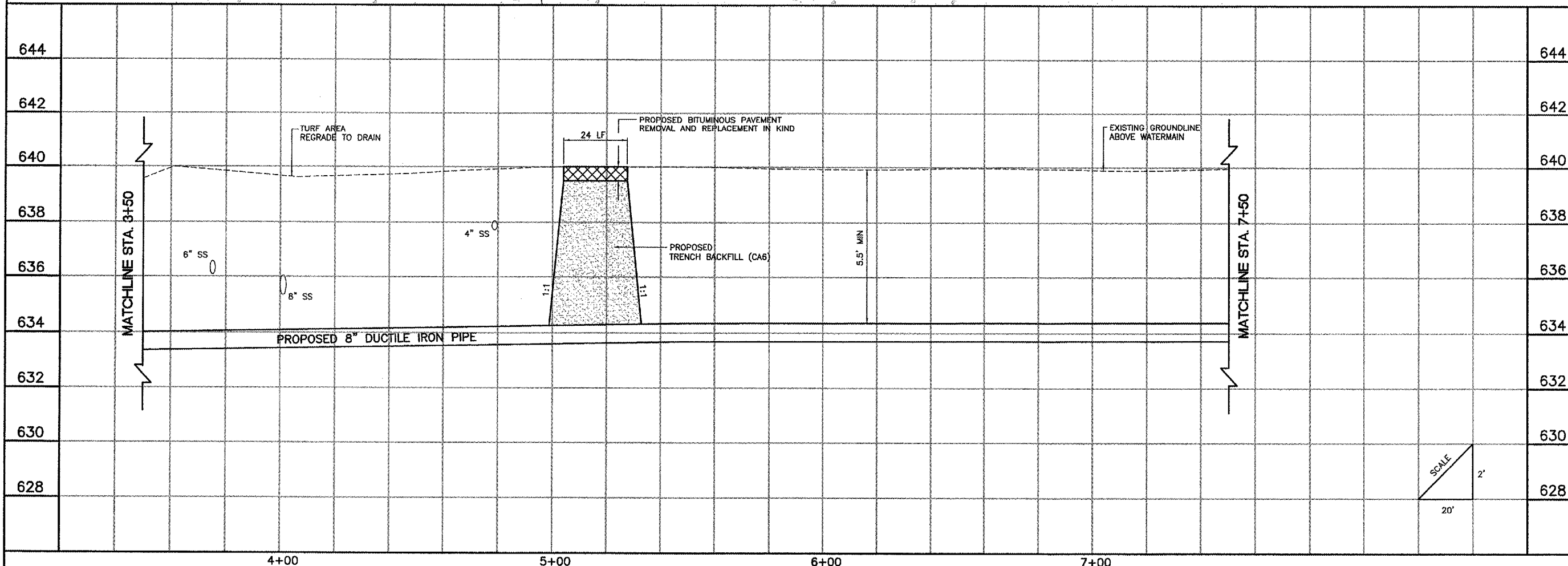
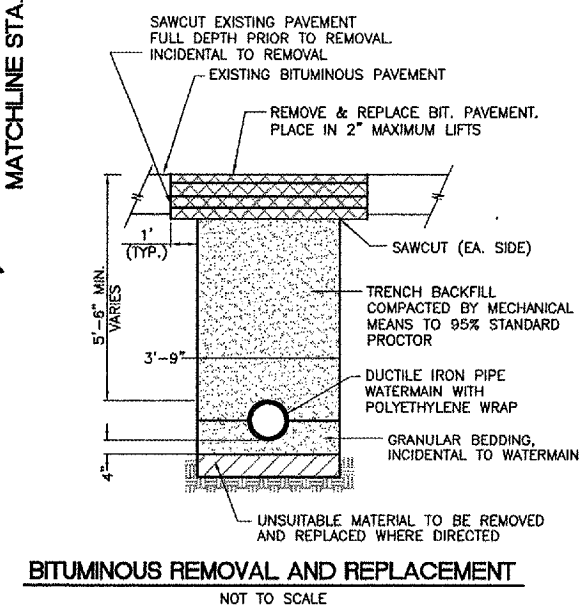
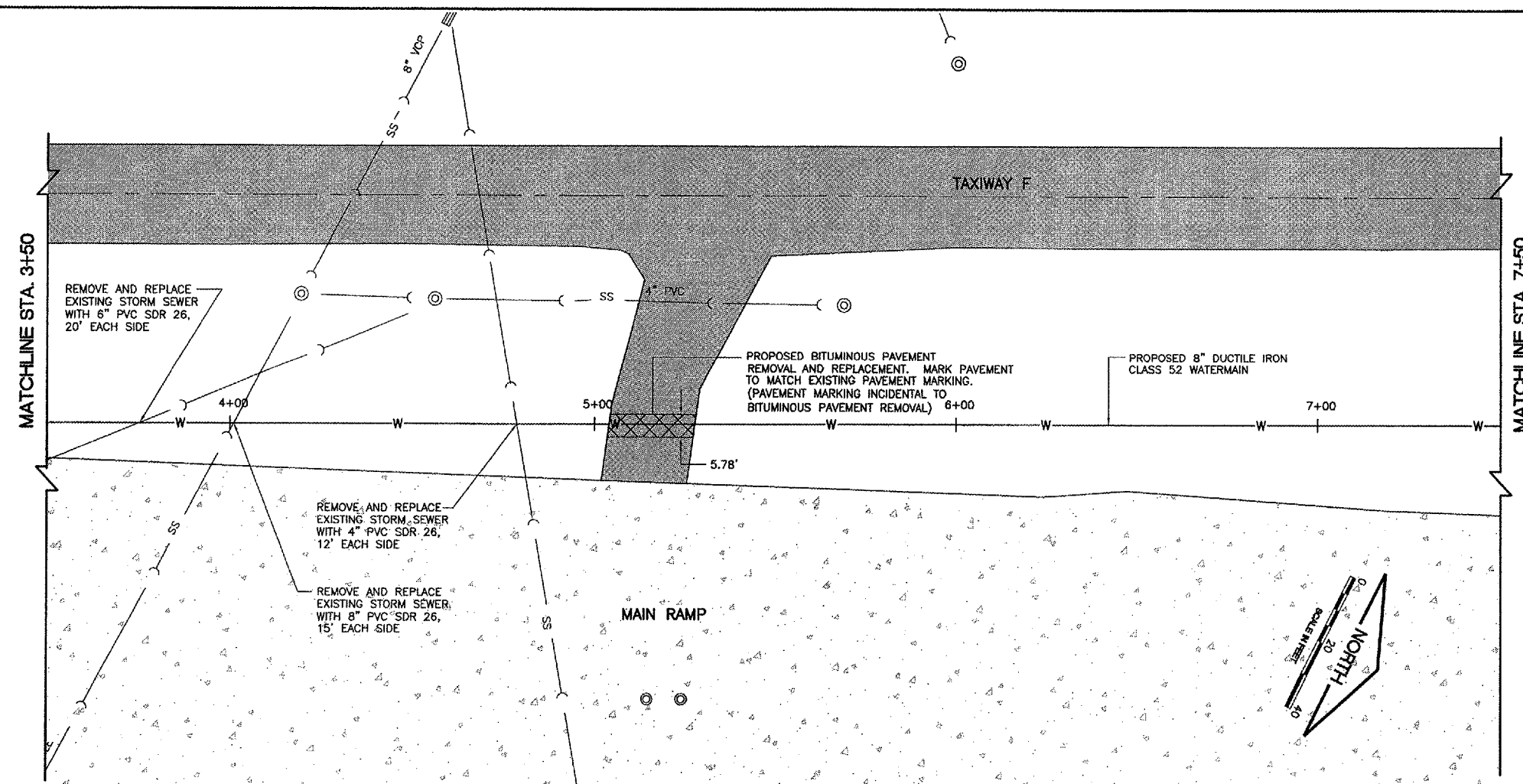
NOTE

1. COUPLINGS AND FITTINGS FOR STORM SEWER REPLACEMENT SHALL BE INCIDENTAL TO THE STORM SEWER.

REVISIONS

NUMBER	BY	DATE

0 1 2
 THIS BAR IS EQUAL TO 2' AT FULL SCALE (34X22).



**PALWAUKEE MUNICIPAL AIRPORT
 CONSTRUCT SOUTHEAST QUADRANT FIRE
 PROTECTION SYSTEM**

**PLAN AND PROFILE
 STA. 3+50 TO STA. 7+50**

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NOTE

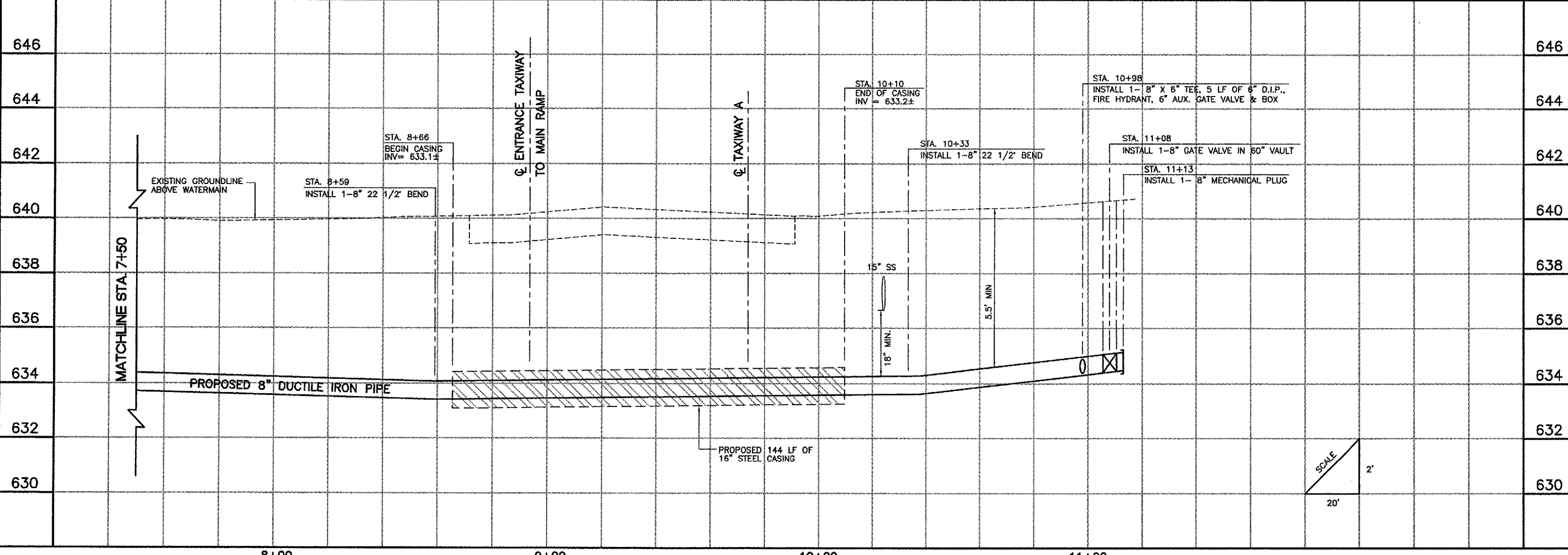
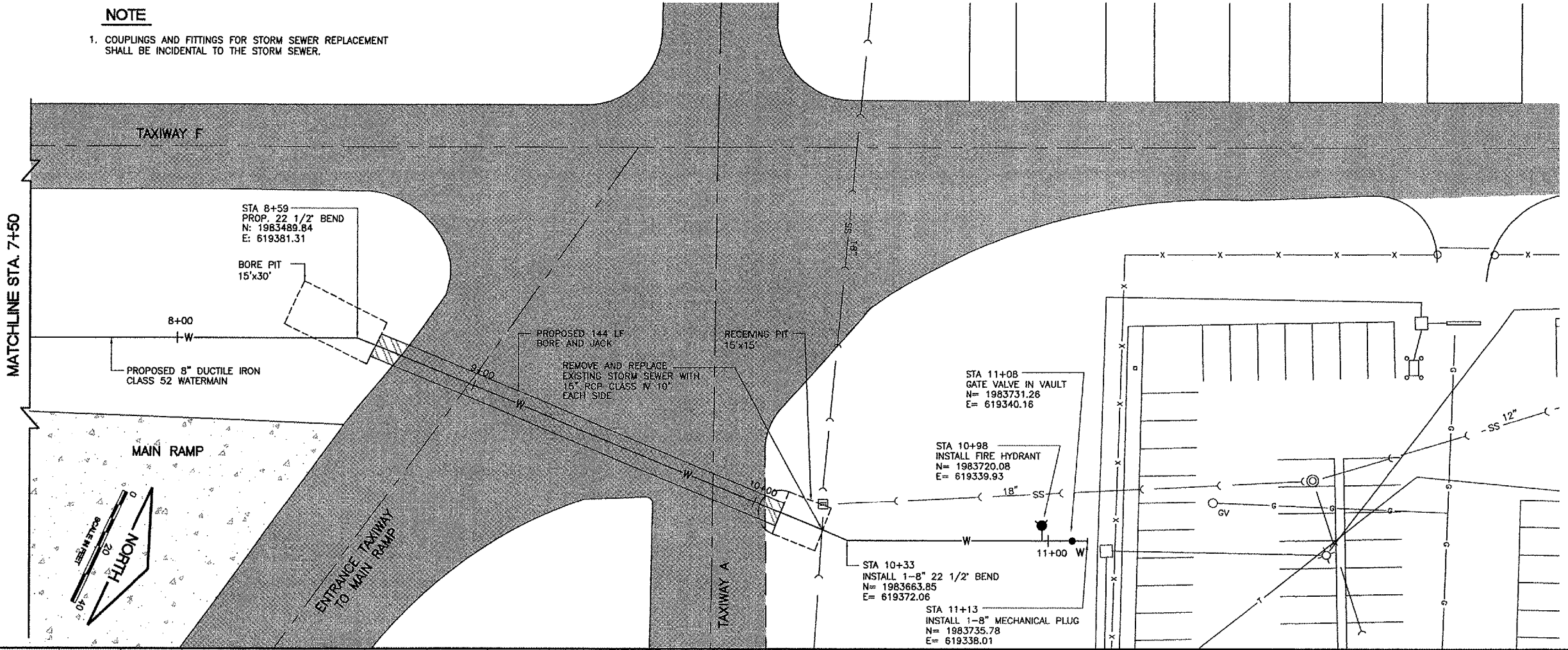
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 DATE: Mon 2/4/02 9:45am

REVISIONS

NUMBER	BY	DATE

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 THIS BAR IS EQUAL TO 2"
 AT FULL SCALE (34X22).



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 CONSTRUCT SOUTHEAST QUADRANT FIRE
 PROTECTION SYSTEM
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 STA. 7+50 TO STA. 11+13**

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 SURVEY BOOK #
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0 1 2
 THIS BAR IS EQUAL TO 2"
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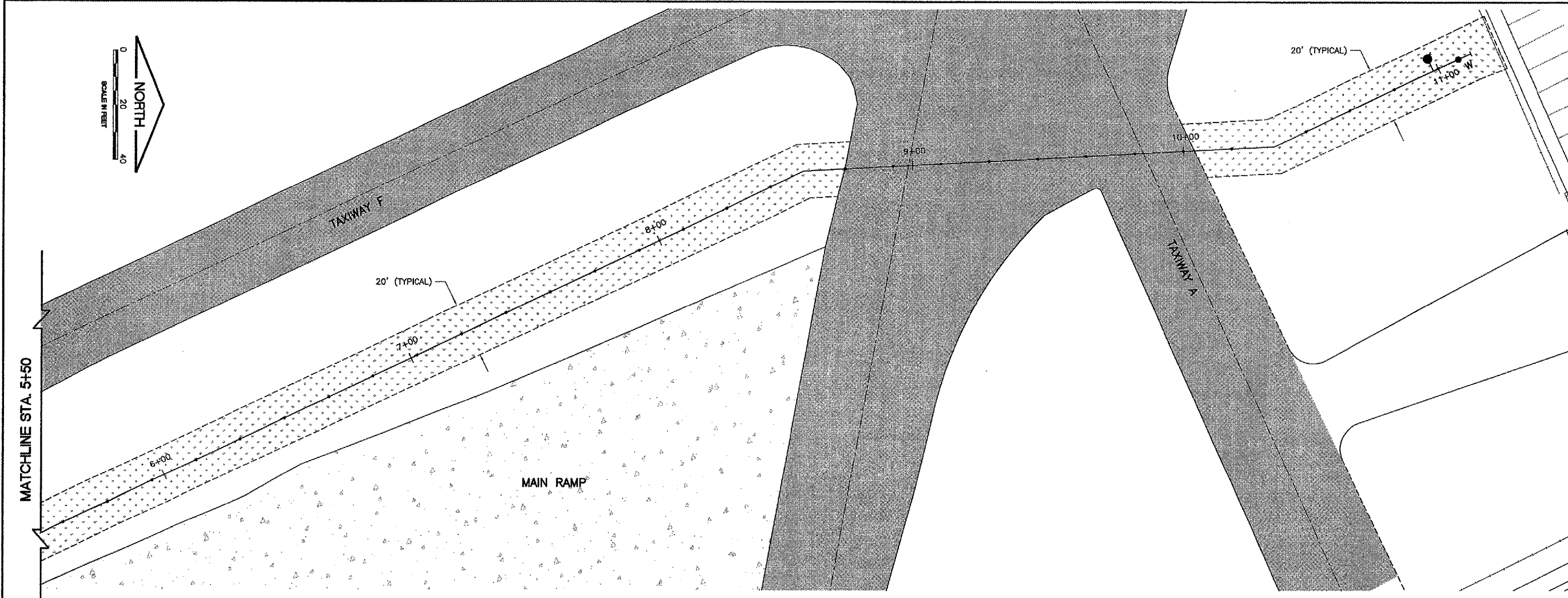
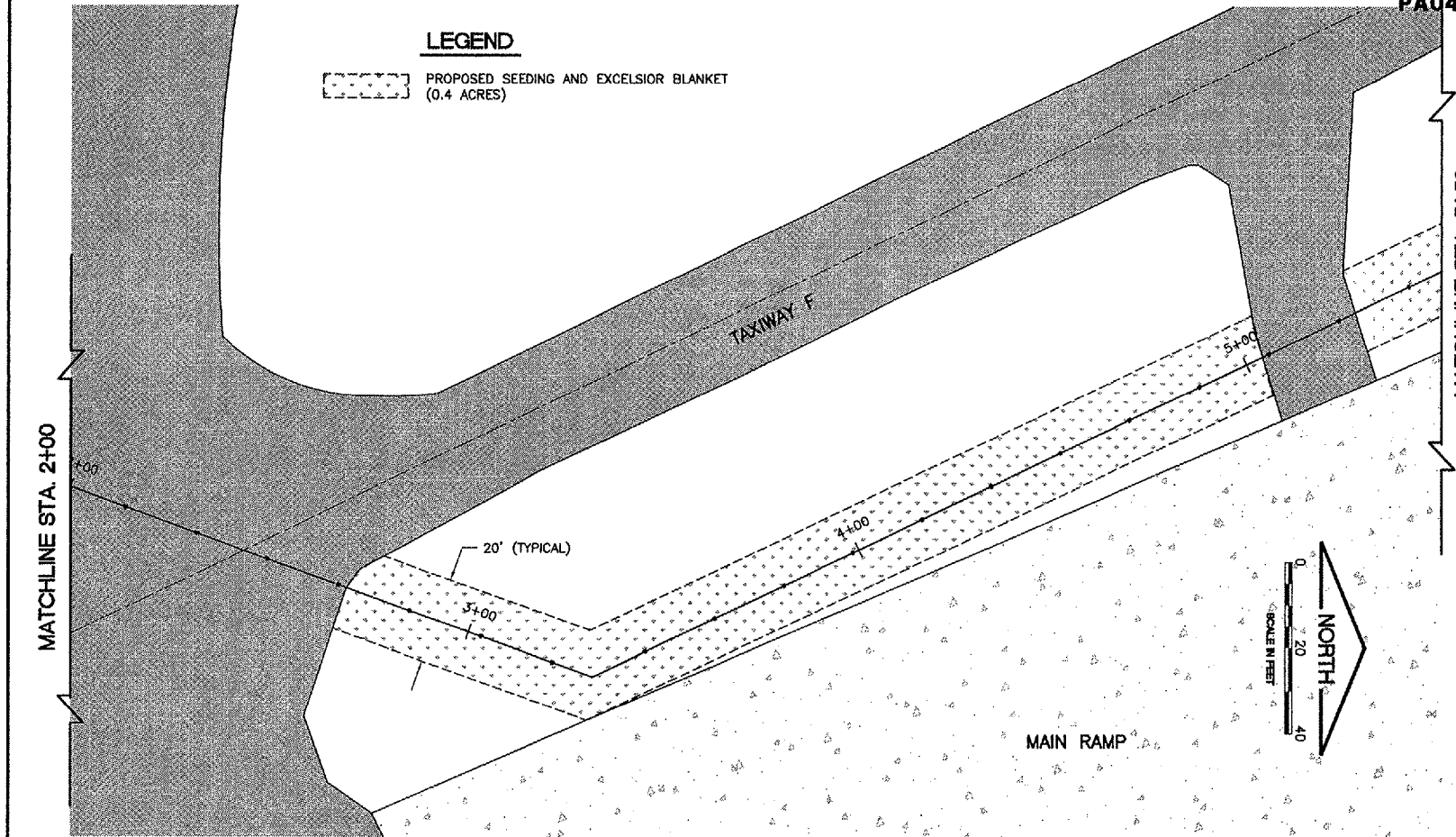
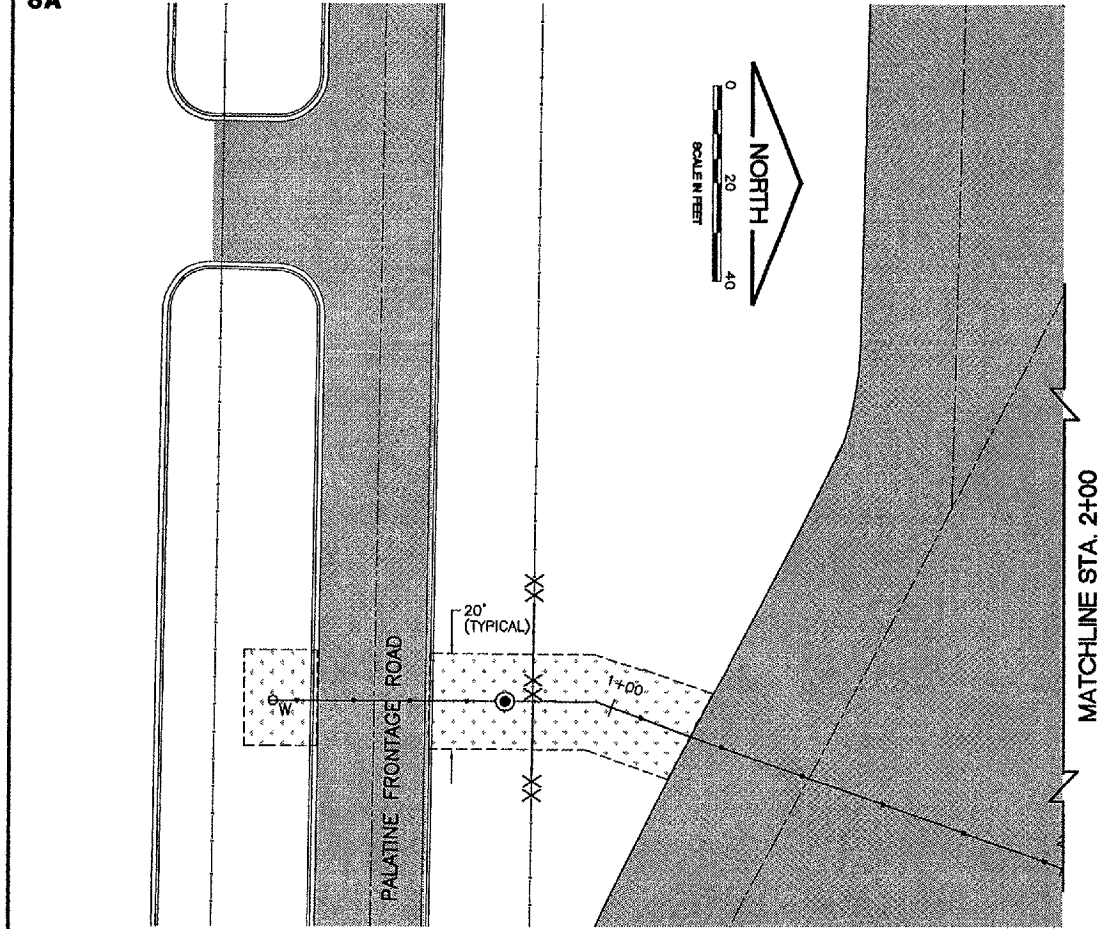
**PALWAUKEE MUNICIPAL AIRPORT
 CONSTRUCT SOUTHEAST QUADRANT FIRE
 PROTECTION SYSTEM**

RESTORATION PLAN

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APPROVED BY:	BDH
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LEGEND

PROPOSED SEEDING AND EXCELSIOR BLANKET
 (0.4 ACRES)

MATERIALS SPECIFICATIONS FOR WATER DISTRIBUTION

- 1. Pipe Material for Water Mains
Water mains shall be constructed of ductile iron pipe, Class 52 (AWWA-C151) with cement mortar lining and seal coating (AWWA-C104).
The joints shall be rubber gasket push-on or mechanical (AWWA-C111). Water main fittings shall be of ductile iron with cement mortar lining and seal coating with mechanical joints and shall conform to (AWWA-C110).
All pipe and fittings shall be manufactured in the United States unless prior approval is received from Illinois American.
2. Fire Hydrants
Fire hydrants shall be either American Flow Control "Waterous Paper", model WB-87-250 or East Jordan Iron Works, Inc. "Watermaster" model SBR. Each hydrant shall have a traffic flange, be compression type, open with pressure in a counterclockwise direction with rising stem, and meet or exceed AWWA specification C-502.
Threads for fire hydrants in all properties shall be National Standard, with the exception of the Marston property where City of Chicago Standard is used. Hydrant is to have one 4 1/2" pumper port and two 2 1/2" hose ports.
Hydrant length shall be supplied to provide a minimum of 5.5 feet of cover over the top of the water main.
All fire hydrants are to be supplied painted on the exterior with two coats of Inspec brand "Inspec-Gloss" Federal Safety Yellow Enamel #2016 (OSHA 1910.44-ANSI 53.1).
Mechanical joint (MJ) Anchoring Tee's shall be used for the auxiliary connection to the water main. The auxiliary valve shall be mechanical joint, resilient wedge type as manufactured by U.S. Pipe, Clow, Waterous and American Flow Control.
Connection of the auxiliary valve to the fire hydrant shall be completed utilizing a 6" dia. "Clow" MJ Anchoring coupling for laying distances 12" to 18". For greater distances, use Class 52 ductile iron pipe with "MEGALUG" (As manufactured by EBBA Iron Sales, Inc.) retainer glands.
Cover for fire hydrant auxiliary valve shall be painted with Inspec brand "Inspec-Gloss" Federal Safety Blue Enamel #2045 (OSHA 1910.144 - ANSI 53.1).
3. Valves - 12" and Smaller
Valves 12" and smaller shall be push-on or mechanical joint fitted resilient wedge type and shall conform to AWWA C-509-80. Valves shall open counterclockwise having non-rising stem.
Valves shall be resilient wedge type as manufactured by U.S. Pipe, Clow, Waterous and American Flow Control.
Valves larger than 12" shall be of the butterfly type with rubber seat and stainless ring on the disc edge to mate with the rubber seat, shall open counterclockwise, shall meet or exceed AWWA C-504 or AWWA C-505.
4. Valve Box
The entire valve box assembly shall be Tyler 664S, Clow F-2454 with F-2490 cover, or Mueller H-10360.
5. Valve Vault
Vaults required for pressure taps, check valves and meter installations, shall be of precast concrete unit construction (ASTM-C478) with a concentric cone and joints sealed with butyl-based material. Concrete adjustment rings shall be used if adjustment is necessary. Adjustment sections shall not exceed 12" vertically overall. All joints shall be sealed with Rubber-Nut, or approved equal butyl-based material. Cement grouting of the seams and joints shall not be completed. Butyl material shall total a minimum width of 2" as applied in two pieces.
A flexible union between the pipe and manhole wall, meeting ASTM C-923, cast integrally into the manhole wall, shall be provided for each pipe connection to the manhole. Unions shall be Interpace Lock Joint Flexible Manhole Sleeve, A-Lok Manhole Pipe Connector, Link Seal, or approved equal. Such unions shall be selected and installed in accordance with the manufacturer's specifications for the specific type of pipe used. Manhole coating shall be Neenah R-1772-B or approved equal. Lid shall be Neenah foundry type B "Self Sealing" with the word "WATER" imprinted. Manhole steps shall be M-A Industries plastic coated. Manholes are to be water-tight.
6. Pressure Taps
Pressure taps shall be performed in the presence of an Illinois-American representative. The outside diameter of the cutter must be at least 1/4" less than the nominal size of the tap to be made. Illinois-American must be provided with a minimum of 48 hours advance notice (630/739-8839) so that inspection by an Illinois-American representative can be scheduled.

8. Sizing of Taps

Size-on-size taps will not be allowed. The tap shall be no larger than one pipe size smaller than the main. All bolts shall be of stainless steel. The pressure tap size allowed on an 8 inch main shall be 6 inches.

A. Taps 2" and Larger on:

- 1. Cast Iron Pipe
a. Clow Model F-5205 tapping sleeve, or approved equal, for sizes 4 inch through 18 inch. All bolts shall be of stainless steel (Type 304), or high strength, corrosion resistant, low alloy material such as Armacor Ten.
2. Asbestos Cement Pipe
a. Clow Model F-5207 tapping sleeve, or approved equal for sizes 4 inch through 12 inch.
b. In specifying tapping sleeves to fit on the "rough barrel" or, that is, the full outside diameter portion of the pipe, it is important that the outside diameter of the pipe be measured before ordering the tapping sleeve. Outside diameters of asbestos pipe can vary significantly and may not remain consistent even within the same pressure class of pipe.
c. All bolts shall be stainless steel (Type 304), or high strength, corrosion resistant low alloy material such as Armacor Ten.
3. Ductile Iron Pipe
a. Romac Industries, Inc., Style "SST", stainless steel tapping sleeve may use the sleeve indicated above for cast iron, or approved equal. Tapping sleeves shall be the resilient wedge type as manufactured by U.S. Pipe, Clow, Waterous, or American Flow Control.

B. Taps 2" or Less

Taps two inch and less may be made by direct tap connection on cast or ductile iron mains. A two inch direct tap on a 6" cast or ductile iron main is not allowed and requires a saddle. All asbestos cement and PVC main taps require saddles. Saddles must be off all bronze or all stainless steel construction.

Bronze: Mueller H 16105, Rockwell 323 or James Jones Co. J-979
Stainless Steel: Cascade CS22, or Romac Style 305

9. Small Service Line Appurtenances

A. Curb Box

Curb box shall be Minneapolis Pattern, 1-1/2 inch inside diameter upper section with a 6 foot fully extended length topped 2 inch at the bottom and supplied with a bushing for smaller curb stops. The lid shall be a two-piece plug type, with a brass sleeve in the cap threaded to receive the brass plug.

Acceptable units are:

Mueller H-10302-72" with lid and plug #9980 with an H-10343 bushing
A.Y. McDonald box Model 5623 with lid Model 5623-L including plug #4511-204.

B. Curb Stop

For 1" service lines the curb stop shall be:

Mueller Mark II Orisval H-15155 or A.Y. McDonald 6104-22.

For 1-1/2" and 2" services the curb stop shall be:

Ford No. B44-868M for 1-1/2" and No. B44-777M for 2", A.Y. McDonald 6104-22.

C. Corporation Stop

Corporation stops for 1" through 2" shall be

Mueller 110 #15008
A.Y. McDonald #4701-B-22.

NOTE: The curb stop and corporation stop shall be equipped with conductive compression connections. Flared or sweat connections are not allowed.

10. Service Lines

All water service lines shall be Type K copper. One piece shall be used from the main to the curb stop and one piece from the curb stop to the meter spread, for lengths of 100 feet or less. The minimum size shall be 1" for a single-family residence. Lines for larger services shall be in accord with AWWA Manual of Practice #22.

When the distance from the curb stop to the meter in the building exceeds the length size specified, a connection may be made using a Mueller, Ford, or A. Y. McDonald three-part union with conductive, compression connections.

INSTALLATION SPECIFICATIONS

1. Protection of Water Mains for Sanitary Sewers and Storm Sewers

Water mains shall be protected for horizontal and vertical separation in accordance with the Technical Policy Statements or the requirements of MWROD, whichever applies. Further, no water main shall pass through or come into contact with any part of a sewer or sewer manhole.

2. Depth of Pipe Cover

A minimum depth of five feet six inches shall be maintained for all water mains. The five feet six inches depth shall be from proposed final grade elevation to the crown of the main. Maximum depth of cover shall be seven feet.

MINIMUM BEARING AREA IN SQUARE FEET*

Table with columns: PIPE SIZE, BENDS (degrees), TEE, DEAD END. Rows for pipe sizes 6", 8", 10", 12" and bend angles 11-1/4, 22-1/2, 45, 90.

* Bearing areas are based on soil having an allowable safe lateral bearing of one ton per square foot. Areas must be revised for soils with a lower bearing capacity.

3. Corrosion Protection

All pipe, fittings, fire hydrant leads, sleeves and valves are to be encased in polyethylene in accordance with AWWA C-105, unless a soil survey has been performed and non-corrosive soils are shown to exist.

4. Laying of Pipe on Curves

Long radius curves, either horizontal or vertical, may be laid with standard pipe by deflections at the joints. If the pipe is shown curved on the plans and no special fittings are shown, it may be assumed that the curves can be made by deflection of the joints with standard lengths of pipe. In approved situations, shorter lengths of pipe may be used to avoid the use of fittings.

Maximum deflections of pipe joints and laying radius for various pipe lengths shall be in accordance with the manufacturer's recommendations based on the size of pipe and type of joint. When rubber gasketed pipe is laid on a curve, the pipe shall be jointed in a straight alignment, then deflected. Trenches shall be made wider on curves for the purpose.

5. Thrust Restraint

All fittings, bends and hydrants shall be properly braced by means of restrained joint assemblies as shown in the standard detail or using methods as described below:

A. Mechanical joint fittings, bends and hydrants shall be properly anchored by means of "Megalug" (as manufactured by EBBA Iron Sales, Inc.) retainer glands. All set screws shall be installed and tightened in accord with manufacturer's recommendations.

B. All push-on joint fittings and bends shall be properly anchored by means of a U.S. Pipe Field Lok gasket or approved equal.

C. All push-on or mechanical joint fittings, bends, and hydrants shall be properly anchored by means of a concrete thrust block as outlined in the Standard Details. The minimum bearing area specifications to be utilized are outlined as follows:

Reaction blocking shall be designed for a minimum internal pipe pressure of 300 psi. The blocking shall be kept clear of the entire bell configuration of any adjacent joint and shall be at least as large as is necessary to restrain the fittings from movement. All concrete shall have a minimum compressive strength of 3000 psi at the end of 28 days.

D. Fire hydrant shall be positively anchored directly to the tee on the main using mechanical joint anchoring fittings, or other approved restraining system.

E. Valves at tees and crosses, where required, shall be anchored directly to the fitting using Clow (or equal) mechanical joint anchoring fittings, or other approved restraining system.

6. Bedding

Type I backfill in accordance with ANSI/AWWA C600-87 as illustrated in the Standard Detail shall be used unless the main is being laid under pavement or within right-of-way. If soil conditions are encountered which require removal of unsuitable material below the depth of the standard bedding, the material removed shall be replaced with granular material of the gradation approved by Illinois-American.

Testing and Disinfection

7. Pressure Test

All newly laid water main shall be subjected to hydrostatic pressure test equal to 200 psi for a period of at least two hours. The pressure shall be maintained at 200 psi for the duration of the test. Each section of the main to be tested, as determined by Illinois-American, shall be slowly filled with water to the specified test pressure using a test pump connected to the main in a satisfactory manner. The test pump, pipe connection and all necessary apparatus, including gauges and the meters, shall be furnished by the developer.

Before applying the specified test pressure, all air shall be expelled from the main utilizing fire hydrants or pressure taps, if necessary, installed at points of highest elevation along the water main installation.

Connection to Illinois-American's water system will not be permitted unless the installation has been constructed in accordance with approved plans and specifications and has been satisfactorily pressure tested in the presence of an Illinois-American designated representative. During the test, the entire length of main being tested, along with all appurtenances, will be carefully inspected by an Illinois-American representative.

Any cracked or defective pipes, fittings, valves or hydrants discovered as a result of this pressure test shall be removed and replaced by the Developer at his expense with sound, new material and retested until satisfactory to an Illinois-American representative. When pressure testing against an existing water main valve and should the valve be found to be leaking or fail during the pressure test, the Developer shall provide and install a new valve at the location of the defective valve.

8. Leakage Test

In conjunction with the pressure test, a leakage test shall be conducted to determine the quantity of water lost by leakage under the specified test pressure. The allowable leakage in gallons per hour per pipeline shall not be greater than that determined by the formula:

L = (ND YP) / 7400

L = The allowable leakage in gallons per hour

N = Number of joints for length of pipeline tested

D = The nominal diameter of the pipe in inches

P = Average test pressure during the leakage test in pounds per square inch gauge

The test will be conducted at an average pressure of not less than 200 psi at the high point of the main and for a period of not less than two hours.

9. Disinfection of Water

The section of main to be disinfected shall first be flushed to remove any solids or contaminated material that may have become lodged in the main. All flushing is to be done under continuous supervision of an Illinois-American representative.

No valves or fire hydrants or other appurtenances are to be purged or flushed unless an Illinois-American representative is present. Illinois-American must be provided with a minimum of 48 hours advance notice (630/739-8839) so that inspection by an Illinois-American representative can be scheduled.

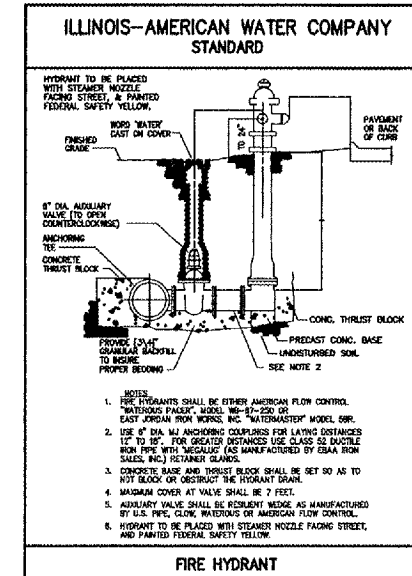
All chlorination, flushing, and testing is to be done in strict accord with Illinois Standards, Division IV, Section 41-2.13H. All new mains shall be chlorinated so that the initial chlorine residual of not less than 25 mg/l and that a chlorine residual of not less than 10 mg/l remains in the water after standing 24 hours in the pipe. Watermain disinfection is per AWWA standard C651. All chlorine concentrations listed are free chlorine. Water test samples are to be collected on two consecutive days after chlorination and final flushing. The first sample is to be collected 24 hours after the final flushing. Chlorine shall be applied in liquid or gas form.

OPERATION OF WATER SYSTEM

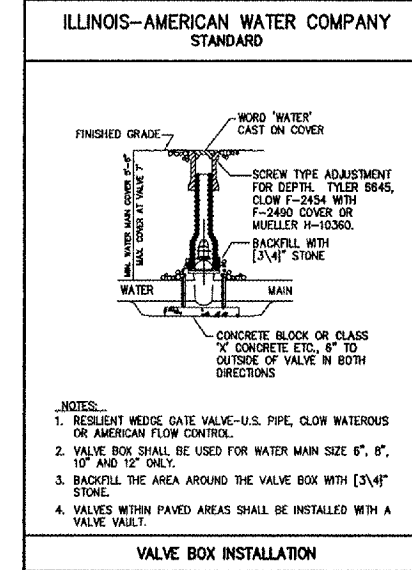
The operation of main valves and fire hydrants on the water system in service often results in disturbance of the natural sediments and mineral deposits in mains, causing problems for Illinois-American's customers. Illinois-American has a responsibility to provide its customers the highest level of service possible. Therefore, Illinois-American has adopted a strict policy that no one, other than an employee of Illinois-American, unless expressly authorized, is to operate any valve, fire hydrant, or other appurtenance of water system that is in service or which will affect the system that is in service. This operation is to be performed by an employee of Illinois-American or under his direct supervision.

Illinois-American must be provided with a minimum of 48 hours advance notice (630/739-8839) so that the flushing/flushing operations can be scheduled.

When there is no alternative to using water from a fire hydrant, fire hydrant meters are available by contacting Illinois-American's office during normal working hours by calling 800/422-2782.

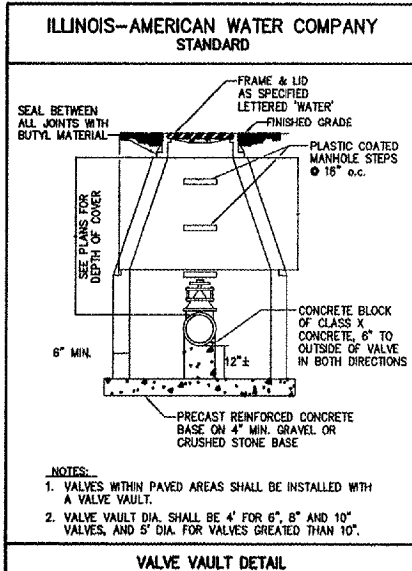


FIRE HYDRANT

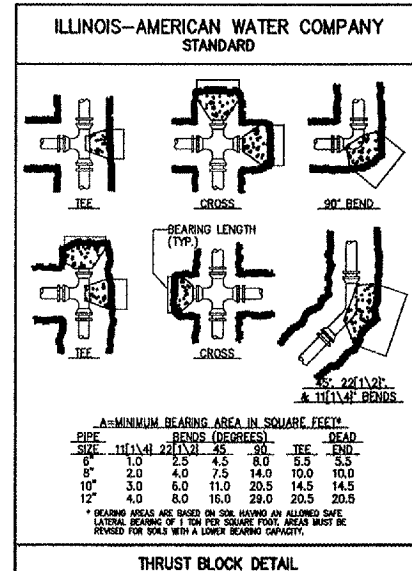


VALVE BOX INSTALLATION

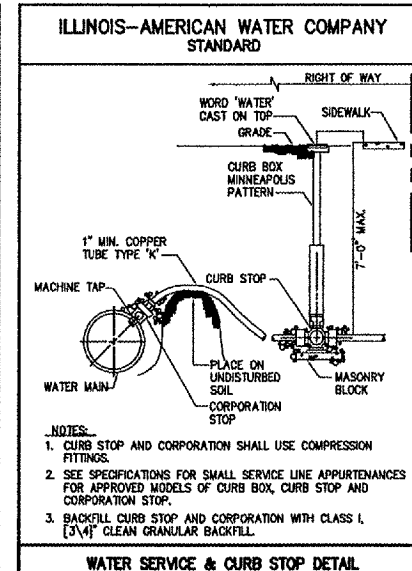
- NOTES:
1. RESILIENT WEDGE GATE VALVE-U.S. PIPE, CLOW WATEROUS OR AMERICAN FLOW CONTROL.
2. VALVE BOX SHALL BE USED FOR WATER MAIN SIZE 6", 8", 10" AND 12" ONLY.
3. BACKFILL THE AREA AROUND THE VALVE BOX WITH 3/4" STONE.
4. VALVES WITHIN PAVED AREAS SHALL BE INSTALLED WITH A VALVE VAULT.



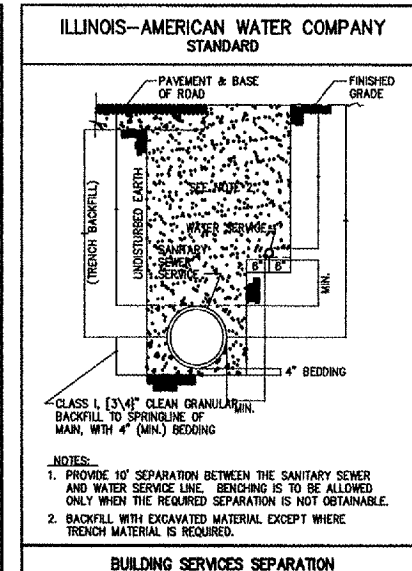
VALVE VAULT DETAIL



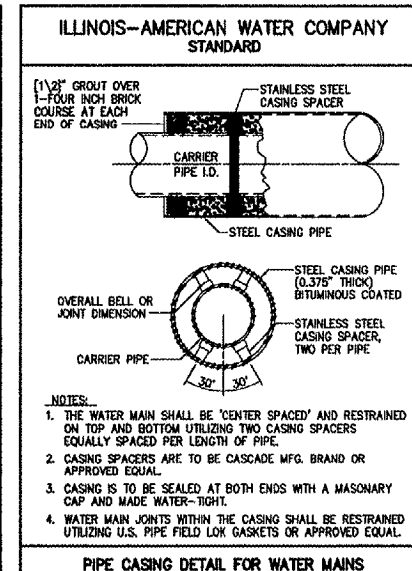
THRUST BLOCK DETAIL



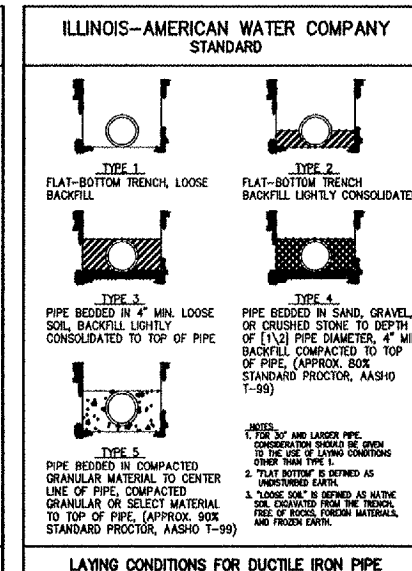
WATER SERVICE & CURB STOP DETAIL



BUILDING SERVICES SEPARATION



PIPE CASING DETAIL FOR WATER MAINS



LAYING CONDITIONS FOR DUCTILE IRON PIPE

PALWAUKEE MUNICIPAL AIRPORT CONSTRUCT SOUTHEAST QUADRANT FIRE PROTECTION SYSTEM
ILLINOIS-AMERICAN WATER CO. DETAILS

Design information including: DESIGN BY: MAB, DRAWN BY: MAB, CHECKED BY: DJK, APPROVED BY: BDH, DATE: 05/25/05, JOB No: 00290-02. Includes logos for CMT and Palwaukee Airport.