SECTION 11 73 00
CEILING MOUNTED PATIENT LIFT SYSTEM (DEDUCT ALTERNATE)

PART 1 - GENERAL

1.1 DESCRIPTION

A. Ceiling Mounted Patient Lift Systems for the transfer of physically challenged patients are specified in this section.

1.2 RELATED WORK

A. Section 01 00 00, GENERAL REQUIREMENTS: Requirements for pre-test of equipment.

B. Section 26 05 11, REQUIREMENTS FOR ELECTRICAL INSTALLATIONS: General Electrical Requirements and items, which are common to sections of Division 26.

1.3 QUALITY ASSURANCE

A. Certification for compliance is required for Ceiling Mounted Patient Lift Systems. Certifications shall be provided by an independent third party who will conduct testing to ensure that the ceiling lift and charging system are safe and in compliance with ISO 10535 & UL 60601-1

1.4 SUBMITTALS

A. Submit in accordance with specification Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA AND SAMPLES.

B. Certificates of Compliance

C. Manufacturer's Literature and Data:

1. Lifting Capacity
2. Lifting Speed
3. Horizontal Displacement Speeds
4. Horizontal Axis Motor
5. Vertical Axis Motor
6. Emergency Brake
7. Emergency Lowering Device
8. Emergency Stopping Device
9. Electronic Soft-Start and Soft-Stop Motor Control
10. Current Limiter for Circuit Protection
11. Low Battery Disconnect System
12. Strap Length
13. All equipment anchors and supports. Submittals shall include weights, dimensions, center of gravity, standard connections, manufacturer's recommendations and behavior problems (e.g., vibration, thermal expansion,) associated with equipment or piping so that the proposed installation can be properly reviewed.

D. Individual Room layouts showing location of lift system installation shall be approved before proceeding with installation of lifts.

1.5 APPLICABLE PUBLICATIONS

A. The publications listed below form a part of this specification to the extent referenced. The publications are listed in the text by the basic designation only.

B. International Organization for Standardization (IOS):

10535-06 ..... Hoist for the Transfer of Disabled Persons-Requirements and Test Methods

C. Underwriters Laboratories (UL):

60601-1 ..... Medical Electrical Equipment: General Requirements for Safety

94-2006 ..... UL Standards for Safety Test for Flammability of Plastic Materials for Parts in Devices and Appliances-Fifth Edition

D. International Electromagnetic Commission (IEC):

801-2(1991) ..... Electromagnetic Compatibility for Industrial-Process Measurement and Control Equipment-Part 2: Electromagnetic Discharge Requirements

PART 2 - PRODUCTS

2.1 PATIENT LIFT SYSTEM

A. Patient Lift System shall be ArjoHuntleigh Maxi Sky 600 and Maxi Sky 1000 on permanent ceiling mounted track, configuration as indicated on Ceiling Plan.

2.2 FEATURES

A. The Lift system shall have the following features.

1. Safe working load:
   a. Maxi Sky 600: 272 kg (600 lbs.)
   b. Maxi Sky 1000: 455 kg (1000 lbs.)
2. Unit weight (batteries included):
   a. Maxi Sky 600: 11.5 kg (28lbs.)
   b. Maxi Sky 1000: 22 kg (48 lbs.)
3. LED indicator for maintenance required.
4. Soft-start and stop motor control.
5. Power on indicator.
6. Emergency brake system.
7. Manual emergency lowering device (located on the motor cab).
8. Electrical up and down emergency buttons.
9. Emergency stopping device (pull cord) accessible from the ground.
10. Low battery indicator (audible and visual LED).

11. Charging indicators.
12. Strap length up to 2.3 m (90")
13. Lifting speed:
    a. Maxi Sky 600: 2.7 cm/sec (1.1"/sec) at 272 kg (600 lbs.)
    b. Maxi Sky 1000: 3 cm/sec (1.2"/sec) at 455 kg (1000 lbs.)
14. Batteries: 2x7 Ah will average 150 cycles (loaded at 75 kg/165 lbs.)
15. Adjustable horizontal displacement speeds:
    a. Maxi Sky 600: 10, 15, 20, 25 cm/sec. Preset at 20 cm/sec.
    b. Maxi Sky 1000: 10, 14, 15, 20 cm/sec.
16. Automatic return to charge function initiated by user: weight s
17. ABS FR casing (fire retardant).
18. CSA No 601.1, UL No 2601-1 certifications CE marked/ICO 10535.
19. Charger unit.
20. Power indicator on charging module.
21. Clip on charger anywhere on the track.
22. 100-240 Vac / 50-60 Hz / 27 Va
23. Protection class IP44 (handset)
24. Infrared remote control.

2.3 MOTORS

A. Vertical Movement-DC Motor
   1. Type: Class A, fully enclosed, permanent magnet.
   2. Rating: 24Vdc, 1.1A, 110W, 4000RPM, 0.3N-m.
   3. Mounting: Secured to chassis.

B. Horizontal Movement-DC Motor
   1. Type: Fully enclosed, permanent magnet, integral reducer.
   2. Rating: 24Vdc, 1.8A, 62W, 260RPM, 1.0N-m.
   3. Mounting: Secured to chassis.

2.4 BATTERIES

A. The life cycle (number of charging cycles) for batteries shall be in compliance with IEC 801-2.

B. Provide rechargeable batteries.

2.5 CHARGER

A. Charger Input: 100-240 Vac, 50/60 Hz.

B. Charger Output: 27 Vdc, 1 A max.

C. Supplemental to the charger provide a clip on charging station with indicator lights.

2.6 STRAPS AND SLING

A. The straps shall be made of threaded nylon. The straps shall ensure the patient's safety by preventing the patient from falling out of the sling.

B. The sling shall be made from a polyester/nylon net material that is pliable, breathable and easy to use. The sling shall cradle the body of the patient.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install ceiling mounted patient lift system as per manufacturer's instruction and under the supervision of manufacturer's qualified representative and as shown on drawings.

B. If the distance in between the suspended ceiling and anchors is more than 18" consult with manufacturer to determine if lateral braces will be required.

3.2 INSTRUCTION AND PERSONNEL TRAINING

A. Training shall be provided for the required personnel to educate them on proper operation and maintenance for the lift system equipment.

3.3 TEST

A. Conduct performance test, in the presence of the Project Engineer and a manufacturer's field representative, to show that the patient lift system equipment and control devices operate properly and in accordance with design and specification requirements.

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SECTION 23 31 00
HVAC DUCTS AND CASINGS

2.10 ACOUSTICAL DUCT SILENCERS

A. General Requirements:

1. Silencers shall be of the size, configuration, capacity and acoustic performance as scheduled on the drawings. All silencers shall be factory fabricated and supplied by the same manufacturer.
2. Submit laboratory acoustic and aerodynamic performance obtained according to ASTM E477-06a and so certified when submitted for approval. The laboratory must be currently NVLAP accredited for the ASTM E477-06a test standard. A copy of the accreditation certificate must be included with the submittals. Data from non-NVLAP accredited test facilities will not be accepted. Shop drawings submitted without proper certifications will be rejected.
3. Silencer inlet and outlet connection dimensions must be equal to the duct sizes shown on the drawings. Duct transitions at silencers are not permitted unless shown on the contract drawings.
4. Silencers shall be constructed in accordance with ASHRAE and SMACNA standards for the pressure and velocity classification specified for the air distribution system in which it is installed. Material gauges noted in other sections are minimums. Material gauges shall be increased as required for the system pressure and velocity classification. The silencers shall not fail structurally when subjected to a differential air pressure of 8 inches water gauge.
5. All casing seams and joints shall be lock-formed and sealed or stitch welded and sealed except as noted in Section G below, to provide leakage-resistant construction. Airtight construction shall be achieved by use of a duct-sealing compound supplied and installed by the contractor at the jobsite.
6. All perforated steel shall be adequately stiffened to insure flatness and form. All spot welds shall be painted.
7. Fire-Performance Characteristics: Silencer assemblies, including acoustic media fill, film liner, sealants, and

acoustical spacer, shall have flame-spread index not exceeding 25 and smoke-developed index not exceeding 50 when tested according to ASTM E 84, NFPA 255 or UL 723.

8. Airstream Surfaces: Surfaces in contact with the airstream shall comply with requirements in ASHRAE 62.1-2007.

B. Rectangular Silencers: Outer casing shall be ASTM A 653/A 653M, G90 galvanized sheet steel, 22 gauge.

C. Rectangular Elbow Silencers: Outer casing shall be ASTM A 653/A 653M, G90 galvanized sheet steel, 18 gauge. All acoustical splitters shall be internally radiused and aerodynamically designed for efficient turning of the air. Half and full splitters are required as necessary to achieve the scheduled insertion loss. All elbow silencers with a turning cross-section dimension greater than 48" shall have at least two half splitters and one full splitter.

D. Inner perforated metal liner: ASTM A 653/A 653M, G90 galvanized sheet steel, 26 gauge for rectangular silencers. Rectangular elbow silencers shall be 22 gauge.

E. Acoustic Media shall be of acoustic quality, shot-free glass fiber insulation with long, resilient fibers bonded with a thermosetting resin. Glass fiber density and compression shall be as required to insure conformance with laboratory test data. Glass fiber shall be packed with a minimum of 15% compression during silencer assembly. Media shall be resilient such that it will not crumble or break, and conform to irregular surfaces. Media shall not cause or accelerate corrosion of aluminum or steel. Mineral wool will not be permitted as a substitute for glass fiber.

F. Film Lined silencers: The acoustic media shall be completely wrapped to help prevent shedding, erosion and impregnation. Silencer manufacturer shall provide a written test report by a third party organization showing silencer assemblies have flame-spread index not exceeding 25 and smoke-developed index not exceeding 50 when tested according to ASTM E 84, NFPA 255 or UL 723.

G. HTL Casings: Silencers shall have high transmission loss (HTL) walls externally applied and completely sealed to the silencer casing by the silencer manufacturer to assure quality controlled

transmission loss. The HTL walls shall consist of media, airspace, mass and outer protective metal skin, as required, to obtain the specified room noise criteria. Standard acoustical panels will not be accepted as HTL walls. If requested by the Engineer, breakout noise calculations for each air handling and fan system shall be provided with the silencer submittal to ensure compliance with the room noise criteria. Breakout noise calculations shall be based on the sound power levels of the specified equipment.

SOUND ATTENUATING UNIT SCHEDULE

UNIT NO.	SYSTEM	UNIT SIZE				CFM	MAX S.P.	DYNAMIC INSERTION LOSS DB OCTIVE BAND & MID-FREQUENCY (CPS)								NOTES
		DIA	L	W	H			63 1	125 2	250 3	500 4	1000 5	2000 6	4000 7	8000 8	
SA-79-1	M-AHU-79	–	36	20	18	2500	0.16	3	6	9	13	17	16	13	8	1
SA-79-2	M-AHU-79	–	72	42	68	25585	0.17	6	9	12	17	23	24	19	15	1,2
SA-79-3	M-AHU-79	–	84	42	44	21545	0.13	8	11	9	13	14	17	15	11	1,2,3
SA-79-4	M-AHU-79	–	60	30	24	4400	0.09	7	10	13	20	17	18	13	12	1,2

NOTES:
1. RECTANGULAR FILM LINED ATTENUATOR.
2. ELBOW SILENCER.
3. EXTENDED WIDTH SILENCER: DUCT DIMENSION 42x44, OUTSIDE CASING DIMENSION: 48x44.

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Project Name:
VA Medical Center CLC Expansion & Remodeling

Project Location:
Fargo, ND

Project Information:
Project No. : 2010097
Drawn By : JAF
Checked By : JCP
Date : 8/13/2012
File Name: 2010097-H26.dwg

Revision:

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R-1

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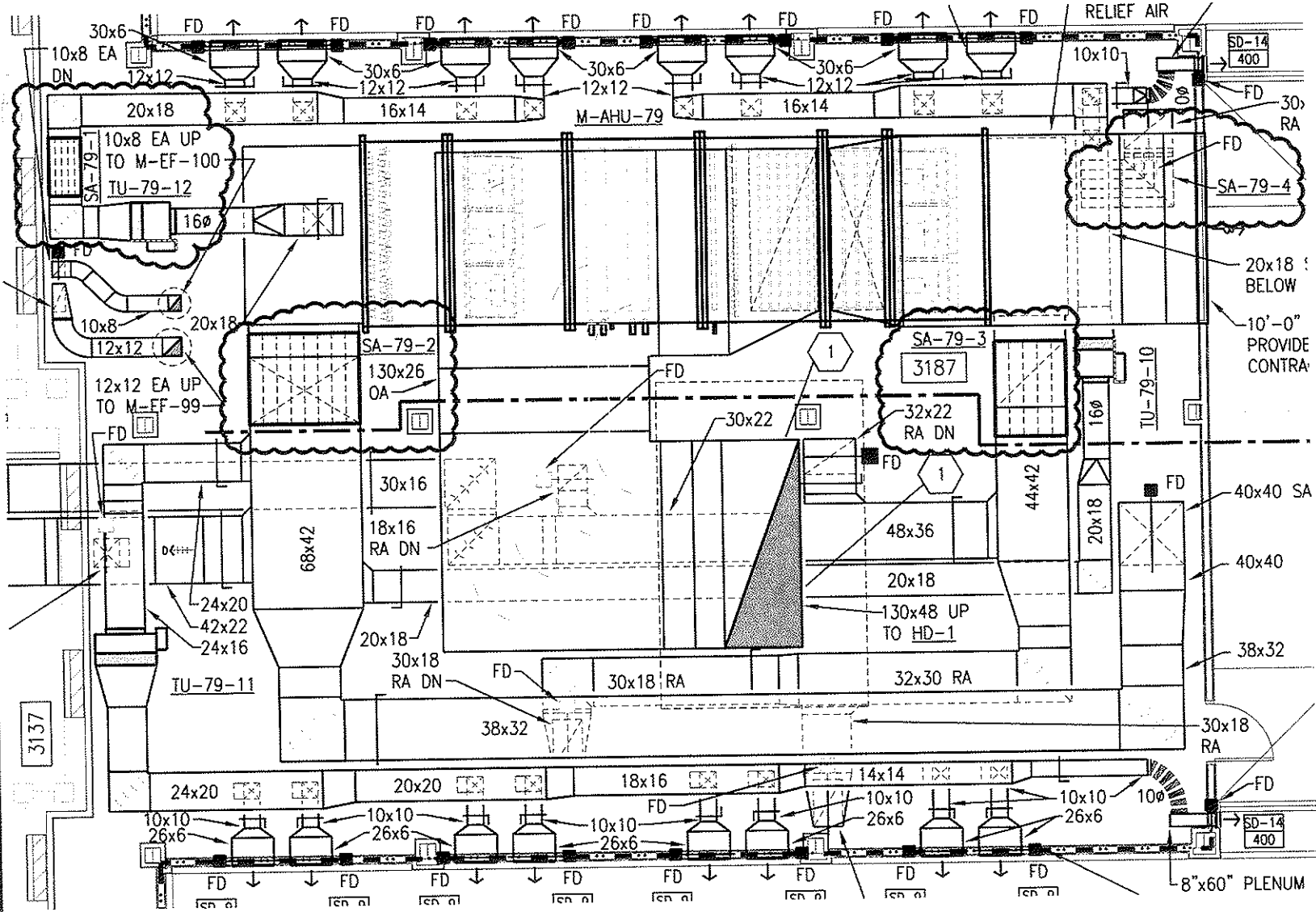
H26



PENTHOUSE VENTILATION PLAN - WING D

1/8"=1'-0"

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Project No. :	2010097
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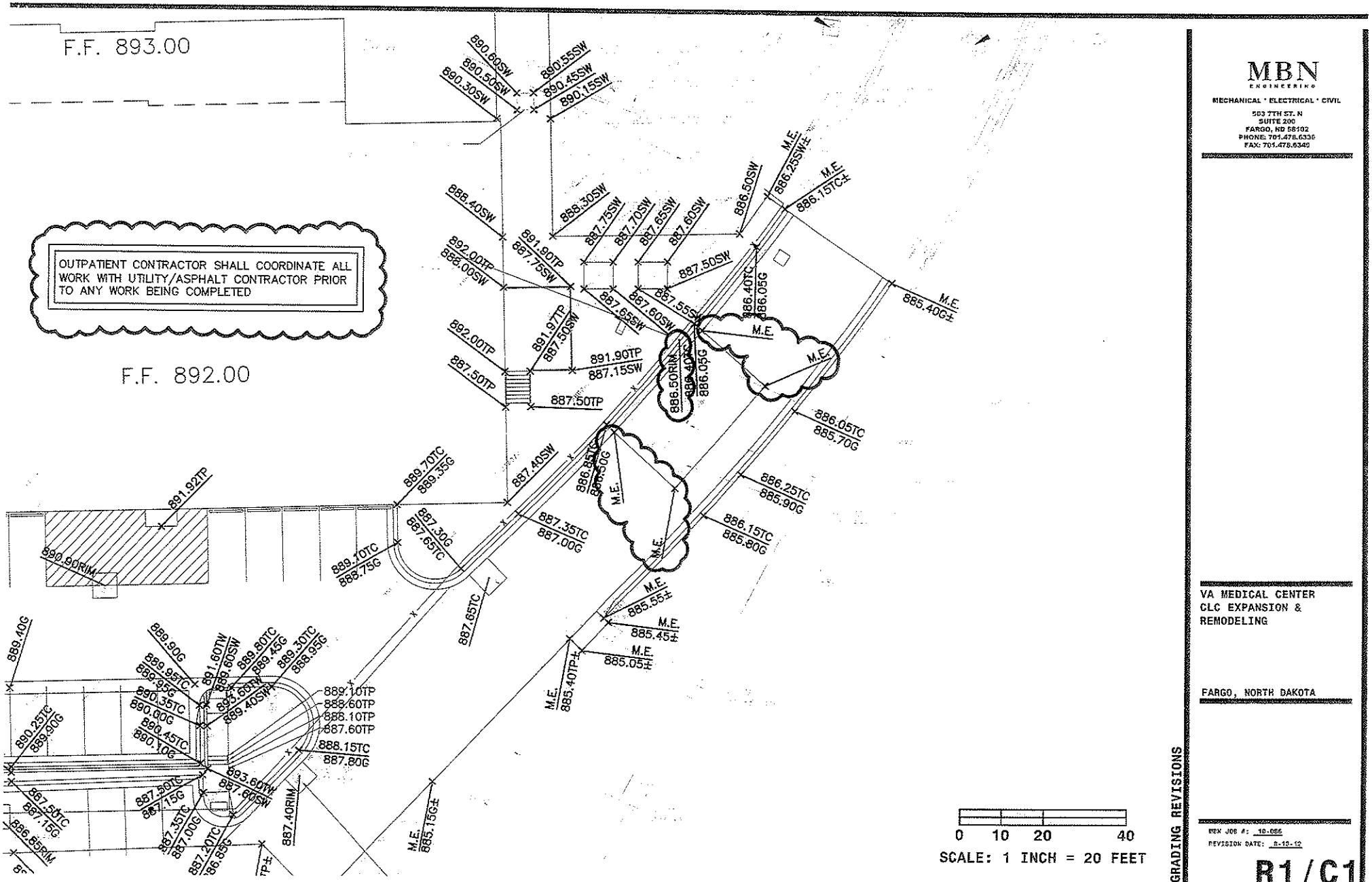

GRADING REVISIONS

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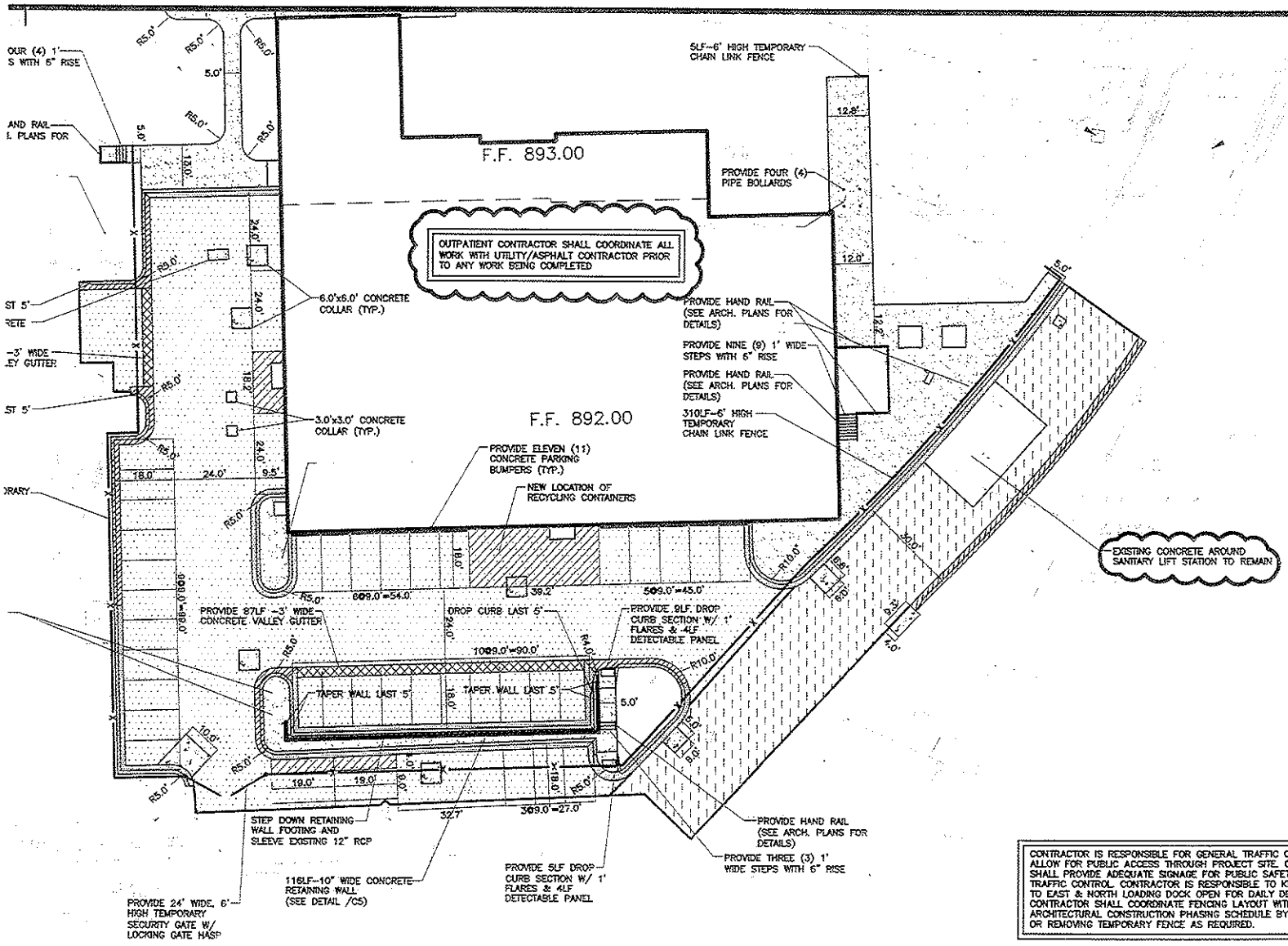
REMODELING

FARGO, NORTH DAKOTA

MBN JOB #: 10-086
REVISION DATE: 8-10-12

R1/C1



CONTRACTOR IS RESPONSIBLE FOR GENERAL TRAFFIC CONTROL TO ALLOW FOR PUBLIC ACCESS THROUGH PROJECT SITE. CONTRACTOR SHALL PROVIDE ADEQUATE SIGNAGE FOR PUBLIC SAFETY AND TRAFFIC CONTROL. CONTRACTOR IS RESPONSIBLE TO KEEP ACCESS TO EAST & NORTH LOADING DOCK OPEN FOR DAILY DELIVERIES. CONTRACTOR SHALL COORDINATE FENCING LAYOUT WITH ARCHITECTURAL CONSTRUCTION PHASING SCHEDULE BY INSTALLING OR REMOVING TEMPORARY FENCE AS REQUIRED.

0 15 30 60

SCALE: 1 INCH = 30 FEET

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