



GENERAL NOTES

- THIS CONTRACT IS TO BE CONSTRUCTED IN ACCORDANCE WITH DELAWARE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, DATED AUGUST 2001 AND THE DELAWARE DEPARTMENT OF TRANSPORTATION "STANDARD CONSTRUCTION DETAILS", DATED 2001, INCLUDING ALL REVISIONS UP TO THE DATE OF ADVERTISEMENT.
- THE CONTRACTOR SHALL GIVE TWO (2) WEEKS NOTICE TO THE PROPERTY OWNER WHEN ANY FIXTURE, SHRUB OR OTHER OBJECT MUST BE REMOVED FROM THE RIGHT OF WAY OR EASEMENT AREA. IF THE OWNER HAS NOT ATTEMPTED TO SALVAGE THIS PROPERTY, THE CONTRACTOR SHALL REMOVE IT WITHOUT OBLIGATION. COMPENSATION SHALL BE INCIDENTAL TO THE CONTRACT.
- THE ENDS OF ALL CURBS SHALL BE DEPRESSED AT A RATIO OF TWELVE TO ONE (12:1) UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- THE CONTRACTOR SHALL PROVIDE AND INSTALL PVC SLEEVES (4" INSIDE DIAMETER MINIMUM, 6" INSIDE DIAMETER MAXIMUM) IN PROPOSED CONCRETE SIDEWALKS, ISLANDS, AND MEDIANS FOR FUTURE TRAFFIC SIGN POSTS AS DIRECTED BY THE ENGINEER. THE LOWER END OF THE SLEEVE SHALL SIT ON THE TOP OF THE SUBBASE. THE COST SHALL BE INCIDENTAL TO THE CONTRACT.
- SITE REVIEWER. AN EROSION CONTROL SITE REVIEWER SHALL BE A PERSON FROM THE CONTRACTOR'S STAFF ASSIGNED TO EROSION AND SEDIMENT CONTROL IMPLEMENTATION AND MAINTENANCE AND SHALL BE REQUIRED ON SPECIFIC PROJECTS. THE NAME AND DNREC CERTIFICATION NUMBER OF EACH SITE REVIEWER SO REQUIRED SHALL BE SUBMITTED TO THE DEPARTMENT AT THE TIME OF BID. THE SITE REVIEWER REQUIREMENTS IN EFFECT ON THIS PROJECT SHALL BE AS MARKED WITH AN (X) BELOW.
- ALL UTILITIES PLOTTED ON THE PLAN SHEETS ARE FROM THE BEST AVAILABLE INFORMATION. THE CONTRACTOR, PRIOR TO ANY INVOLVED CONSTRUCTION SHALL EXCAVATE WITHIN THE ALIGNMENT AT POINTS OF POSSIBLE CONFLICT TO DETERMINE IF A CONFLICT EXISTS. ANY CONFLICTS SHALL BE COORDINATED BY THE CONTRACTOR WITH THE ENGINEER AND THE UTILITY. THE ENGINEER INVOLVED SHALL DETERMINE THE SOLUTION. EXCAVATING AND BACKFILLING OF TEST HOLES SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT.
- MAINTENANCE OF TRAFFIC - ALL WORK SHALL BE PERFORMED IN A MANNER THAT WILL INSURE THE LEAST PRACTICABLE OBSTRUCTION TO TRAFFIC, AND CONSISTENT WITH SAFETY, AND SHALL COMPLY WITH THE DEPARTMENT MANUAL ENTITLED "TRAFFIC CONTROLS FOR STREETS AND HIGHWAY CONSTRUCTION, MAINTENANCE, UTILITY, AND EMERGENCY OPERATIONS". THE MOST CURRENT VERSION OF THIS MANUAL IN EFFECT AT THE TIME OF ADVERTISEMENT FOR BIDS SHALL BE USED. HEREINAFTER, THIS MANUAL SHALL BE REFERRED TO AS THE "TRAFFIC CONTROL MANUAL". THE CONTRACTOR, SHALL SUBMIT A TRAFFIC CONTROL PLAN FOR APPROVAL BY THE ENGINEER BEFORE THE START OF THE PROJECT.

8. NOTES ON STAGING AREAS
 PROPER EROSION AND SEDIMENT CONTROL MEASURES AS DETERMINED BY THE ENGINEER SHALL BE INSTALLED IN ALL STAGING AREAS. NO IMMEDIATE DELDOT LAND IS AVAILABLE FOR STAGING. ALL LAND TO BE USED FOR STAGING SHALL BE APPROVED BY ENGINEER AND AT NO ADDITIONAL COST TO THE STATE.

ALL AREAS USED BY THE CONTRACTOR FOR STAGING OPERATIONS SHALL BE FULLY RESTORED BY THE CONTRACTOR. UPON COMPLETION OF THE PROJECT, IF THE STAGING AREA IS PAVED, IT SHALL BE RESTORED TO ITS ORIGINAL CONDITION. IF THE STAGING AREA IS UNPAVED, IT SHALL BE RE-GRADED TO THE SATISFACTION OF THE ENGINEER, TOP-SOILED, SEEDED AND MULCHED IN ACCORDANCE WITH DELAWARE STANDARD SPECIFICATIONS SECTIONS 732, 734, AND 735, FOR TOP-SOIL, SEED, AND MULCH RESPECTIVELY. THE SEED SHALL ADHERE TO THE SPECIFICATIONS OF SECTION 734 FOR PERMANENT GRASS SEEDING - DRY GROUND. ALL COSTS ASSOCIATED TO THE ABOVE WORKS SHALL BE AT THE CONTRACTOR'S EXPENSE. IF THE ENGINEER DETERMINES THAT A SATISFACTORY STAND OF GRASS DOES NOT EXIST AT THE TIME OF FINAL INSPECTION, ALL COST ASSOCIATED TO RE-ESTABLISHING A SATISFACTORY STAND OF GRASS SHALL ALSO BE AT THE CONTRACTOR'S EXPENSE.

EROSION POTENTIAL FOR THIS PROJECT	SITE REVIEWER REQUIREMENT
() INSIGNIFICANT	NONE
(X) MINOR	CONTRACTOR CERTIFICATION COURSE TRAINING ONLY. SEE 1. BELOW
() MEDIUM	SUPERINTENDENT SHALL BE A CERTIFIED CONSTRUCTION REVIEWER (CCR) OR SEPARATE INDIVIDUAL FROM CONTRACTOR'S STAFF SHALL BE CCR. SEE 2. BELOW.
() MAJOR	SUPERINTENDENT AND INDIVIDUAL FROM CONTRACTOR'S STAFF SHALL BE CCR. SEE 3. BELOW.

- AS DEFINED IN SECTION 13 OF THE DELAWARE SEDIMENT AND STORMWATER REGULATIONS.
- AS DEFINED IN SECTION 12 OF THE DELAWARE SEDIMENT AND STORMWATER REGULATIONS.
- SUPERINTENDENT MUST OBTAIN CCR WITHIN ONE YEAR OF AWARD OF CONTRACT.

CONSTRUCTION

	PAVING, FULL DEPTH REPAIR		INTEGRAL P.C.C. CURB AND GUTTER TYPE 1
	SUPERPAVE, TYPE C HOT-MIX, 160 GYRATION, PG 64-22 ON MILLED EXISTING PAVEMENT		P.C.C. CURB TYPE 1 & OR 3
	BRICK PAVERS, WEAVE PATTERN, 2 1/2" ON 1" MORTAR SETTING BED ON # P.C.C. BASE OVER 1/2" GRADED AGGREGATE BASE COURSE, TYPE B.		P.C.C. CURB TYPE 2
	# P.C.C. SIDEWALK OVER 8' GRADED AGGREGATE BASE COURSE, TYPE B		INTEGRAL P.C.C. CURB AND GUTTER TYPE 2
			INTEGRAL P.C.C. CURB AND GUTTER TYPE 3
	BUTT JOINT		CURB (BY OTHERS)
	PAVEMENT PATCH		CURB IDENTIFIER
	RIPRAP		CURB OPENING
	DRAINAGE INLET		CURB ACCESS RAMP IDENTIFIER WITH TYPE NUMBER
	DRAINAGE INLET IDENTIFIER		CONCRETE SAFETY BARRIER
	MANHOLE		BARRIER IDENTIFIER
	MANHOLE IDENTIFIER		STEEL BEAM GUARDRAIL
	DRAINAGE PIPE & FLOW ARROW		GUARDRAIL END SECTION
	PIPE IDENTIFIER		GUARDRAIL IDENTIFIER
	FLARED END SECTION		METAL FENCE
	FLARED END SECTION IDENTIFIER		WOOD FENCE
	JUNCTION BOX		R/W MONUMENT
	JUNCTION BOX IDENTIFIER		R/W MONUMENT IDENTIFIER
	CONVERT TO JB IDENTIFIER		RELOCATE BY CONTRACTOR
	UNDERDRAIN		ADJUST BY CONTRACTOR
	UNDERDRAIN IDENTIFIER		REMOVE BY CONTRACTOR
	UNDERDRAIN OUTLET STRUCTURE		RELOCATE BY OTHERS
	DITCH		ADJUST BY OTHERS
	BIOFILTRATION SWALE		REMOVE BY OTHERS

CONSTRUCTION PHASING

	STONE CHECK DAM		PORTABLE SEDIMENT TANK
	INLET SEDIMENT CONTROL		SILT FENCE
	PERIMETER DIKE SWALE		REINFORCED SILTY FENCE
	TEMPORARY SWALE		SILT FENCE IDENTIFIER
	EARTH DIKE		STILLING WELL
	SAND BAG DIVERSION		SUMP PIT
	EROSION CONTROL FABRIC		DEWATERING BASIN
	SEDIMENT TRAP / IDENTIFIER		SEDIMENT TRAP PIPE OUTLET
	TRAFFIC CONTROL PLASTIC DRUMS		TEMPORARY SLOPE DRAIN
	CONSTRUCTION WARNING SIGNS		SAND BAG DIKE
	EXISTING CONTOURS		TYPE 3 BARRICADE
	PROPOSED CONTOURS		TRAFFIC FLOW ARROW
	CRASH CUSHION (SAND BARRELS)		PORTABLE CONCRETE SAFETY BARRIER
	TURBIDITY CURTAIN		STABILIZED CONSTRUCTION ENTRANCE

SIGNING, STRIPING AND CONDUITS

	PAVEMENT MARKINGS		CONDUITS UNDER PAVEMENT
	LANE STRIPING		CONDUITS IN TRENCH
	TRAFFIC SIGN AND POST (BY STATE FORCES)		CONDUIT JUNCTION WELL

RIGHT OF WAY

	PROPOSED RIGHT-OF-WAY		PROPOSED RIGHT OF WAY AND DENIAL OF ACCESS
	PROPOSED DENIAL OF ACCESS		PROPOSED PERMANENT EASEMENT
	PROPOSED UTILITY EASEMENT		PROPOSED TEMPORARY CONSTRUCTION EASEMENT
	HISTORIC R/W CENTERLINE OR BASELINE		PROPOSED RIGHT OF WAY BASELINE
	EXISTING RIGHT-OF-WAY LINE		EXISTING PROPERTY LINE

PROPOSED LANDSCAPING

	CONIFEROUS TREE
	SHRUB
	DECIDUOUS TREE

MISCELLANEOUS SYMBOLS

	LIMIT OF CONSTRUCTION
	CLEAR ZONE
	CONSTRUCTION BASELINE
	PROPOSED LUMINAIRE

UTILITIES

	CONNECT POWER DELIVERY (ELECTRIC) (OVERHEAD)
	CONNECT POWER DELIVERY (ELECTRIC) (UNDERGROUND)
	CONNECT POWER DELIVERY (GAS) (UNDERGROUND)
	CITY OF WILMINGTON SEWER (UNDERGROUND)
	CITY OF WILMINGTON WATER (UNDERGROUND)
	SANITARY SEWER (ASSUMED TO BE CITY OF WILMINGTON)
	DELDOT SUBMARINE CABLES
	LIGHT CONDUIT

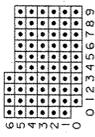
GENERAL NOTES AND LEGEND

NOTE: ALL SYMBOLS SHOWN ON THIS LEGEND SHEET MAY NOT NECESSARILY APPEAR IN THESE CONTRACT PLANS.

EXISTING DETAIL

	SURVEY TRAVERSE POINT		CURB
	POINT OF INTERSECTION - TANGENTS		INTEGRAL CURB & GUTTER
	POINT OF TANGENCY & CURVATURE		FLEXIBLE PAVEMENT EDGE
	SURVEY TIE POINT LOCATION		RIGID PAVEMENT EDGE
	BENCH MARK LOCATION		STEEL BEAM GUARD RAIL
	SOIL BORING LOG - PROFILE VIEW		WOOD POST AND CABLE GUARD RAIL
	SOIL BORING LOCATION - PLAN VIEW		STORM DRAINAGE SURFACE INLET
	SOIL TYPE AND BOUNDARY LINE		STORM DRAINAGE MANHOLE
	MARSH OR WET AREAS		STORM DRAINAGE JUNCTION BOX
	SMALL BUSH OR ORNAMENTAL SHRUB		EXISTING DRAINAGE PIPE AND FLOW ARROW
	CONIFEROUS TREE - 6" AND LARGER		DRAINAGE PIPE HEADWALL
	DECIDUOUS TREE - 6" AND LARGER		EROSION CONTROL STONE
	HEDGEROW OR THICKET		STREAM, DITCH OR POND BOUNDARY
	WOODS LINE		STREAM FLOW DIRECTION ARROW
	TREE STUMP		TRAFFIC CONTROL SIGN POST
	UTILITY TEST HOLE LOCATION		TRAFFIC SIGNAL SUPPORT BASE
	GAS MANHOLE		TRAFFIC SIGNAL CONTROL BOX AND/OR BASE
	SANITARY SEWER MANHOLE		TRAFFIC SIGNAL CONDUIT JUNCTION WELL
	TELEPHONE MANHOLE		ELECTRIC TRANSFORMER
	ELECTRIC MANHOLE		CABLE TELEVISION DISTRIBUTION BOX
	FIRE HYDRANT		CONCRETE MONUMENT OR PROPERTY MARKER
	TELEPHONE BOOTH		PROPERTY LINE MARKER
	UTILITY POLE GUY WIRE ANCHOR		STONE PILLAR - CONC. BLOCK OR POURED
	GAS VALVE		STRAND OR WOVEN WIRE FENCE
	WATER VALVE		WOODEN FENCE
	WOOD POLE		LUMINAIRE SUPPORT POLE AND/OR BASE
	WATER METER		SERVICE STATION FUEL PUMP
	SANITARY SEWER VENT		WELL HEAD
	SANITARY SEWER SURFACE FIXTURE		SEPTIC DRAIN FIELD
	TELEPHONE TEST POINT		STONE WALL
	GAS METER		BLOCK WALL
	POLE MOUNTED LUMINAIRE		RAILROAD TRACKS
	RESIDENTIAL STREET LAMP AND POST		
	FLAG POLE		

CADD DESIGN JFB CHKD. JFB



PROJECTS NOTES

1. LOCATION AND DESCRIPTION
BRIDGE I-688, SOUTH MARKET STREET OVER CHRISTINA RIVER, WILMINGTON.

THE WORK ON BRIDGE I-688 INVOLVES REPLACEMENT OF THE BASCULE MACHINERY, ELECTRICAL SYSTEM AND CONTROLS, INSTALLATION OF NEW BRIDGE OPERATING TRAFFIC GATES AND SIGNALS, REPLACING DETERIORATED CONNECTION RIVETS WITH HIGH STRENGTH BOLTS, REPLACING DETERIORATED LATERAL BRACING GUSSET PLATES, INSTALLATION OF NEW BOLTED FLOORBEAM BOTTOM FLANGE COVER PLATES AT ALL INTERIOR FLOORBEAMS, REPAIRING OR REPLACING BROKEN RAIL ELEMENTS, STRENGTHENING THE STEEL JOIST, LIVE LOAD SUPPORT ANCHOR BOLTS AND RETAINING METAL WORK, CLEANING AND PAINTING THE ENTIRE SUPERSTRUCTURE WITH A THREE COAT SYSTEM, REPAIRING SPALLED SUBSTRUCTURE REINFORCED CONCRETE, JACKETING DETERIORATING OPERATOR HOUSE COLUMNS, REPLACING THE APPROACH ROADWAY CURB AND SIDEWALK, MILLING AND OVERLAYING THE APPROACH ROADWAY SURFACE AND OTHER MISCELLANEOUS REPAIRS.
2. DESIGN CRITERIA
1996 AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES WITH INTERIMS THROUGH 2001.
3. PORTLAND CEMENT CONCRETE
PORTLAND CEMENT CONCRETE FOR CAST-IN-PLACE STRUCTURAL ELEMENTS SHALL BE AS FOLLOWS:
(F'c - 28 DAY COMPRESSIVE STRENGTH)
CLASS D - CONCRETE FILLED GRID DECK (F'c - 4,500 psi)
CLASS A - SUBSTRUCTURE REPAIR (F'c - 4,500 psi)
CLASS A (F'c - 4,500 psi) - MODIFIED TO MATCH EXISTING CONCRETE

MIX REQUIREMENTS SHALL CONFORM TO SECTION 012 OF THE STANDARD SPECIFICATIONS.
ALL EXPOSED EDGES SHALL BE CHAMFERED UNLESS OTHERWISE NOTED.
4. BAR REINFORCEMENT
REINFORCING STEEL SHALL CONFORM TO AASHTO M31/M 31M (ASTM A615), GRADE 60 (ksi).
ALL REINFORCING STEEL SHALL HAVE A CLEAR COVER OF 2" UNLESS OTHERWISE SPECIFIED ON THE PLANS. REINFORCING STEEL SHALL CONFORM TO AASHTO M284 (ASTM D3963).
5. CONSTRUCTION JOINTS
KEYED CONSTRUCTION JOINTS SHALL BE 2" X 4" OR AS NOTED. ALL EXPOSED CONSTRUCTION JOINT EDGES SHALL HAVE A 1" V NOTCH.
6. STRUCTURAL STEEL
ALL STRUCTURAL STEEL SHALL BE AASHTO M 270, GRADE 36. UNLESS OTHERWISE NOTED. ALL BOLTS SHALL BE ASTM A325 EXCEPT BOLTS CONNECTING ALUMINUM TO STEEL SHALL BE ASTM F593 AND COATED WITH INORGANIC ZINC, UNLESS OTHERWISE NOTED.
7. AS DIRECTED BY THE ENGINEER, ALL AREAS DISTURBED BY THE CONTRACTOR'S OPERATION OUTSIDE THE LIMITS OF CONSTRUCTION SHALL BE RECONSTRUCTED AT THE CONTRACTOR'S EXPENSE.
8. RIVER RESTRICTION
ALL CONSTRUCTION IS TO TAKE PLACE FROM THE ROADWAY OR FROM FLOAT EQUIPMENT ON THE CHRISTINA RIVER.
9. THE CHRISTINA RIVER IS USED FOR COMMERCIAL AND RECREATIONAL PURPOSES. THE CONTRACTOR IS TO PROVIDE A SAFE PASSAGE THROUGH THE WORK AREA FOR THESE INDIVIDUALS AND IS TO HAVE THE PASSAGEWAY CLEARLY MARKED. PAYMENT IS INCLUDED UNDER PAY ITEM 763500, "MAINTENANCE OF TRAFFIC". ANY CONTRACTOR ACTIVITY WHICH WILL RESULT IN THE SHORT TERM RESTRICTION OF THE RIVER TO THESE INDIVIDUALS IS TO BE COORDINATED WITH THE ENGINEER ONE MONTH IN ADVANCE.
10. MAINTENANCE OF TRAFFIC
A DETOUR ROUTE HAS BEEN ESTABLISHED FOR THIS PROJECT. THE DETOUR SHALL BE IMPLEMENTED ONCE, FOR NO LONGER THAN 10 WEEKS AND SHALL TAKE PLACE BETWEEN JAN. 4, 2005 AND APRIL 30, 2005. PAYMENT FOR THE DETOUR SHALL BE UNDER ITEM 763500, "MAINTENANCE OF TRAFFIC". TWO CHANGEABLE MESSAGE BOARDS SHALL BE PLACED TWO WEEKS PRIOR TO A DETOUR. THE MESSAGE BOARDS SHALL BE SOLAR POWERED. PAYMENT SHALL BE MADE UNDER PAY ITEM 743514, "FURNISH AND MAINTAIN MESSAGE BOARD".
11. MILESTONES
THE MECHANICAL REHABILITATION REQUIRES SIGNIFICANT LEAD TIME FOR FABRICATION, SITE PREPARATION AND COMMUNITY COORDINATION. ALL MATERIALS SHALL BE DELIVERED TO THE PROJECT SITE PRIOR TO A WATERWAY RESTRICTION OR DETOUR. THE CONTRACTOR SHALL BEGIN THE SHOP DRAWING PROCESS IMMEDIATELY FOLLOWING AWARD OF THE CONTRACT.
12. UTILITIES
PUBLIC UTILITY RELOCATIONS ARE NOT ANTICIPATED FOR CONSTRUCTION OF THIS PROJECT. ALL UTILITIES SHALL BE LOCATED AND PROTECTED BY THE CONTRACTOR DURING CONSTRUCTION. UTILITY LOCATIONS SHALL BE VERIFIED IN THE AREAS OF POTENTIAL CONFLICT PRIOR TO CONSTRUCTION. BACKFILL SHALL BE PAID FOR UNDER PAY ITEM 209003, BORROW TYPE C.
13. AS DIRECTED BY THE ENGINEER THE CONTRACTOR SHALL INSTALL AND MAINTAIN TWO "PROJECT" SIGNS AT THE WATER STREET AND S. SHIPLEY STREET INTERSECTION WITH SOUTH MARKET STREET. THE SIGNS SHALL BE A MINIMUM OF 48 X 48 INCHES AND SHALL CONTAIN THE FOLLOWING:
"THIS PROJECT IS CONSTRUCTED BY"
CONTRACTOR'S COMPANY LOGO AND PHONE*. DELDOT NAME AND LOGO
THESE SIGNS SHALL BE IN PLACE FOR THE LENGTH OF THE PROJECT AND ARE PAID UNDER PAY ITEM 763500, "MAINTENANCE OF TRAFFIC".
14. WATER FOUND IN THE BASCULE PIER PITS IS TO BE REMOVED AND PAID FOR IN ACCORDANCE TO ITEM 202530, "REMOVAL OF CONTAMINATED WATER".
15. CONTRACTOR MUST NOTIFY DART 2 WEEKS PRIOR TO ANY CHANGE IN TRAFFIC. CONTRACTOR SHALL NOTIFY LOCAL BUSINESS, BY FLYER, 2 WEEKS PRIOR TO DETOUR. THE COST FOR THIS NOTICE IS CONSIDERED INCIDENTAL TO ITEM 763500, MAINTENANCE OF TRAFFIC.
16. SEE ENVIRONMENTAL COMPLIANCE SHEET FOR POSSIBLE RESTRICTIONS/GUIDANCE ASSOCIATED WITH THIS PROJECT.
17. ALL EXISTING METAL SURFACES SHALL BE CLEANED AND PAINTED, EXCEPT AS NOTED. ALL NEW STRUCTURAL & MISCELLANEOUS STEEL ITEMS MUST BE PAINTED PRIOR TO INSTALLATION. A COATING WARRANTY (SPECIFICATION ITEM 605609) SHALL BE PROVIDED AND CONSIDERED INCIDENTAL TO THE COATING PAINTING ITEMS. ALUMINUM RAIL, COPPER CORNICE AND STEEL GRID DECK (UNLESS BEING REPAIRED) SHALL NOT BE PAINTED. THE CONTRACTOR IS HEREBY NOTIFIED THAT THE EXISTING PAINT ON THE BRIDGE IS LEAD BASED. THE COLOR OF THE BRIDGE SHALL BE SELECTED AND PROVIDED TO THE CONTRACTOR BY THE STATE.
18. ALL ALUMINUM FRAME AND RAILING MATERIAL SHALL BE ALUMINUM ALLOY 6061-T6 AND WELDING SHALL CONFORM TO AWS D1.2-97 STRUCTURAL WELDING CODE - ALUMINUM.
19. CONTRACTOR IS NOT PERMITTED TO PLACE ANY LOADS ON THE BASCULE SPAN WHEN THE CENTER LOCKS ARE DISENGAGED. THE LIMITS OF THE BASCULE SPAN ARE SHOWN ON THE FRAMING PLANS.

20. THE INBOARD FACE OF THE EXISTING BALUSTRADES ARE TO BE SURFACE CLEANED WITH THE GENTLEST METHOD POSSIBLE, WITH LOW PRESSURE POWERWASHING AND USING BRUSHES. A SAMPLE AREA SHALL BE CLEANED AND APPROVED BY THE ENGINEER PRIOR TO CLEANING THE ENTIRE INSIDE FACE OF THE WALLS. THIS ITEM SHALL BE CONSIDERED INCIDENTAL TO PAY ITEM 602572, "REPAIRING EXISTING P.C.C. STRUCTURES".
21. THE CONTRACTOR IS TO VERIFY ALL EXISTING INFORMATION, PRIOR TO PREPARING SHOP DRAWINGS. NECESSARY ADJUSTMENTS SHALL BE SUBMITTED BY THE CONTRACTOR FOR THE ENGINEER'S APPROVAL.
22. THE CONTRACTOR IS EXPECTED TO WORK DURING NORMAL DAYTIME HOURS, EXCEPT DURING DETOUR PERIOD AND SHALL MAKE SURE ALL PERMITS ARE IN PLACE PRIOR TO COMMENCING OTHER THAN NORMAL WORK HOUR SHIFTS.

PROJECT NOTES

BR. I-688	CONTRACT	COUNTY	FEDERAL AID PROJECT NO.	SHEET NO.	TOTAL SHTS.
	21-074-07	NEW CASTLE	EBHN-N029 (2)	3	169
BR 688					
SOUTH MARKET STREET BRIDGE					
REHABILITATION					
REVISIONS					

LOAD RATINGS

<p>HS20 44 (AASHTO) 36 TON OPERATING RATING: CONTROL POINT-CENTER LOCKS (FLEXURAL STRESS) POSITIVE ACTION RATING FACTOR - 1.21 LOAD RATING - 43.56 TONS INVENTORY RATING: CONTROL POINT-BASCULE SPAN, GRATING SUPPORT BEAMS (SHEAR STRESS OVER STRINGER (S1) AND (S6)) POSITIVE ACTION RATING FACTOR - 0.78 LOAD RATING - 28.08 TONS</p>	<p>S437 (DE 4 AXLE SINGLE UNIT) 37 TON OPERATING RATING: CONTROL POINT-NORTH PIER FLOORBEAM (FLEXURAL STRESS AT EDGE OF MANHOLE) POSITIVE ACTION RATING FACTOR - 1.06 LOAD RATING - 39.1 TONS INVENTORY RATING: CONTROL POINT-NORTH PIER FLOORBEAM (FLEXURAL STRESS AT EDGE OF MANHOLE) POSITIVE ACTION RATING FACTOR - 0.63 LOAD RATING - 23.4 TONS</p>
<p>S220 (DE 2 AXLE SINGLE UNIT) 20 TON OPERATING RATING: CONTROL POINT-NORTH AND SOUTH BASCULE LEAF, FLOORBEAM (FBI), (FLEXURAL STRESS AT MIDSPAN) POSITIVE ACTION RATING FACTOR - 2.05 LOAD RATING - 40.9 TONS INVENTORY RATING: CONTROL POINT-NORTH AND SOUTH BASCULE LEAF, FLOORBEAM (FBI), (FLEXURAL STRESS AT MIDSPAN) POSITIVE ACTION RATING FACTOR - 1.23 LOAD RATING - 24.5 TONS</p>	<p>T330 (DE 3 AXLE SEMI) 30 TON OPERATING RATING: CONTROL POINT-CENTER LOCKS (FLEXURAL STRESS) POSITIVE ACTION RATING FACTOR - 1.61 LOAD RATING - 48.3 TONS INVENTORY RATING: CONTROL POINT-NORTH AND SOUTH BASCULE LEAF, FLOORBEAM (FBI), (FLEXURAL STRESS AT MIDSPAN) POSITIVE ACTION RATING FACTOR - 1.17 LOAD RATING - 35.1 TONS</p>
<p>S327 (DE 3 AXLE SINGLE UNIT, INTERSTATE) 27 TON OPERATING RATING: CONTROL POINT-NORTH PIER FLOORBEAM (FLEXURAL STRESS AT EDGE OF MANHOLE) POSITIVE ACTION RATING FACTOR - 1.46 LOAD RATING - 39.5 TONS INVENTORY RATING: CONTROL POINT-NORTH PIER FLOORBEAM (FLEXURAL STRESS AT EDGE OF MANHOLE) POSITIVE ACTION RATING FACTOR - 0.88 LOAD RATING - 23.7 TONS</p>	<p>T435 (DE 4 AXLE SEMI) 35 TON OPERATING RATING: CONTROL POINT-CENTER LOCKS (FLEXURAL STRESS) POSITIVE ACTION RATING FACTOR - 1.35 LOAD RATING - 47.3 TONS INVENTORY RATING: CONTROL POINT-SOUTH BASCULE LEAF, ALL STRINGERS BETWEEN FLOORBEAMS (FBI) AND (FB2), (FLEXURAL STRESS AT MIDSPAN). POSITIVE ACTION RATING FACTOR - 0.88 LOAD RATING - 30.8 TONS</p>
<p>S335 (DE 3 AXLE SINGLE UNIT) 35 TON OPERATING RATING: CONTROL POINT-NORTH PIER FLOORBEAM (FLEXURAL STRESS AT EDGE OF MANHOLE) POSITIVE ACTION RATING FACTOR - 1.07 LOAD RATING - 37.6 TONS INVENTORY RATING: CONTROL POINT-NORTH PIER FLOORBEAM (FLEXURAL STRESS AT EDGE OF MANHOLE) POSITIVE ACTION RATING FACTOR - 0.64 LOAD RATING - 22.5 TONS</p>	<p>T540 (DE 5 AXLE SEMI) 40 TON OPERATING RATING: CONTROL POINT-NORTH BASCULE LEAF, WEST BASCULE GIRDER (SHEAR STRESS AT APPROX. 9' PAST E TRUNNION, TOWARD COUNTERWEIGHT). POSITIVE ACTION RATING FACTOR - 1.24 LOAD RATING - 49.6 TONS INVENTORY RATING: CONTROL POINT-NORTH AND SOUTH BASCULE LEAF, FLOORBEAM (FBI), (FLEXURAL STRESS AT MIDSPAN). POSITIVE ACTION RATING FACTOR - 0.87 LOAD RATING - 34.9 TONS</p>

NOTES:

1. GRATING SUPPORT BEAMS ARE THOSE BEAMS THAT ARE DIRECTLY BENEATH THE OPEN STEEL GRATING AND THEY ARE NOT SHOWN ON THE FRAMING PLANS.
2. FOR LOCATION OF SUPERSTRUCTURE MEMBERS, SEE SHEETS "FRAMING PLAN - SOUTH LEAF" AND "FRAMING PLAN - NORTH LEAF".

ASSOCIATED CONTRACTS	
CONTRACT No.	CONTRACT NAME
2049	SOUTH MARKET STREET BRIDGE
64-02-018	SOUTH MARKET STREET BRIDGE
64-04-013	SOUTH MARKET STREET BRIDGE PAINTING
72 B	WILMINGTON BRIDGE - SOUTH MARKET STREET
72 C	NORTH OPERATOR HOUSE WILMINGTON BRIDGE EXTRA FLOOR
72-09-008	NEW CASTLE BRIDGE
72-72 A	WILMINGTON BRIDGE
73-08-002	BRIDGE NO. 688 SOUTH MARKET STREET BRIDGE
81-071-02	BRIDGE NO. 688 SOUTH MARKET STREET BRIDGE
85-061-09	US 13, N. OF I-295 TO S. MARKET ST. BR. (PE/C)
927	SOUTH MARKET ST. - BASCULE TIMBER PLATE FLOOR
927 A	THREE INCH 1 BEAM LOK SLAB
MB-1	WILMINGTON BRIDGE PAINTING

UTILITIES
CONNECTIV POWER DELIVERY/ELECTRIC
CONNECTIV POWER DELIVERY/GAS
VERIZON
CITY OF WILMINGTON DEPARTMENT OF PUBLIC WORKS

CADD DESIGN: JAK, CHKD.: JFB, DESIGN: JAK, DW

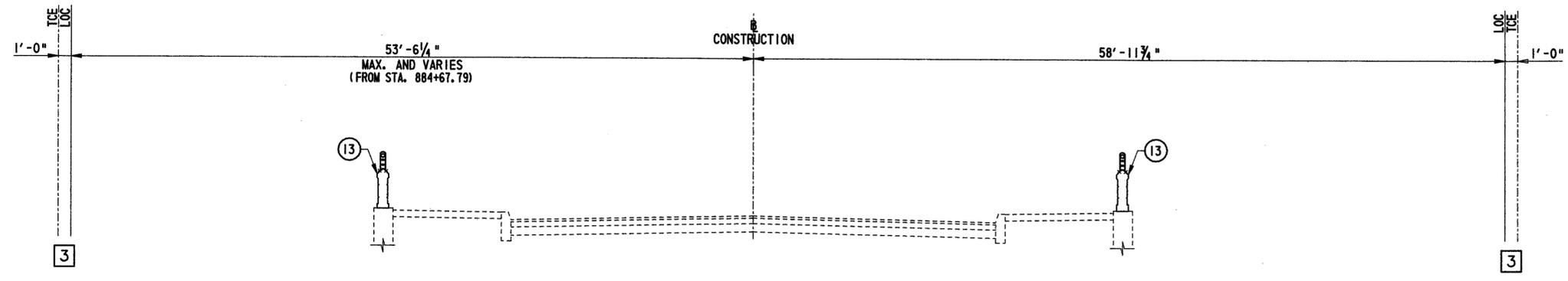
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 .1875
 .25
 0123456789

TYPICAL SECTIONS

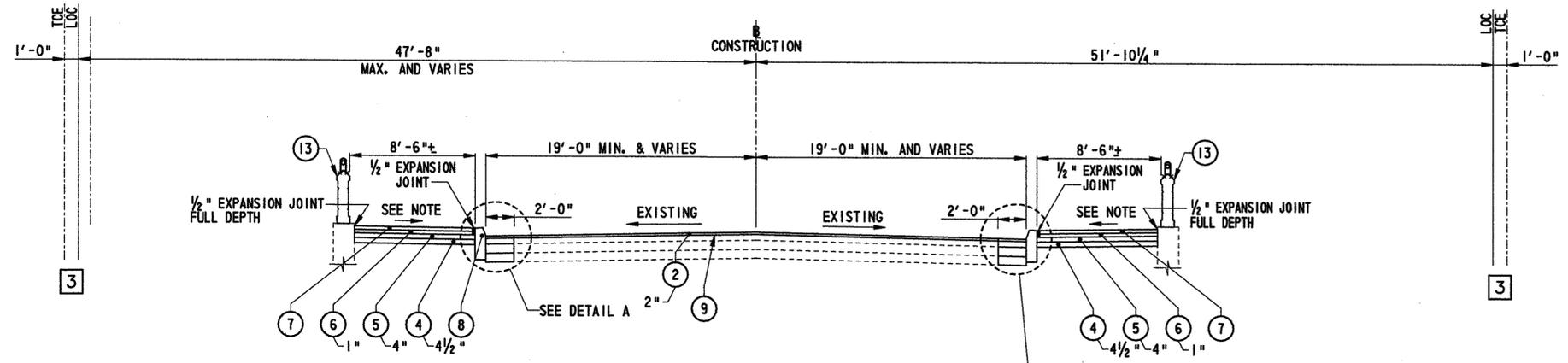
BR 688
 SOUTH MARKET STREET BRIDGE
 REHABILITATION

REVISIONS	
13 REVISED LOC. NEW PARAPET	JFB 10/22/04

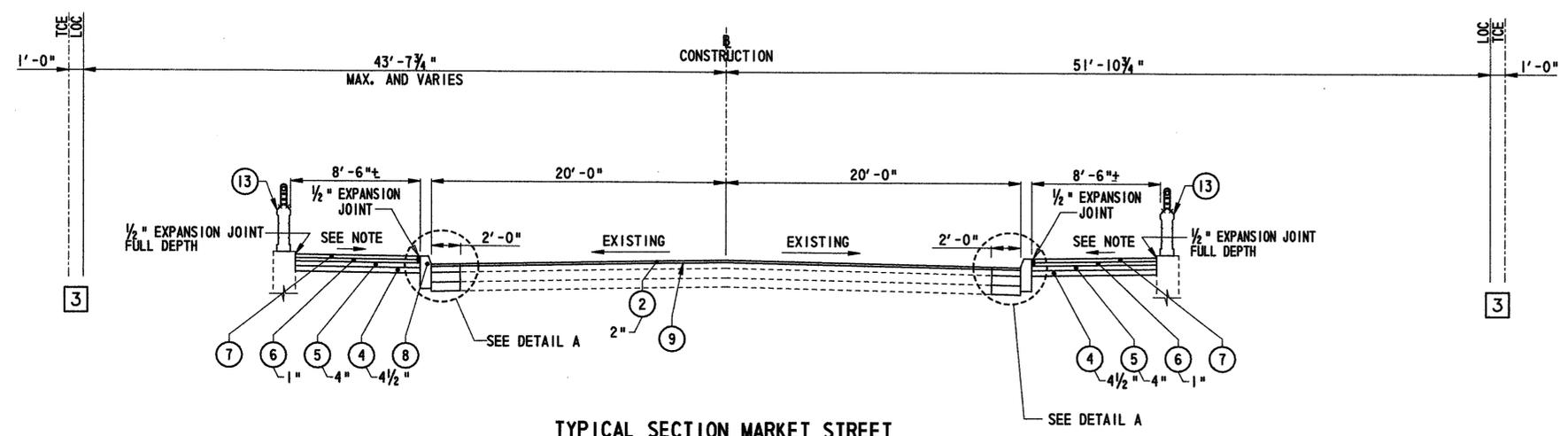
- 1 ASPHALTIC REINFORCED MEMBRANE
- 2 SUPERPAVE, TYPE C 160 GYRATIONS, PG 64-22
- 3 BITUMINOUS CONCRETE BASE COURSE, 160 GYRATIONS, PG 64-22 PATCHING
- 4 GRADED AGGREGATE BASE COURSE, TYPE B, PATCHING
- 5 P.C.C. BASE COURSE
- 6 MORTAR SETTING BED
- 7 BRICK PAVER COURSE
- 8 STONE CURB
- 9 PAVEMENT MILLING, HOT-MIX
- 10 BORROW, TYPE A
- 11 SAW CUTTING, HOT-MIX
- 12 SAW CUTTING, CONCRETE, FULL DEPTH
- 13 REMOVE AND REPLACE EXISTING PEDESTRIAN PARAPET



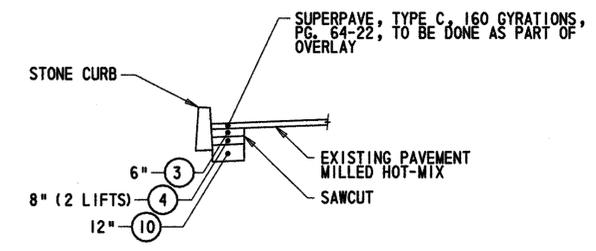
TYPICAL SECTION MARKET STREET
 SCALE: 1/8" = 1'-0"
 STA. 884+00.00 TO STA. 885+28.47



TYPICAL SECTION MARKET STREET
 SCALE: 1/8" = 1'-0"
 STA. 888+19.47 TO STA. 889+00.00



TYPICAL SECTION MARKET STREET
 SCALE: 1/8" = 1'-0"
 STA. 889+00.00 TO STA. 890+00.00



FULL DEPTH PAVEMENT DETAIL "A"
 N.T.S.

NOTE:
 SIDEWALK CROSS SLOPE TO BE ESTABLISHED BY PROVIDING A MINIMUM OF 39" OF EXISTING BRIDGE WALL HEIGHT AND MEETING THE TOP OF CURB ELEVATION. MAXIMUM SIDEWALK CROSS-SLOPE TO BE 2%.

CADD DESIGN DM DESIGN JFB CHKD. JAK

TEXT SIZE REFERENCE
 .125
 .1875
 .25

0123456789

BR. 1-688

CONTRACT	COUNTY	FEDERAL AID PROJECT NO.	SHEET NO.	TOTAL SHTS.
21-074-07	NEW CASTLE	EBHN-N029 (2)	6	169

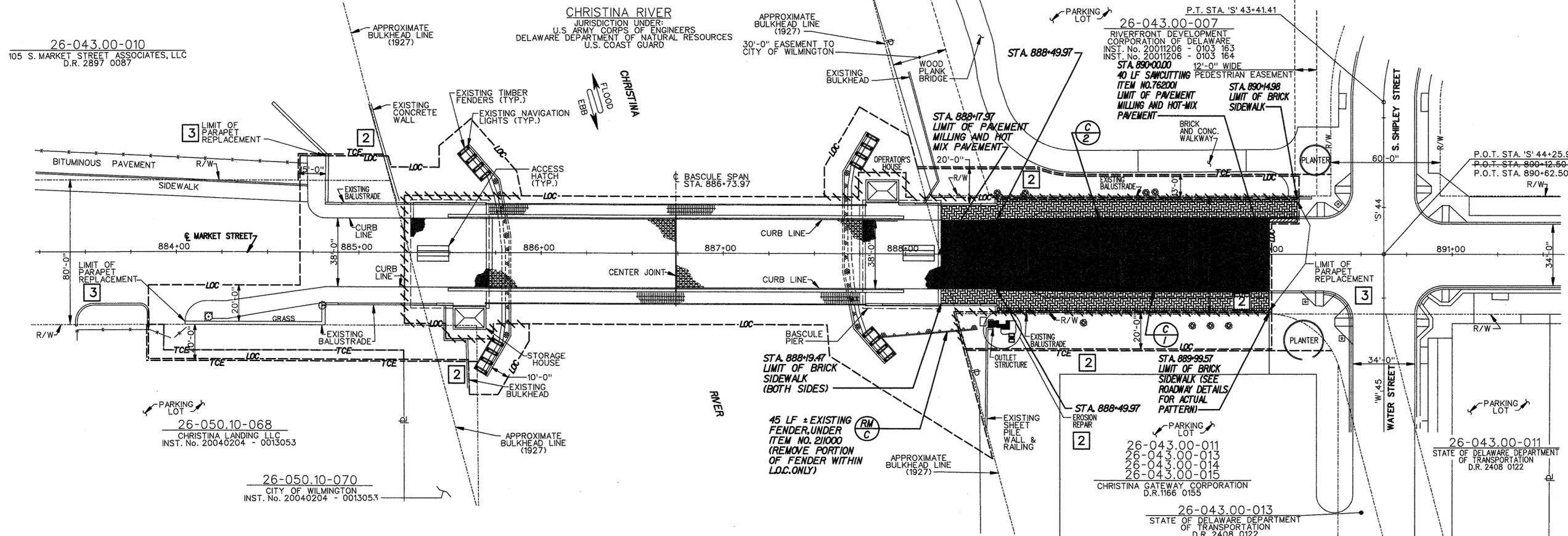
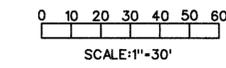
SHEET 1 OF 1

BR 688
SOUTH MARKET STREET BRIDGE
REHABILITATION

REVISIONS

2	REVISED ROW, LOC, ADDED TCE	3	ADD PARAPET WORK
	JFB 9/25/04		JFB 10/22/04

CONSTRUCTION PLAN



NOTES:
 2. REVISED PROPERTY LINES BASED ON "CHRISTINA LANDING LLC - RECORD SUBDIVISION PLAN", BUCCINI POLLIN GROUP DATED 1/23/04 AND PREPARED BY PENNONI ASSOCIATES, INC.

BALUSTRADE REPAIR SCHEDULE*

STA.	RIGHT	Size
885+28.50	RIGHT	6' x 4'
885+28.50	RIGHT	6' x 6'
885+40.50	LEFT	24' x 6'
885+48.50	LEFT	12' x 6'
888+06.50	LEFT	12' x 4'
888+19.50	RIGHT	24' x 12'
888+19.50	RIGHT	3' x 3'
888+19.50	RIGHT	6' x 4'
888+19.50	LEFT	8' x 4'
888+24.00	RIGHT	6' x 4'
888+42.50	LEFT	12' x 12'
888+50.50	LEFT	15' x 6'
888+19.50	LEFT	12' x 4'
889+84.50	RIGHT	3' x 5'
889+85.50	LEFT	6' x 6'

PROPOSED PAVEMENT LEGEND

	STEEL GRID DECK
	CONCRETE FILLED STEEL GRID DECK
	2" SUPERPAVE, TYPE C HOT-MIX 160 GYRATIONS, PG 64-22

CURB SCHEDULE

NO.	TYPE OF CURB	LF.
1	STONE CURB	150 LF.
2	STONE CURB	165 LF.

SHEET REFERENCE INDEX

ITEM	SHEET
TYPICAL SECTIONS	5 OF 169
DETOUR PLAN	11 OF 169
ENVIRONMENTAL COMPLIANCE PLAN	13 OF 169
SIGNING AND STRIPING PLAN	92 OF 169
UTILITY PLAN	93 OF 169
RIGHT OF WAY PLAN	94A OF 169

R.O.W. LEGEND

- (D) - DEED
- EXISTING RIGHT OF WAY LINE
- EXISTING BULKHEAD LINE
- EXISTING PROPERTY LINE
- LIMIT OF CONSTRUCTION
- TEMPORARY CONSTRUCTION EASEMENT

TYPE OF ACQUISITION

- FEE AREA OF ACQUISITION
- R/W AREA OCCUPIED BY EXISTING R/W
- P/E PERMANENT EASEMENT
- TCE TEMPORARY CONSTRUCTION EASEMENT
- U/E PERMANENT UTILITY EASEMENT
- 0.00 DISTANCE IN FEET
- OFFSET IS LEFT OF BASELINE

3. BALUSTRADE REPAIRS ARE PAID UNDER ITEM 602572, REPAIRING EXISTING P.O.C. STRUCTURES AND SHALL UTILIZE A MODIFIED TYPE A CEMENT, AS DIRECTED BY THE ENGINEER, THE COLOR AND TEXTURE OF REPAIRS TO MATCH EXISTING AND SHALL BE TESTED AND SUBMITTED FOR APPROVAL SEE NOTE 20 OF PROJECT NOTES.

3 CHANGED SHEET NOS.

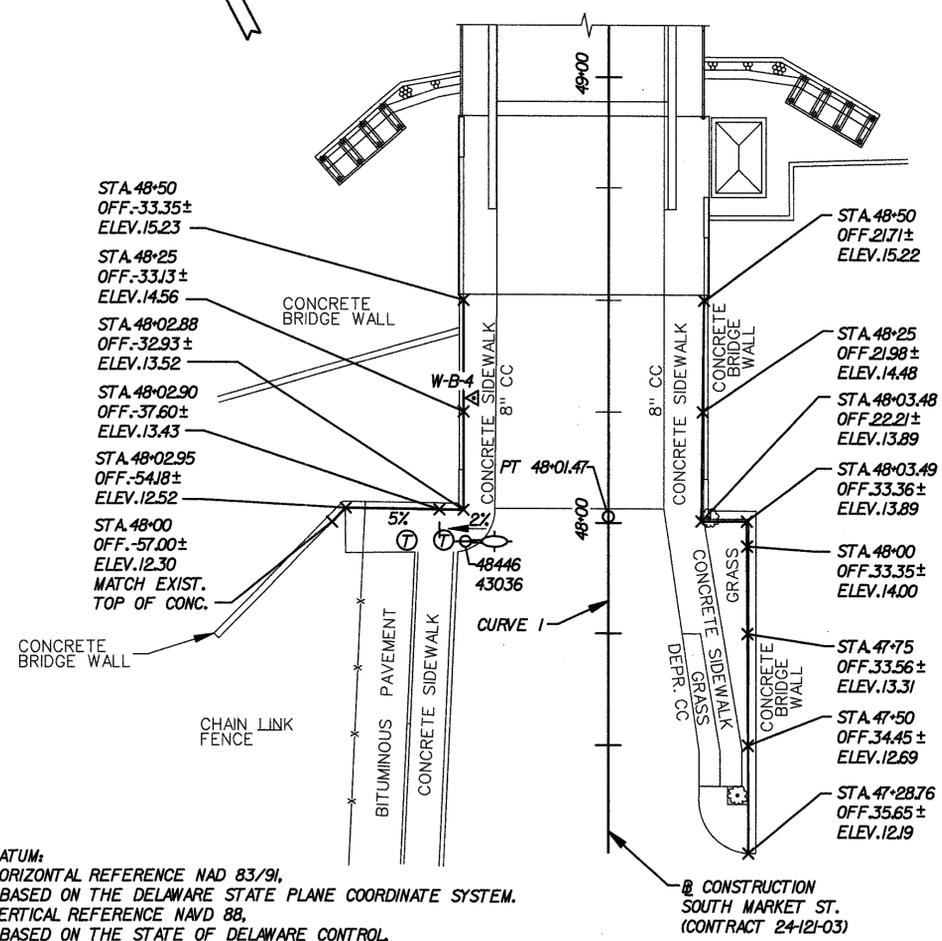
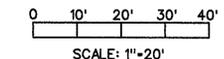
C CURB INDICATOR

JAK
 CHKD.
 JFB
 DESIGN
 DM
 CADD DESIGN

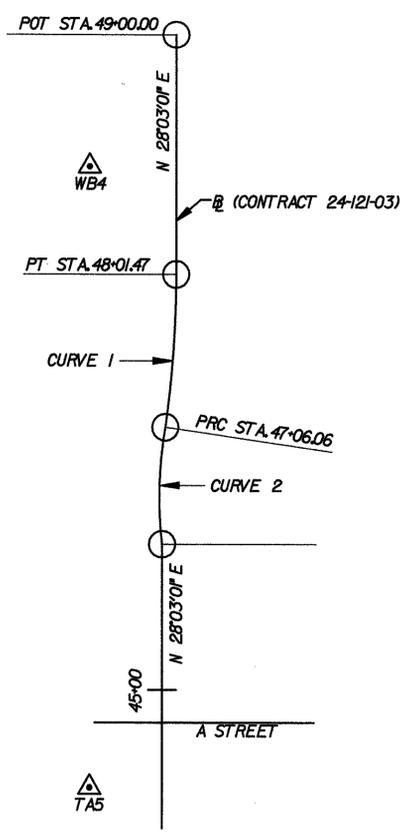
FEET/12/100
 TEXT SIZE
 REFERENCE
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 .1875
 .25

BR. 1-688		CONTRACT	COUNTY	FEDERAL AID PROJECT NO.	SHEET NO.	TOTAL SHTS.
		21-074-07	NEW CASTLE	EBHN-N029 (2)	6A	169
BR 688						
SOUTH MARKET STREET BRIDGE						
REHABILITATION						
REVISIONS						
NEW SHEET		JFB 11/22/04				

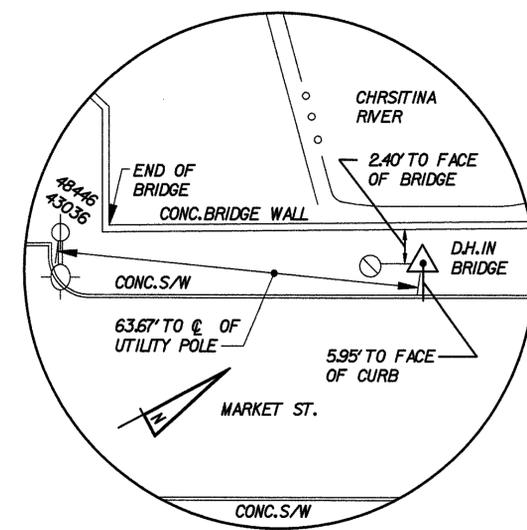
**SOUTH APPROACH
 PEDESTRIAN PARAPET
 LAYOUT AND HORIZONTAL / VERTICAL CONTROL**



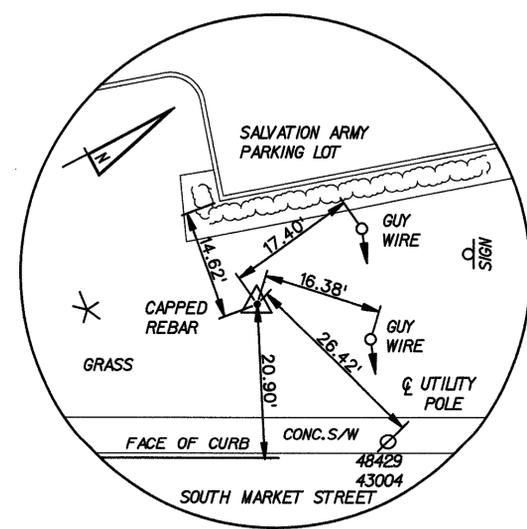
PROPOSED SIDEWALK ELEVATIONS
 FACE OF EAST AND WEST WALLS
 SCALE: 1"=20'



PARTIAL A-STREET IMPROVEMENT
 PACKAGE B ROADWAY BASELINE



TRAVERSE POINT W-B-4
 N 632322.692
 E 617438.57
 ELEV. 16.65



TRAVERSE POINT T-A-5
 N 631953.259
 E 617217.608
 ELEV. 6.05

CONTROL COORDINATES		
DESCRIPTION	NORTH	EAST
POT 49+00.00	632,343.9771	617,485.2725
PT 48+01.47	632,257.0228	617,438.9426

CURVE DATA	
①	②
Δ - 41°2'19.10" LT	Δ - 41°2'19.10" RT
Dc - 4'24"26.52"	Dc - 4'24"26.52"
R - 1,300.00'	R - 1,300.00'
T - 47.73'	T - 47.73'
L - 95.42'	L - 95.42'
E - 0.88'	E - 0.88'

DATUM:
 HORIZONTAL REFERENCE NAD 83/91,
 BASED ON THE DELAWARE STATE PLANE COORDINATE SYSTEM.
 VERTICAL REFERENCE NAVD 88,
 BASED ON THE STATE OF DELAWARE CONTROL.

NOTES:
 1. THE INFORMATION ON THIS SHEET IS PROVIDED BY RUMMEL, KLEPPER & KAHL, L.L.P. AND IS FOR THE LAYOUT AND FINISH (TOP OF SIDEWALK) ELEVATIONS ONLY AS PART OF WILMINGTON RIVERFRONT A STREET IMPROVEMENTS CONTRACT 24-121-03

CADD DESIGN ML.A
 DESIGN JFB
 CHKD. JAK
 JAK

FEET/12/1000
 TEXT SIZE REFERENCE
 .125
 .1875
 .25

BR. 1-688		CONTRACT	COUNTY	FEDERAL AID PROJECT NO.	SHEET NO.	TOTAL SHTS.
		21-074-07	NEW CASTLE	EBHN-NO29 (2)	6B	169
BR 688						
SOUTH MARKET STREET BRIDGE REHABILITATION						
REVISIONS						
NEW SHEET		ABT 11/22/04				

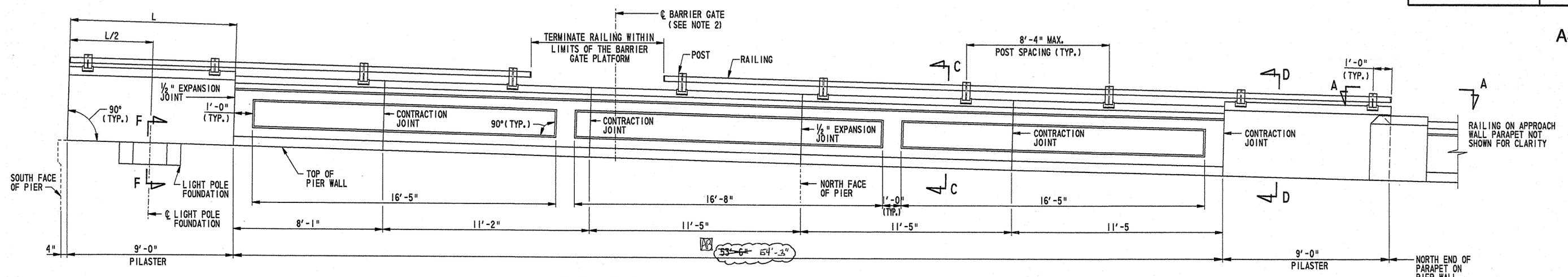
- NOTES:**
- WHERE DIMENSIONS OR DETAILS SHOWN ON THESE PLANS ARE NOT COMPATIBLE WITH OR SIMILAR TO EXISTING CONDITIONS, IT SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER AND REVISED DETAILS SHALL BE SUBMITTED AS PART OF THE WORKING DRAWINGS.
 - FOR LOCATION OF BARRIER GATE, SEE SHEET NO. 62. VERIFY LOCATION OF BARRIER GATE PRIOR TO CONSTRUCTION OF PARAPET.
 - FOR RAILING DETAILS SEE SHEET NO. 6J.
 - FOR SECTIONS "C-C" AND "D-D" SEE SHEET NO. 6F.
 - FOR SECTIONS "K-K" AND "L-L" SEE SHEET NO. 6G.
 - FOR SECTION "F-F" SEE SHEET NO. 6H.

- FOR REMOVAL OF EXISTING PARAPET SEE DETAIL "PARAPET REMOVAL" ON SHEET 6H.
- ALL DIMENSIONS SHALL BE VERIFIED PRIOR TO CONSTRUCTING THE PARAPETS OR ORDERING ANY MATERIALS. THE CONTRACTOR SHALL SUBMIT WORKING DRAWINGS OF THE NEW PARAPETS TO THE ENGINEER FOR APPROVAL AFTER VERIFYING THE DIMENSIONS. ALL DETAILS ON SHEETS 6B THROUGH 6K SHALL BE CONSIDERED PART OF THE NEW PARAPET WORK AND SHALL BE INCLUDED IN THE WORKING DRAWINGS.
- FOR APPROACH WALL TURN DETAIL SEE SHEET NO. 6G.

NORTHEAST PARAPET AND RAILING

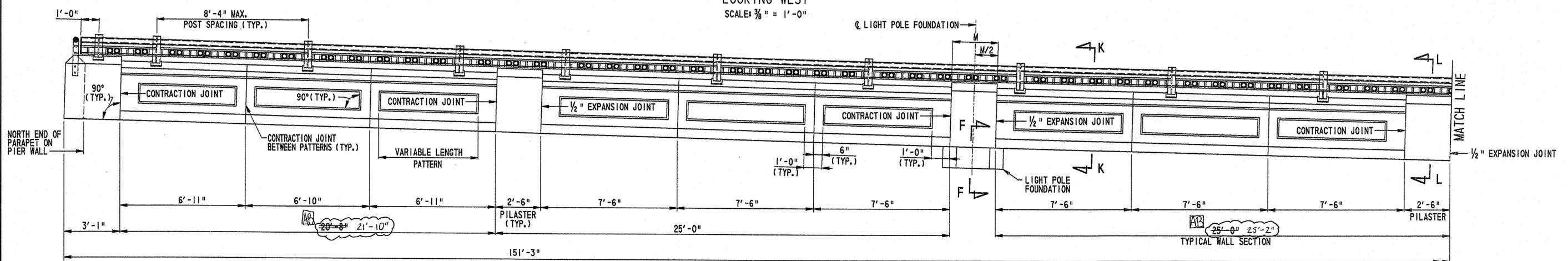
SOUTH MARKET STREET BRIDGE REHABILITATION

AS BUILT



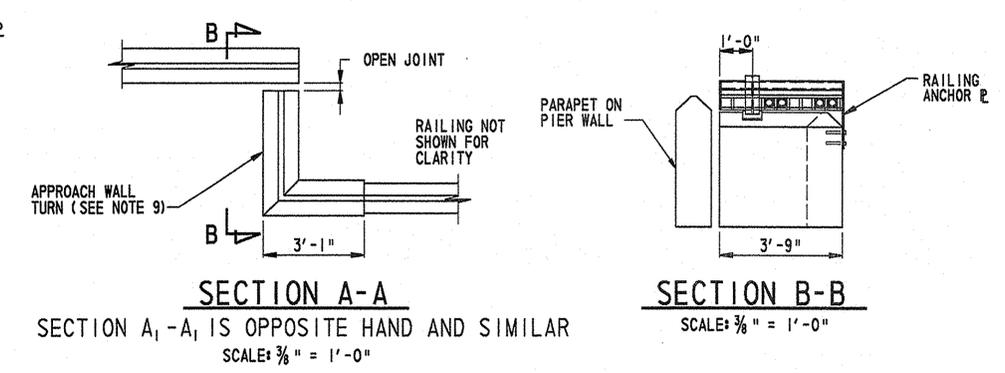
ELEVATION: PARAPET ON NORTHEAST PIER WALL

LOOKING WEST
 SCALE: 3/8" = 1'-0"



ELEVATION: PARAPET ON NORTHEAST APPROACH WALL

LOOKING WEST
 SCALE: 3/8" = 1'-0"



SECTION A-A

SECTION A₁-A₁ IS OPPOSITE HAND AND SIMILAR
 SCALE: 3/8" = 1'-0"

SECTION B-B

SCALE: 3/8" = 1'-0"

CADD DESIGN: M/LA
 DESIGN: REJ
 CHKD.: ABT
 9/21/2006 21-074-07

FEET/12/1000
 TEXT SIZE REFERENCE
 . 125
 . 1875
 . 25
 0 1 2 3 4 5 6 7 8 9
 10 11 12 13 14 15 16 17 18 19
 20 21 22 23 24 25
 26 27 28 29 30 31 32 33 34 35
 36 37 38 39 40 41 42 43 44 45
 46 47 48 49 50 51 52 53 54 55
 56 57 58 59 60 61 62 63 64 65
 66 67 68 69 70 71 72 73 74 75
 76 77 78 79 80 81 82 83 84 85
 86 87 88 89 90 91 92 93 94 95
 96 97 98 99 100

BR. 1-688

CONTRACT	COUNTY	FEDERAL AID PROJECT NO.	SHEET NO.	TOTAL SHTS.
21-074-07	NEW CASTLE	EBHN-NO29 (2)	6C	169

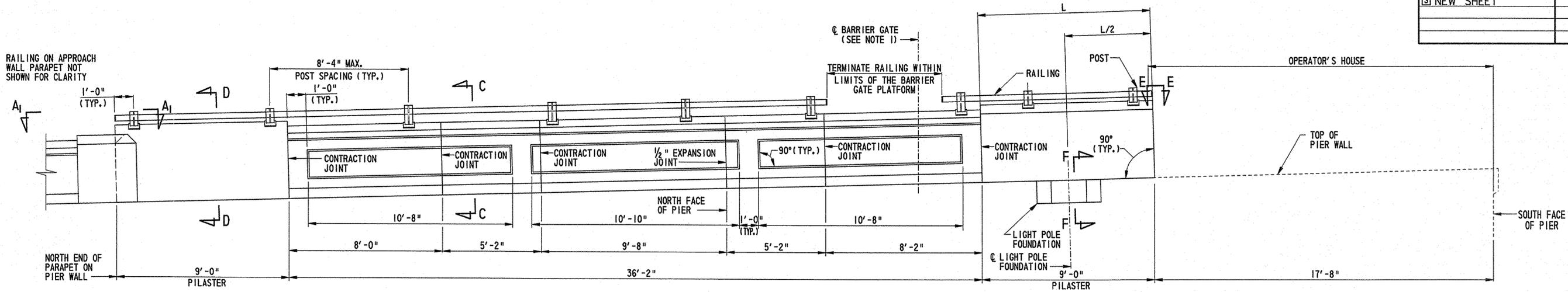
- NOTES:**
- NOTES 1, 2, 3, 7, 8, AND 9 ON SHEET NO. 6B ARE APPLICABLE TO THIS SHEET.
 - FOR SECTION "A₁-A₁" SEE SHEET NO. 6B.
 - FOR APPROACH WALL TURN REINFORCEMENT DETAILS SEE SHEET NO. 6G.
 - FOR SECTIONS "C-C", "D-D", AND "E-E" SEE SHEET NO. 6F.
 - FOR SECTIONS "K-K" AND "L-L" SEE SHEET NO. 6G.

NORTHWEST PARAPET AND RAILING

**BR 688
 SOUTH MARKET STREET BRIDGE
 REHABILITATION**

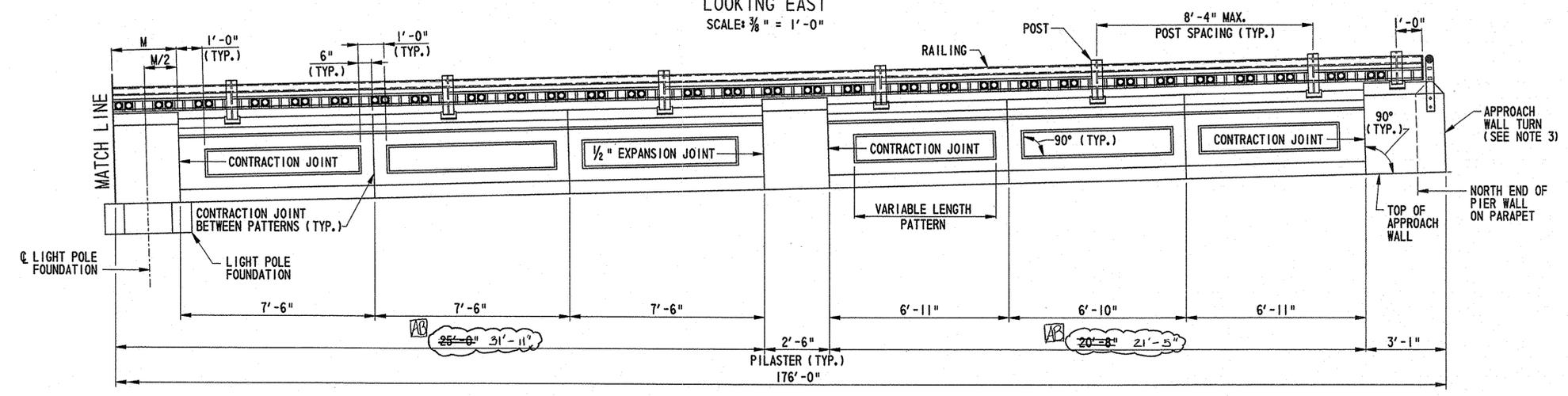
REVISIONS

NEW SHEET	ABT 11/22/04
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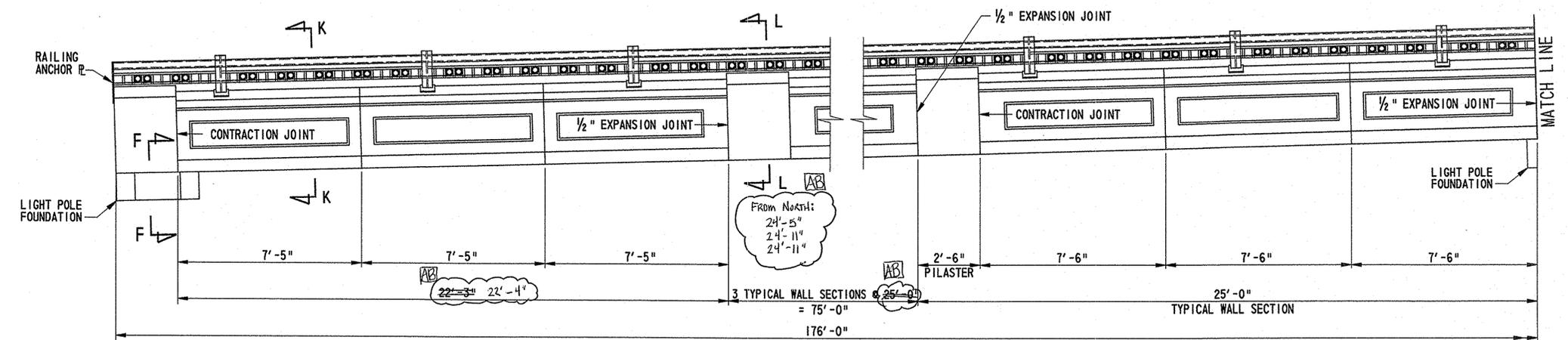
ELEVATION: PARAPET ON NORTHWEST PIER WALL

LOOKING EAST
 SCALE: 3/8" = 1'-0"



ELEVATION: PARAPET ON NORTHWEST APPROACH WALL

LOOKING EAST
 SCALE: 3/8" = 1'-0"



CADD DESIGN: M/LA
 DESIGN: RECJ
 CHKD.: ABT
 9/21/2006 21-074-07

TEXT SIZE REFERENCE .125 .1875 .25

BR. 1-688

CONTRACT	COUNTY	FEDERAL AID PROJECT NO.	SHEET NO.	TOTAL SHTS.
21-074-07	NEW CASTLE	EBHN-N029 (2)	6D	169

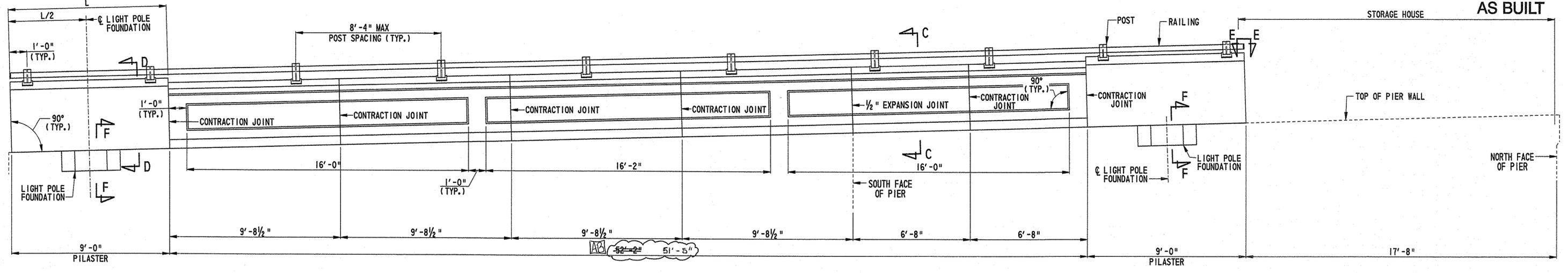
NOTES:

- NOTES 1, 3, 7, 8 AND 9 FROM SHEET NO. 6B ARE APPLICABLE TO THIS SHEET.
- FOR SECTIONS "C-C", "D-D" AND "E-E" SEE SHEET NO. 6F.
- FOR SECTIONS "M-M" AND "N-N" SEE SHEET NO. 6G.
- SEE SHEET NO. 6A FOR PROPOSED SIDEWALK ELEVATIONS ADJACENT TO THE SOUTH APPROACH AND PIER WALLS.
- FOR SECTION "F-F" AND "R-R" SEE SHEET NO. 6H.
- FOR APPROACH WALL TURN SECTION SEE SHEET NO. 6G.
- EXPANSION JOINTS IN NEW TOP OF APPROACH WALL SHOULD MATCH THE ORIENTATION AND LOCATION OF THE EXISTING EXPANSION JOINTS. IT HAS BEEN ASSUMED THAT THE EXISTING WALL JOINTS ARE PLUMB.

SOUTHEAST PARAPET AND RAILING

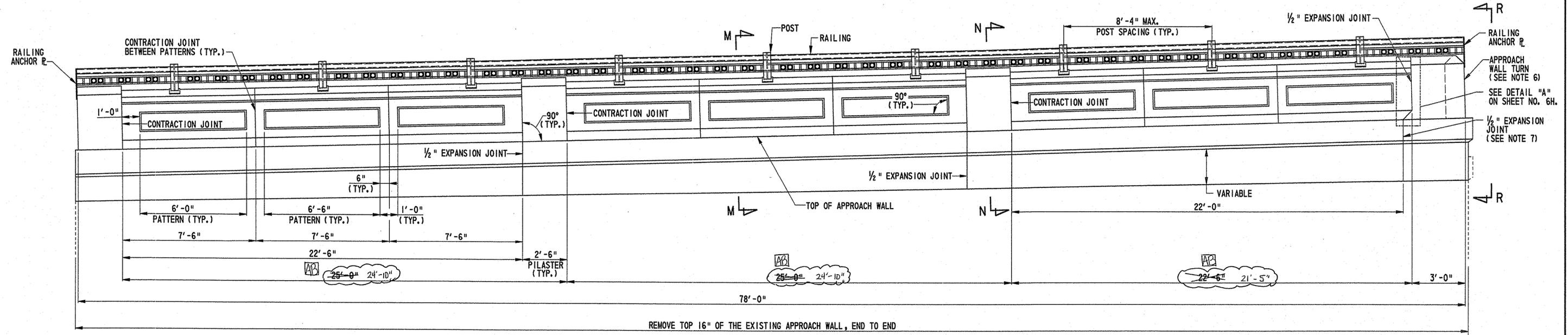
BR 688 SOUTH MARKET STREET BRIDGE REHABILITATION

REVISIONS	
3 NEW SHEET	ABT 11/22/04



ELEVATION: PARAPET ON SOUTHEAST PIER WALL

LOOKING WEST
SCALE: 3/8" = 1'-0"



ELEVATION: PARAPET ON SOUTHEAST APPROACH WALL

LOOKING WEST
SCALE: 3/8" = 1'-0"

CADD DESIGN M.A. DESIGN REJ. CHKD. ABT.

9/21/2006 21-074-07

TEXT SIZE
REFERENCE
125
1875
25
0123456789
50000-0

- NOTES:**
- NOTES 1, 3, 7 AND 8, FROM SHEET NO. 6B ARE APPLICABLE TO THIS SHEET.
 - FOR SECTIONS "C-C" AND "D-D" SEE SHEET NO. 6F.
 - FOR SECTIONS "K-K" AND "L-L" SEE SHEET NO. 6G.
 - FOR SECTION "F-F" SEE SHEET NO. 6H.

BR. 1-688

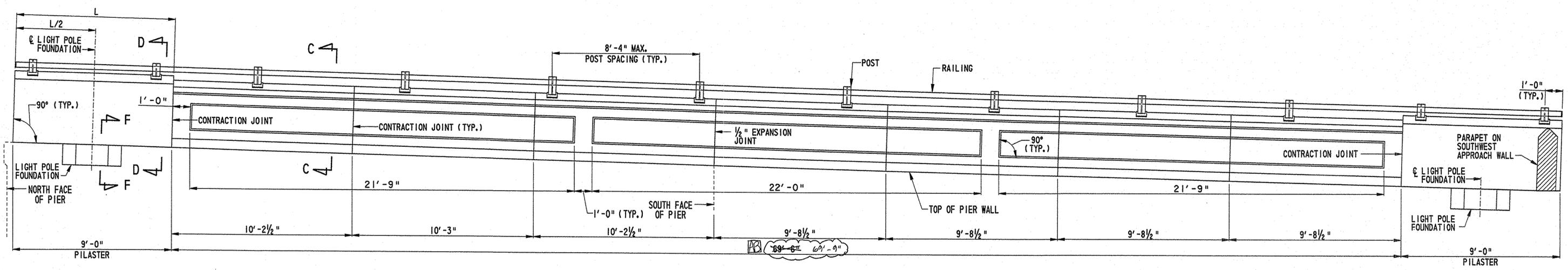
CONTRACT	COUNTY	FEDERAL AID PROJECT NO.	SHEET NO.	TOTAL SHTS.
21-074-07	NEW CASTLE	EBHN-N029 (2)	6E	169

SOUTHWEST PARAPET AND RAILING

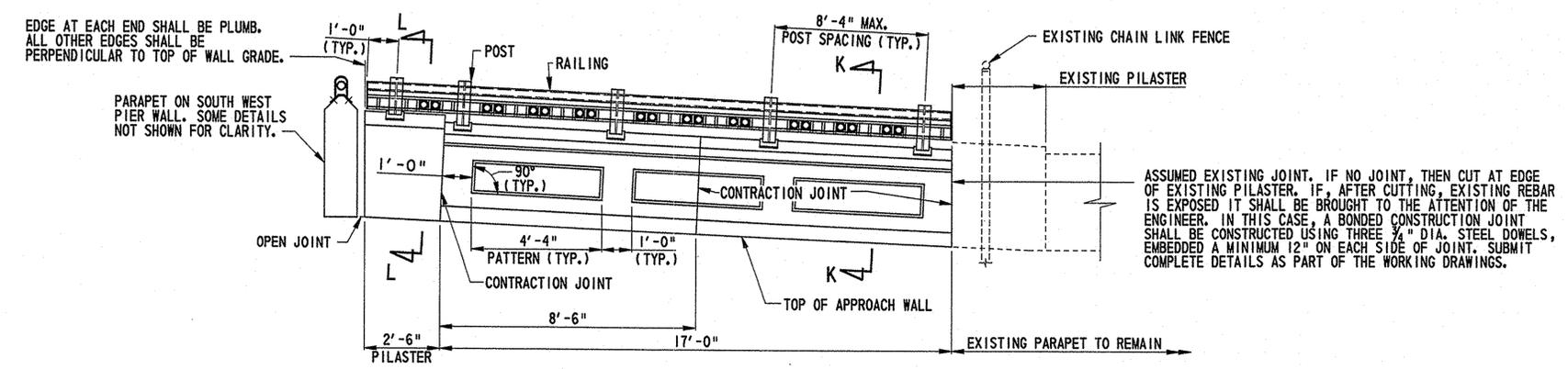
**BR 688
SOUTH MARKET STREET BRIDGE
REHABILITATION**

REVISIONS	
NEW SHEET	ABT 11/22/04

AS BUILT



ELEVATION: PARAPET ON SOUTHWEST PIER WALL
LOOKING EAST
SCALE: 3/8" = 1'-0"



ELEVATION: PARAPET ON SOUTHWEST APPROACH WALL
LOOKING SOUTH
SCALE: 3/8" = 1'-0"

CADD DESIGN
MLA
DESIGN
REJ
CHKD.
ABT

9/21/2006 21-074-07

TEXT SIZE
REFERENCE
.125
.1875
.25

0123456789
0123456789
0123456789

BR. 1-688

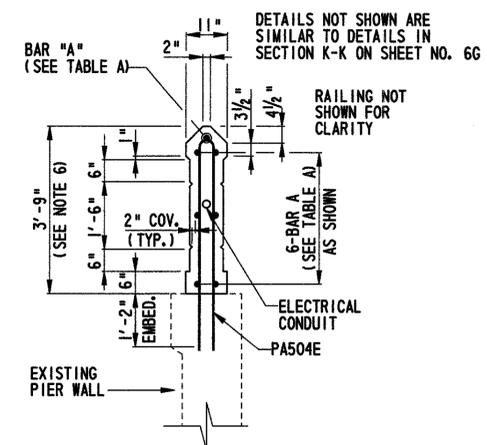
CONTRACT	COUNTY	FEDERAL AID PROJECT NO.	SHEET NO.	TOTAL SHTS.
21-074-07	NEW CASTLE	EBHN-N029 (2)	6F	169

DETAILS: PARAPET ON PIER WALLS

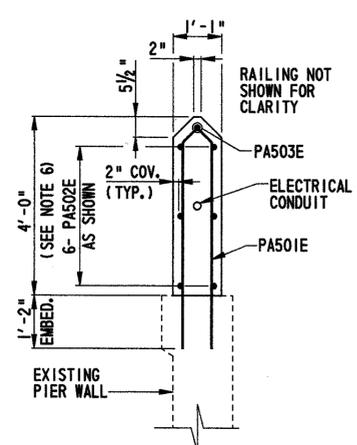
BR 688
SOUTH MARKET STREET BRIDGE
REHABILITATION

REVISIONS

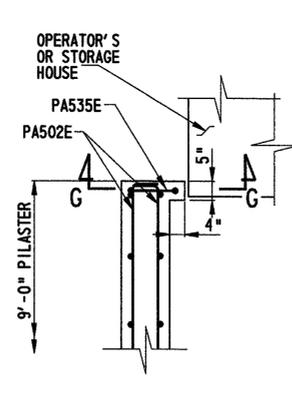
NEW SHEET	ABT 11/22/04



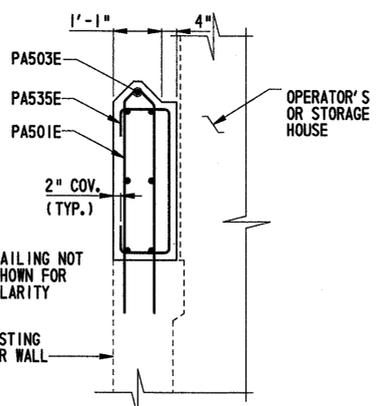
SECTION C-C
SCALE: 1/2" = 1'-0"



SECTION D-D
SCALE: 1/2" = 1'-0"



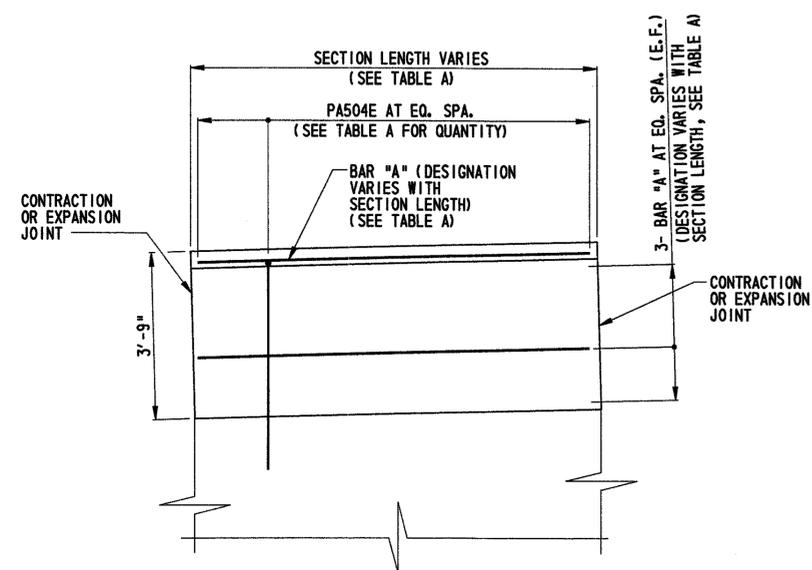
SECTION E-E
SCALE: 1/2" = 1'-0"



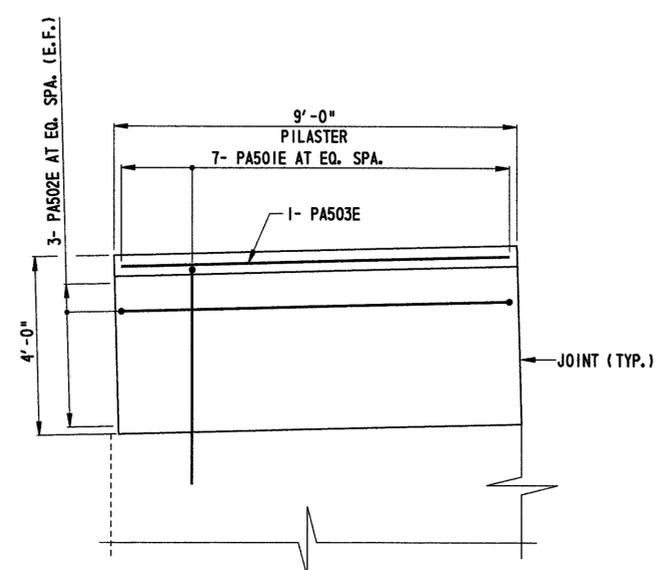
SECTION G-G
SCALE: 1/2" = 1'-0"

NOTES:

- FOR JOINT DETAILS SEE SHEET NO. 6H.
- FOR PROPOSED SIDEWALK ELEVATIONS ADJACENT TO SOUTH PIER WALLS AND APPROACH WALLS SEE SHEET NO. 6A.
- CLASS A PORTLAND CEMENT CONCRETE ($f'_c = 4500$ psi AT 28 DAYS) SHALL BE USED FOR THE PARAPETS.
- REINFORCING STEEL SHALL CONFORM TO AASHTO M31M GRADE 60 AND SHALL BE EPOXY COATED IN CONFORMANCE WITH AASHTO M284M.
- FOR LOCATION OF SECTIONS "C-C", "D-D" AND "E-E", SEE SHEET NOS. 6B - 6E.
- PARAPET AND PILASTER PROFILE DIMENSIONS ARE PERPENDICULAR TO THE TOP-OF-WALL GRADE.



TYPICAL PIER WALL PARAPET
REINFORCEMENT DETAIL
SCALE: 1/2" = 1'-0"



TYPICAL PIER WALL PILASTER
REINFORCEMENT DETAIL
SCALE: 1/2" = 1'-0"

	SECTION LENGTH	DESIGNATION BAR "A"	PA504E QUANTITY
NE PIER WALL	8'-1"	PA505E	7
	11'-2"	PA506E	9
	11'-5"	PA506E	9
NW PIER WALL	8'-0"	PA505E	7
	8'-2"	PA505E	7
	5'-2"	PA516E	5
SE PIER WALL	9'-8"	PA517E	8
	6'-8"	PA522E	6
	9'-8 1/2"	PA520E	8
SW PIER WALL	10'-2 1/2"	PA519E	8
	10'-3"	PA519E	8
	9'-8 1/2"	PA520E	8

TABLE A

CADD DESIGN DW DESIGN ABT CHKD. JFB

TEXT SIZE REFERENCE
 .125
 .1875
 .25

**BR 688
 SOUTH MARKET STREET BRIDGE
 REHABILITATION**

REVISIONS

NEW SHEET	ABT 11/22/04
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- NOTES:**
- EXPANSION JOINTS IN PARAPET SHALL BE LOCATED WHERE THERE ARE EXPANSION JOINTS IN THE EXISTING PIER WALLS AND APPROACH WALLS, UNLESS OTHERWISE SHOWN.
 - REINFORCEMENT IS DISCONTINUOUS AT EXPANSION AND CONTRACTION JOINTS.
 - CLASS A PORTLAND CEMENT CONCRETE ($f_c = 4500$ psi AT 28 DAYS) SHALL BE USED FOR THE PARAPET AND WALL.
 - FOR PROPOSED SIDEWALK ELEVATIONS ADJACENT TO WALLS SEE SHEET NO. 6A.
 - FOR PARAPET REMOVAL DETAILS, SEE SHEET NO. 6H.
 - REINFORCING STEEL SHALL CONFORM TO AASHTO M31M GRADE 60 AND SHALL BE EPOXY COATED IN CONFORMANCE WITH AASHTO M284M.
 - FOR LOCATION OF SECTIONS "K-K", "L-L", "M-M" AND "N-N", SEE SHEET NOS. 6B THROUGH 6E, AND 6H.
 - PROVIDE MINIMUM 2" COVER TO ALL REINFORCEMENT.
 - FOR APPROACH WALL REINFORCEMENT DETAILS SEE SHEET NO. 6H.
 - PARAPET AND PILASTER PROFILE DIMENSIONS ARE PERPENDICULAR TO THE TOP-OF-WALL GRADE.

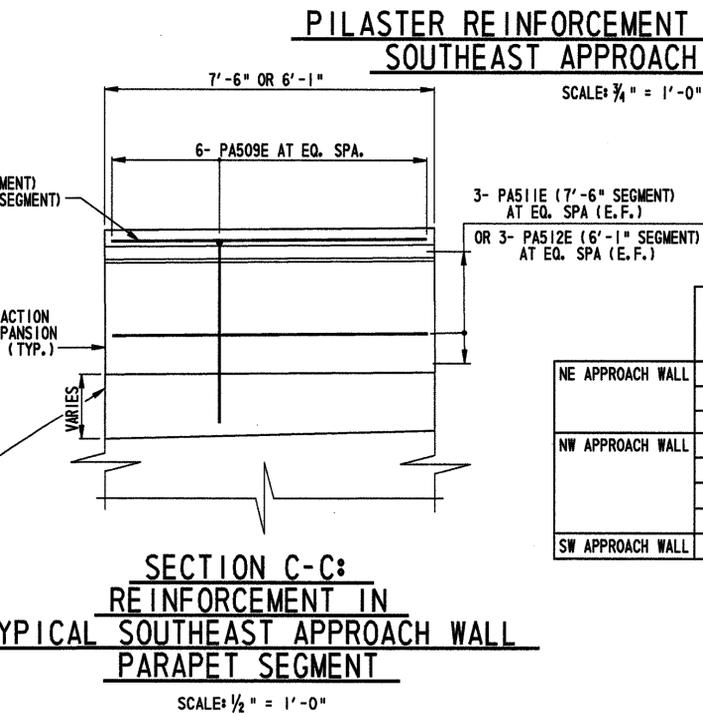
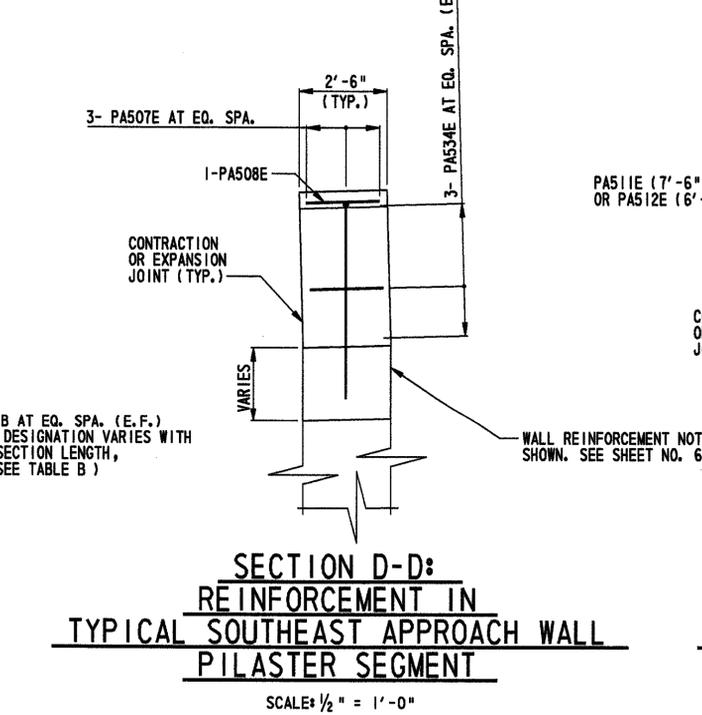
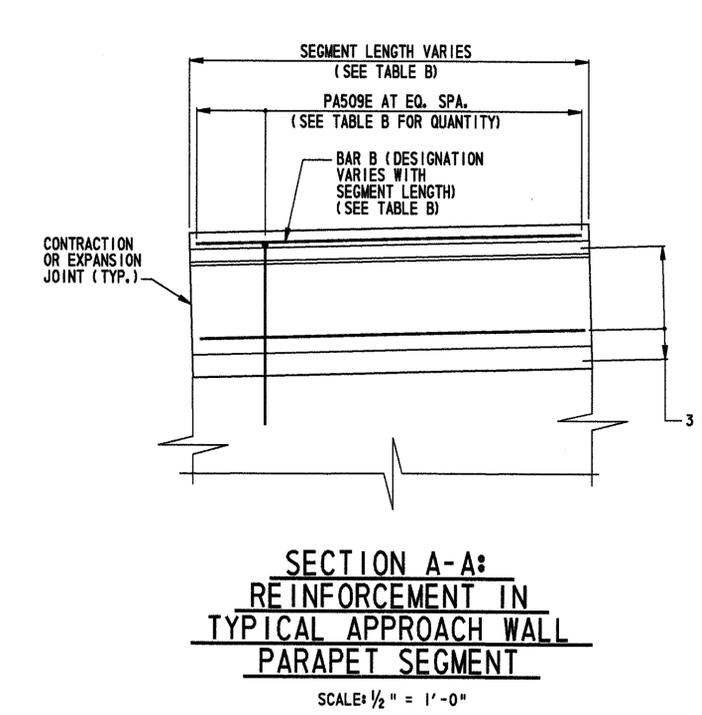
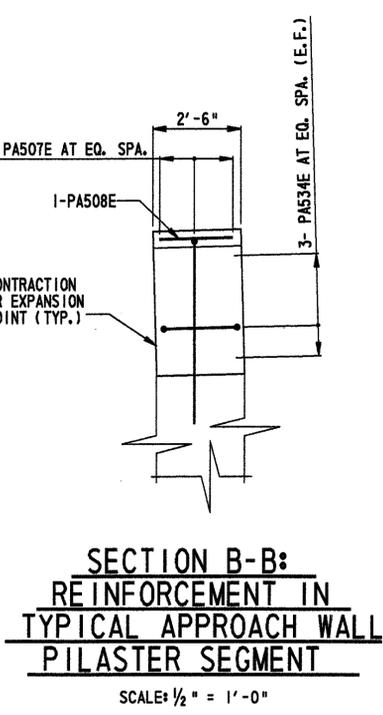
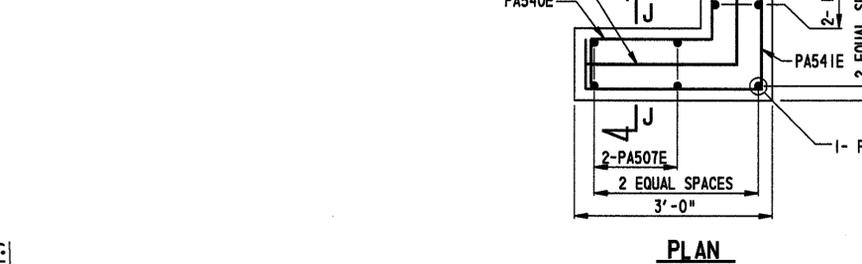
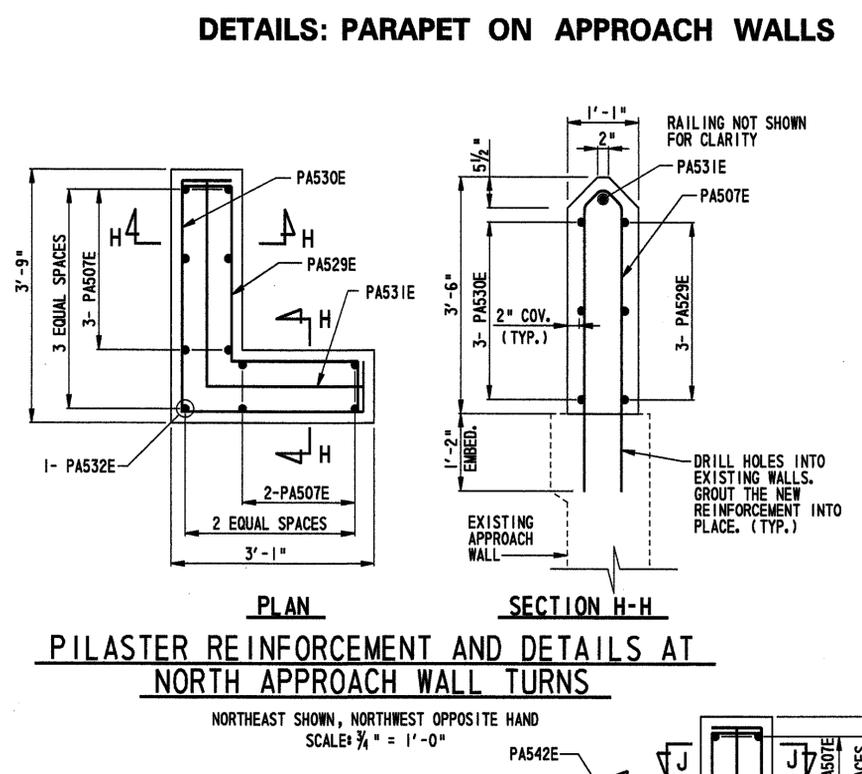
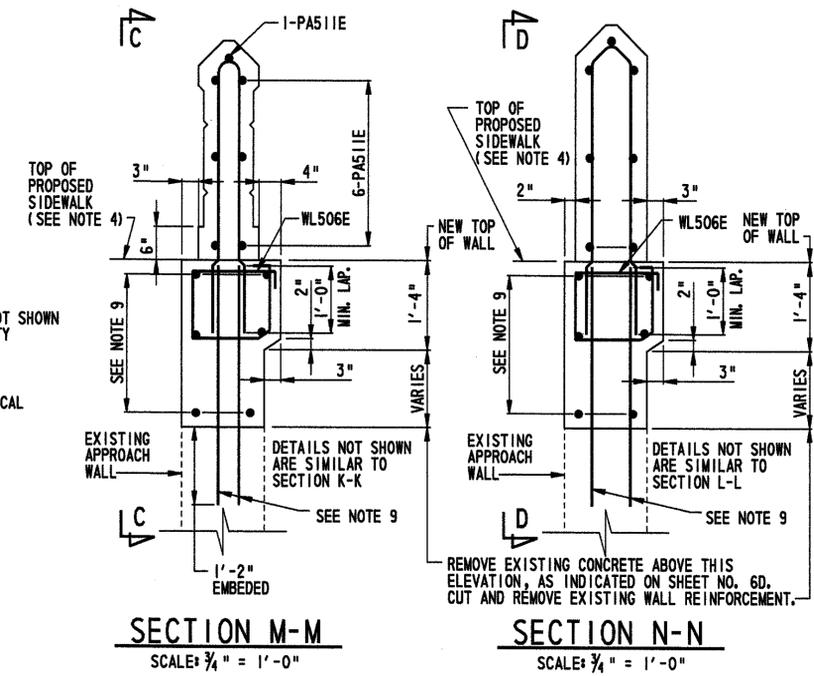
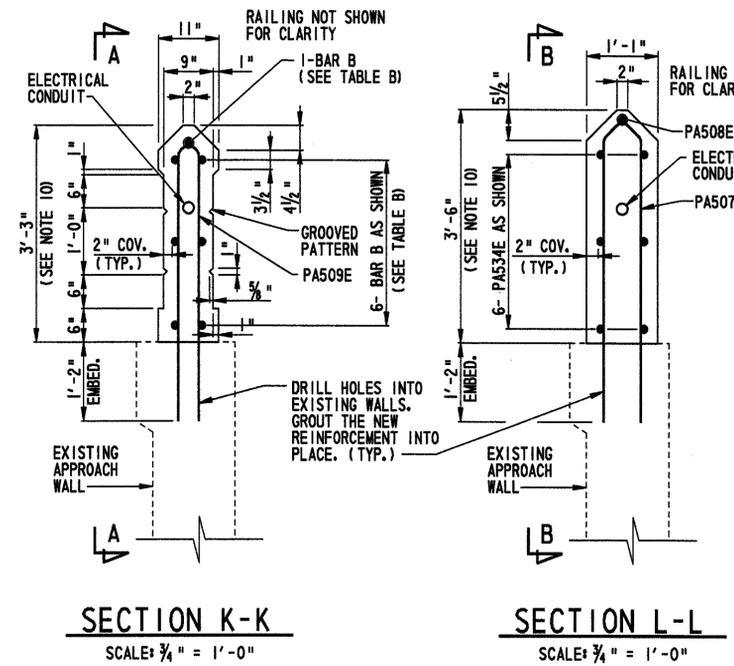


TABLE B

	PARAPET SEGMENT LENGTH	DESIGNATION OF BAR B	QUANTITY OF PA509E PER SEGMENT
NE APPROACH WALL	6'-10"	PA510E	6
	6'-11"	PA510E	6
	7'-6"	PA511E	6
NW APPROACH WALL	6'-10"	PA510E	6
	6'-11"	PA510E	6
	7'-5"	PA511E	6
SW APPROACH WALL	8'-6"	PA521E	7

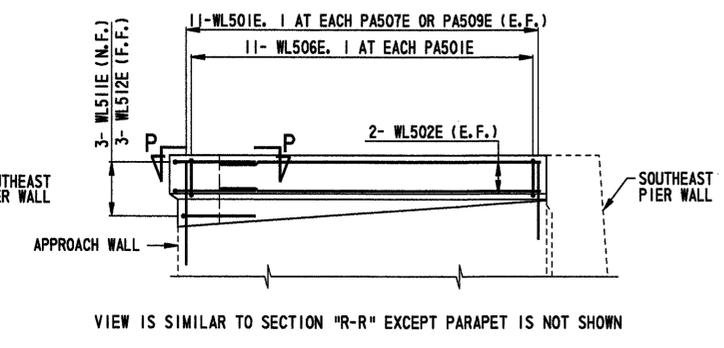
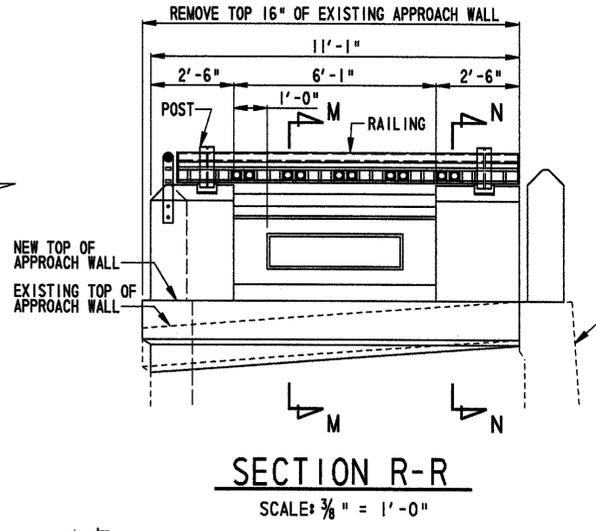
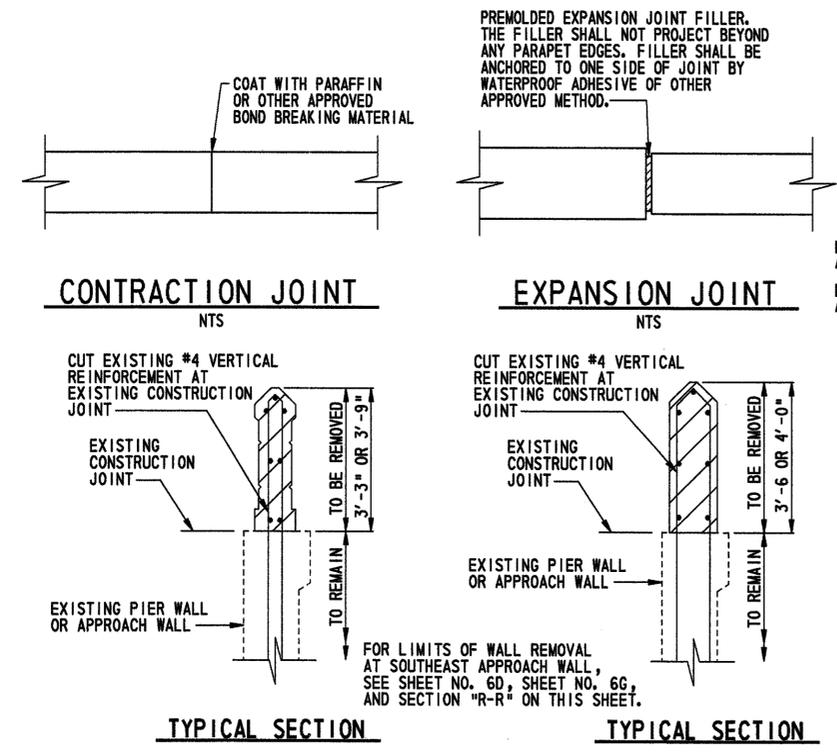
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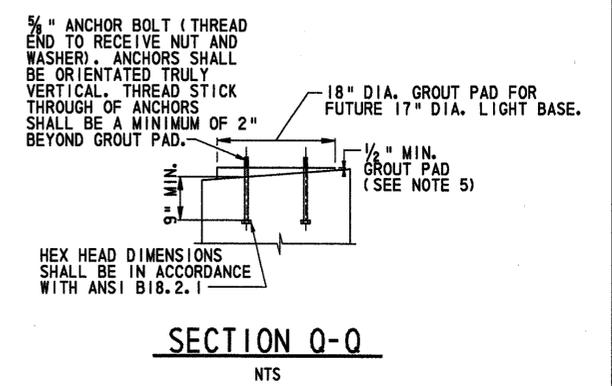
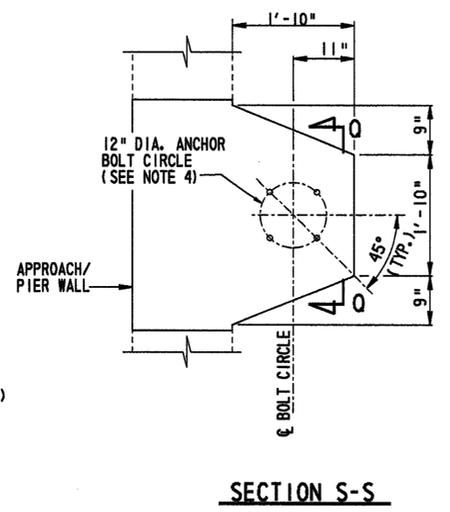
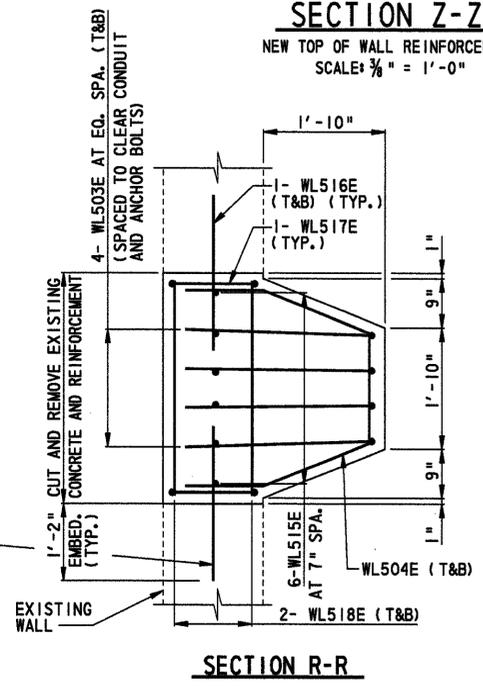
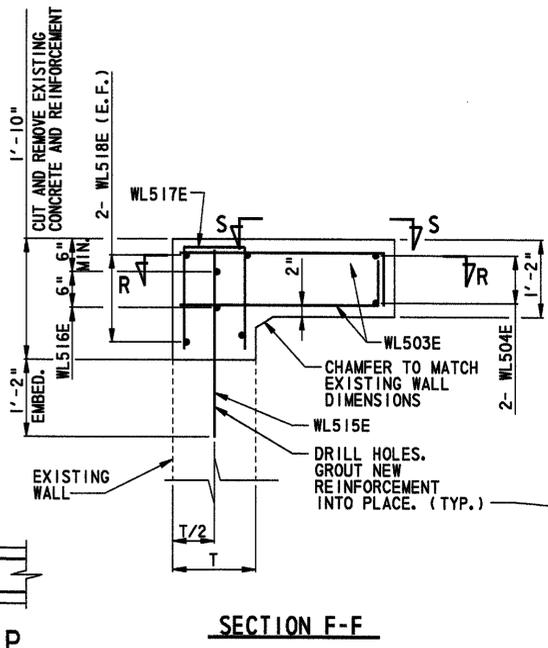
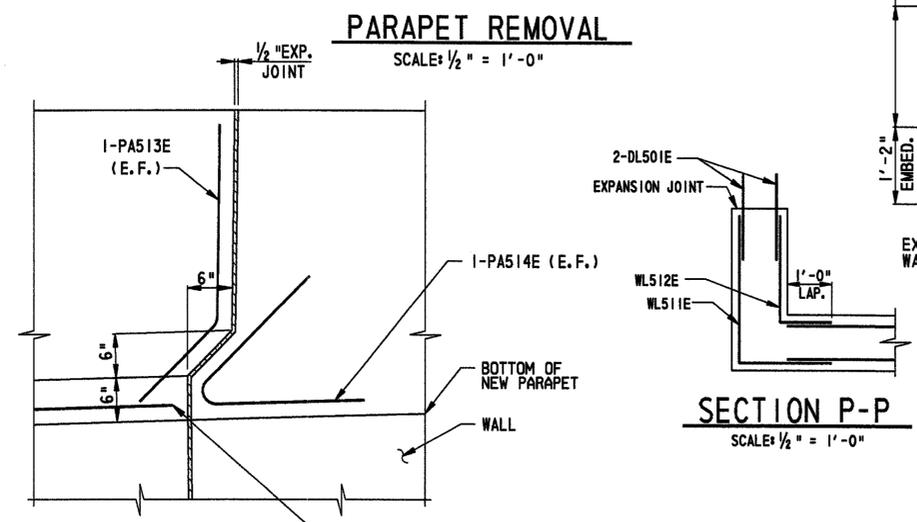
MISCELLANEOUS PARAPET DETAILS

BR 688
 SOUTH MARKET STREET BRIDGE
 REHABILITATION

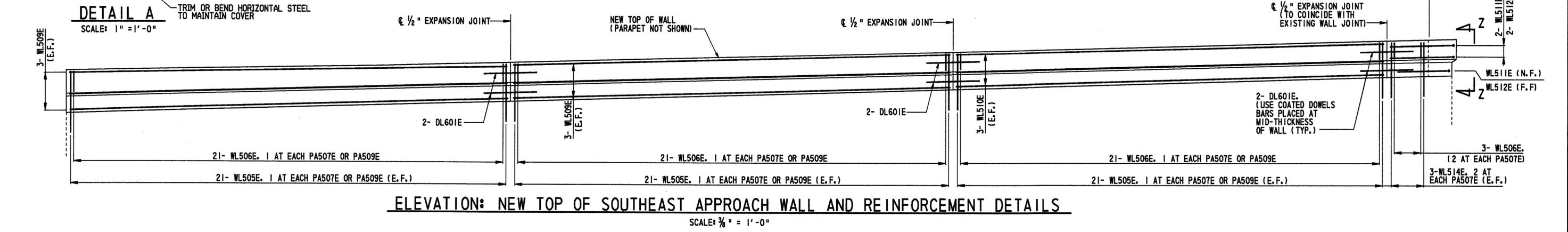
REVISIONS	
NEW SHEET	ABT 11/22/04



- NOTES:**
- CLASS A PORTLAND CEMENT CONCRETE ($f' = 4500$ psi AT 28 DAYS) SHALL BE USED FOR THE PARAPET, WALL, AND LIGHT POLE FOUNDATIONS.
 - THE FOLLOWING SHALL BE SUBMITTED FOR APPROVAL:
 (A) CONTRACTION JOINT BOND BREAKING MATERIAL
 (B) EXPANSION JOINT FILLER
 (C) METHOD/MATERIAL FOR ANCHORING JOINT FILLER TO PARAPET
 - ELEVATION OF JUNCTION BOX IN ANCHOR BOLT FOUNDATION IS AN ASSUMED ELEVATION. MAKE ANY NECESSARY ADJUSTMENTS TO REINFORCEMENT DETAILS IF FINAL ELEVATION DIFFERS FROM THE ASSUMED ELEVATION.
 - ANCHOR BOLTS SHALL CONFORM TO ASTM F1554, GRADE 36, AND SHALL BE GALVANIZED.
 - FOR LEVELING GROUT PAD, USE GROUT IN CONFORMANCE WITH NOTE 4 OF SHEET NO. 22.
 - FOR PROPOSED SIDEWALK ELEVATIONS ADJACENT TO SOUTH PIER WALLS AND APPROACH WALLS SEE SHEET NO. 6A.
 - REINFORCING STEEL SHALL CONFORM TO AASHTO M31M GRADE 60 AND SHALL BE EPOXY COATED IN CONFORMANCE WITH AASHTO M284M.
 - FOR LOCATION OF SECTION F-F, SEE SHEET NOS. 6B-6E.
 - FOR LOCATION OF SECTION "R-R" SEE SHEET NO. 6D.
 - FOR LOCATION OF DETAIL "A" SEE SHEET NO. 6D.
 - FOR SECTIONS "M-M" AND "N-N" SEE SHEET NO. 6G.



TYPICAL LIGHT POLE FOUNDATION DETAILS
 SCALE: 1/2" = 1'-0"



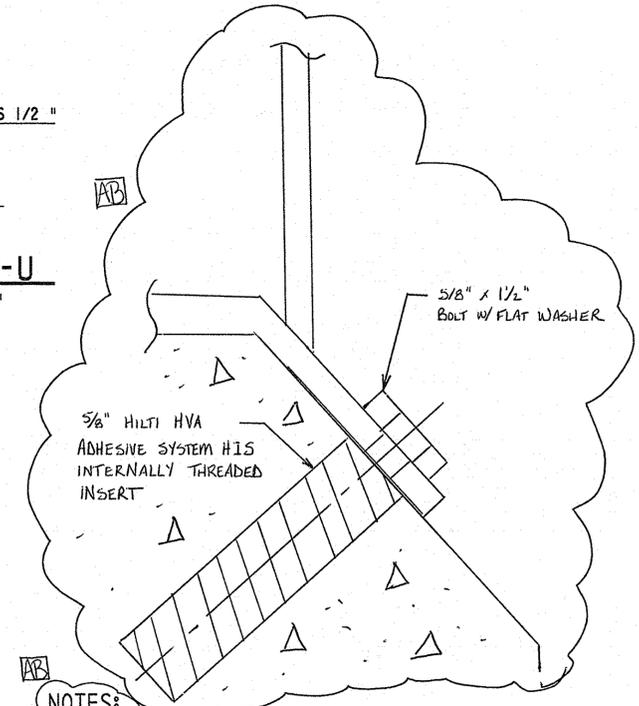
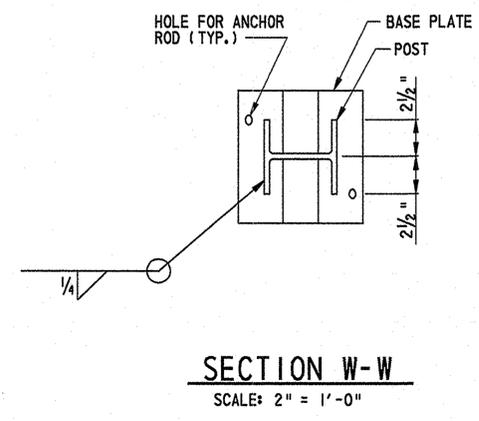
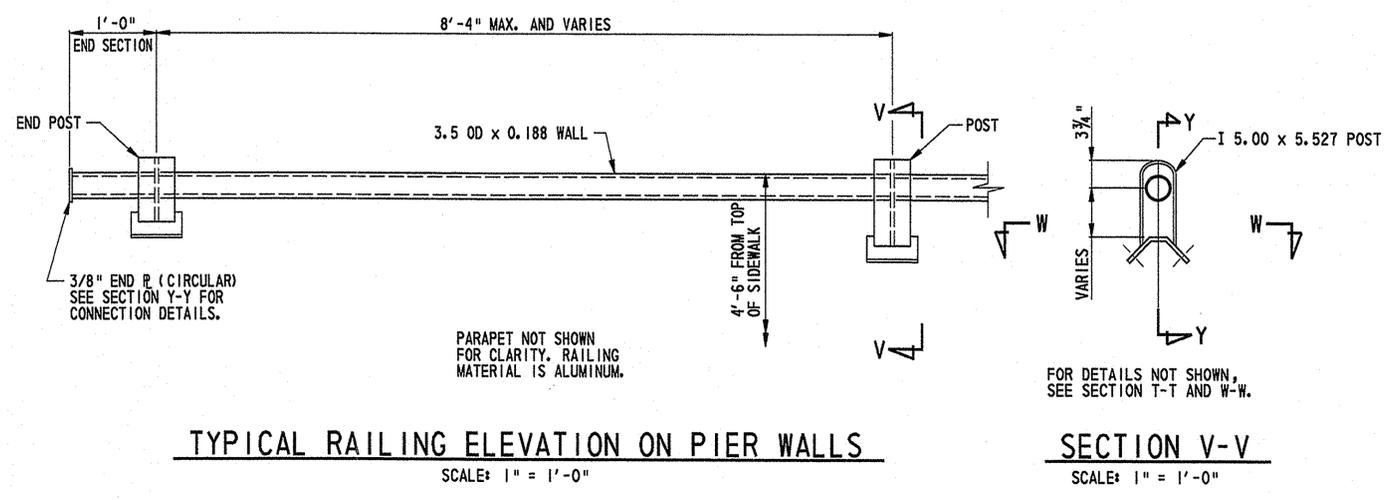
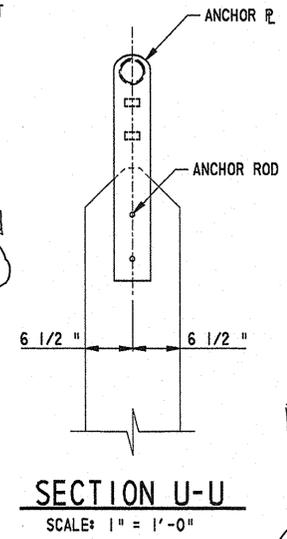
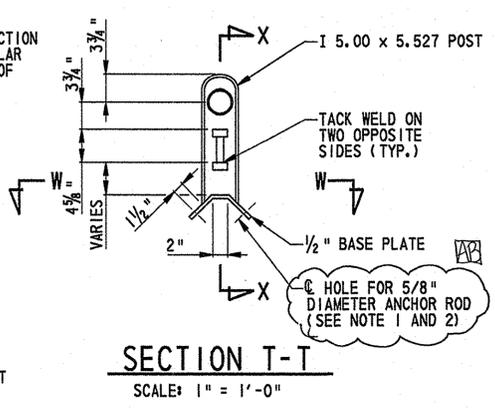
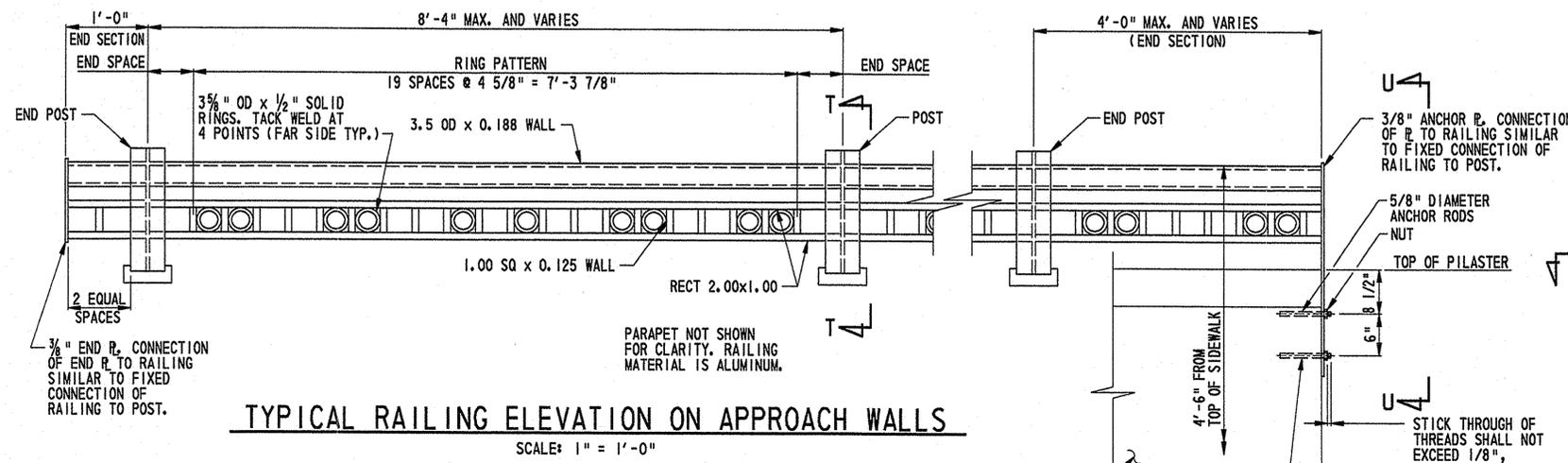
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BR. 1-688		CONTRACT	COUNTY	FEDERAL AID PROJECT NO.	SHEET NO.	TOTAL SHTS.
		21-074-07	NEW CASTLE	EBHN-029 (2)	6J	169
BR 688						
SOUTH MARKET STREET BRIDGE						
REHABILITATION						
REVISIONS						
3 NEW SHEET		ABT 11/22/04				

DETAILS: RAILING

AS BUILT



- NOTES:**
1. DRILL HOLES IN PARAPET TO RECEIVE RAILING POST ANCHOR RODS AND ANCHOR R. ANCHOR RODS. ANCHORS SHALL BE EMBEDDED 6" INTO THE PARAPET. THE ANCHOR SHALL BE BONDED TO THE PARAPET WITH AN ADHESIVE THAT IS CAPABLE OF DEVELOPING THE FULL YIELD STRENGTH OF THE ANCHOR. ANCHORS SHALL BE THREADED AT THE EXTERNAL END TO RECEIVE A NUT AND WASHER.
 2. ALL ANCHOR RODS SHALL CONFORM TO ASTM F1554, GRADE 36 AND SHALL BE GALVANIZED. RODS THAT ANCHOR THE POSTS SHALL BE TRIMMED 1/4" BEYOND THE NUT. ALL ANCHOR ROD THREADS SHALL BE BURRED AFTER INSTALLING NUT.
 3. ALL ALUMINUM RAILING MATERIAL SHALL BE ALUMINUM ALLOY 6061-T6, AND WELDING SHALL CONFORM TO AWS D1.2-97 STRUCTURAL WELDING CODE-ALUMINUM. USE FILLER ALLOY 5183 OR 5556 FOR ALL ALUMINUM WELDS.
 4. ALL PAINTING OF RAILING SHALL BE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS. THE COLOR OF THE RAILING SHALL BE SIMILAR TO THE PEDESTRIAN RAILING NEXT TO THE SITE AND AS APPROVED BY THE ENGINEER. THE COST OF PAINTING SHALL BE INCLUDED IN PAY ITEM "ADDITIONAL WORK-004-REMOVE AND REPLACE EXISTING PEDESTRIAN PARAPET".
 5. THE DETAILING, FABRICATION, AND ERECTION OF THE ALUMINUM RAILING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE ALUMINUM DESIGN MANUAL PUBLISHED BY THE ALUMINUM ASSOCIATION, INC.
 6. THE SURFACES OF THE POST BASE PLATES AND ANCHOR PLATES THAT WILL BE IN CONTACT WITH CONCRETE SHALL BE PAINTED WITH A HEAVY COAT OF ALUMINUM PIGMENTED BITUMINOUS PAINT COMPLYING WITH ASTM D2824, TYPE 1.
 7. ALL ANCHOR ROD HOLES AND SPACES BETWEEN BASE PLATES AND CONCRETE, OR ANCHOR PLATES AND CONCRETE, SHALL BE THOROUGHLY CAULKED WITH A CAULKING COMPOUND CONFORMING TO FEDERAL SPECIFICATIONS A-A-272A, TYPE III OR TYPE IV.
 8. LOCATE ONE EXPANSION CONNECTION AT EACH RAILING POST. USE ONLY FIXED CONNECTIONS WITHIN END SECTIONS. FIELD WELDING IS PERMITTED FOR RAILING-TO-POST CONNECTIONS.

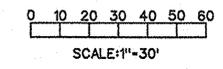
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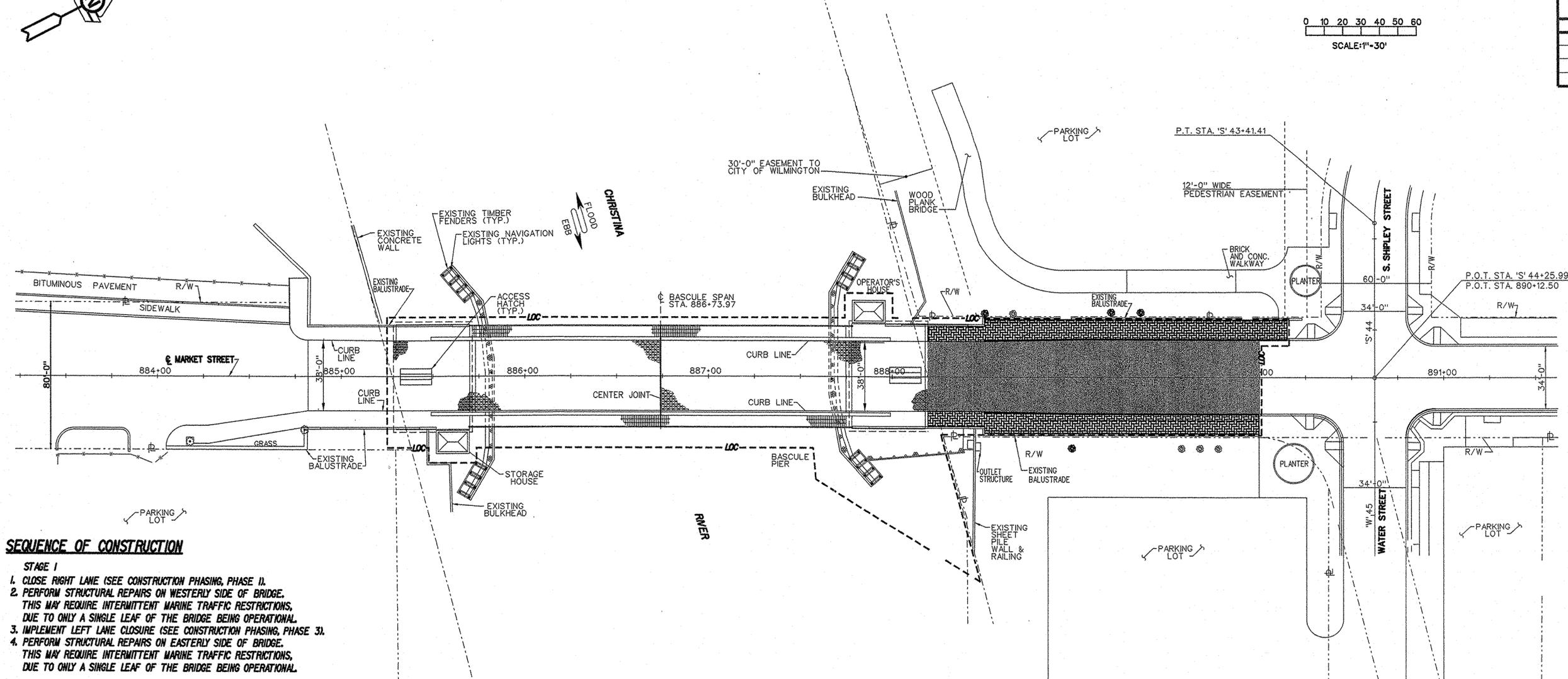
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BR. I-688	CONTRACT	COUNTY	FEDERAL AID PROJECT NO.	SHEET NO.	TOTAL SHTS.
	21-074-07	NEW CASTLE	EBHN-N029 (2)	7	169
BR 688 SOUTH MARKET STREET BRIDGE REHABILITATION					
REVISONS					

CONSTRUCTION SEQUENCE PLAN



AS BUILT



SEQUENCE OF CONSTRUCTION

- STAGE 1**
1. CLOSE RIGHT LANE (SEE CONSTRUCTION PHASING, PHASE II).
 2. PERFORM STRUCTURAL REPAIRS ON WESTERLY SIDE OF BRIDGE. THIS MAY REQUIRE INTERMITTENT MARINE TRAFFIC RESTRICTIONS, DUE TO ONLY A SINGLE LEAF OF THE BRIDGE BEING OPERATIONAL.
 3. IMPLEMENT LEFT LANE CLOSURE (SEE CONSTRUCTION PHASING, PHASE 3).
 4. PERFORM STRUCTURAL REPAIRS ON EASTERLY SIDE OF BRIDGE. THIS MAY REQUIRE INTERMITTENT MARINE TRAFFIC RESTRICTIONS, DUE TO ONLY A SINGLE LEAF OF THE BRIDGE BEING OPERATIONAL.
- STAGE 2**
1. CLEAN AND PAINT BRIDGE. CONTRACTOR IS TO WORK ON A SINGLE LEAF AT A TIME AND UTILIZE A SINGLE LANE CLOSURE AS NEEDED. THIS MAY REQUIRE INTERMITTENT MARINE TRAFFIC RESTRICTIONS. THE CONTRACTOR HAS THE OPTION TO UTILIZE TWO LANES CLOSED, EXCEPT DURING THE HOURS OF 3:00 PM TO 6:00 PM.
- STAGE 3**
1. IMPLEMENT LANE CLOSURES OR DETOUR FOR FULL BRIDGE CLOSURE (SEE DETOUR PLAN) AS NEEDED.
 2. PERFORM STRUCTURAL REPAIRS REQUIRING ROADWAY CLOSURES AS WELL AS MECHANICAL AND ELECTRICAL SYSTEM REPAIRS. CONTRACTOR IS TO WORK ON A SINGLE LEAF AT A TIME AND UTILIZE A SINGLE LANE CLOSURE OR DETOUR AS NEEDED. THIS MAY REQUIRE INTERMITTENT MARINE TRAFFIC RESTRICTIONS. DURING FINAL SPAN BALANCING AND LIVE LOAD SHOE ADJUSTMENT, ALL MARINE TRAFFIC IS RESTRICTED (2 DAYS MAX).
 3. REMOVE AND REPLACE TRAFFIC SIGNALS AND BARRIER GATES. INSTALL CONDUITS AND WIRING FOR NEW SIGNALS AND GATES. REMOVE AND REPLACE CURB & ASPHALT REPAIR. REMOVE AND REPLACE SIDEWALK. REPAIR BALUSTRADES. REPAIR SUBSTRUCTURE UNITS. MILL AND OVERLAY NORTH APPROACH.

PROPOSED PAVEMENT LEGEND	
	STEEL GRID DECK
	CONCRETE FILLED STEEL GRID DECK
	2" SUPERPAVE, TYPE C HOT-MIX 160 GYRATIONS, PG 64-22

ACI
 SUPERPAVE TYPE C HOT MIX NOT PERFORMED UNDER THIS CONTRACT

- NOTE:**
1. LEFT AND RIGHT LANE ARE NOT TO BE CLOSED AT THE SAME TIME.
 2. NO MULTILANE CLOSURES SHALL BE DONE DURING STAGES 1 AND 3.

CADD DESIGN: DM
 DESIGN: JFB
 CHKD.: JAK

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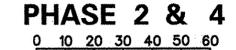
BR. 1-688		CONTRACT	COUNTY	FEDERAL AID PROJECT NO.	SHEET NO.	TOTAL SHTS.
		21-074-07	NEW CASTLE	EBHN-N029 (2)	9	169
BR 688						
SOUTH MARKET STREET BRIDGE						
REHABILITATION						
REVISTONS						

TRAFFIC CONTROL NOTES:

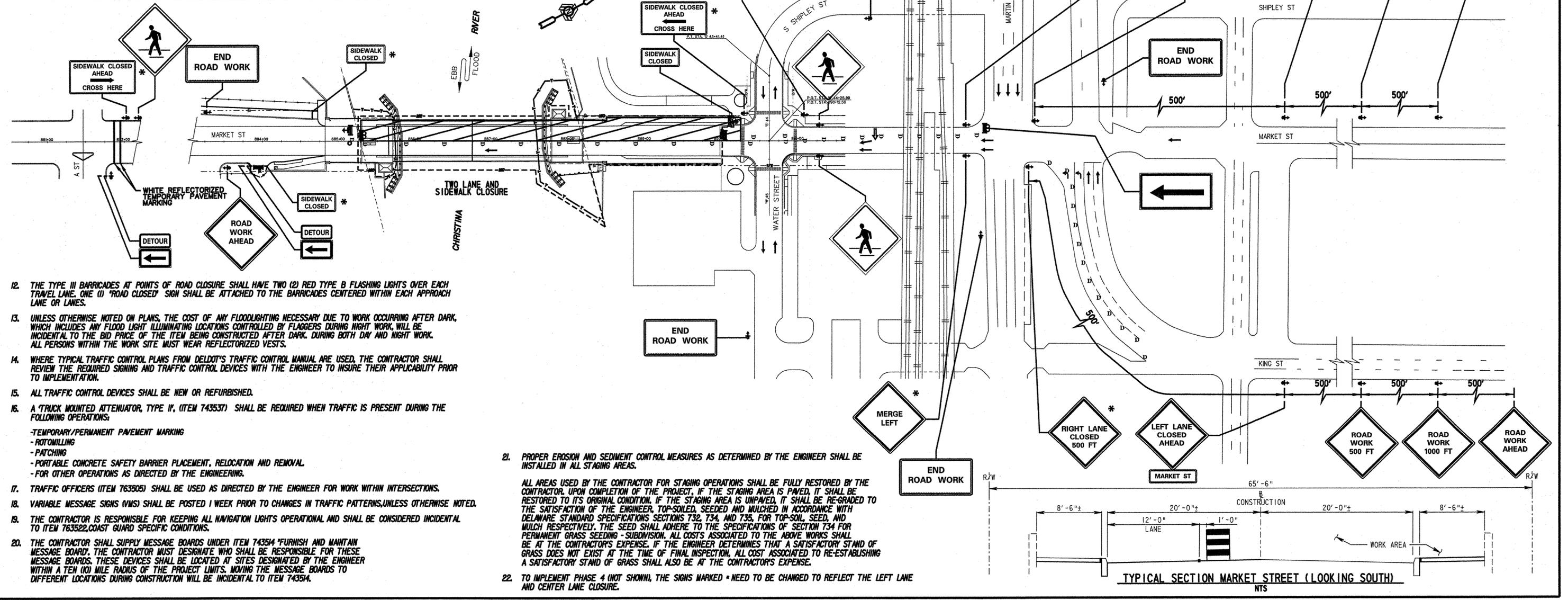
- ALL PERSONNEL WORKING IN OR NEAR THE ROADWAY MUST WEAR "RETROREFLECTIVE ORANGE" VESTS AND PROTECTIVE HEADGEAR TO IDENTIFY THEM AS BEING PART OF A "CONSTRUCTION, MAINTENANCE OR UTILITY WORK FORCE". FLAGGERS MUST ADHERE TO THE STANDARD FLAGGER PROCEDURES.
- FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATIONS AT ALL TIMES.
- WHEN NO WORK IS BEING PERFORMED AND DURING NIGHTTIME, THE WORK AREA SHALL BE PROTECTED WITH DRUMS.
- LONGITUDINAL DIMENSIONS MAY BE ADJUSTED SLIGHTLY TO FIT FIELD CONDITIONS, AS DIRECTED BY ENGINEER.
- THE FIRST TWO DRUMS IN A LINE OF DRUMS USED TO CHANNELIZE OR DIVERT TRAFFIC SHALL EACH BE EQUIPPED WITH ONE (1) AMBER TYPE B FLASHING LIGHT AND THE LAST DRUM SHALL HAVE ONE TYPE A LIGHT. EACH SUBSEQUENT DRUM IN THAT LINE SHALL NOT BE EQUIPPED WITH LIGHTS. THE BATTERIES SHALL BE MOUNTED WITHIN THE DRUM AS PER THE TRAFFIC CONTROL MANUAL. METAL BATTERY BOXES IN OR ON PLASTIC DRUMS ARE PROHIBITED. DRUM SPACING SHALL EQUAL THE SPEED LIMIT EXCEPT ON TAPERS WHERE SPACING SHALL EQUAL 25 FEET.
- ALL VEHICLES IN A WORK AREA SHALL DISPLAY FLASHING LIGHTS INSTALLED FOR THE PURPOSE OF WARNING APPROACHING DRIVERS OF A VEHICULAR TRAFFIC HAZARD REQUIRING UNUSUAL CARE IN APPROACHING, OVERTAKING, OR PASSING.
- THE TRAFFIC CONTROL PLANS SHOW THE MINIMUM REQUIREMENT FOR THE CONDITION SET FORTH. THE TRAFFIC ENGINEER MAY REQUIRE ADDITIONAL TRAFFIC CONTROL DEVICES AS DEEMED NECESSARY.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING HIS WORK WITH OTHER CONTRACTORS IN THE AREA.
- MAINTENANCE OF TRAFFIC - ALL WORK SHALL BE PERFORMED IN A MANNER THAT WILL INSURE THE LEAST PRACTICABLE OBSTRUCTION TO TRAFFIC CONSISTENT WITH SAFETY AND SHALL COMPLY WITH THE DEPARTMENT MANUAL ENTITLED "TRAFFIC CONTROLS FOR STREETS AND HIGHWAY CONSTRUCTION, MAINTENANCE, UTILITY, AND EMERGENCY OPERATIONS" (2000). THE MOST CURRENT VERSION OF THIS MANUAL IN EFFECT AT THE TIME OF ADVERTISEMENT FOR BIDS SHALL BE USED. HEREINAFTER, THIS MANUAL SHALL BE REFERRED TO AS THE "TRAFFIC CONTROL MANUAL". THE CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN FOR APPROVAL BY THE ENGINEER BEFORE START OF THE PROJECT.
- ALL TEMPORARY WARNING AND WARNING SIGNS SHALL HAVE TYPE VII RETROREFLECTIVE ORANGE FLUORESCENT DIAMOND GRADE SHEETING. SIGNS SHALL BE INSTALLED ON TWO BREAKAWAY POSTS, MOUNTED SEVEN FEET ABOVE THE TRAVEL LANE OF SIDEWALK. THE SIGN SIZES SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
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- LEGEND**
- BARRICADE SYMBOLS**
 = TYPE III
 ← = ARROW PANEL
- SYMBOLS**
 D = DRUM
 = WORK AREA
 ↓ = SIGN (BOTTOM OF ALL SIGNS MUST BE AT LAST FIVE (5) FEET ABOVE ROADWAY SURFACE)
 ← = TRAFFIC FLOW
- LIGHT SYMBOLS**
 ○ = TYPE "A" AMBER FLASHING LIGHT
 ⊙ = TYPE "B" AMBER FLASHING LIGHT
 ⊗ = TYPE "B" RED HIGH-INTENSITY LIGHT
- SEDIMENT CONTROL**
 = FLOATING TURBIDITY CURTAIN

**CONSTRUCTION PHASING
 EROSION AND SEDIMENT CONTROL
 PHASE 2 & 4**

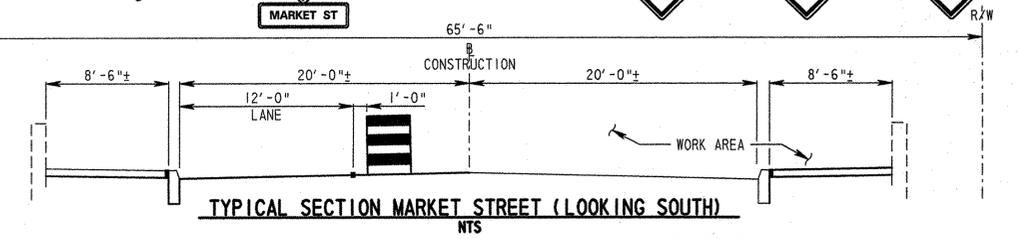


SCALE: 1"=60'
 TWO LANE CLOSURE IS OPTIONAL AND CANNOT BE USED DURING THE HOURS OF 300 PM TO 6:00 PM.



- THE TYPE III BARRICADES AT POINTS OF ROAD CLOSURE SHALL HAVE TWO (2) RED TYPE B FLASHING LIGHTS OVER EACH TRAVEL LANE. ONE (1) "ROAD CLOSED" SIGN SHALL BE ATTACHED TO THE BARRICADES CENTERED WITHIN EACH APPROACH LANE OR LANES.
- UNLESS OTHERWISE NOTED ON PLANS, THE COST OF ANY FLOODLIGHTING NECESSARY DUE TO WORK OCCURRING AFTER DARK, WHICH INCLUDES ANY FLOOD LIGHT ILLUMINATING LOCATIONS CONTROLLED BY FLAGGERS DURING NIGHT WORK, WILL BE INCIDENTAL TO THE BID PRICE OF THE ITEM BEING CONSTRUCTED AFTER DARK. DURING BOTH DAY AND NIGHT WORK. ALL PERSONS WITHIN THE WORK SITE MUST WEAR REFLECTORIZED VESTS.
- WHERE TYPICAL TRAFFIC CONTROL PLANS FROM DELDOT'S TRAFFIC CONTROL MANUAL ARE USED, THE CONTRACTOR SHALL REVIEW THE REQUIRED SIGNING AND TRAFFIC CONTROL DEVICES WITH THE ENGINEER TO INSURE THEIR APPLICABILITY PRIOR TO IMPLEMENTATION.
- ALL TRAFFIC CONTROL DEVICES SHALL BE NEW OR REFURBISHED.
- A TRUCK MOUNTED ATTENUATOR, TYPE II, (ITEM 743537) SHALL BE REQUIRED WHEN TRAFFIC IS PRESENT DURING THE FOLLOWING OPERATIONS:
 -TEMPORARY/PERMANENT PAVEMENT MARKING
 -ROTO-MILLING
 -PATCHING
 -PORTABLE CONCRETE SAFETY BARRIER PLACEMENT, RELOCATION AND REMOVAL.
 -FOR OTHER OPERATIONS AS DIRECTED BY THE ENGINEERING.
- TRAFFIC OFFICERS (ITEM 763505) SHALL BE USED AS DIRECTED BY THE ENGINEER FOR WORK WITHIN INTERSECTIONS.
- VARIABLE MESSAGE SIGNS (VMS) SHALL BE POSTED 1 WEEK PRIOR TO CHANGES IN TRAFFIC PATTERNS, UNLESS OTHERWISE NOTED.
- THE CONTRACTOR IS RESPONSIBLE FOR KEEPING ALL NAVIGATION LIGHTS OPERATIONAL AND SHALL BE CONSIDERED INCIDENTAL TO ITEM 763522. COAST GUARD SPECIFIC CONDITIONS.
- THE CONTRACTOR SHALL SUPPLY MESSAGE BOARDS UNDER ITEM 743514 "FURNISH AND MAINTAIN MESSAGE BOARD". THE CONTRACTOR MUST DESIGNATE WHO SHALL BE RESPONSIBLE FOR THESE MESSAGE BOARDS. THESE DEVICES SHALL BE LOCATED AT SITES DESIGNATED BY THE ENGINEER WITHIN A TEN (10) MILE RADIUS OF THE PROJECT LIMITS. MOVING THE MESSAGE BOARDS TO DIFFERENT LOCATIONS DURING CONSTRUCTION WILL BE INCIDENTAL TO ITEM 743514.

- PROPER EROSION AND SEDIMENT CONTROL MEASURES AS DETERMINED BY THE ENGINEER SHALL BE INSTALLED IN ALL STAGING AREAS.
 ALL AREAS USED BY THE CONTRACTOR FOR STAGING OPERATIONS SHALL BE FULLY RESTORED BY THE CONTRACTOR UPON COMPLETION OF THE PROJECT. IF THE STAGING AREA IS PAVED, IT SHALL BE RESTORED TO ITS ORIGINAL CONDITION. IF THE STAGING AREA IS UNPAVED, IT SHALL BE RE-GRADED TO THE SATISFACTION OF THE ENGINEER, TOP-SOILED, SEED AND MULCHED IN ACCORDANCE WITH DELAWARE STANDARD SPECIFICATIONS SECTIONS 732, 734, AND 735. FOR TOP-SOIL, SEED, AND MULCH RESPECTIVELY. THE SEED SHALL ADHERE TO THE SPECIFICATIONS OF SECTION 734 FOR PERMANENT GRASS SEEDING - SUBDIVISION. ALL COSTS ASSOCIATED TO THE ABOVE WORKS SHALL BE AT THE CONTRACTOR'S EXPENSE. IF THE ENGINEER DETERMINES THAT A SATISFACTORY STAND OF GRASS DOES NOT EXIST AT THE TIME OF FINAL INSPECTION, ALL COST ASSOCIATED TO RE-ESTABLISHING A SATISFACTORY STAND OF GRASS SHALL ALSO BE AT THE CONTRACTOR'S EXPENSE.
- TO IMPLEMENT PHASE 4 (NOT SHOWN), THE SIGNS MARKED * NEED TO BE CHANGED TO REFLECT THE LEFT LANE AND CENTER LANE CLOSURE.



CAD DESIGN ML.A
 DESIGN J.F.B
 CHKD. C.H.K.
 J.A.K.

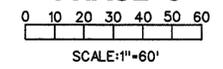
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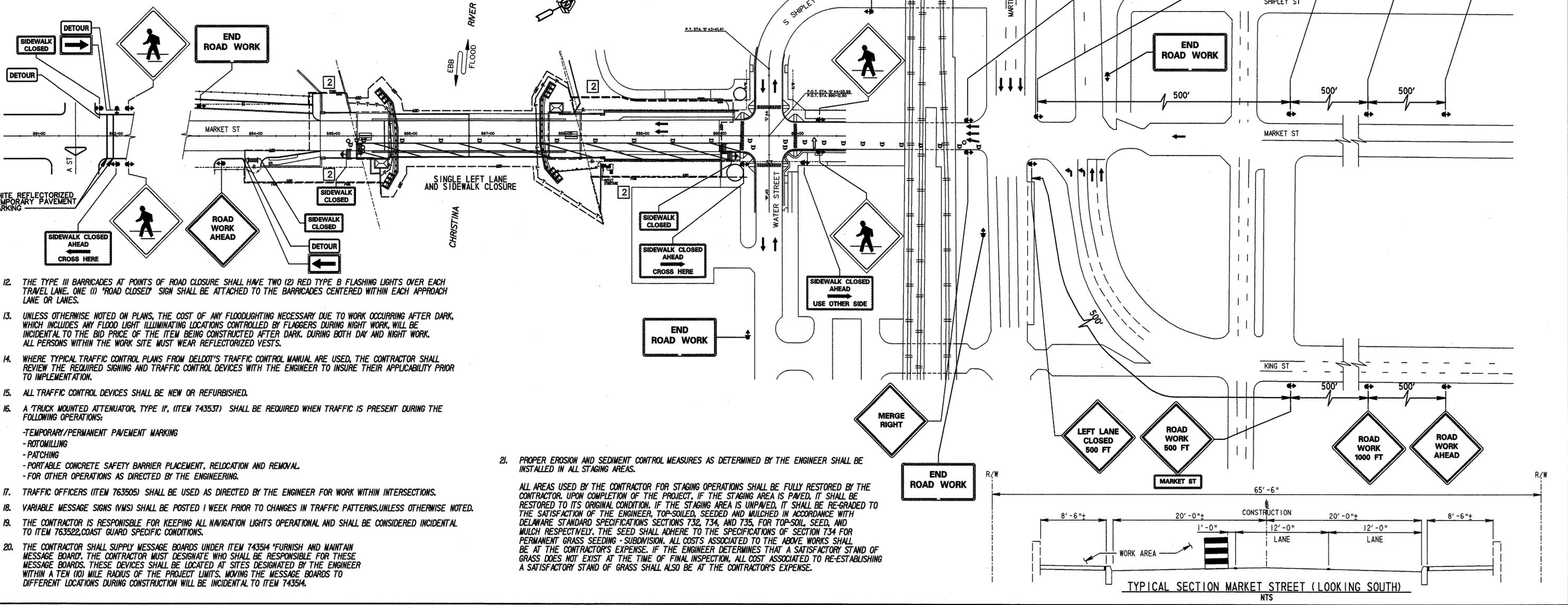
**CONSTRUCTION PHASING
 EROSION AND SEDIMENT CONTROL
 PHASE 3**



**BR 688
 SOUTH MARKET STREET BRIDGE
 REHABILITATION**

REVISIONS

2	REVISED LOC. ADDED SOIL EROSION	
	JFB 8/2/04	



- THE TYPE III BARRICADES AT POINTS OF ROAD CLOSURE SHALL HAVE TWO (2) RED TYPE B FLASHING LIGHTS OVER EACH TRAVEL LANE. ONE (1) "ROAD CLOSED" SIGN SHALL BE ATTACHED TO THE BARRICADES CENTERED WITHIN EACH APPROACH LANE OR LANES.
- UNLESS OTHERWISE NOTED ON PLANS, THE COST OF ANY FLOODLIGHTING NECESSARY DUE TO WORK OCCURRING AFTER DARK, WHICH INCLUDES ANY FLOOD LIGHT ILLUMINATING LOCATIONS CONTROLLED BY FLAGGERS DURING NIGHT WORK, WILL BE INCIDENTAL TO THE BID PRICE OF THE ITEM BEING CONSTRUCTED AFTER DARK. DURING BOTH DAY AND NIGHT WORK, ALL PERSONS WITHIN THE WORK SITE MUST WEAR REFLECTORIZED VESTS.
- WHERE TYPICAL TRAFFIC CONTROL PLANS FROM DELDOT'S TRAFFIC CONTROL MANUAL ARE USED, THE CONTRACTOR SHALL REVIEW THE REQUIRED SIGNING AND TRAFFIC CONTROL DEVICES WITH THE ENGINEER TO INSURE THEIR APPLICABILITY PRIOR TO IMPLEMENTATION.
- ALL TRAFFIC CONTROL DEVICES SHALL BE NEW OR REFURBISHED.
- A TRUCK MOUNTED ATTENUATOR, TYPE II, (ITEM 743537) SHALL BE REQUIRED WHEN TRAFFIC IS PRESENT DURING THE FOLLOWING OPERATIONS:
 - TEMPORARY/PERMANENT PAVEMENT MARKING
 - ROTOMILLING
 - PATCHING
 - PORTABLE CONCRETE SAFETY BARRIER PLACEMENT, RELOCATION AND REMOVAL
 - FOR OTHER OPERATIONS AS DIRECTED BY THE ENGINEERING.
- TRAFFIC OFFICERS (ITEM 763505) SHALL BE USED AS DIRECTED BY THE ENGINEER FOR WORK WITHIN INTERSECTIONS.
- VARIABLE MESSAGE SIGNS (VMS) SHALL BE POSTED 1 WEEK PRIOR TO CHANGES IN TRAFFIC PATTERNS, UNLESS OTHERWISE NOTED.
- THE CONTRACTOR IS RESPONSIBLE FOR KEEPING ALL NAVIGATION LIGHTS OPERATIONAL AND SHALL BE CONSIDERED INCIDENTAL TO ITEM 763522, COAST GUARD SPECIFIC CONDITIONS.
- THE CONTRACTOR SHALL SUPPLY MESSAGE BOARDS UNDER ITEM 743514 "FURNISH AND MAINTAIN MESSAGE BOARD". THE CONTRACTOR MUST DESIGNATE WHO SHALL BE RESPONSIBLE FOR THESE MESSAGE BOARDS. THESE DEVICES SHALL BE LOCATED AT SITES DESIGNATED BY THE ENGINEER WITHIN A TEN (10) MILE RADIUS OF THE PROJECT LIMITS. MOVING THE MESSAGE BOARDS TO DIFFERENT LOCATIONS DURING CONSTRUCTION WILL BE INCIDENTAL TO ITEM 743514.

2. PROPER EROSION AND SEDIMENT CONTROL MEASURES AS DETERMINED BY THE ENGINEER SHALL BE INSTALLED IN ALL STAGING AREAS.

ALL AREAS USED BY THE CONTRACTOR FOR STAGING OPERATIONS SHALL BE FULLY RESTORED BY THE CONTRACTOR, UPON COMPLETION OF THE PROJECT. IF THE STAGING AREA IS PAVED, IT SHALL BE RESTORED TO ITS ORIGINAL CONDITION. IF THE STAGING AREA IS UNPAVED, IT SHALL BE RE-GRADED TO THE SATISFACTION OF THE ENGINEER, TOP-SOILED, SEEDING AND MULCHED IN ACCORDANCE WITH DELAWARE STANDARD SPECIFICATIONS SECTIONS 732, 734, AND 735, FOR TOP-SOIL, SEED, AND MULCH RESPECTIVELY. THE SEED SHALL ADHERE TO THE SPECIFICATIONS OF SECTION 734 FOR PERMANENT GRASS SEEDING - SUBDIVISION. ALL COSTS ASSOCIATED TO THE ABOVE WORKS SHALL BE AT THE CONTRACTOR'S EXPENSE. IF THE ENGINEER DETERMINES THAT A SATISFACTORY STAND OF GRASS DOES NOT EXIST AT THE TIME OF FINAL INSPECTION, ALL COST ASSOCIATED TO RE-ESTABLISHING A SATISFACTORY STAND OF GRASS SHALL ALSO BE AT THE CONTRACTOR'S EXPENSE.

CADD DESIGN M.L.A. DESIGN J.F.B. CHKD. J.A.K.

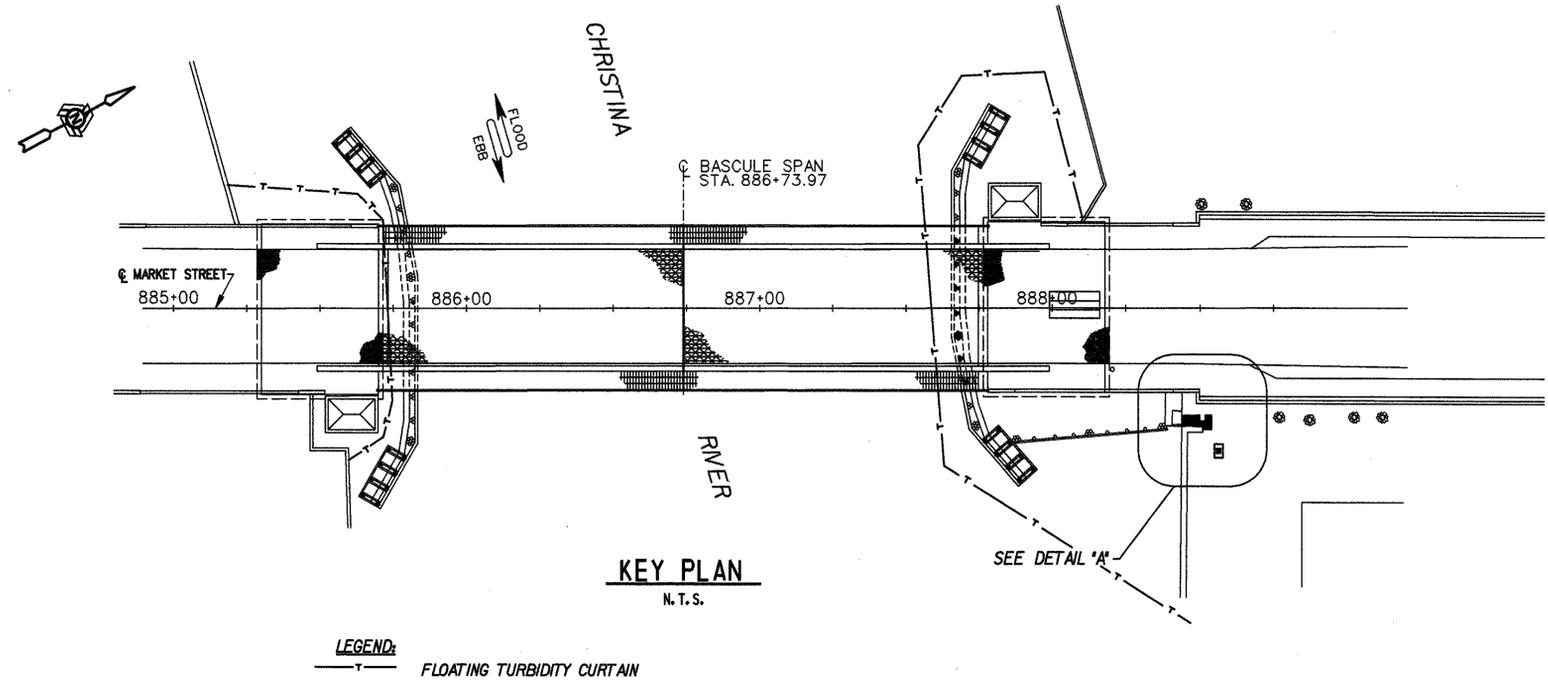
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SOIL EROSION REPAIR DETAILS

BR 688
 SOUTH MARKET STREET BRIDGE
 REHABILITATION

REVISIONS	
2	NEW SHEET
	JFB 5/3/04

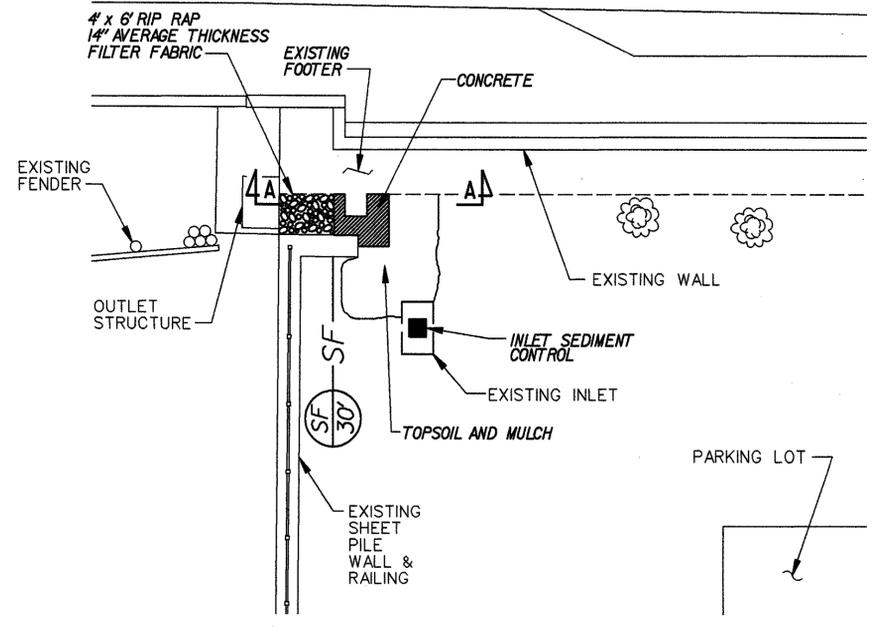
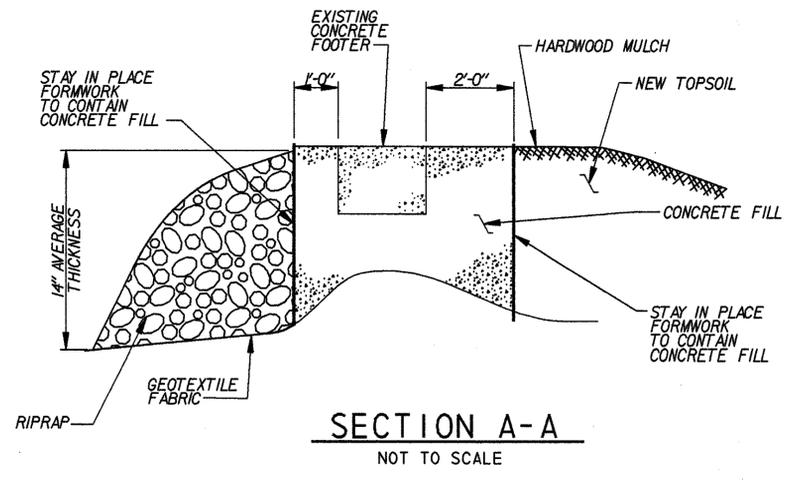


NOTES:

1. NO SURVEY HAS BEEN DONE TO LOCATE THE DRAINAGE STRUCTURES. ALL PHYSICAL FEATURES SHOWN IN DETAIL A ARE APPROXIMATED. THE CONTRACTOR IS TO VERIFY DIMENSIONS AND QUANTITIES ARE APPROPRIATE AND SUBMIT TO THE ENGINEER ANY DISCREPANCIES NOTED.
2. ALL WORK IS TO BE DONE BY HAND. NO MOTORIZED EQUIPMENT WILL BE PERMITTED IN THE GRASS/LANDSCAPED AREAS.
3. RIPRAP IS TO BE PAID FOR UNDER ITEM 712005, RIPRAP (R4). GEOTEXTILE SHALL BE PAID FOR UNDER 713003, GEOTEXTILE RIPRAP. THE RIPRAP SHALL BE HAND PLACED.
4. TOPSOIL TO BE PAID UNDER 733008, TOPSOILING, 18" DEPTH.
5. COMPLETED TOPSOIL SHALL BE STABILIZED BY MULCHING AND TO PAID FOR UNDER 737002, MULCHING PLANTS.

SUGGESTED SEQUENCE:

1. PROVIDE SILT FENCE AND INLET SEDIMENT CONTROL.
2. AT LOW TIDE, PLACE FORMWORK. PLACE GEOTEXTILE AND STAKE AS NEEDED. PLACE RIPRAP AND TOPSOIL HOLDING FORM IN PLACE.
3. PLACE CONCRETE UNDER EXPOSED FOOTER AND AGAINST PLYWOOD FORMS.
4. FINISH GRADE TOPSOIL TO DRAIN TO INLET AFTER CONCRETE SETS.
5. STABILIZE TOPSOIL USING MULCH.



CADD DESIGN DM DESIGN M.L.A. CHKD. JFB

PREL. TRACING: MIKE ALESTRÁ DESIGN: JOHN BERGMAN

	(A)
	(B)
	(C)
	(D)
	(E)
	(F)
	(G)
	(H)
	(I)
	(J)

36"

60"

4" C
4" C
4" C
5" C
4" E
4" E

24"

48"

← OR →

(U)

(W)

(X)

(Y)

NON-STANDARD SIGNS ARE TO BE: RETROREFLECTIVE FLOURESCENT H/1 ORANGE - BLACK LEGEND

(S)

VMS¹

(2 WEEKS PRIOR TO THE BEGINNING OF CONSTRUCTION)

	SCREEN 1	SCREEN 2
LINE 1	RT 13 SB	PLAN ALT
LINE 2	CONST	ROUTE
LINE 3	DATE	

(AT START DETOUR)

	SCREEN 1	SCREEN 2
LINE 1	RT 13 SB	TAKE ALT
LINE 2	CONST	ROUTE
LINE 3	DATE	

(T)

VMS²

(2 WEEKS PRIOR TO DETOUR)

	SCREEN 1	SCREEN 2
LINE 1	RT 13 SB	PLAN ALT
LINE 2	CONST	ROUTE
LINE 3	DATE	

(AT START DETOUR)

	SCREEN 1	SCREEN 2
LINE 1	RT 13 SB	FOLLOW
LINE 2	CLOSED	POSTED
LINE 3	DATE	DETOUR

RELOCATE TO MARTIN LUTHER KING BLVD. AND SOUTH MARKET STREET INTERSECTION

(V)

(W)

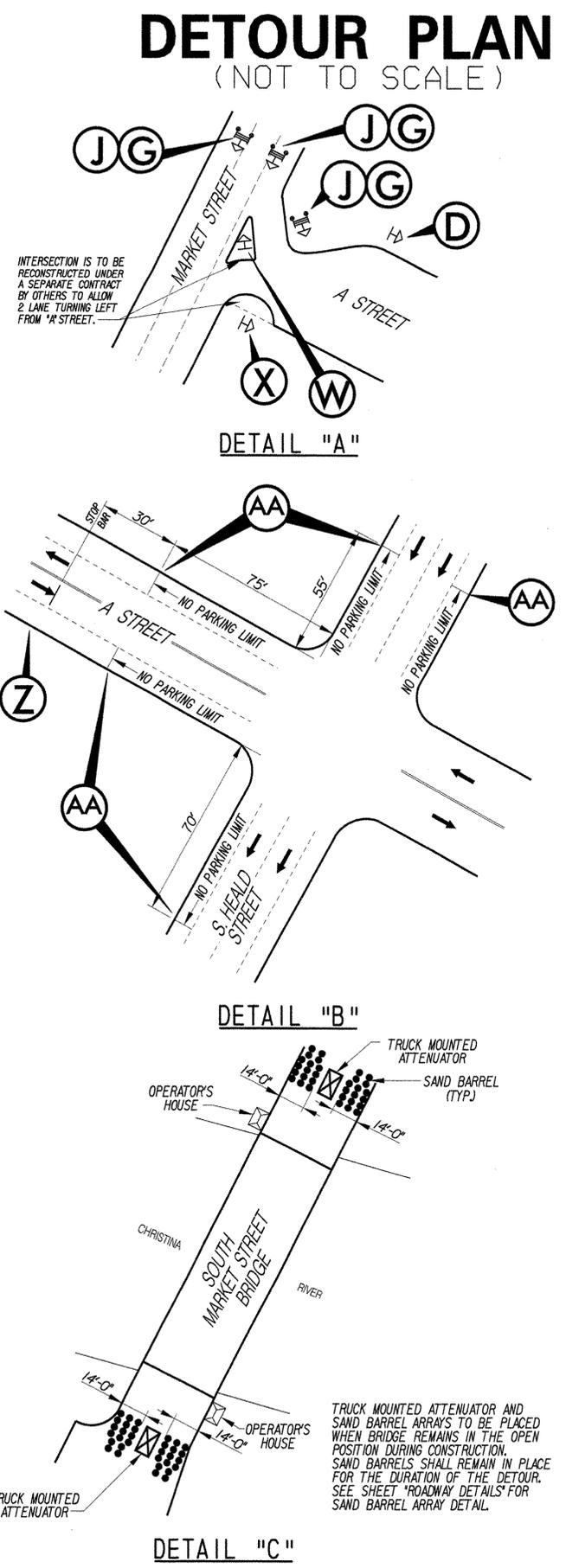
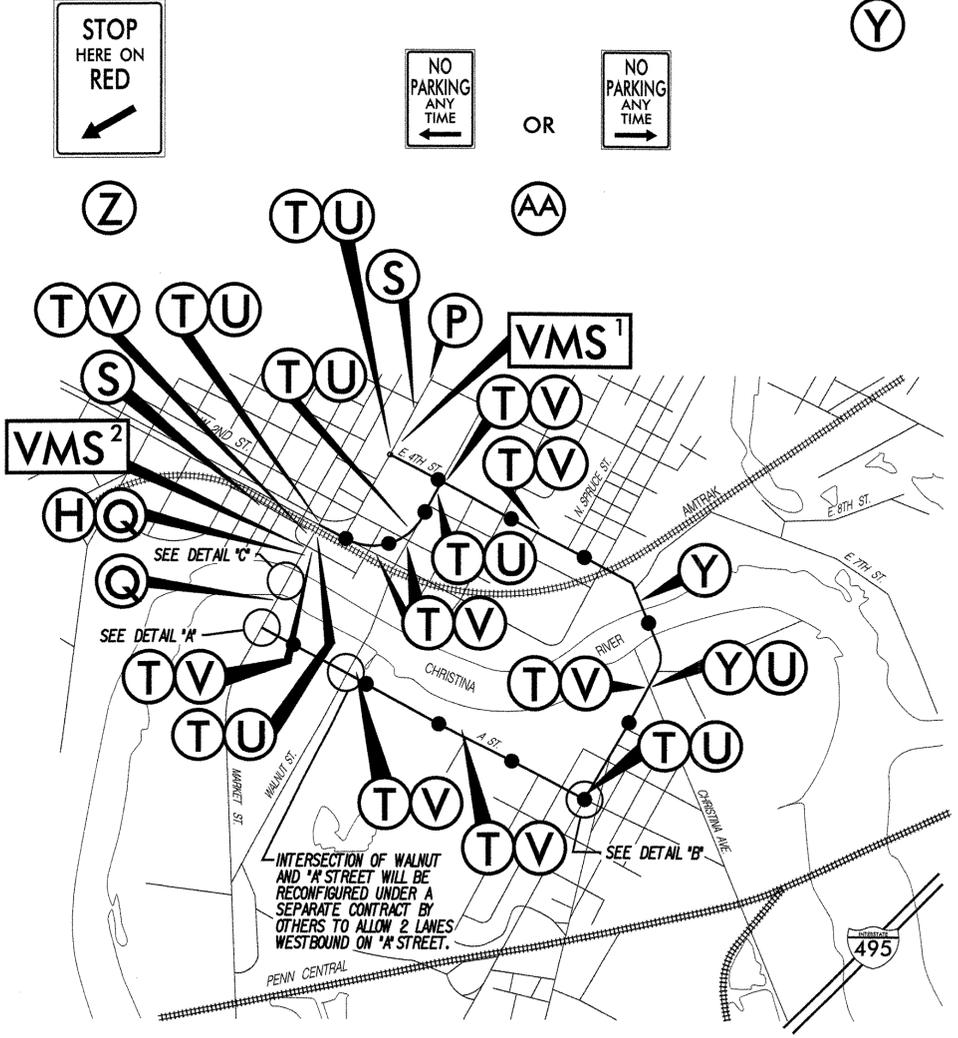
(X)

(Y)

36"

55"

4" C
4" C
4" C
4" C



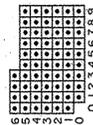
CONTRACT	COUNTY	F.A.P. NO.	SHEET	TOTAL
21-074-07	NC	EBHN-N029 (2)	11	169

BR 688 SOUTH MARKET STREET BRIDGE REHABILITATION

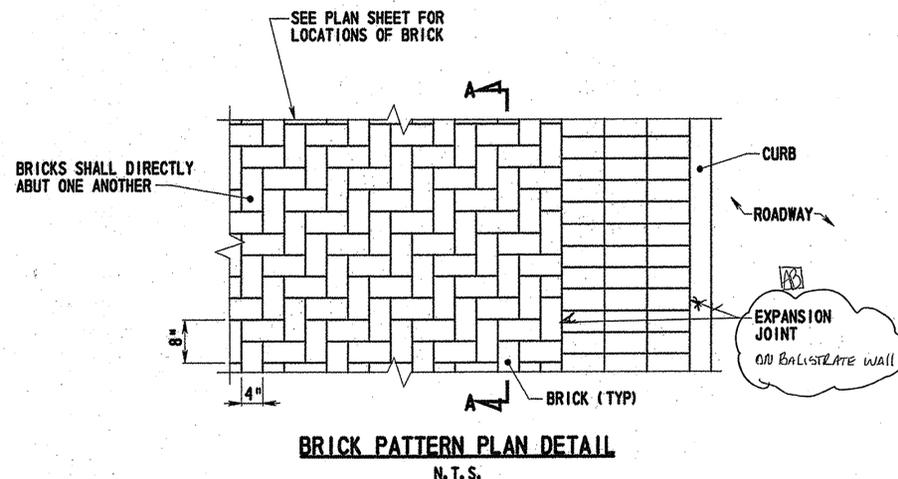
(P)		(N)
(L)		
		(O)
(M)		
		(K)
(R)		
		(Q)

- #### NOTES
- ALL DETOUR SIGNING INCLUDING TRAILBLAZERS, ARE TO BE SUPPLIED AND MAINTAINED BY THE GENERAL CONTRACTOR IN COMPLIANCE TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
 - THE CONTRACTOR SHALL COMPLY WITH GUIDELINES IN "TRAFFIC CONTROLS FOR STREETS AND HIGHWAY CONSTRUCTION, MAINTENANCE, UTILITY AND EMERGENCY OPERATIONS" MANUAL, FOR LIGHTS, BARRICADES AND SIGNS. (AS PER LATEST REVISION)
 - FIELD CONDITIONS MAY DICTATE CHANGES AT SOME TIME DURING THE LIFE OF THE CONTRACT. IN THE EVENT OF OMISSIONS OR CORRECTIONS, THE SIGNING PROVISIONS OF THE DELAWARE TRAFFIC CONTROL MANUAL WILL PREVAIL.
 - SIGNS H THROUGH M, THE WORD (ROAD) SHOULD BE CHANGED TO R/R OR BRIDGE WHERE APPLICABLE.
 - WARNING SIGNS SHOULD BE MOUNTED ON BREAKAWAY POSTS AND HAVE RETROREFLECTIVE FLUORESCENT SHEETING. TYPE "B" LIGHTS WILL NOT BE REQUIRED.
 - "Q" BARRICADES WILL COMPLETELY RUN THE FULL WIDTH OF ROADWAY.

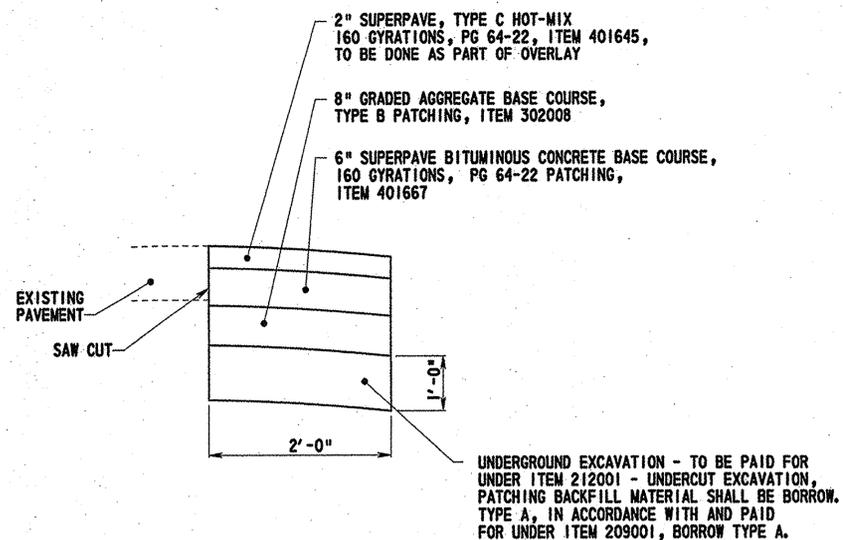
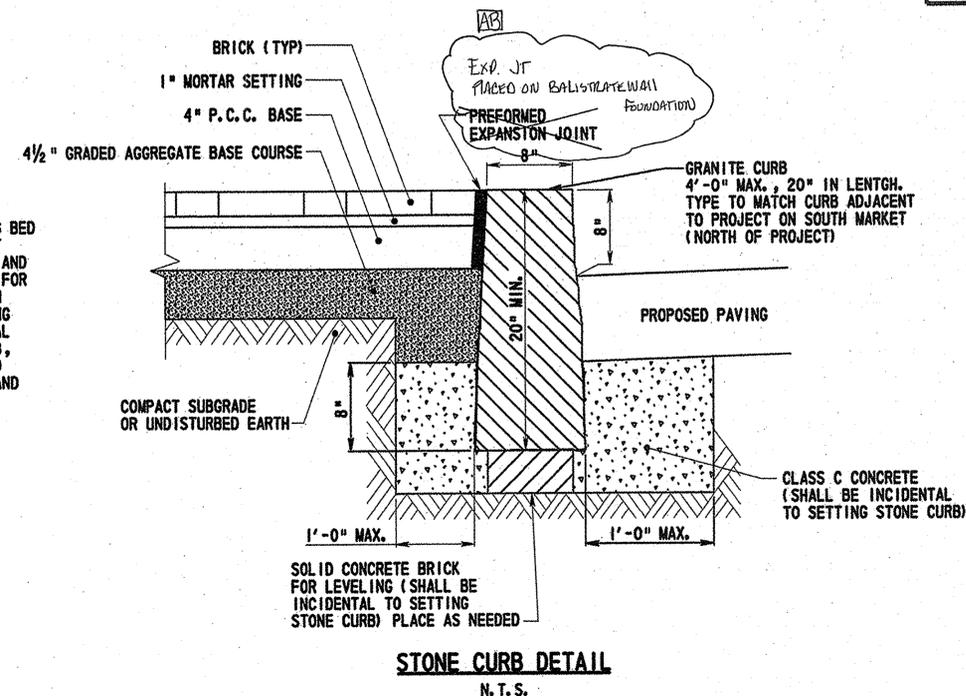
RECOMMENDED _____	20 _____
RECOMMENDED _____	20 _____
RECOMMENDED _____	20 _____
APPROVED CHIEF SAFETY INSPECTOR _____	DATE _____
APPROVED TRAFFIC ENGINEER _____	DATE _____



ROADWAY DETAILS

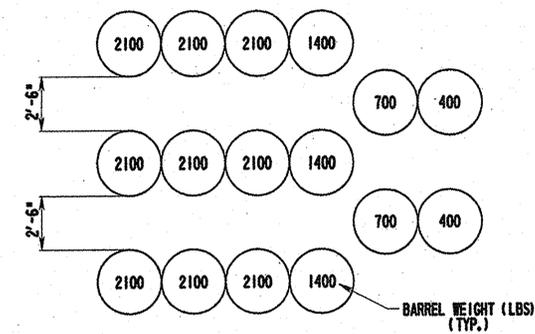


NOTE:
ALL MATERIALS, LABOR AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM INCLUDING THE 1" MORTAR SETTING BED (HYDRATED MIX COMPOSED OF ONE PART PORTLAND CEMENT AND 3 PARTS SAND BY DRY LOOSE VOLUME, 4" P.C.C. BASE AND 4 1/2" G.A.B.C. SHALL BE PAID FOR AT THE UNIT BID PRICE FOR BRICK AND/OR BLOCK SIDEWALK - ITEM 705504. PATTERN TO MATCH ADJACENT EXISTING BRICK SIDEWALK. EXISTING SIDEWALK TO BE REMOVED UNDER ITEM 758000 - REMOVAL OF EXISTING PORTLAND CEMENT CONCRETE PAVEMENT CURB, SIDEWALK, ETC. ANY ADDITIONAL EXCAVATION REQUIRED SHALL BE PAID FOR UNDER ITEM 202000 - EXCAVATION AND EMBANKMENT.



NOTE:
SAW CUTTING HOT-MIX PAVEMENT TO BE INCLUDED UNDER ITEMS 762001.002 - SAW CUTTING WHEN SAWING P.C.C. PAVEMENT WHICH HAS BEEN PREVIOUSLY RESURFACED WITH HOT-MIX. COMPENSATION FOR HOT-MIX CUTTING SHALL BE INCIDENTAL TO ITEM 762002.

HOT-MIX PATCH DETAIL
N. T. S.



SAND BARREL ARRAY DETAIL
N. T. S.

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 TEXT SIZE
 REFERENCE
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 .1875
 .25

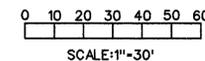
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ENVIRONMENTAL COMPLIANCE NOTES

1. GENERAL NOTES:

- A. THE PURPOSE OF THIS SHEET IS TO IDENTIFY THOSE ITEMS ASSOCIATED WITH ENVIRONMENTAL COMPLIANCE.
- B. IF A DEPARTURE FROM THE APPROVED PLANS (WHICH WOULD AFFECT ANY OF THE NATURAL AND/OR CULTURAL RESOURCE ISSUES) IS NECESSARY, THE ENVIRONMENTAL STUDIES SECTION SHALL BE CONTACTED AT (302)760-2280-2264 [2]
- C. USE OF THIS SHEET DOES NOT ALLEVIATE THE CONTRACTOR'S RESPONSIBILITY TO COMPLY WITH ALL CONDITIONS SET FORTH IN THE ENVIRONMENTAL STATEMENT AND PERMITS.

ENVIRONMENTAL COMPLIANCE PLAN



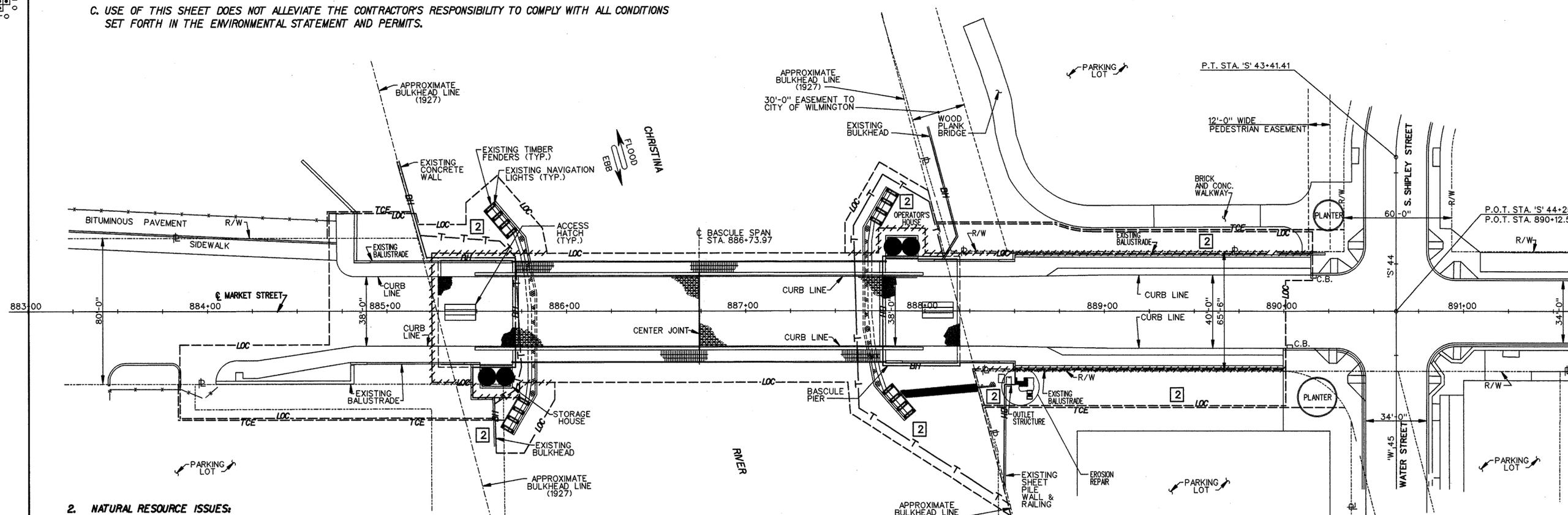
BR. 1-688

CONTRACT	COUNTY	FEDERAL AID PROJECT NO.	SHEET NO.	TOTAL SHTS.
21-074-07	NEW CASTLE	EBHN-N029 (2)	13	169

**BR 688
 SOUTH MARKET STREET BRIDGE
 REHABILITATION**

REVISIONS

[2] ADDED IMPACT AREA	JFB 7/1/04
TCE REVISED LOC.	
UPDATED TURBIDITY CURTAIN	



2. NATURAL RESOURCE ISSUES:

- A. PERMIT REQUIREMENTS / APPROVALS:
 - CORPS OF ENGINEERS - NATIONWIDE PERMIT #23
 - DNREC - SUBAQUEOUS LANDS PERMIT
 - NEW CASTLE COUNTY - NONE (BASED ON SCOPE OF WORK) [2]
 - U.S. COAST GUARD - 30-DAY ADVANCED NOTIFICATION [2]
 - *THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING APPROVAL FROM THE U.S. COAST GUARD (SEE ITEM 4 FOR FURTHER DETAILS). THE ENVIRONMENTAL STUDIES SECTION IS RESPONSIBLE FOR COORDINATING/OBTAINING THE OTHER PERMITS/APPROVALS.
 - **THE CONTRACTOR MUST ENSURE THAT THESE PERMITS/APPROVALS (COE, DNREC) ARE IN THEIR POSSESSION PRIOR TO THE BEGINNING OF CONSTRUCTION IN THE PERMITTED AREAS). THESE PERMITS/APPROVALS SHALL BE DISPLAYED ON-SITE DURING THE ENTIRE CONSTRUCTION PERIOD. [2]
- B. CONSTRUCTION RESTRICTIONS:
 - FISHERIES - RESTRICTION FROM MARCH 22 - MAY 30 (INCLUSIVE OF THOSE DATES)
 - NO IN-WATER WORK ALLOWED DURING THIS TIME FRAME.
 - ENDANGERED SPECIES - NONE
 - MIGRATORY BIRDS - NONE

3. CULTURAL RESOURCE ISSUES:

BRIDGE 688 IS ELIGIBLE FOR THE NATIONAL REGISTER OF HISTORIC PLACES. THEREFORE, THE REPAIR, REHABILITATION, AND PATCHING OF MASONRY ELEMENTS IS UNDER A HISTORIC COMPLIANCE REVIEW AND APPROVAL PROCESS. AS SUCH, THE CONTRACTOR MUST PREPARE A TEST PANEL(S) (INCIDENTAL TO 602572, REPAIRING EXISTING P.C.C. STRUCTURES) OF THE CONCRETE CLEANING AND PATCHING FOR REVIEW AND APPROVAL BY DELDOT, THE DELAWARE STATE HISTORIC PRESERVATION OFFICE (SHPO), AND ANY INTERESTED PARTIES TO ENSURE THAT THE CONCRETE CLEANING WILL MATCH PRE-EXISTING AND HISTORIC DESIGN CONFIGURATIONS. UPON COMPLETION OF THE TEST PANEL(S), THE CONTRACTOR MUST NOTIFY THE DISTRICT ENGINEER (A MINIMUM OF 5 DAYS IN ADVANCE) FOR MEETING COORDINATION PURPOSES. FOR ADDITIONAL DETAILS AND GUIDELINES, REFER TO THE "HISTORIC PRESERVATION GENERAL PROVISIONS" LOCATED IN THE ENVIRONMENTAL STATEMENT, CONTAINED WITHIN THE CONTRACT BID DOCUMENTS.

4. U.S. COAST GUARD 30-DAY ADVANCED NOTIFICATION:

THE CHRISTINA RIVER IS A NAVIGABLE WATERWAY. ALL WORK PERFORMED WITHIN THE WATERWAY SHALL BE COORDINATED WITH THE U.S. COAST GUARD PRIOR TO BEGINNING WORK AND BE IN CONFORMANCE WITH ITEM #763522 - COAST GUARD SPECIFIC CONDITIONS. THIS COORDINATION INCLUDES ADVANCED NOTIFICATION, WHICH REQUIRES THE CONTRACTOR TO FORMALLY NOTIFY THE COAST GUARD 30 DAYS IN ADVANCE OF ANY PLANNED TEMPORARY OBSTRUCTION TO WATERWAY NAVIGATION. CONTACT BILL BRAZIER AT (757) 398-6422, AS WELL AS SUBMIT A WRITTEN NOTICE (WHICH INCLUDES A SKETCH DEPICTING THE LOCATIONS AND DURATION OF ALL RESTRICTIONS) TO THE COMMANDING OFFICER ADWB, 5TH COAST GUARD DISTRICT, FEDERAL BUILDING, 431 CRAWFORD ST., PORTSMOUTH, VA. 23704 FOR APPROVAL.

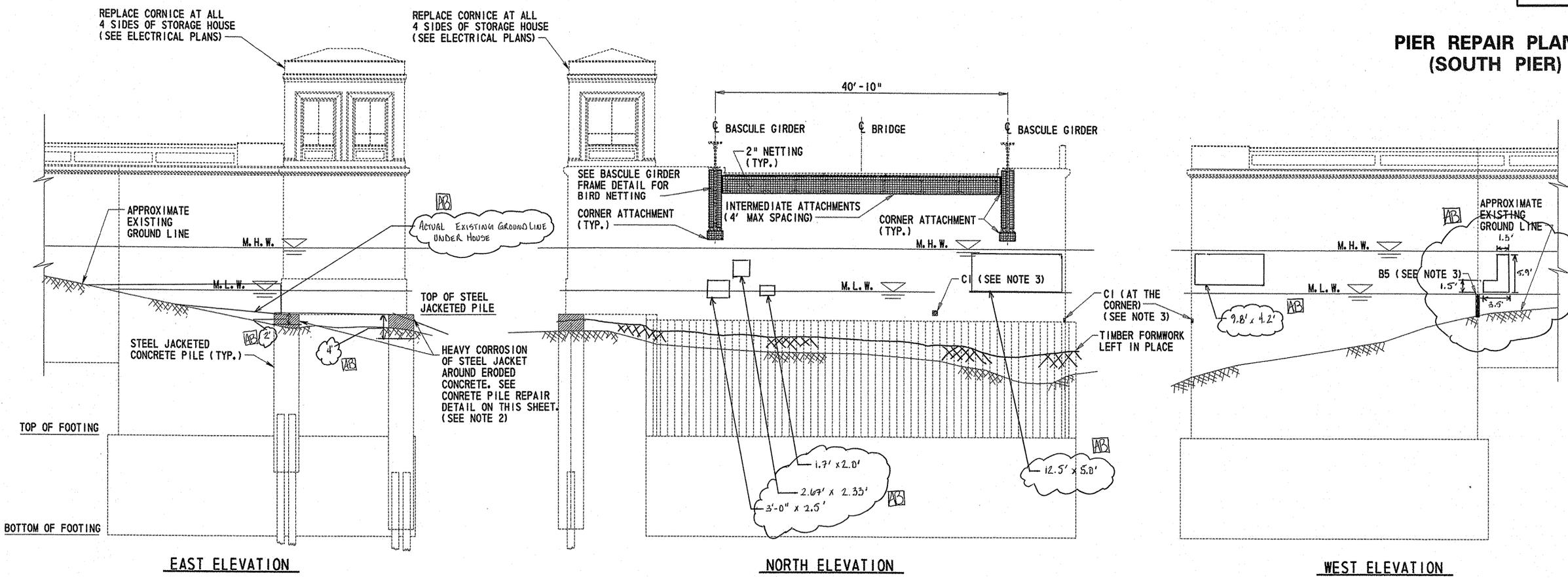
LEGEND	
	TEMPORARY IMPACT AREA
	BULKHEAD (M.H.W.L AND M.L.W.L)
	LIMIT OF CONSTRUCTION

CADD DESIGN DM
 DESIGN JFB
 CHKD. JAK
 JAK

FEET/12/1000
 TEXT SIZE
 REFERENCE
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BR. 1-688	CONTRACT 21-074-07	COUNTY NEW CASTLE	FEDERAL AID PROJECT NO. EBHN-N029 (2)	SHEET NO. 14	TOTAL SHTS. 169
BR 688					
SOUTH MARKET STREET BRIDGE					
REHABILITATION					
REVISIONS					

**PIER REPAIR PLAN I
 (SOUTH PIER)**

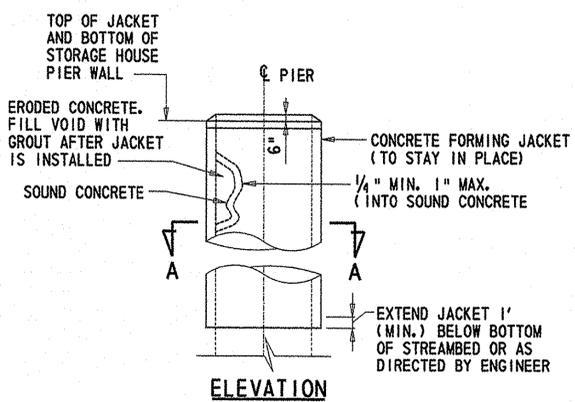


REPAIR LOCATIONS
 SCALE: 1/8" = 1'-0"

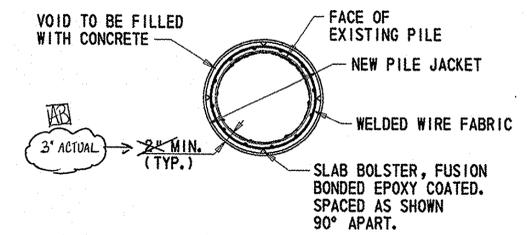
- NOTES:**
- CONCRETE DEFECTS AND REPAIRS ARE AS INDICATED IN THE 2001 UNDERWATER DIVER INSPECTION REPORT PREPARED BY BOSWELL UNDERWATER ENGINEERING. ALL DEFECTS AND REPAIR AREAS ARE TO BE FIELD VERIFIED PRIOR TO CONSTRUCTION.
 - COST OF REPAIRS TO CONCRETE PILES TO BE INCLUDED IN PAY ITEM 620511, "RESTORATION OF CONCRETE PILES".
 - COST OF REPAIRS TO CONCRETE PIER TO BE INCLUDED IN PAY ITEM 602551, "REHABILITATION OF EXISTING CONCRETE STRUCTURES".
 - FOR ADDITIONAL INFORMATION, SEE REFERENCE SHEETS "BASCULE PIER SECTIONS", "BASCULE PIERS AND APPROACH WALLS LONGITUDINAL SECTION" AND "BASCULE PIERS LONGITUDINAL AND CROSS SECTIONS".

- REPAIR LEGEND:**
- B3 DENOTES ESTIMATED SURFACE AREA OF CONCRETE REPAIR IN SQUARE FEET
 - DENOTES TYPE OF CONCRETE REPAIR. TYPE "A" SHOWN ON PIER REPAIR PLAN 2 (NORTH PIER). TYPE "B" AND "C" SHOWN BELOW.

- NOTES FOR BIRD CONTROL:**
- MATERIAL, METHOD OF ATTACHMENT AND ALUMINUM FRAME SHALL BE SUBMITTED FOR APPROVAL.
 - GAPS IN NETTING, SPACING OF INTERMITTENT ATTACHMENTS, CONCRETE ANCHORS AND TENSION IN NETTING SHALL BE IN ACCORDANCE W/MANUFACTURERS SPECIFICATIONS AND SHALL BE DESIGNED FOR HEAVY DUTY APPLICATIONS TO RESIST BIRDS.
 - THE PIGEON WASTE REMOVAL WITHIN THE PIERS IS TO BE PAID FOR UNDER ITEM 605617, "CLEANING OF PATHOGENICALLY CONTAMINATED STRUCTURE".

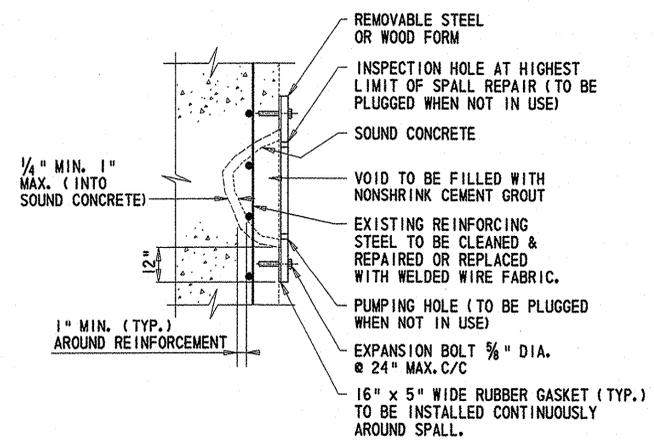


ELEVATION



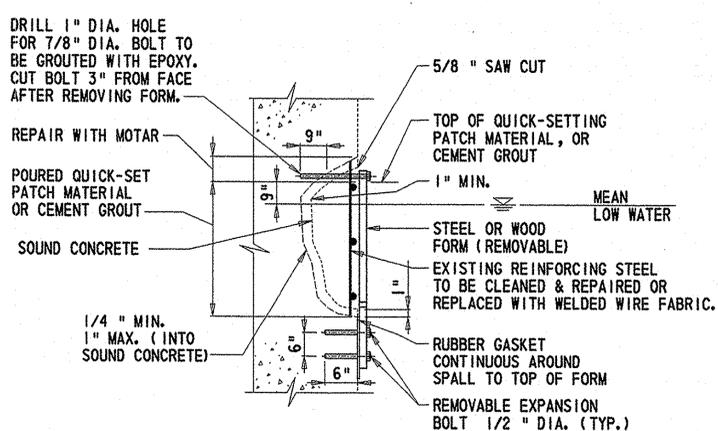
SECTION A-A

CONCRETE PILE REPAIR DETAIL
 SCALE: NTS



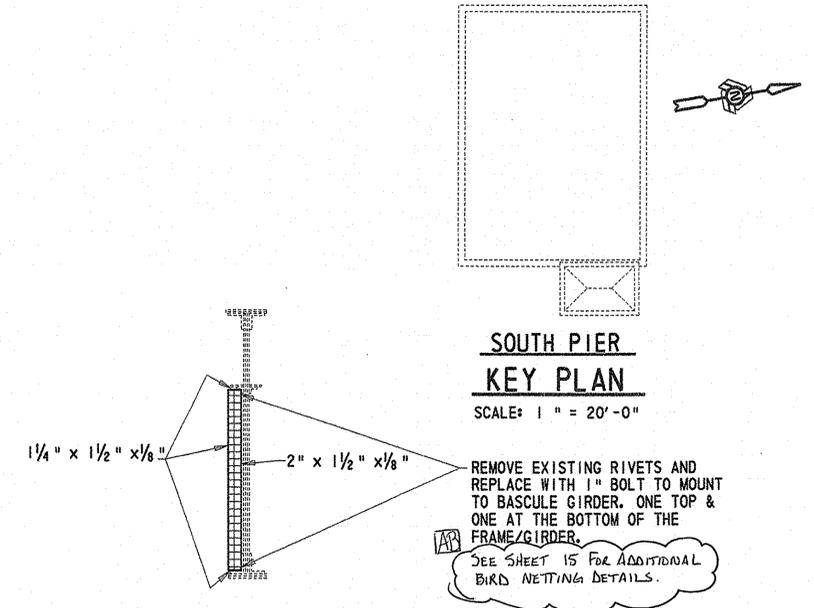
SECTION

UNDER WATER SPALL REPAIRS - TYPE C
 SCALE: NTS



SECTION

SPLASH ZONE REPAIRS - TYPE B
 SCALE: NTS



SOUTH PIER KEY PLAN

BASCULE GIRDER FRAME DETAIL FOR BIRD NETTING
 SCALE: 1/8" = 1'-0"

CADD DESIGN RLS
 DESIGN RLS
 CHKD. REL
 JRW

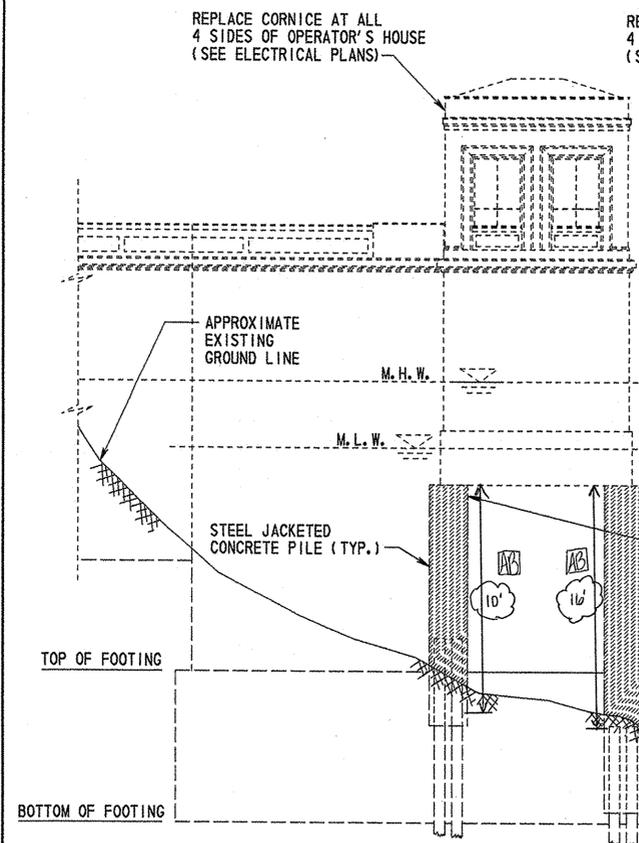
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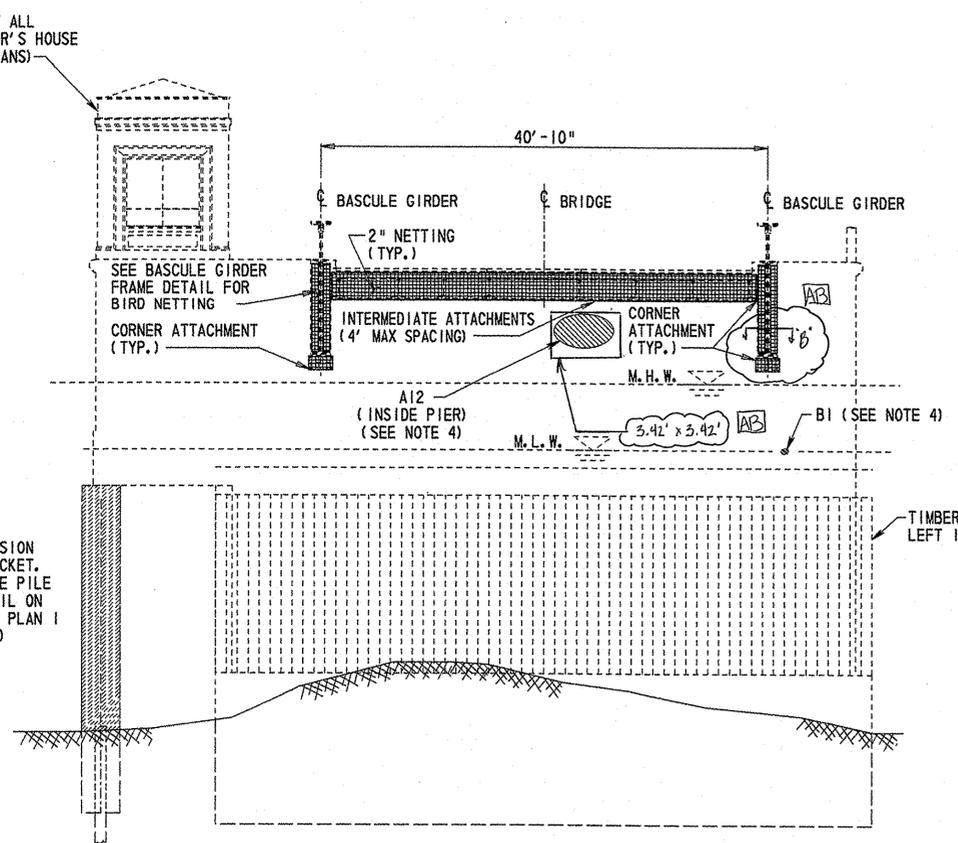
BR 688
SOUTH MARKET STREET BRIDGE
REHABILITATION

REVISIONS	

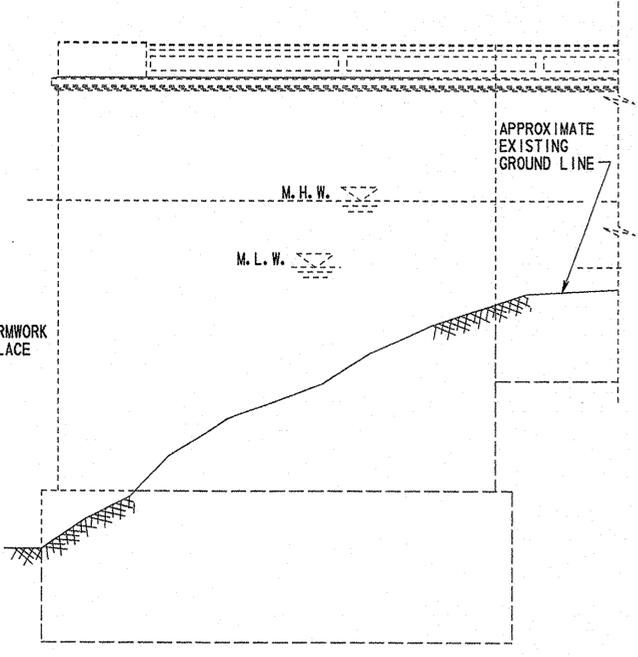
PIER REPAIR PLAN 2
(NORTH PIER)



WEST ELEVATION



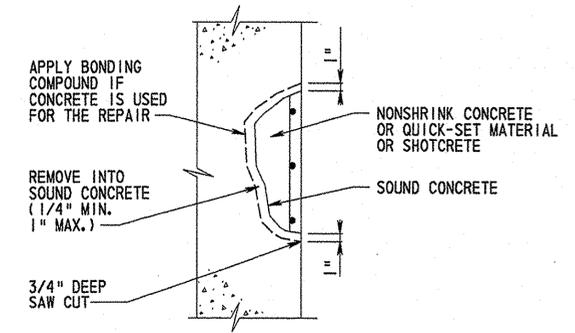
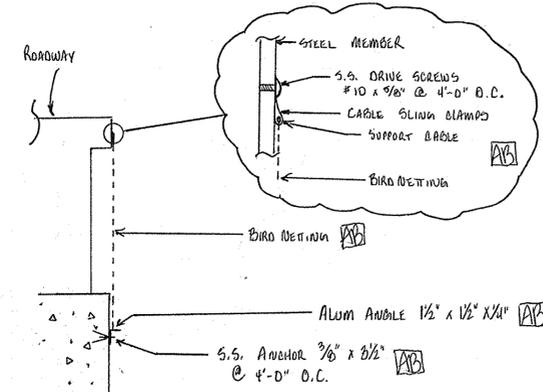
SOUTH ELEVATION



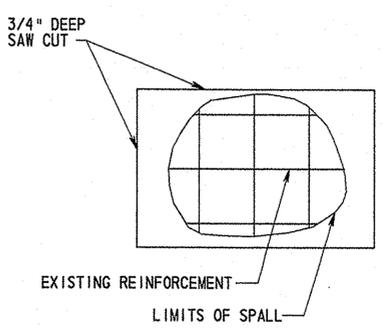
EAST ELEVATION

REPAIR LOCATIONS
 SCALE: 1/8" = 1'-0"

SCALE: 1/8" = 1'-0"



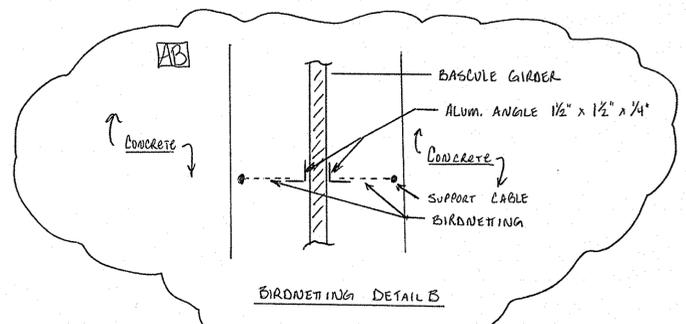
SECTION



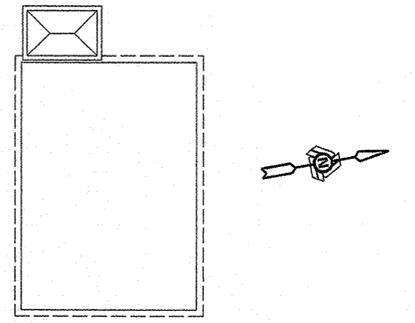
ELEVATION

ABOVE WATER REPAIRS - TYPE A
 SCALE: NTS

SCALE: NTS



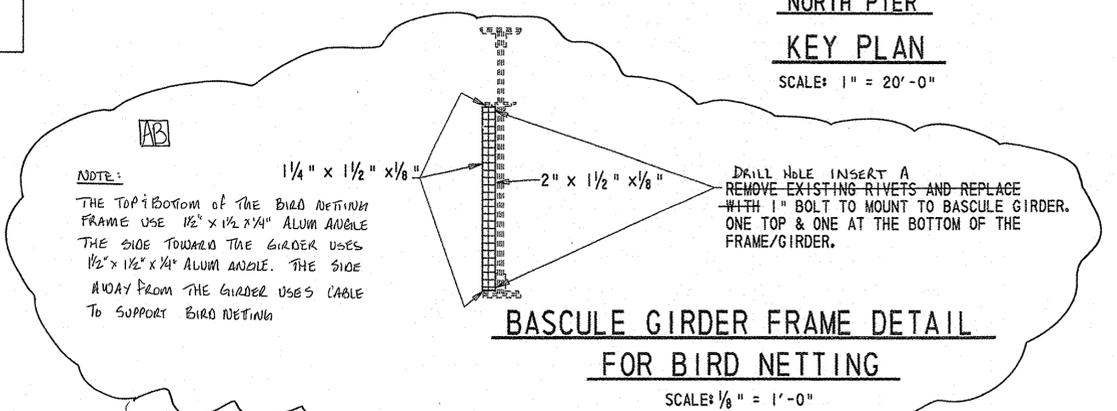
BIRDNETTING DETAILS



NORTH PIER

KEY PLAN

SCALE: 1" = 20'-0"



BASCULE GIRDER FRAME DETAIL
FOR BIRD NETTING
 SCALE: 1/8" = 1'-0"

SCALE: 1/8" = 1'-0"

NOTES:

AS BUILT

1. CONCRETE DEFECTS AND REPAIRS ARE AS INDICATED IN THE 2001 UNDERWATER DIVER INSPECTION REPORT PREPARED BY BOSWELL UNDERWATER ENGINEERING. ALL DEFECTS AND REPAIR AREAS ARE TO BE FIELD VERIFIED PRIOR TO CONSTRUCTION.
2. FOR SPLASH ZONE REPAIRS - TYPE B AND REPAIR LEGEND, SEE PIER REPAIR PLAN 1 (SOUTH PIER).
3. COST OF REPAIRS TO CONCRETE PILES TO BE INCLUDED IN PAY ITEM 620511, "RESTORATION OF CONCRETE PILES".
4. COST OF REPAIRS TO CONCRETE PIER TO BE INCLUDED IN PAY ITEM 602551, "REHABILITATION OF EXISTING CONCRETE STRUCTURES".
5. FOR ADDITIONAL INFORMATION, SEE REFERENCE SHEETS "BASCULE PIER SECTIONS", "BASCULE PIERS AND APPROACH WALLS LONGITUDINAL SECTION" AND "BASCULE PIERS LONGITUDINAL AND CROSS SECTIONS".

NOTES FOR BIRD CONTROL:

1. MATERIAL, METHOD OF ATTACHMENT AND ALUMINUM FRAME SHALL BE SUBMITTED FOR APPROVAL.
2. GAPS IN NETTING, SPACING OF INTERMITTANT ATTACHMENTS, CONCRETE ANCHORS AND TENSION IN NETTING SHALL BE IN ACCORDANCE W/ MANUFACTURERS SPECIFICATIONS AND SHALL BE DESIGNED FOR HEAVY DUTY APPLICATIONS TO RESIST BIRDS.
3. THE PIGEON WASTE REMOVAL WITHIN THE PIERS IS TO BE PAID FOR UNDER ITEM 605617, "CLEANING OF PATHOGENICALLY CONTAMINATED STRUCTURE".

CADD DESIGN RJ/S
 DESIGN RJ/S
 CHKD. REJ
 JFW

9/21/2006 21-074-07

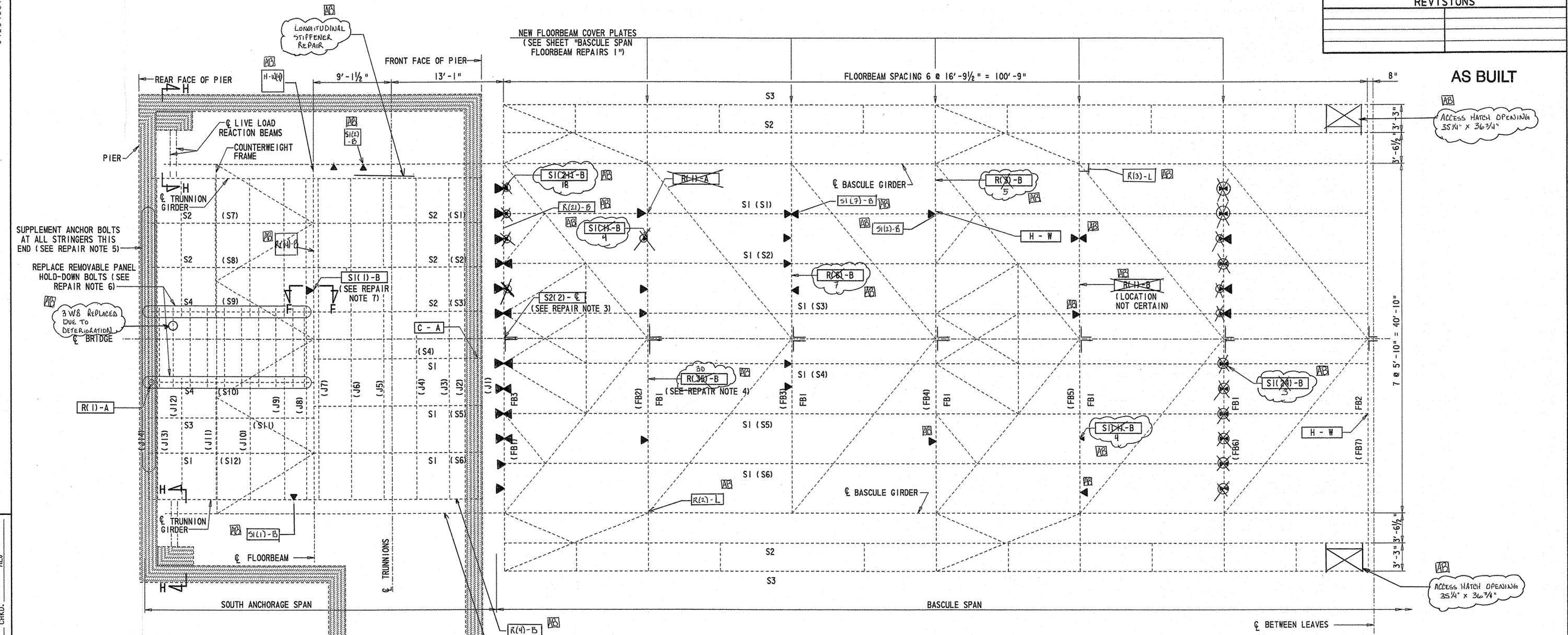
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FRAMING PLAN -
 SOUTH LEAF

BR 688
 SOUTH MARKET STREET BRIDGE
 REHABILITATION

REVISIONS	



FRAMING PLAN - SOUTH LEAF

SCALE: 3/16" = 1'-0"

NOTE:

GRATING SUPPORT JOISTS NOT SHOWN
 IN BASCULE SPAN FOR CLARITY.

REPAIR NOTES:

- SEE SHEETS BASCULE SPAN FLOORBEAM REPAIRS 1 AND 2 FOR REPAIR DETAILS FOR STIFFENERS, HOLES AND CONNECTION MEMBERS.
- SEE SHEET "BEARING REPAIR DETAILS 1" FOR SECTION H-H.
- REPAIR IS TYPICAL TO EVERY FLOORBEAM.
- RIVETS TO BE REPLACED ARE IN THE EAST HALF OF THE FLOORBEAM.
- SEE STRINGER ANCHOR BOLT SUPPLEMENT ON SHEET "BEARING REPAIR DETAILS 1".
- SEE SHEET "GRID DECK, SIDEWALK AND RAILING REPAIR PLAN" FOR REPLACEMENT OF THE REMOVABLE PANEL HOLD-DOWN BOLTS.
- FOR SECTION F-F SEE SHEET "ANCHORAGE SPAN MISCELLANEOUS DETAILS".

LEGEND:

- R - L LOCATION OF REPAIR:
 T = TOP FLANGE L = LATERAL BRACE
 W = WEB A = CONNECTION ANGLE
 B = BOTTOM FLANGE C = CENTERLINE OF BRIDGE
- TYPE OF REPAIR:
 R(*) = RIVET REPLACEMENT (# OF RIVETS TO BE REPLACED PER FLOORBEAM)
 S1(*) = STIFFENER REPAIR (# OF STIFFENERS TO BE REPAIRED PER FLOORBEAM)
 S2(*) = STIFFENER REPLACEMENT (# OF STIFFENERS TO BE REPLACED PER FLOORBEAM)
 H = HOLE REPAIR
 C = CONNECTION MEMBER REPLACEMENT
- ▽ INDICATES LOCATION OF STIFFENER TO BE REPAIRED

MEMBER DESIGNATIONS:

- FB3 (FB1) MEMBER NAME AS INDICATED IN MODJESKI AND MASTERS, INC. "IN-DEPTH INSPECTION REPORT", NOVEMBER 2000.
 MEMBER NAME AS INDICATED IN THE ORIGINAL CONTRACT PLANS.

CADD DESIGN R/S DESIGN ABT CHKD. REV.

9/21/2006 21-074-07

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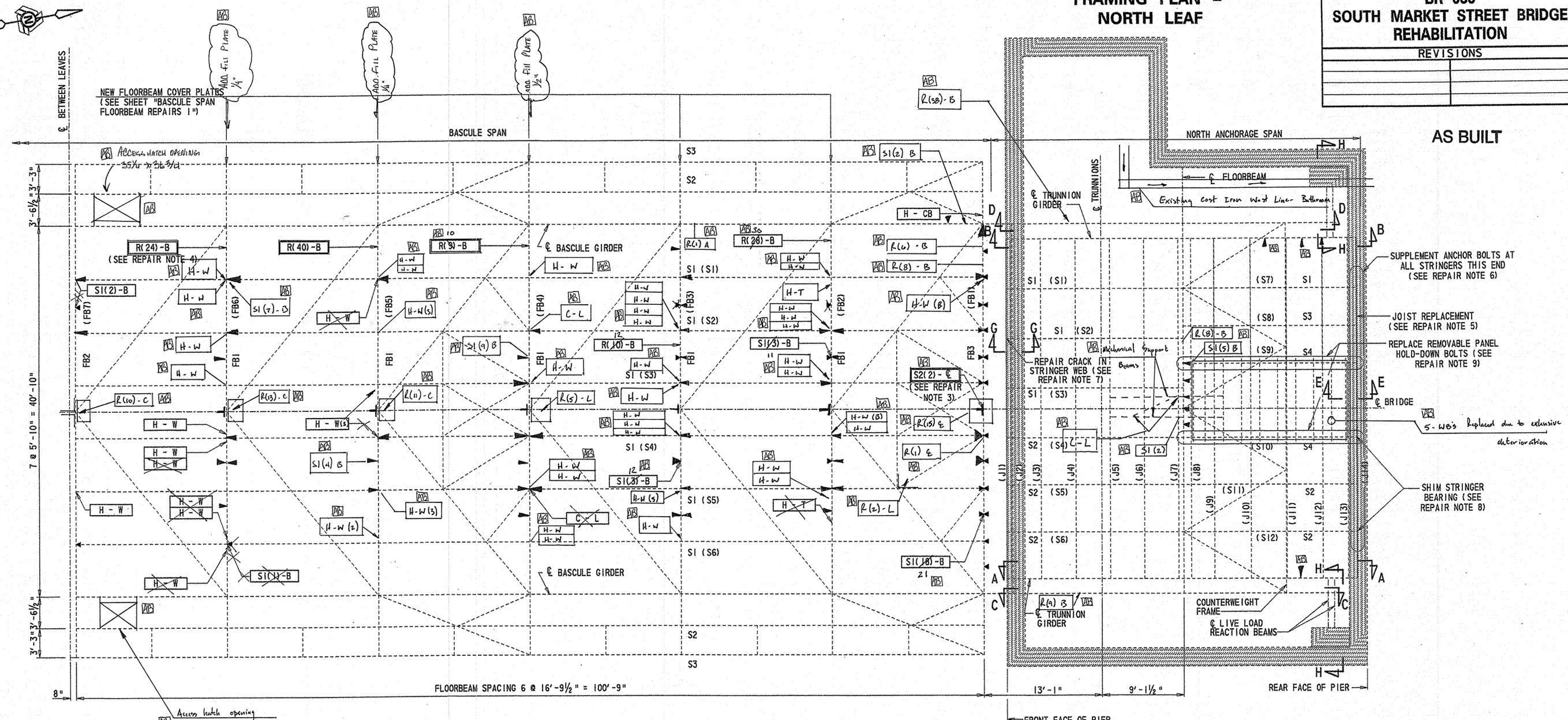
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FRAMING PLAN - NORTH LEAF

BR 688 SOUTH MARKET STREET BRIDGE REHABILITATION

REVISIONS	

AS BUILT



FRAMING PLAN - NORTH LEAF

SCALE: 3/8" = 1'-0"

NOTE:
 GRATING SUPPORT JOISTS NOT SHOWN IN BASCULE SPAN FOR CLARITY.

- REPAIR NOTES:
- SEE SHEETS BASCULE SPAN FLOORBEAM REPAIRS 1 AND 2 FOR REPAIR DETAILS FOR STIFFENERS, HOLES AND CONNECTION MEMBERS.
 - SEE SHEET "BEARING REPAIR DETAILS 1" FOR SECTION H-H. REPAIR IS TYPICAL TO EVERY FLOORBEAM.
 - MOST OF THE RIVETS TO BE REPLACED ARE IN THE WEST HALF OF THE FLOORBEAM.
 - SEE JOIST REPLACEMENT DETAIL ON SHEET "ANCHORAGE SPAN MISCELLANEOUS DETAILS".
 - SEE STRINGER ANCHOR BOLT SUPPLEMENT DETAILS ON SHEET "BEARING REPAIR DETAILS 1".
 - FOR SECTION G-G, SEE SHEET "ANCHORAGE SPAN MISCELLANEOUS DETAILS".
 - SEE STRINGER SHIM DETAIL ON SHEET "BEARING REPAIR DETAILS 1".
 - SEE SHEET "GRID DECK, SIDEWALK AND RAILING REPAIR PLAN" FOR REPLACEMENT OF THE REMOVABLE PANEL HOLD-DOWN BOLTS.

- LEGEND:
- R-L LOCATION OF REPAIR:
 T = TOP FLANGE A = CONNECTION ANGLE
 W = WEB C = CENTERLINE OF BRIDGE
 B = BOTTOM FLANGE CB = CANTILEVER BRACKET
 L = LATERAL BRACE c = connection
- TYPE OF REPAIR:
 R(#) = RIVET REPLACEMENT (# OF RIVETS TO BE REPLACED PER FLOORBEAM)
 S1(#) = STIFFENER REPAIR (# OF STIFFENERS TO BE REPAIRED PER FLOORBEAM)
 S2(#) = STIFFENER REPLACEMENT (# OF STIFFENERS TO BE REPLACED PER FLOORBEAM)
 H = HOLE REPAIR
 C = CONNECTION MEMBER REPLACEMENT
- INDICATES LOCATION OF STIFFENER TO BE REPAIRED

- MEMBER DESIGNATIONS:
- FB3 (FB1) MEMBER NAME AS INDICATED IN MODJESKI AND MASTERS, INC. "IN-DEPTH INSPECTION REPORT", NOVEMBER 2000.
 MEMBER NAME AS INDICATED IN THE ORIGINAL CONTRACT PLANS.

CADD DESIGN RLS DESIGN APT. CHKD. REJ.

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BR. I-688

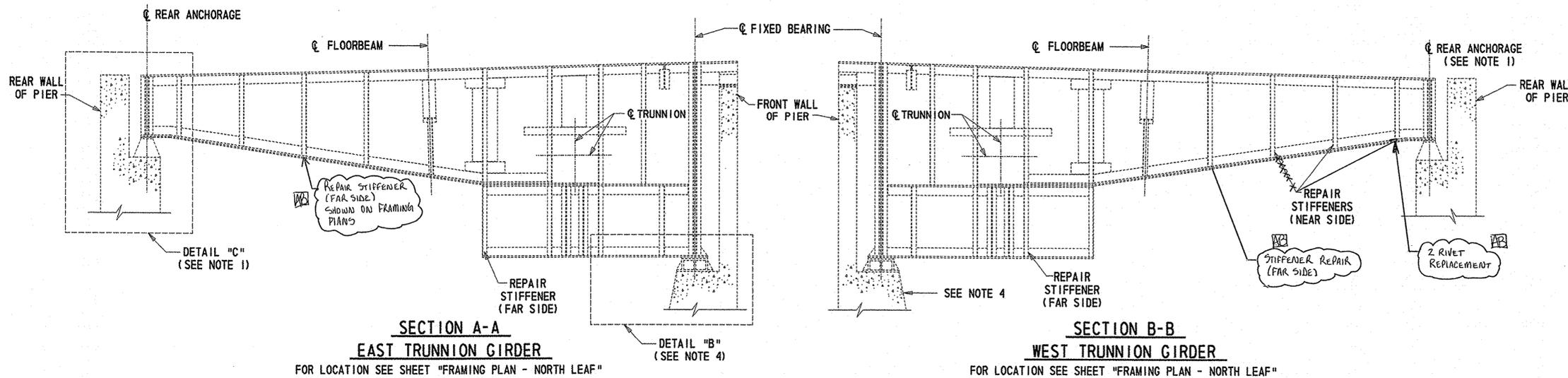
CONTRACT	COUNTY	FEDERAL AID PROJECT NO.	SHEET NO.	TOTAL SHTS.
21-074-07	NEW CASTLE	EBHN-N029 (2)	18	169

**BR 688
SOUTH MARKET STREET BRIDGE
REHABILITATION**

REVISIONS

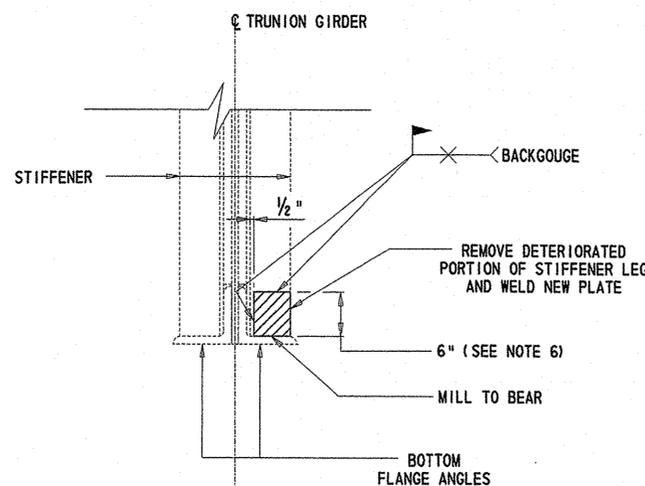
AS BUILT

TRUNNION GIRDER REPAIRS



NORTH PIER

SCALE: 1/4" = 1'-0"



TYPICAL STIFFENER REPAIR

(SEE NOTE 2)
SCALE: 1/2" = 1'-0"

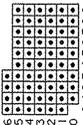
NOTES:

- REPAIR IS SIMILAR AT OTHER THREE TRUNNION GIRDERS. FOR DETAILS OF TRUNNION GIRDER REAR ANCHORAGE REPAIR, SEE DETAIL "C" ON SHEET "BEARING REPAIR DETAILS 2".
- COST TO BE INCLUDED IN PAY ITEM 605585, "STEEL STRUCTURE REPAIR" AS A STIFFENER REPAIR.
- FOR ADDITIONAL DETAILS SEE INFORMATIONAL SHEETS.
- FOR SEISMIC RETROFIT DETAILS AT THE TRUNNION GIRDER FIXED BEARING, SEE SHEET "SEISMIC RETROFIT I: TRUNNION GIRDER RESTRAINT BRACKET". COST OF RETROFIT TO BE INCLUDED IN PAY ITEM 605679, "SEISMIC RETROFIT".
- "FAR SIDE" OF TRUNNION GIRDER REFERS TO SIDE FACING THE OUTSIDE OF THE PIER. "NEAR SIDE" REFERS TO THE SIDE FACING THE INSIDE OF THE PIER.
- LIMITS OF STIFFENER DETERIORATION ARE APPROXIMATE. CONTRACTOR SHALL VERIFY LIMITS OF DETERIORATION PRIOR TO MAKING REPAIRS.

CADD DESIGN M/A DESIGN REJ CHKD. ABT

9/21/2006 21-074-07

TEXT SIZE
REFERENCE
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BR. I-688

CONTRACT	COUNTY	FEDERAL AID PROJECT NO.	SHEET NO.	TOTAL SHTS.
21-074-07	NEW CASTLE	EBHN-N029 (2)	19	169

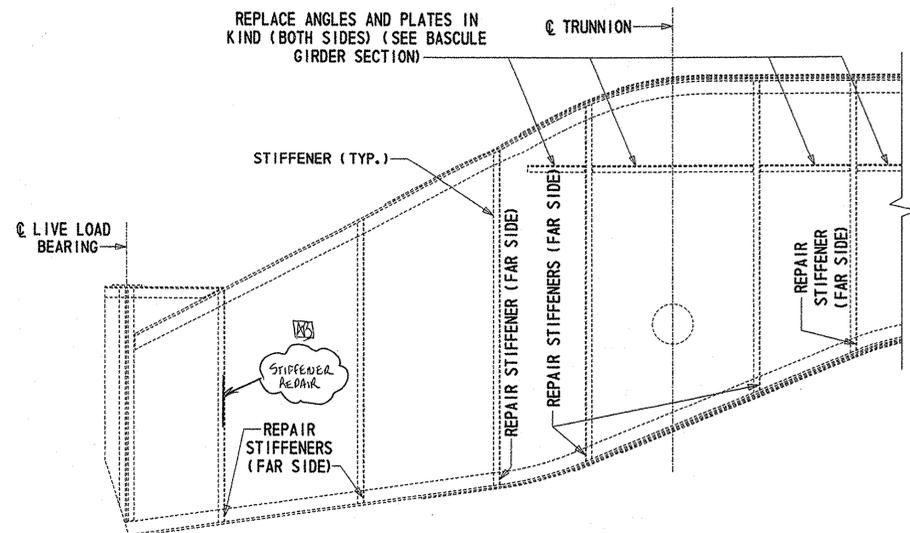
BASCULE GIRDER REPAIRS AT ANCHORAGE SPAN

BR 688 SOUTH MARKET STREET BRIDGE REHABILITATION

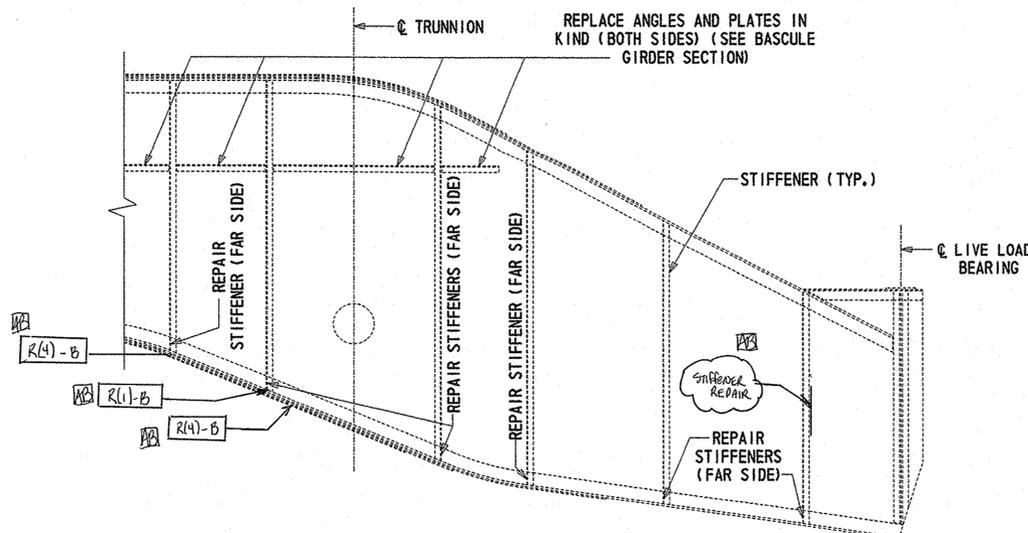
REVISIONS

AS BUILT

- NOTES:
- COST TO BE INCLUDED IN PAY ITEM 605585, "STEEL STRUCTURE REPAIR", AS A STIFFENER REPAIR.
 - FOR ADDITIONAL DETAILS SEE INFORMATIONAL SHEETS.
 - LIMITS OF STIFFENER DETERIORATION ARE APPROXIMATE. CONTRACTOR SHALL VERIFY LIMITS OF DETERIORATION PRIOR TO MAKING REPAIRS.
 - "FAR SIDE" OF THE BASCULE GIRDER REFERS TO THE SIDE OF THE BASCULE GIRDER FACING THE OUTSIDE OF THE PIER.
 - COST TO BE INCLUDED IN PAY ITEM 605585, "STEEL STRUCTURE REPAIR", AS AN ANGLE AND PLATE REPLACEMENT (PER LINEAR FOOT IS MEASURED ALONG THE GIRDER).

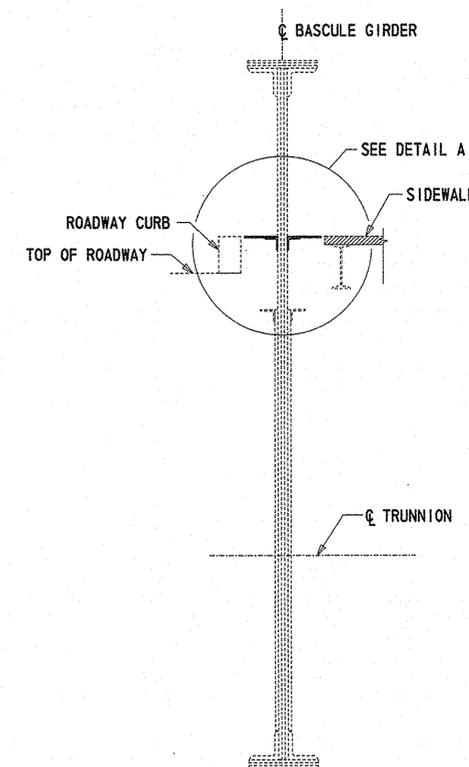


**SECTION C-C
EAST GIRDER**
FOR LOCATION, SEE SHEET "FRAMING PLAN - NORTH LEAF"

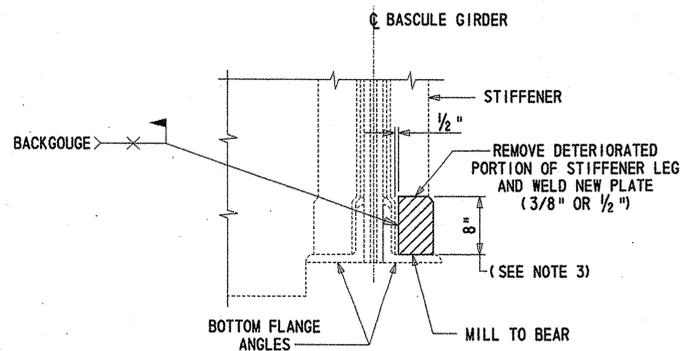


**SECTION D-D
EAST GIRDER**
FOR LOCATION, SEE SHEET "FRAMING PLAN - NORTH LEAF"

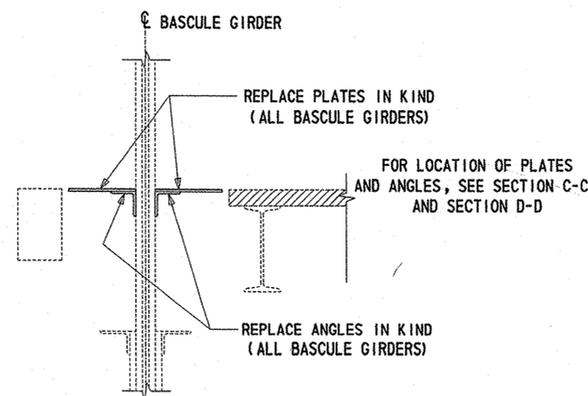
NORTH BASCULE LEAF
SCALE: 1/4" = 1'-0"



BASCULE GIRDER SECTION
SCALE: 1/2" = 1'-0"



TYPICAL STIFFENER REPAIR
(SEE NOTE 1)
SCALE: 1" = 1'-0"



DETAIL A
(SEE NOTE 5)
SCALE: 1" = 1'-0"

CADD DESIGN EVS DESIGN REV CHKD. ABT

9/21/2006 21-074-07

TEXT SIZE REFERENCE .125 .1875 .25

NOTES:

1. ALL DETAILS ARE EXISTING UNLESS OTHERWISE NOTED. NOT ALL EXISTING DETAILS ARE SHOWN ON THIS SHEET. FOR MORE INFORMATION, SEE OTHER CONTRACT PLANS AND INFORMATIONAL/REFERENCE SHEETS ATTACHED TO THE CONTRACT PLANS.
2. FALSEWORK SUSPENDER RODS SHOULD BE SPACED SUCH THAT THE TOTAL FALSEWORK LOAD IS EQUALLY DISTRIBUTED (APPROXIMATELY) TO EACH SUSPENDER ROD.
3. FOR SECTIONS AND DETAILS SEE SHEET NO. 19B.
4. ALL EXISTING FASTENERS THAT ARE REMOVED SHALL BE REPLACED WITH HIGH-STRENGTH FASTENERS.
5. ALL FASTENERS USED ON THE FALSEWORK SYSTEM SHALL BE HIGH-STRENGTH FASTENERS.
6. ALL HIGH-STRENGTH FASTENERS SHALL CONFORM TO ASTM A325. FALSEWORK ANCHOR BOLTS AND SUSPENDER RODS SHALL CONFORM TO ASTM F1554.
7. ALL TEMPORARY BOLTS SHALL BE PAINTED RED AND SHALL NOT BE REUSED - NO EXISTING FASTENERS SHALL BE REUSED.
8. THE FALSEWORK DETAILS SHOWN SHALL BE CONSIDERED CONCEPTUAL.
9. EXISTING COMPONENTS THAT ARE TEMPORARILY DISCONNECTED OR TEMPORARILY REMOVED DURING THE FLOORBEAM REPAIR OPERATIONS SHALL BE REINSTALLED TO MATCH THE PREVIOUSLY EXISTING CONNECTIONS AND DETAILS, UNLESS OTHERWISE NOTED.
10. ALL COMPONENTS THAT ARE TEMPORARILY REMOVED SHALL BE CLEANED AND REPAINTED, ALL FAYING SURFACES SHALL BE CLEANED AND PRIMED ONLY.
11. ALL EXISTING FAYING SURFACES THAT ARE TEMPORARILY EXPOSED SHALL BE CLEANED AND PRIMED.
12. FOR GENERAL PROCEDURE FOR REPAIR AND FALSEWORK OPERATIONS, SEE SHEET NO. 19B.

LEGEND:

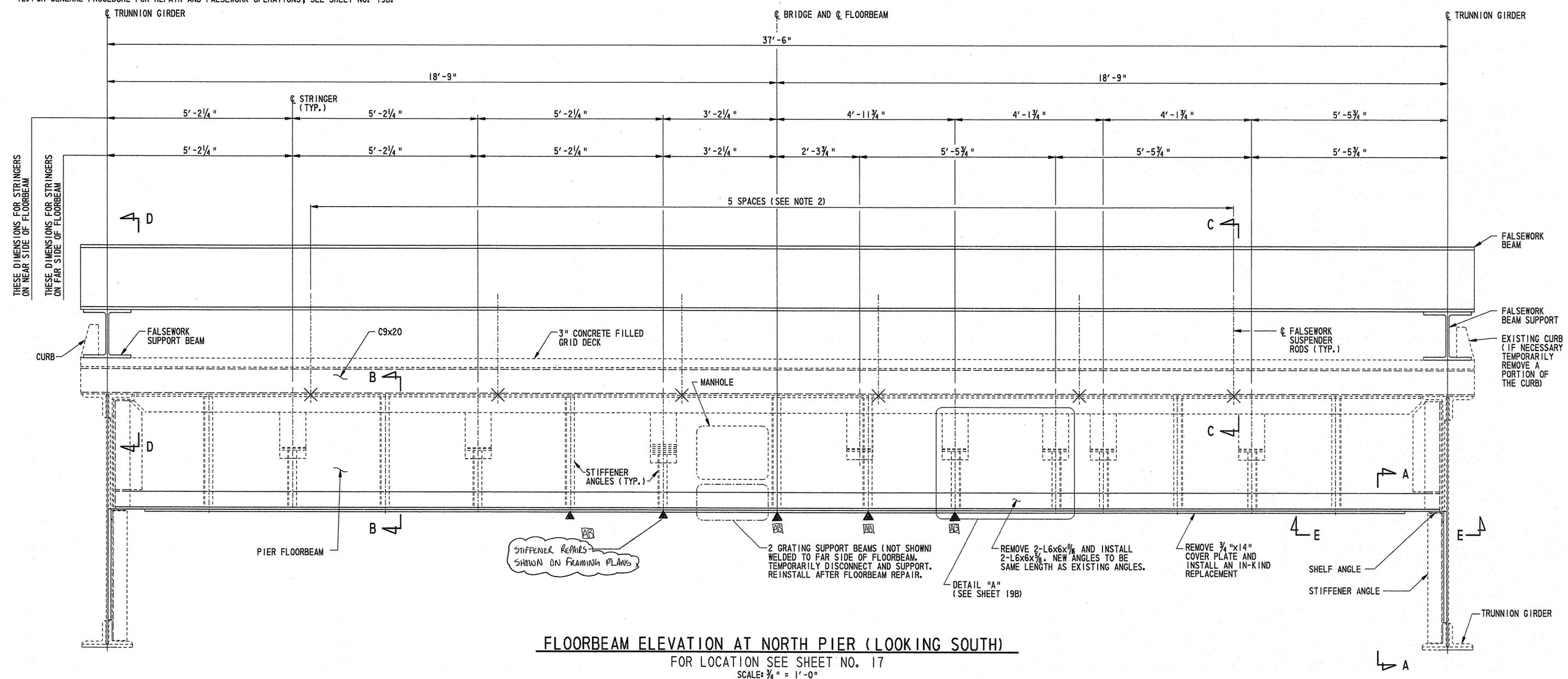
✕ POINT OF ATTACHMENT OF FALSEWORK SUSPENDER ROD TO FLOORBEAM

NORTH PIER FLOORBEAM REPAIR AND FALSEWORK: ELEVATION

BR 688 SOUTH MARKET STREET BRIDGE REHABILITATION

REVISIONS	
2 NEW SHEET	ABT 9/27/04

AS BUILT



FLOORBEAM ELEVATION AT NORTH PIER (LOOKING SOUTH)
FOR LOCATION SEE SHEET NO. 17
SCALE: 3/4" = 1'-0"

CADD DESIGN DM DESIGN ABT CHKD. JFB

9/21/2006 21-074-07

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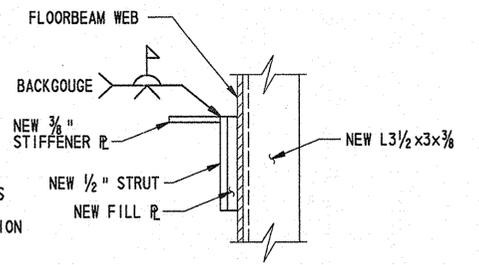
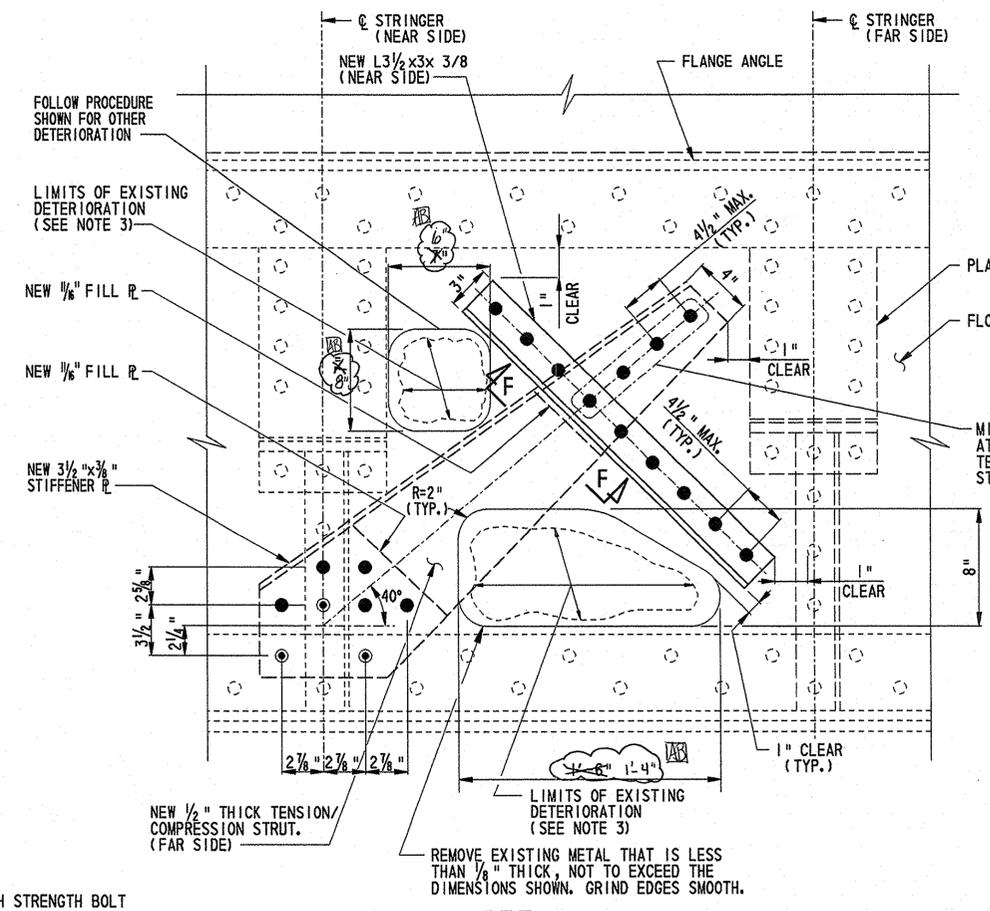
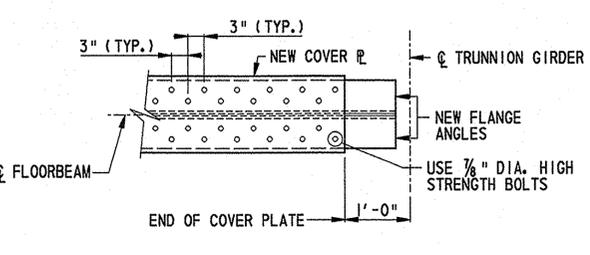
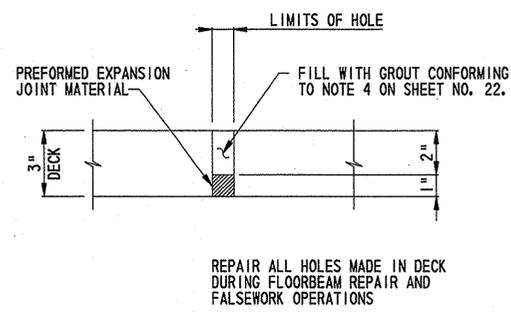
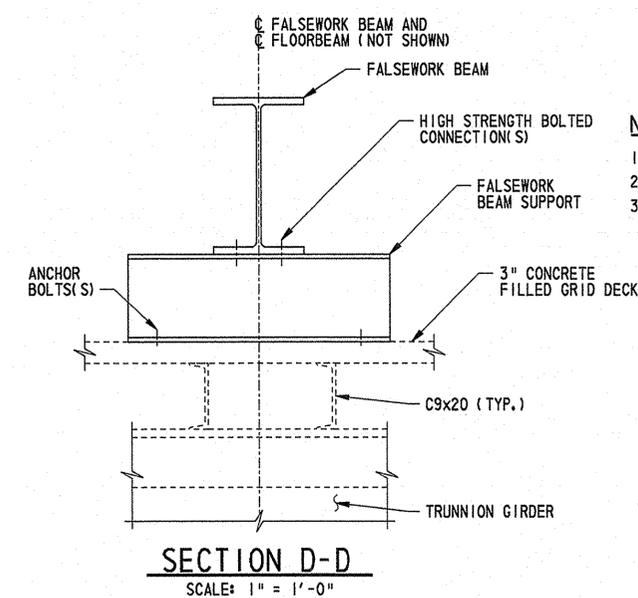
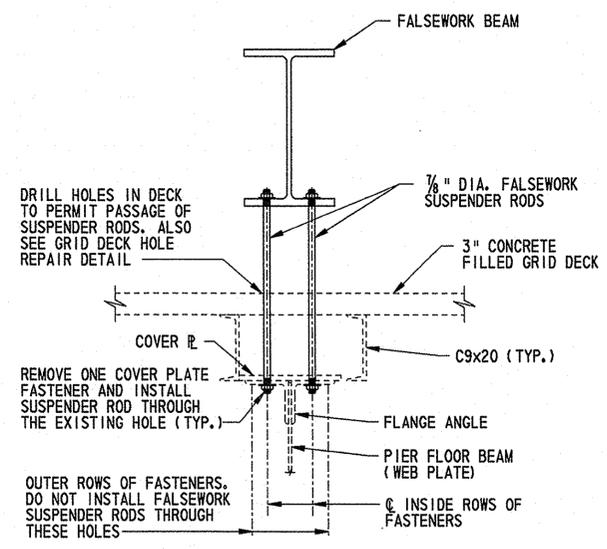
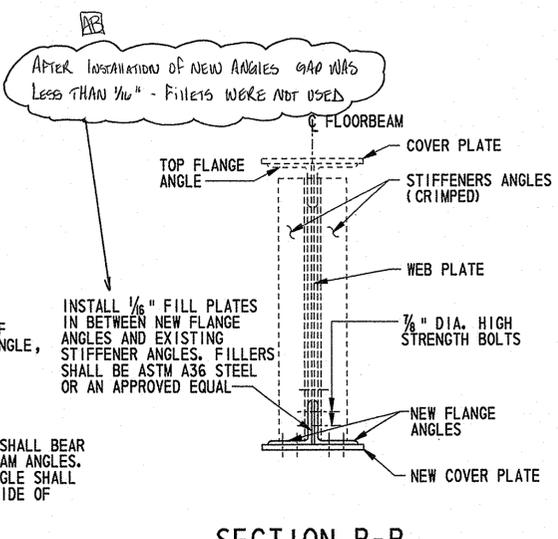
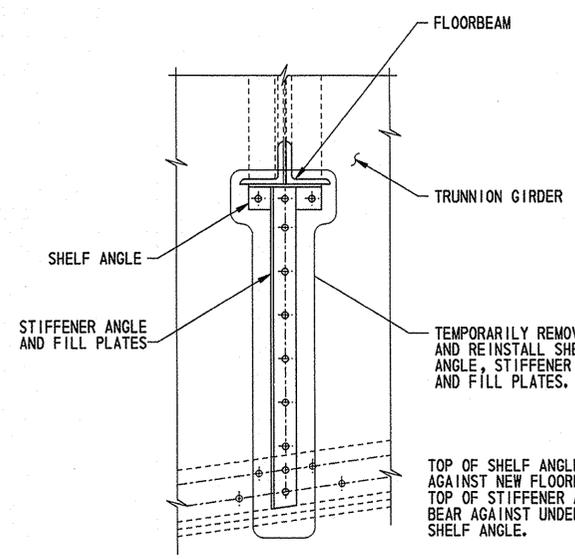
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NORTH PIER FLOORBEAM REPAIR AND FALSEWORK: DETAILS
SOUTH MARKET STREET BRIDGE REHABILITATION

REVISIONS	
2 NEW SHEET	ABT 9/27/04

NOTES:
 1. ALL NOTES ON SHEET NO. 19A ARE APPLICABLE TO THIS SHEET.
 2. FOR LOCATION OF SECTIONS, SEE SHEET NO. 19A.
 3. LIMITS OF FLOORBEAM WEB DETERIORATION ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY THE LIMITS OF DETERIORATION PRIOR TO MAKING REPAIRS. ALL OTHER DETERIORATION SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER.

AS BUILT



GENERAL PROCEDURE FOR REPAIR AND FALSEWORK OPERATIONS:

1. TEMPORARILY REMOVE EXISTING STEEL CURB IF NECESSARY. INSTALL FALSEWORK SUPPORTS AND FALSEWORK BEAM.
2. DRILL HOLES IN GRID DECK FOR SUSPENDER RODS.
3. INSTALL FALSEWORK SUSPENDER RODS. TIGHTEN EACH SUSPENDER ROD SUCH THAT EVERY ROD IS IN TENSION PRIOR TO THE REMOVAL OF ANY EXISTING STRUCTURAL STEEL COMPONENT.
4. TEMPORARILY REMOVE/DISCONNECT EXISTING COMPONENTS AS INDICATED ON THE PLANS THAT MAY BE NECESSARY FOR REPLACEMENT OF FLOORBEAM COVER PLATE AND ANGLES. REMOVAL OF COMPONENTS NOT INDICATED ON THE PLANS SHALL NOT BE PERMITTED UNLESS APPROVED BY THE ENGINEER.
5. REMOVE EXISTING FLOORBEAM FLANGE ANGLES AND COVER PLATE.
6. CLEAN AND PRIME EXISTING EXPOSED CONTACT SURFACES.
7. INSTALL NEW FLANGE ANGLES AND COVER PLATE.
8. REINSTALL ALL EXISTING COMPONENTS THAT WERE REMOVED OR DISCONNECTED. PAINT ADDITIONAL COATS ON NEW STEEL, REINSTALLED STEEL AND ANY NEWLY PAINTED SURFACES DAMAGED BY THIS REPAIR AS PER THE SPECIFICATIONS.
9. REPAIR HOLES IN THE GRID DECK.

FASTENER LEGEND FOR DETAIL "A"

- EXISTING FASTENER
- REPLACE EXISTING FASTENER WITH 7/8" DIA. HIGH STRENGTH BOLT
- DRILL HOLE AND FURNISH AND INSTALL 7/8" DIA. HIGH STRENGTH BOLT

APR
 AFTER INSTALLATION OF NEW ANGLES GAP WAS LESS THAN 1/16" - FILLETS WERE NOT USED

INSTALL 1/16" FILL PLATES IN BETWEEN NEW FLANGE ANGLES AND EXISTING STIFFENER ANGLES. FILLERS SHALL BE ASTM A36 STEEL OR AN APPROVED EQUAL

TEMPORARILY REMOVE AND REINSTALL SHELF ANGLE, STIFFENER ANGLE, AND FILL PLATES.
 TOP OF SHELF ANGLE SHALL BEAR AGAINST NEW FLOORBEAM ANGLES. TOP OF STIFFENER ANGLE SHALL BEAR AGAINST UNDERSIDE OF SHELF ANGLE.

DRILL HOLES IN DECK TO PERMIT PASSAGE OF SUSPENDER RODS. ALSO SEE GRID DECK HOLE REPAIR DETAIL

REMOVE ONE COVER PLATE FASTENER AND INSTALL SUSPENDER ROD THROUGH THE EXISTING HOLE (TYP.)

OUTER ROWS OF FASTENERS. DO NOT INSTALL FALSEWORK SUSPENDER RODS THROUGH THESE HOLES

REMOVE EXISTING METAL THAT IS LESS THAN 1/8" THICK, NOT TO EXCEED THE DIMENSIONS SHOWN. GRIND EDGES SMOOTH.

CADD DESIGN DM DESIGN ABT CHKD. JFB

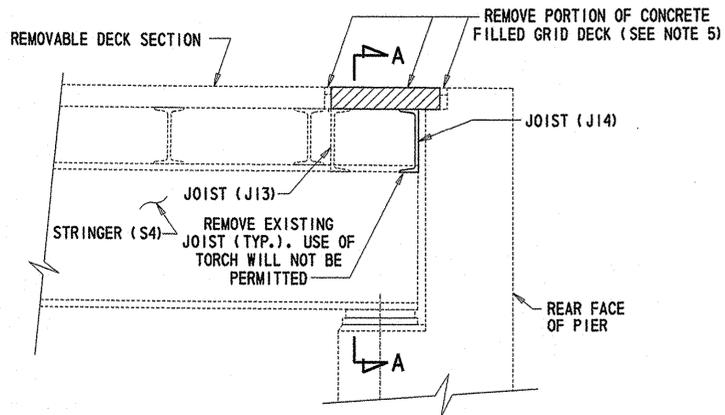
9/21/2006 21-074-07

**ANCHORAGE SPAN
MISCELLANEOUS DETAILS**

**BR 688
SOUTH MARKET STREET BRIDGE
REHABILITATION**

REVISIONS

- NOTES:**
- AS BUILT**
- COST OF JOIST REPLACEMENT IS INCIDENTAL TO PAY ITEM 605655, "BEARING ANCHOR BOLT REPLACEMENT". ANY TEMPORARY SUPPORTS, DEEMED NECESSARY BY THE CONTRACTOR SHALL BE CONSIDERED INCIDENTAL TO PAY ITEM 605655, "BEARING ANCHOR BOLT REPLACEMENT".
 - WATER IN BOTH PIERS SHALL BE REMOVED, COST TO BE INCLUDED IN PAY ITEM 202530, "REMOVAL OF CONTAMINATED WATER".
- NOTES FOR JOIST REPLACEMENT DETAIL:**
- FOR ADDITIONAL DETAILS, SEE INFORMATIONAL SHEETS.
 - FOR LOCATION OF REPAIR, SEE SHEET "FRAMING PLAN - NORTH LEAF".
 - FOR REMOVAL DETAILS OF CONCRETE-FILLED GRID DECK, SEE SHEET "GRID DECK, SIDEWALK AND RAILING REPAIR PLAN".
- NOTES FOR STRINGER WEB CRACK REPAIR DETAIL:**
- FOR ADDITIONAL DETAILS, SEE INFORMATIONAL SHEETS.
 - FOR LOCATION OF REPAIR, SEE SHEET "FRAMING PLAN - NORTH LEAF".
 - CONTRACTOR SHALL FIELD VERIFY LIMITS OF CRACK BY MAGNETIC PARTICLE TESTING OR DYE PENETRATION TESTING. IF LIMITS OF CRACK ARE WITHIN 2" OF ESTIMATED LIMITS, THEN DRILL HOLES AT ENDS OF CRACK AND PUT IN BOLTS. COST IS INCLUDED IN PAY ITEM 605585, "STEEL STRUCTURE REPAIR", AS A STRINGER WEB CRACK REPAIR.
- NOTES FOR TRUNNION COLUMN CONNECTION PLATE REPAIR DETAIL:**
- FOR ADDITIONAL DETAILS, SEE INFORMATIONAL SHEETS.
 - WHERE TRUNNION COLUMN IS SCHEDULED TO HAVE BOTH CONNECTION PLATES REPLACED, REPLACEMENT SHALL BE ONE PLATE AT A TIME. THIS WORK SHALL NOT BE DONE WHEN THERE IS TRAFFIC ON THE BRIDGE. COST IS INCLUDED IN PAY ITEM 605585, "STEEL STRUCTURE REPAIR", AS A TRUNNION COLUMN CONNECTION PLATE REPLACEMENT.

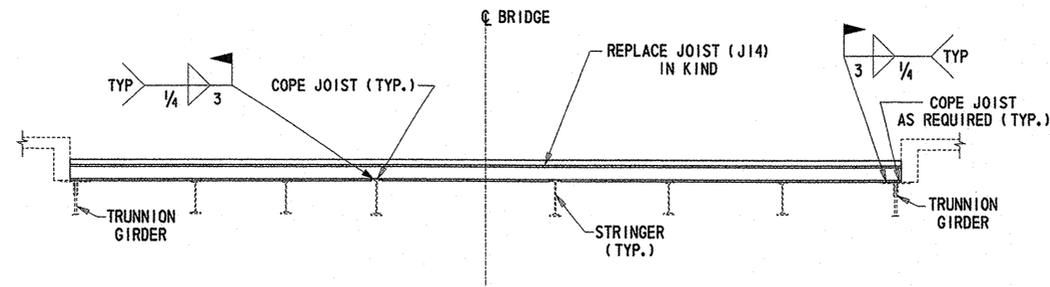


SECTION E-E

FOR LOCATION, SEE SHEET "FRAMING PLAN - NORTH LEAF"
SCALE: 1" = 1'-0"

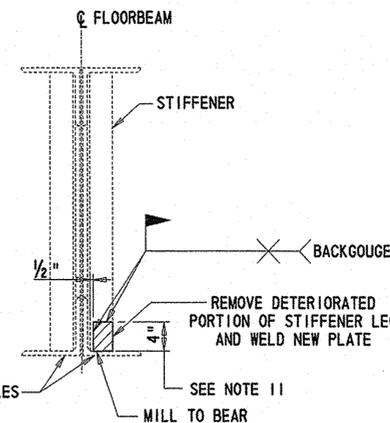
JOIST REPLACEMENT DETAIL AT NORTH PIER

(SEE NOTE 1)



SECTION A-A

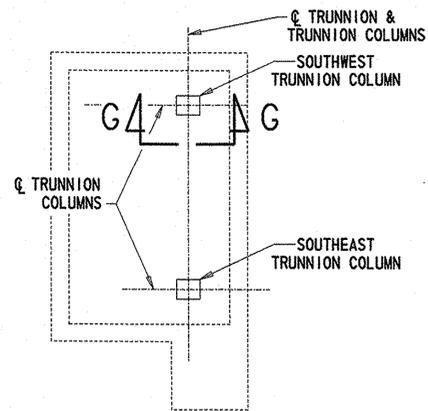
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SECTION F-F

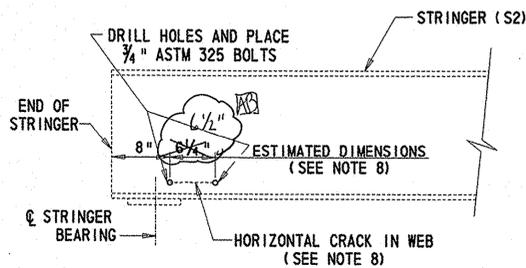
SOUTH PIER FLOORBEAM STIFFENER REPAIR

FOR LOCATION SEE "FRAMING PLAN - SOUTH LEAF"
SCALE: 1" = 1'-0"



**SOUTH PIER
KEY PLAN**

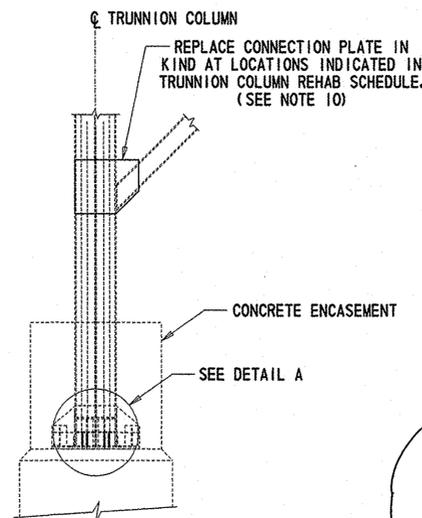
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SECTION G-G

**STRINGER WEB CRACK
REPAIR DETAIL**

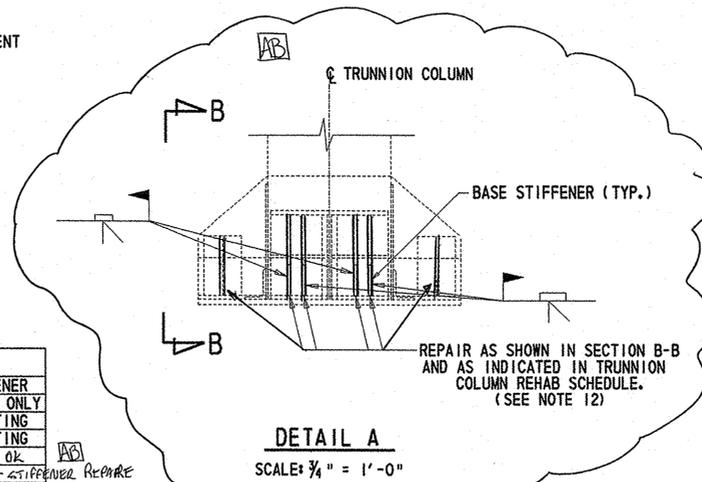
FOR LOCATION, SEE SHEET "FRAMING PLAN - NORTH LEAF"
SCALE: 1" = 1'-0"



SECTION G-G

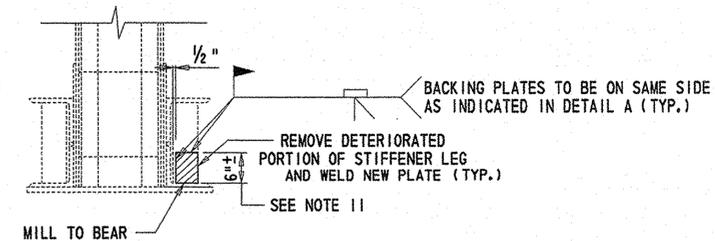
SCALE: 1/4" = 1'-0"

TRUNNION COLUMN LOCATION	CONNECTION PLATE		BASE STIFFENER
	INBOARD	OUTBOARD	INBOARD SIDE ONLY
NORTHEAST CORNER	REPLACE	LEAVE EXISTING	LEAVE EXISTING
NORTHWEST CORNER	REPLACE	REPLACE	LEAVE EXISTING
SOUTHEAST CORNER	REPLACE	REPLACE	REPAIR OR
SOUTHWEST CORNER	LEAVE EXISTING	LEAVE EXISTING	REPAIR - STIFFENER REPAIR



DETAIL A

SCALE: 3/4" = 1'-0"



SECTION B-B

SCALE: 3/4" = 1'-0"

TRUNNION COLUMN REPAIR DETAILS

9/21/2006 21-074-07

FEET/12/1000
TEXT SIZE
REFERENCE
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CADD DESIGN
M.L.A.
DESIGN
REJ.
CHKD.
A.B.T.

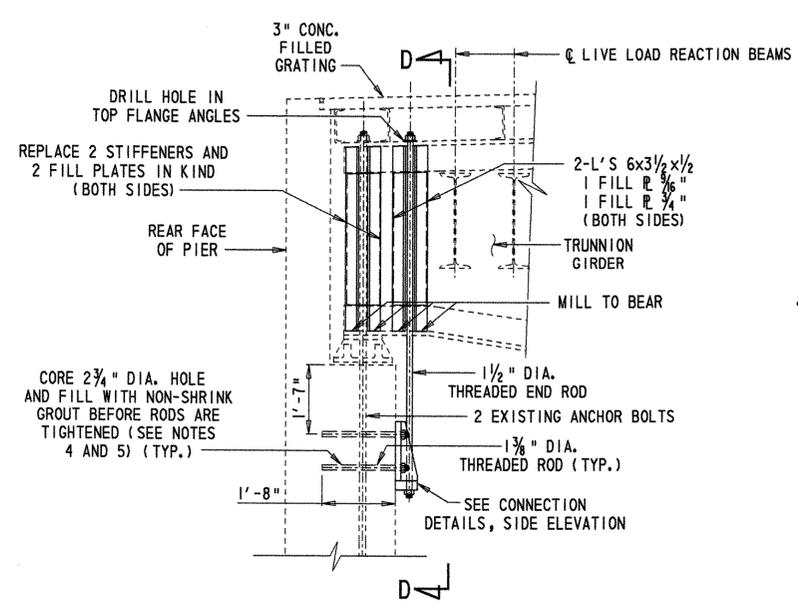
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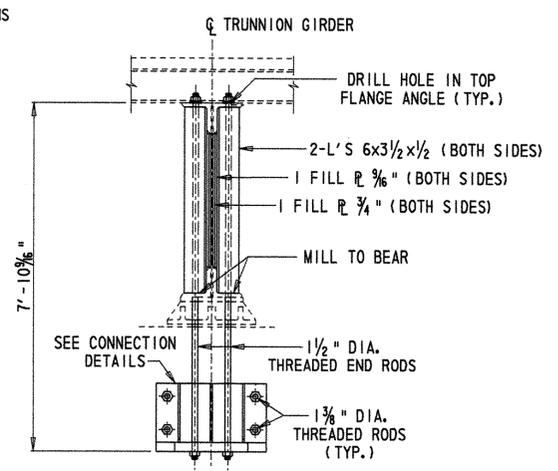
BEARING REPAIR DETAILS 2

**BR 688
 SOUTH MARKET STREET BRIDGE
 REHABILITATION**

REVISIONS	

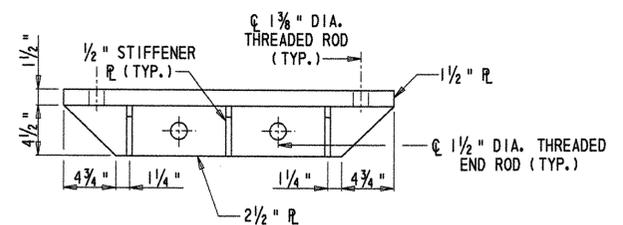


DETAIL "C"
 FOR LOCATION SEE SHEET "TRUNNION GIRDER REPAIRS"
TRUNNION GIRDER REAR ANCHORAGE REPAIR
 (SEE NOTE 9)
 SCALE: 1/2" = 1'-0"

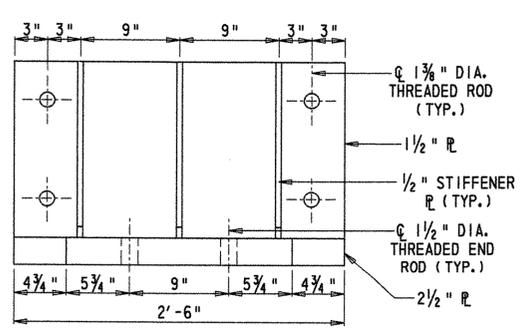


EXISTING ANCHOR BOLTS NOT SHOWN FOR CLARITY.

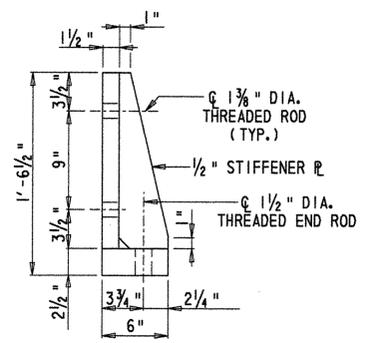
SECTION D-D



PLAN

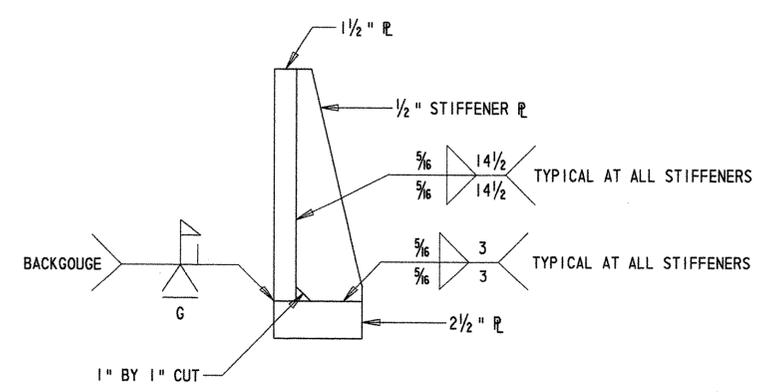


FRONT ELEVATION



SIDE ELEVATION

CONNECTION DETAILS
 SCALE: 1/2" = 1'-0"



NOTE: ALL FILLET WELDS SHALL TERMINATE 1/4" BEFORE EDGES.

WELD DETAILS
 SCALE: 2" = 1'0"

- NOTES:**
- COST OF REPAIR TO BE INCLUDED IN PAY ITEM 605585, "STEEL STRUCTURE REPAIR", AS A TRUNNION GIRDER REAR ANCHORAGE REPAIR.
 - FOR ADDITIONAL INFORMATION, SEE REFERENCE SHEETS:
 - A. BASCULE PIER SECTIONS
 - B. BASCULE PIERS AND APPROACH WALLS LONGITUDINAL SECTION
 - C. BASCULE PIERS LONGITUDINAL AND CROSS SECTIONS
 - D. TRUNNION GIRDERS-COLUMNS-ETC. (SHOP DRAWING)
 - ALL THREADED ANCHOR RODS SHALL CONFORM TO ASTM A354 (GRADE BD) AND ARE INCIDENTAL TO PAY ITEM 605585, "STEEL STRUCTURE REPAIR", AS A TRUNNION GIRDER REAR ANCHORAGE REPAIR.
 - GROUT SHALL BE PROPRIETARY PRE-MIXED PACKAGED, NON-SHRINK, NON-METALLIC GROUT SUCH AS FIVE STAR GROUT (FROM FIVE STAR PRODUCTS, INC.) OR AN APPROVED EQUAL. SHRINKAGE REQUIREMENTS AS PER THE US ARMY CORPS OF ENGINEERS CRD C-621. GROUT IS INCIDENTAL TO PAY ITEM 605585, "STEEL STRUCTURE REPAIR", AS A TRUNNION GIRDER REAR ANCHORAGE REPAIR.
 - CORING OF EXISTING CONCRETE SHALL BE DONE IN ACCORDANCE WITH SECTION 605.29 OF THE STANDARD SPECIFICATIONS. CORING IS INCIDENTAL TO PAY ITEM 605585, "STEEL STRUCTURE REPAIR", AS A TRUNNION GIRDER REAR ANCHORAGE REPAIR.
 - FOR COUNTERWEIGHT CONCRETE REMOVAL AT ANCHORAGE, SEE SHEET "COUNTERWEIGHT MODIFICATION PLAN".
 - FOR OVERVIEW OF REPAIR LOCATIONS, SEE SHEET "TRUNNION GIRDER REPAIRS".
 - ALL BOLT HOLES IN EXISTING STEEL SHALL BE DRILLED. ALL CONNECTION BOLTS AND RIVETS TO BE REPLACED SHALL CONFORM TO ASTM A325 AND ARE INCIDENTAL TO PAY ITEM 605585, "STEEL STRUCTURE REPAIR", AS A TRUNNION GIRDER REAR ANCHORAGE REPAIR.
 - REAR ANCHORAGE REPAIR DETAIL IS SHOWN FOR THE EAST TRUNNION GIRDER AT NORTH PIER. REPAIR IS SIMILAR AT OTHER THREE TRUNNION GIRDERS.

CADD DESIGN EYS DESIGN REJ CHKD. JFB

TEXT SIZE
REFERENCE
.125
.1875
.25

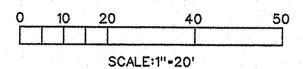
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70 71 72 73 74 75 76 77 78 79
80 81 82 83 84 85 86 87 88 89
90 91 92 93 94 95 96 97 98 99
100



BR. 1-688

CONTRACT	COUNTY	FEDERAL AID PROJECT NO.	SHEET NO.	TOTAL SHTS.
21-074-07	NEW CASTLE	EBHN-NO29 (2)	23	169

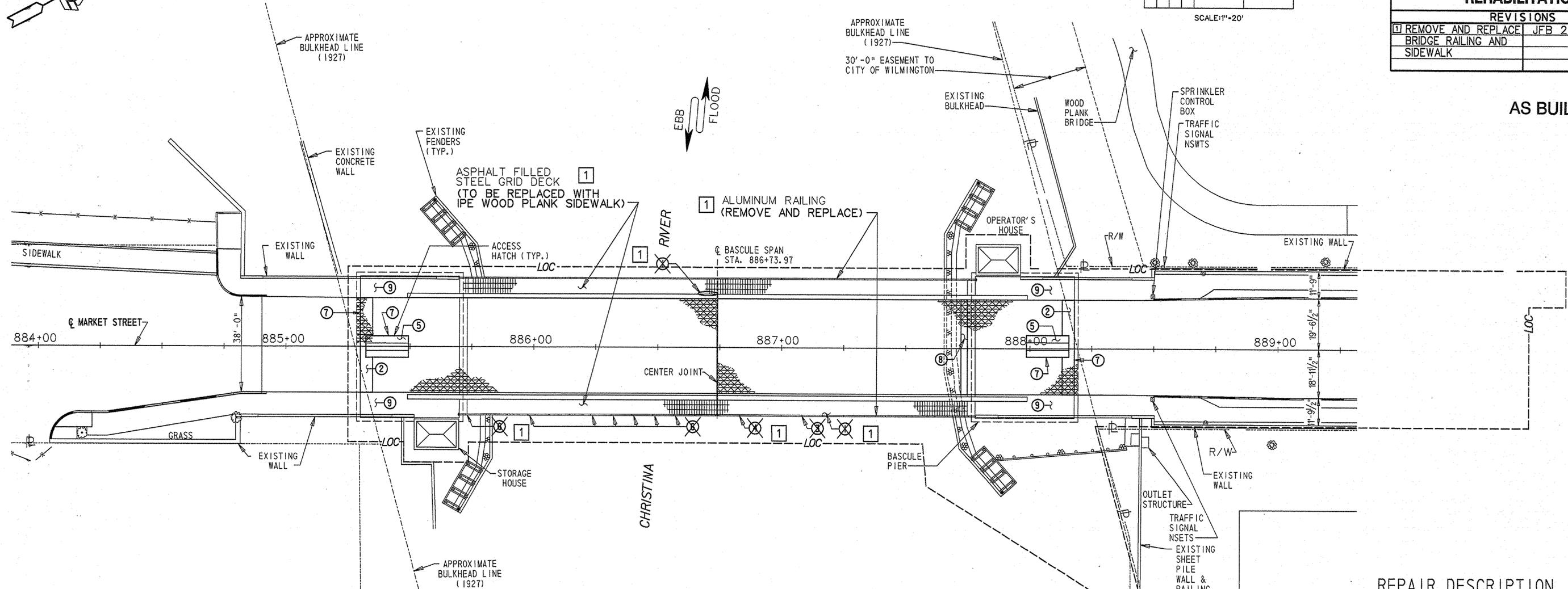
GRID DECK, SIDEWALK AND RAILING REPAIR PLAN



**BR 688
SOUTH MARKET STREET BRIDGE
REHABILITATION**

REVISIONS	
1	REMOVE AND REPLACE BRIDGE RAILING AND SIDEWALK
	JFB 2/26/04

AS BUILT



PLAN
SCALE: 1" = 20'-0"

NOTES:

- FOR ADDITIONAL INFORMATION, SEE REFERENCE SHEETS:
 - BASCULE PIER SECTIONS
 - BASCULE PIERS AND APPROACH WALLS LONGITUDINAL SECTION
 - BASCULE PIERS LONGITUDINAL AND CROSS SECTION
 - NEW DECK FRAMING OVER PIERS - DETAILS OF REMOVABLE PANELS
 - NEW RAILING AND SIDEWALK DETAILS
 - DETAILS OF NEW ROADWAY GRATING

2. METHOD OF PAYMENT:

REPAIR DESCRIPTION NUMBER	PAY ITEM
1	STEEL STRUCTURE REPAIR, 605585
2, 7	BEARING ANCHOR BOLT REPLACEMENT, 605655
3, 4, 6	REPAIRING BRIDGE RAILING POST, 720561
5	REPLACING STEEL RIVETS / BOLTS, 605578
8	PORTLAND CEMENT CONCRETE MASONRY, CLASS D, 602013
9	SEISMIC RETROFIT, 605679

3. FOR REPAIR DETAILS, SEE SHEET "GRID DECK, SIDEWALK AND RAILING REPAIR DETAILS".

1-4. HEAT STRAIGHTENING SHALL BE DONE IN ACCORDANCE WITH SECTION 606.30 OF THE STANDARD SPECIFICATIONS.

REPAIR DESCRIPTION

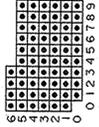
- HEAT STRAIGHTEN SIDEWALK GRID SECTION (SEE NOTE 4).
- REMOVE PORTION OF CONCRETE-FILLED GRID DECK FOR ACCESS TO REPAIRS AT THE REAR OF THE PIER. REPLACE WITH 3" CONCRETE-FILLED GRID DECK.
- REPAIR POST WELD (ON BOTH SIDES OF POST).
- REPAIR BROKEN POST CONNECTION TO FASCIA.
- REPLACE THE HOLD DOWN BOLTS AT THE REMOVABLE PANEL.
- REPLACE BROKEN POST.
- REPLACE PREFORMED BITUMINOUS FILLER AND HOT POURED JOINT SEALER.
- REMOVE DEBRIS FROM THE GRID DECK AT THE NORTH END OF THE NORTH LEAF. CLEAN AND FILL WITH CONCRETE.
- REPLACE ACCESS WALKWAYS TO LIVE LOAD ANCHORAGES. SEE PREVIOUS REPAIR NO. 1 ON REFERENCE SHEETS A, B AND C, AS INDICATED IN NOTE 1.

7 SIKAFLEX IC-SL USED IN PLACE OF BITUMINOUS FILLER AND HOT POURED JOINT SEALER

CADD DESIGN RJS DESIGN REJ CHKO JRW

9/21/2006 21-074-07

TEXT SIZE REFERENCE
 .125
 .1875
 .25



BASCULE PIER SIDEWALK REPLACEMENT DETAILS 1

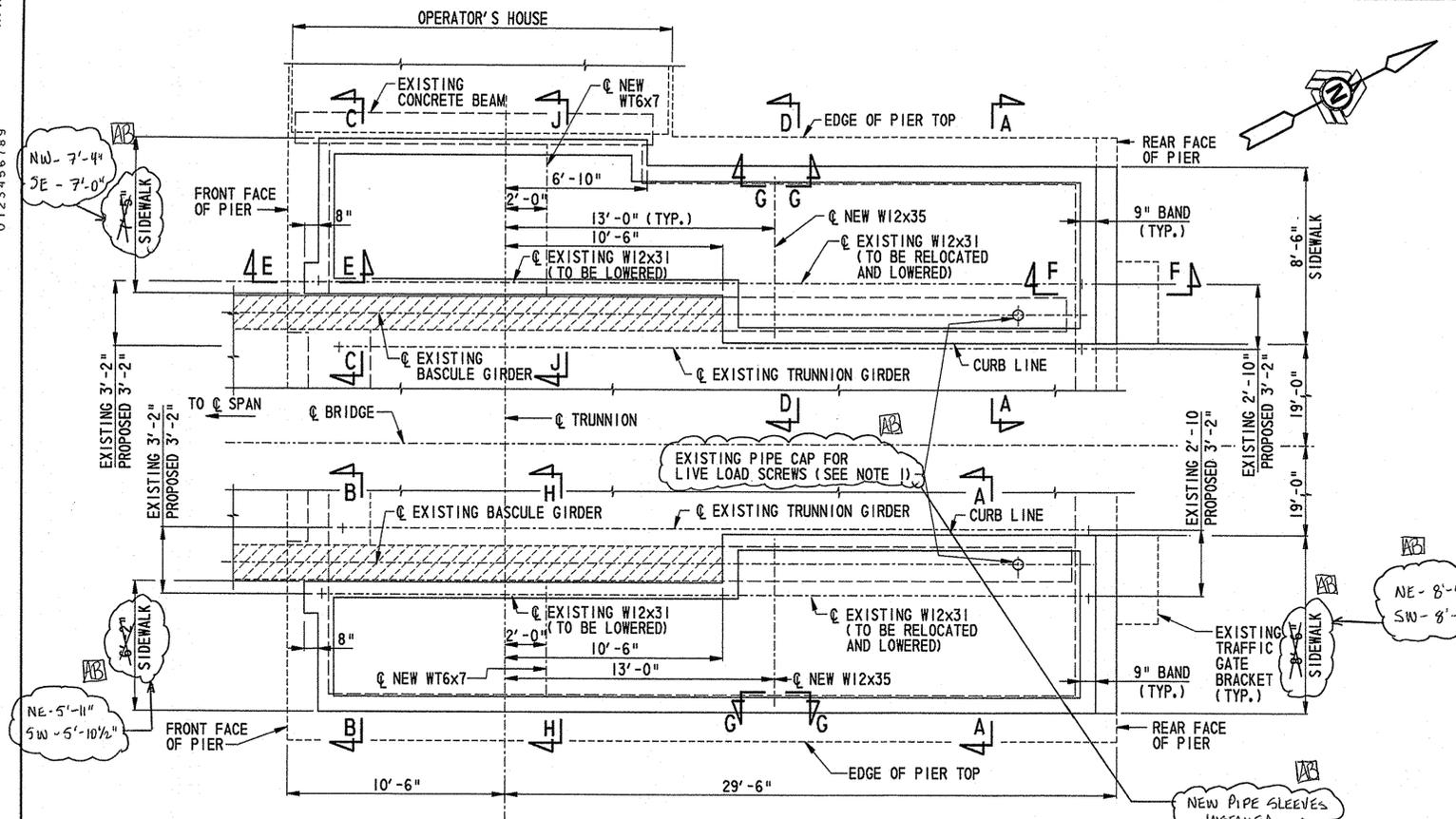
**BR 688
SOUTH MARKET STREET BRIDGE REHABILITATION**

REVISIONS	
2	NEW SHEET
	JFB 9/28/04

AS BUILT

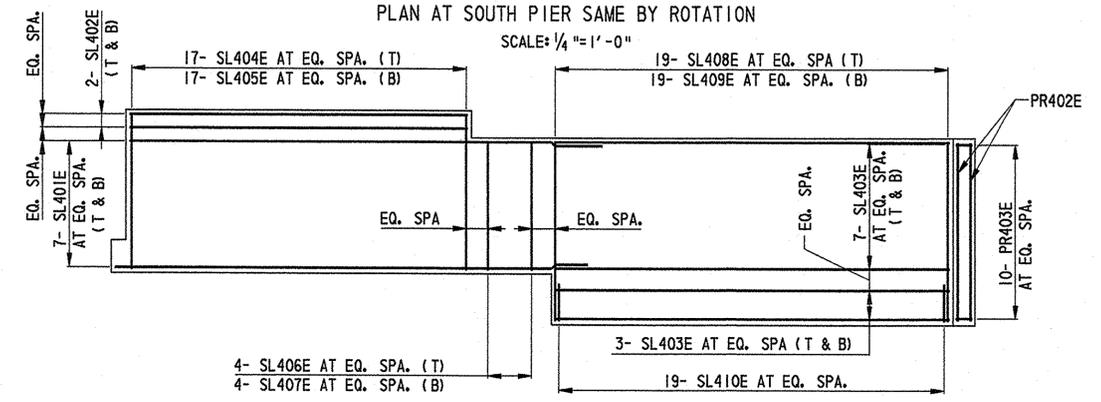
LEGEND:
 (T) = TOP REINFORCEMENT
 (B) = BOTTOM REINFORCEMENT
 EQ. SPA. = EQUAL SPACES

NOTES:
 1. EXISTING PIPE CAP FOR LIVE LOAD SCREWS SHALL BE SET FLUSH WITH PROPOSED SIDEWALK GRADE.
 NEW PIPE SLEEVES INSTALLED

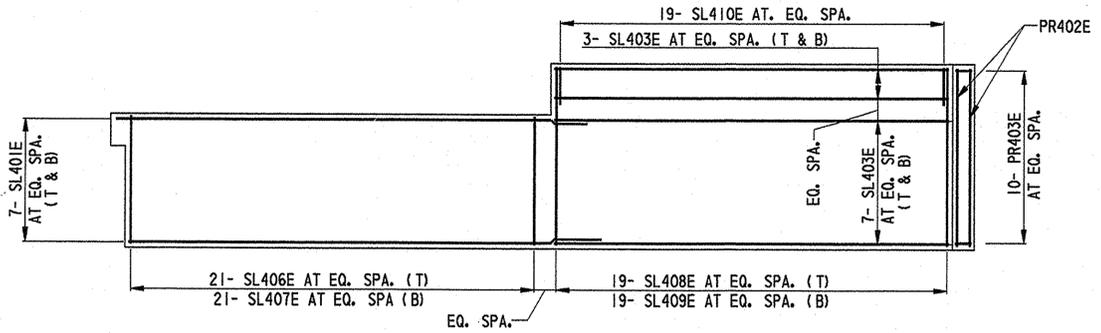


NORTH PIER - NEW SIDEWALK PLAN

PLAN AT SOUTH PIER SAME BY ROTATION
 SCALE: 1/4" = 1'-0"



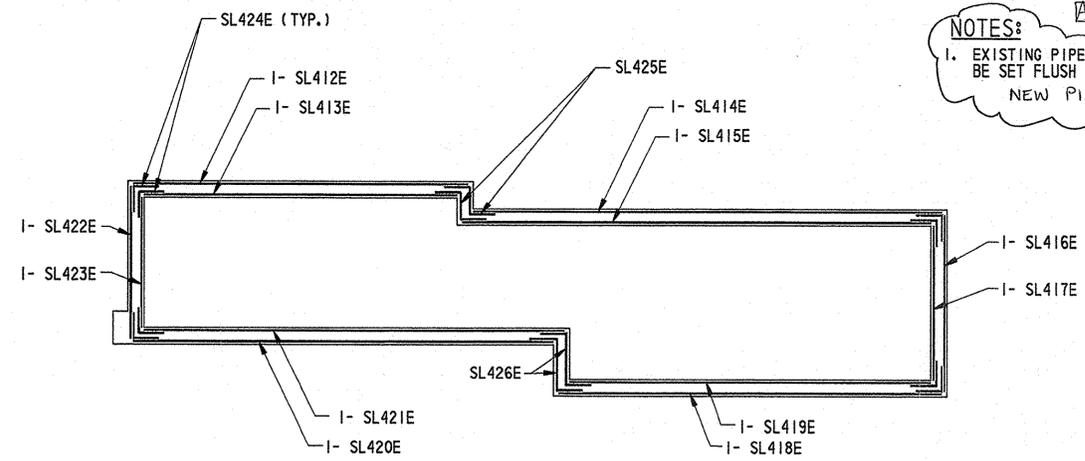
NORTHWEST SIDEWALK



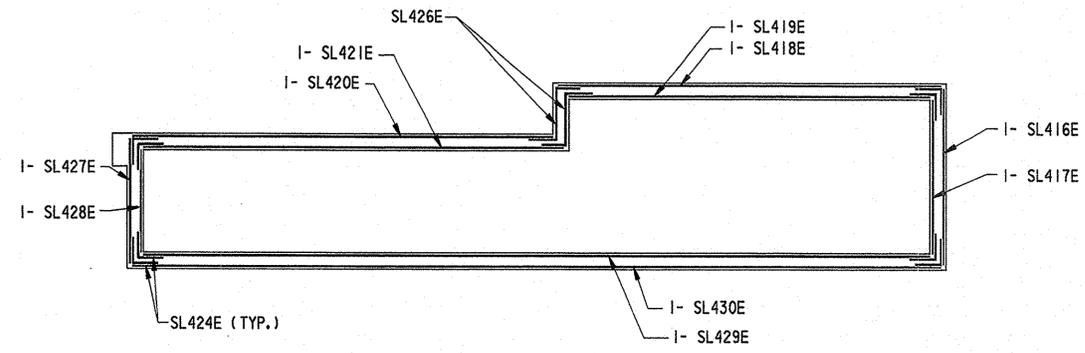
NORTHEAST SIDEWALK

NORTH PIER - SIDEWALK REINFORCEMENT PLAN

PLAN AT SOUTH PIER SAME BY ROTATION
 SCALE: 1/4" = 1'-0"



NORTHWEST SIDEWALK



NORTHEAST SIDEWALK

NORTH PIER - SIDEWALK PERIMETER BAND REINFORCEMENT PLAN

PLAN AT SOUTH PIER SAME BY ROTATION
 SCALE: 1/4" = 1'-0"

CADD DESIGN M.L.A. DESIGN REJ. CHKD. JFB

9/21/2006 21-074-07

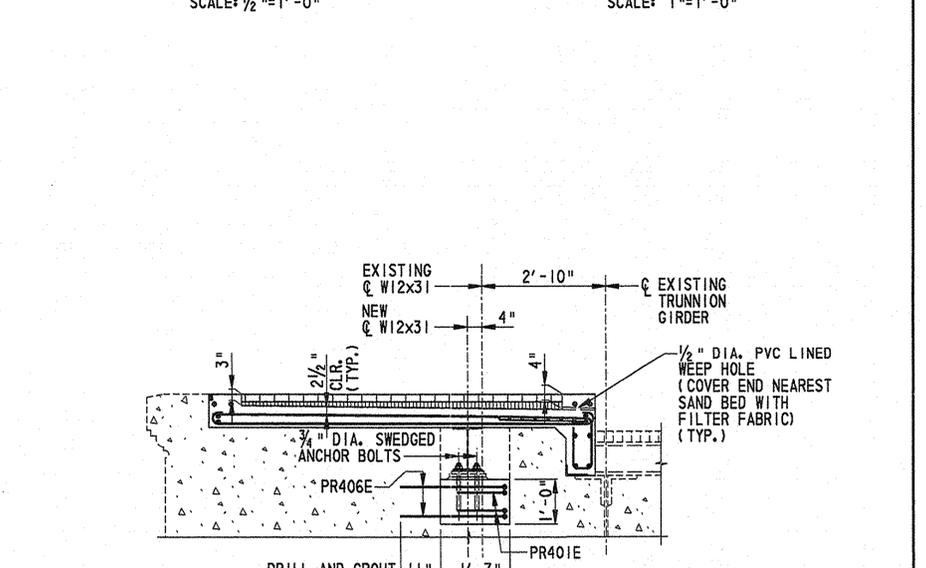
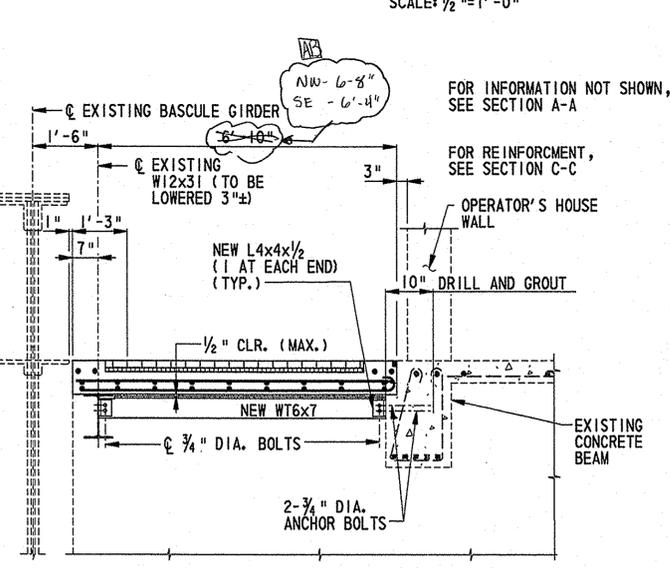
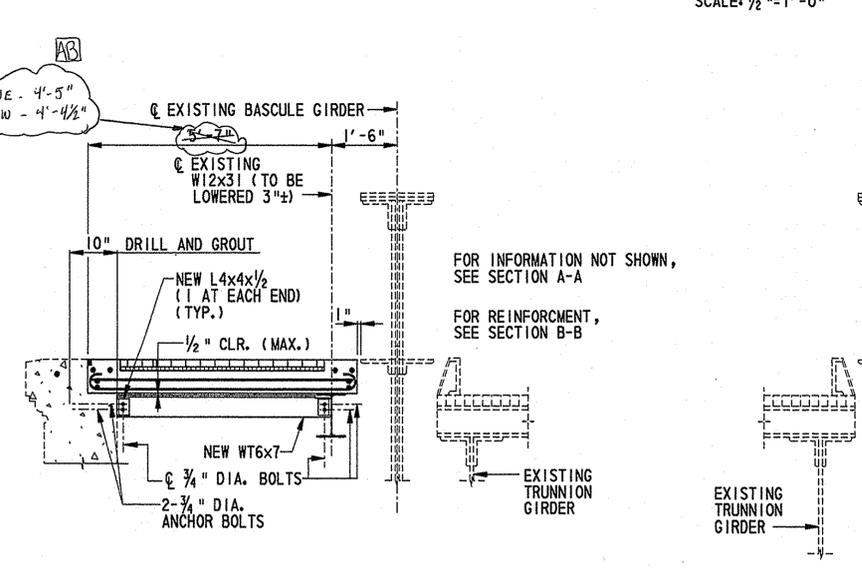
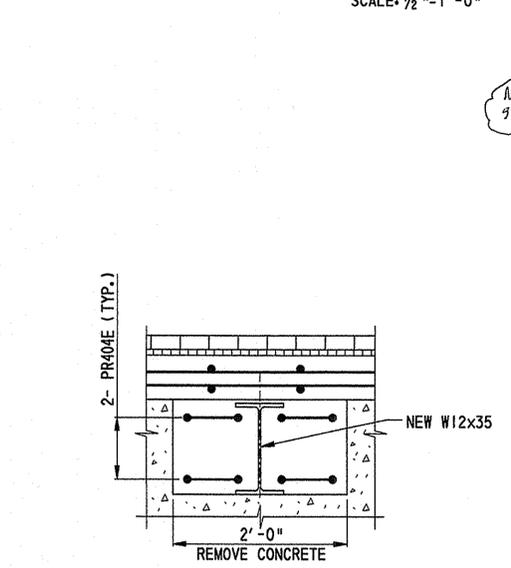
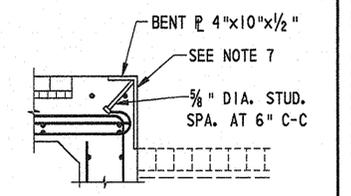
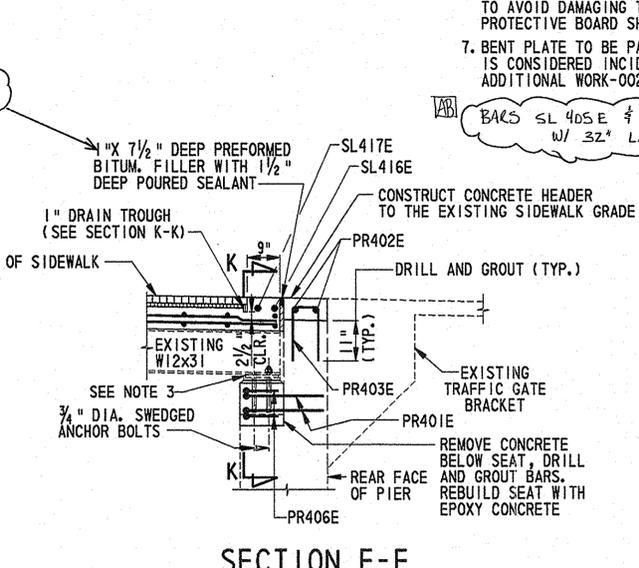
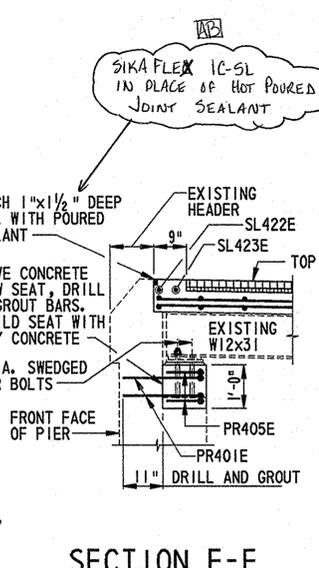
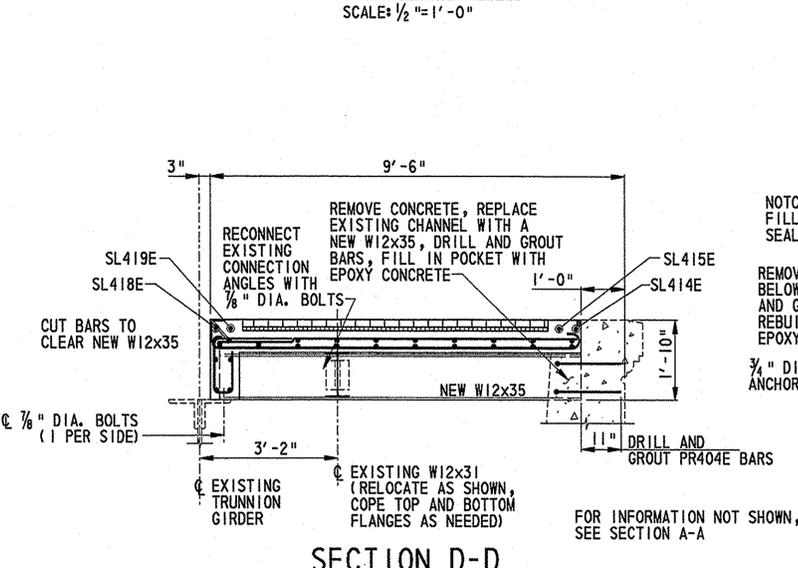
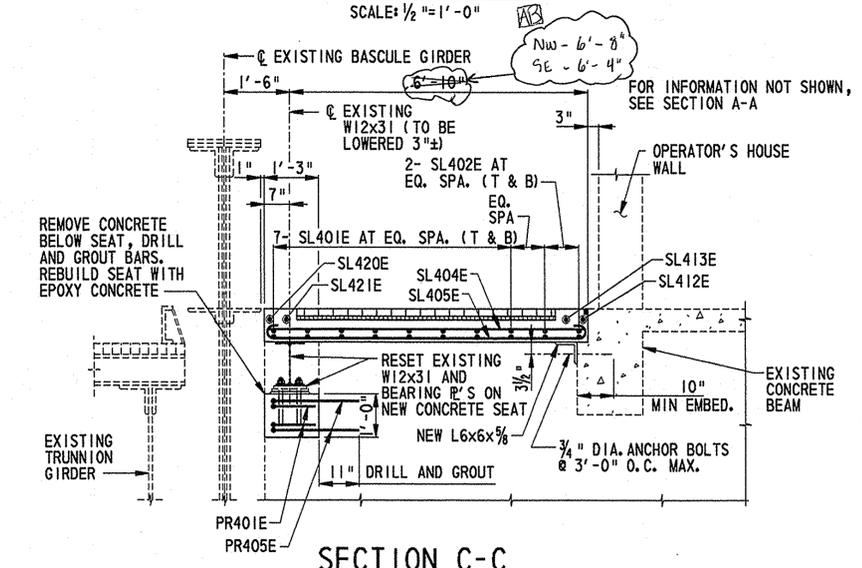
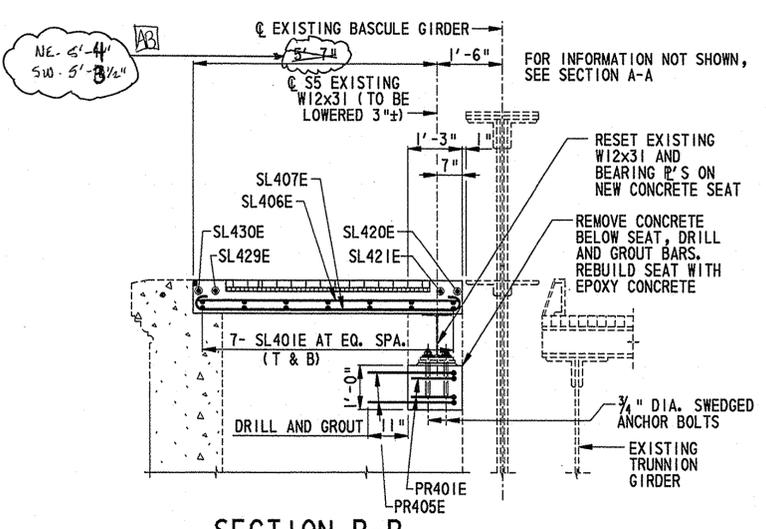
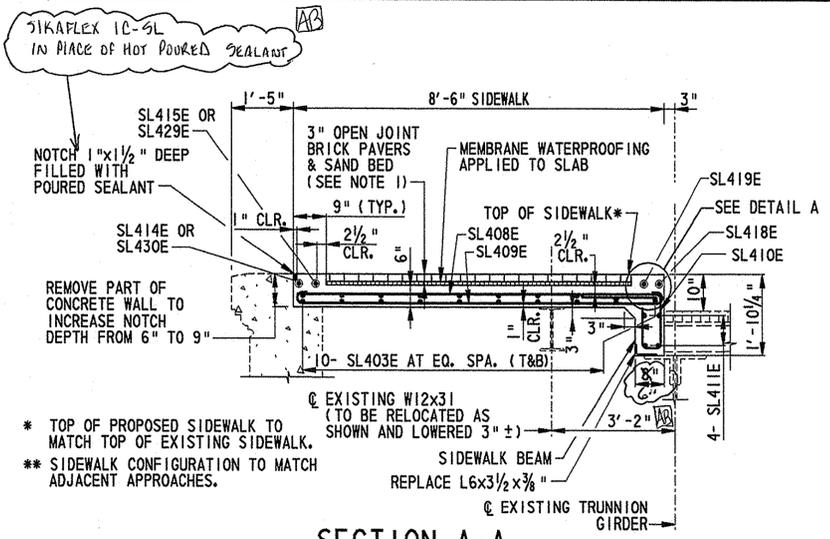
TEXT SIZE REFERENCE .125 .1875 .25

BR. 1-688	CONTRACT 21-074-07	COUNTY NEW CASTLE	FEDERAL AID PROJECT NO. EBHN-NO29 (2)	SHEET NO. 23B	TOTAL SHTS. 169
BR 688 SOUTH MARKET STREET BRIDGE REHABILITATION					
REVISIONS					
NEW SHEET			JFB 9/28/04		

BASCULE PIER SIDEWALK REPLACEMENT DETAILS 2

- NOTES:**
- PATTERN AND COLOR OF BRICK PAVERS SHALL CLOSELY MATCH THE EXISTING BRICK SIDEWALKS ON THE NORTH APPROACHES.
 - ALL EXISTING SURFACES IN CONTACT WITH NEW CONCRETE SHALL BE COATED WITH AN EPOXY BONDING COMPOUND PRIOR TO POURING NEW CONCRETE
 - BEARINGS AT REAR WALL TO HAVE SLOTTED BOLT HOLES IN STRINGER AND TOP $\frac{1}{8}$ " DIA. x $\frac{1}{2}$ " LONG.
 - ALL BOLTS SHALL CONFORM TO ASTM A325.
 - ALL ANCHOR BOLTS SHALL CONFORM TO ASTM F1554 GRADE 55.
 - THE EDGES OF THE DRAIN TROUGH SHALL HAVE ROUNDED EDGES TO AVOID DAMAGING THE WATERPROOF MEMBRANE. THE PROTECTIVE BOARD SHALL NOT EXTEND OVER THE DRAIN TROUGH.
 - BENT PLATE TO BE PAINTED TO MATCH THE GIRDERS. PAINTING IS CONSIDERED INCIDENTAL TO THE PAY ITEM ADDITIONAL WORK-002, BASCULE PIER SIDEWALK REPLACEMENT

AS BUILT



CADD DESIGN M.L.A. DESIGN R.E.J. CHKD. J.F.B.

9/21/2006 21-074-07

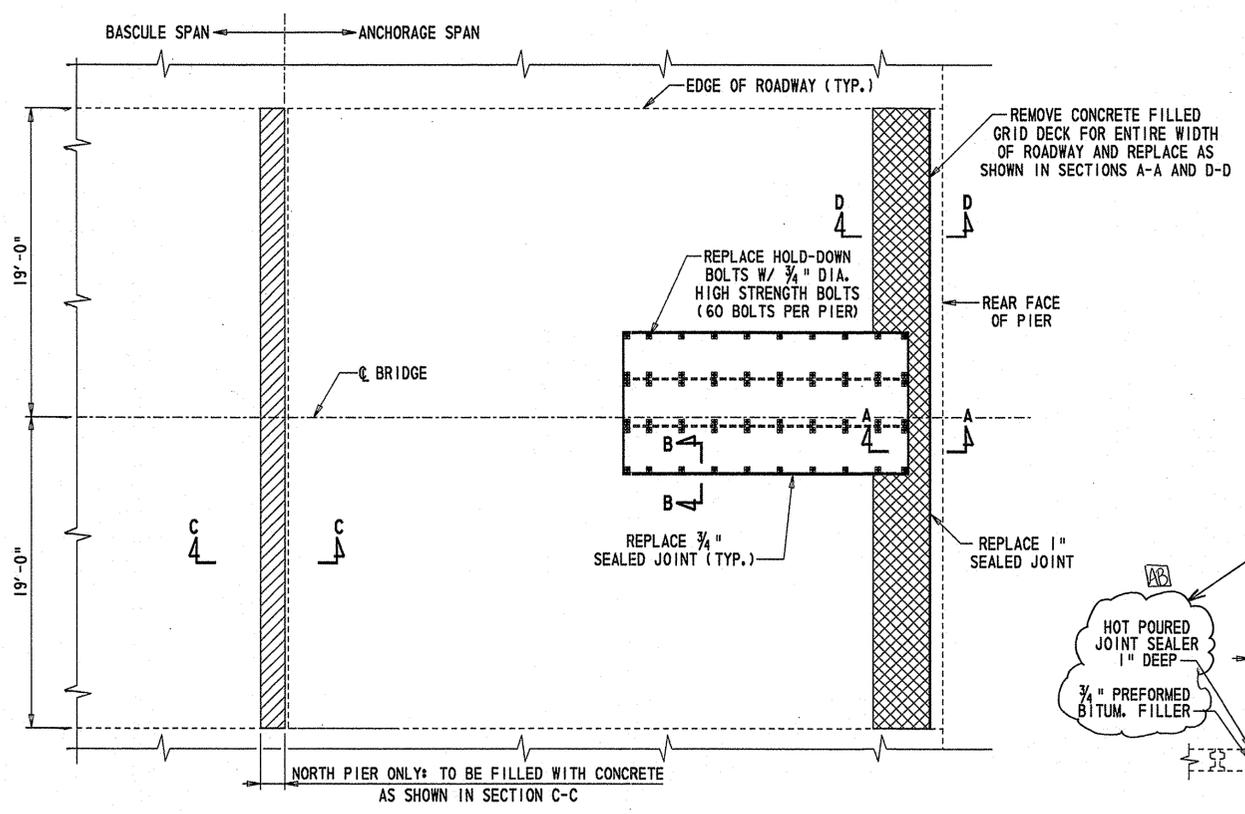
TEXT SIZE REFERENCE
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BR 688 SOUTH MARKET STREET BRIDGE REHABILITATION	
REVISIONS	
1	REMOVE RAILING DETAIL AND NOTES
	JFB 2/26/04

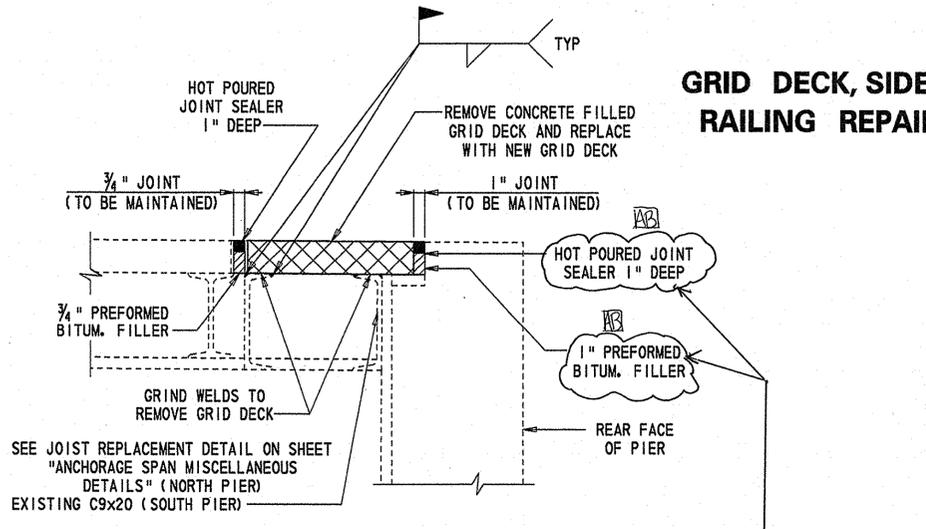
GRID DECK, SIDEWALK AND RAILING REPAIR DETAILS

AS BUILT

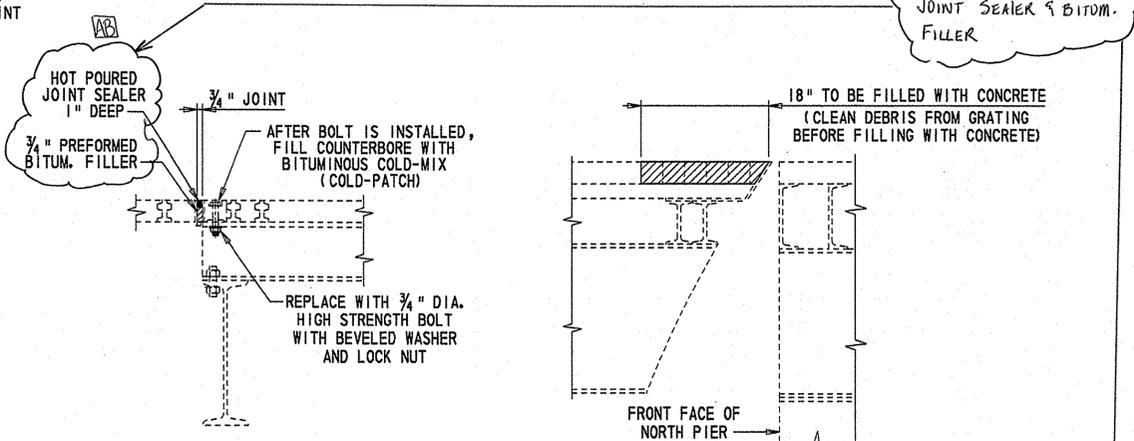
- NOTES:**
- FOR REFERENCE SHEETS, LOCATION OF REPAIRS AND FOR ITEMS OF WORK AND THEIR RESPECTIVE PAY ITEMS, SEE SHEET "GRID DECK, SIDEWALK AND RAILING REPAIR PLAN".
 - COST OF INSTALLATION OF NEW JOIST (SECTION D-D) IS INCIDENTAL TO PAY ITEM 605655, "BEARING ANCHOR BOLT REPLACEMENT".
- DECK AND DECK JOINT REPAIR NOTES:**
- A STEEL PLATE SHALL BE PLACED OVER THE PORTION OF THE OPEN DECK WHERE TRAFFIC IS TO BE MAINTAINED PER THE STAGING PLANS. THICKNESS OF PLATE SHALL BE DETERMINED BY CONTRACTOR AND SUBMITTED FOR APPROVAL AND IS CONSIDERED INCIDENTAL TO PAY ITEM 605655, "BEARING ANCHOR BOLT REPLACEMENT".
 - GRID DECK IS TO BE REPLACED IN-KIND WITH 3" I BEAM GRID DECK, MIN. S = 0.82 IN² (TOP) AND MIN. S = 0.88 IN² (BOTTOM) AND PAID FOR UNDER PAY ITEM 605591, "STEEL OPEN GRID BRIDGE DECK". REPLACEMENT CONCRETE FOR GRID DECK SHALL BE PAID FOR UNDER PAY ITEM 602013, "PORTLAND CEMENT CONCRETE MASONRY, CLASS D". NO SEPARATE PAYMENT WILL BE MADE FOR FORM WORK UNDER GRID DECK.
- RAILING REPAIR NOTES:**
- ALL ALUMINUM SHALL BE ALUMINUM ALLOY 6061 T6.
 - THIS WELD SHALL BE DONE AT ALL LOCATIONS FOR REPAIR ITEMS ③ AND ④.
 - ANY FASTENER THAT IS REMOVED TO REPLACE RAIL POSTS SHALL BE REUSED, EXCEPT FOR THE 8 FASTENERS (OR 4 FASTENERS IF CONNECTION IS AT MID-POINT BETWEEN SIDEWALK BRACKETS) IN THE NEW CONNECTION PLATES.



PARTIAL PLAN OF BRIDGE DECK (NORTH PIER)
 SCALE: 3/8" = 1'-0"

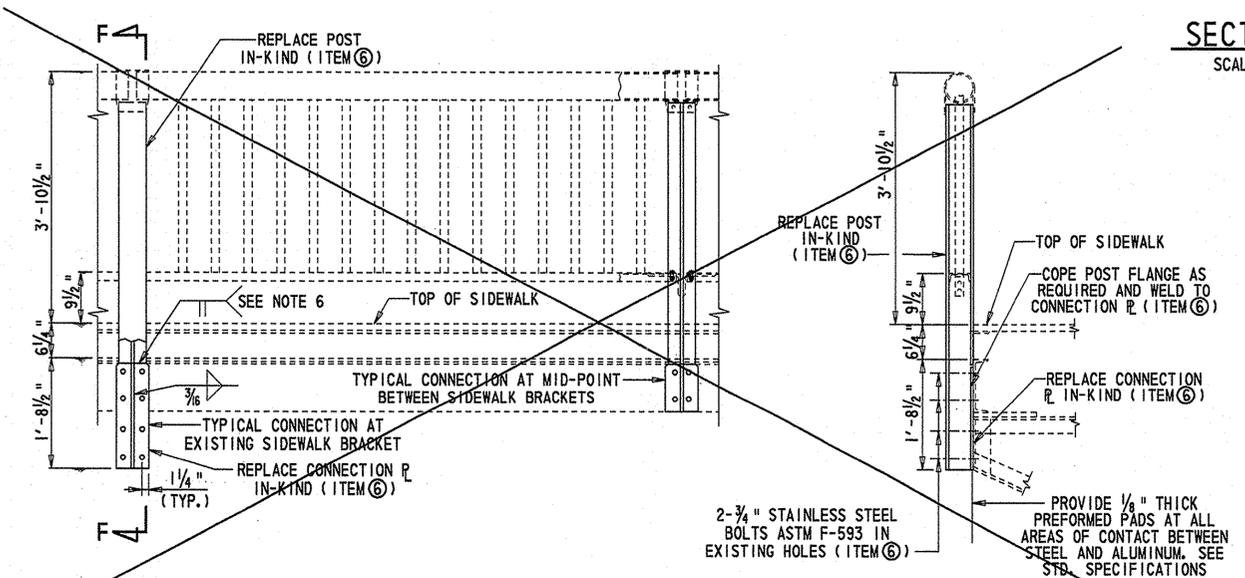


SECTION A-A
 SCALE: 1 1/2" = 1'-0"

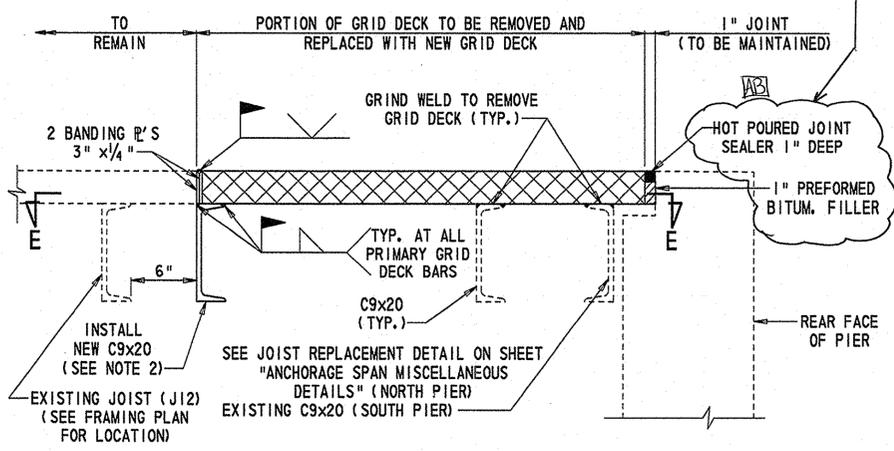


SECTION B-B
 SCALE: 1" = 1'-0"

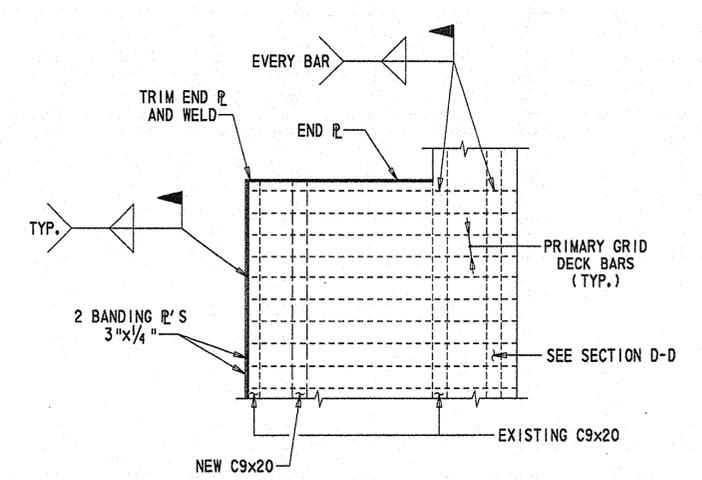
SECTION C-C
 SCALE: 1" = 1'-0"



ELEVATION
TYPICAL RAILING REPAIR DETAIL
 SCALE: 3/4" = 1'-0"



SECTION D-D
 SCALE: 1 1/2" = 1'-0"



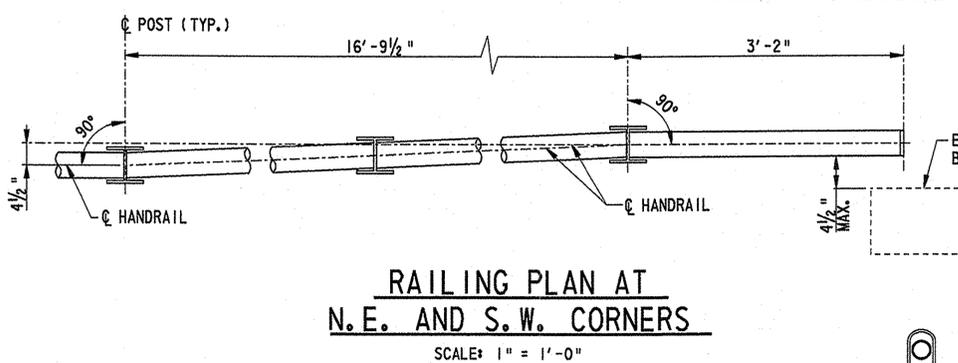
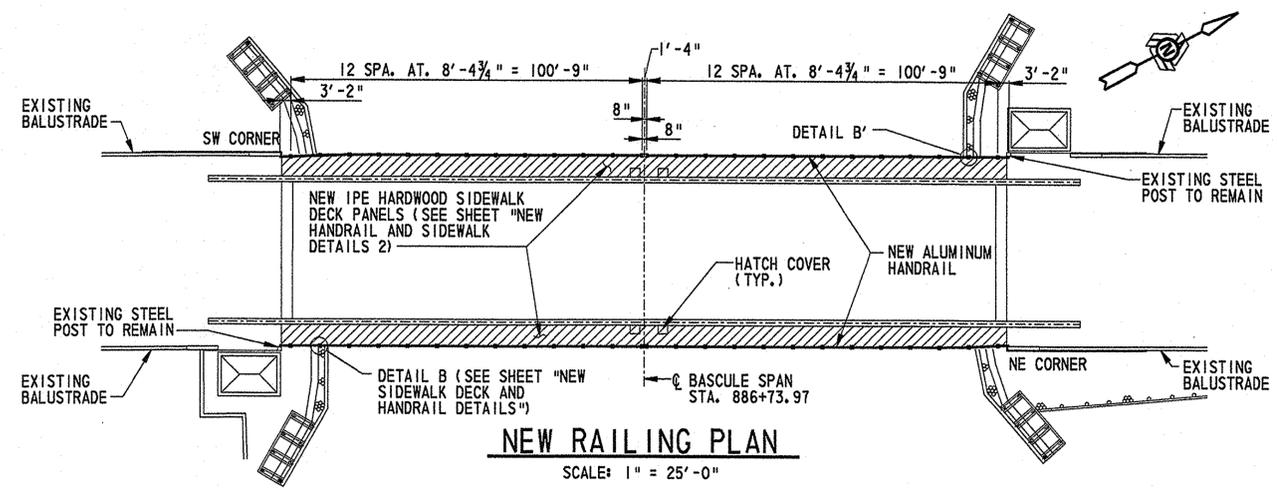
SECTION E-E
 SCALE: 3/4" = 1'-0"

CADD DESIGN EVS DESIGN REJ CHKD. JRW

9/21/2006 21-074-07

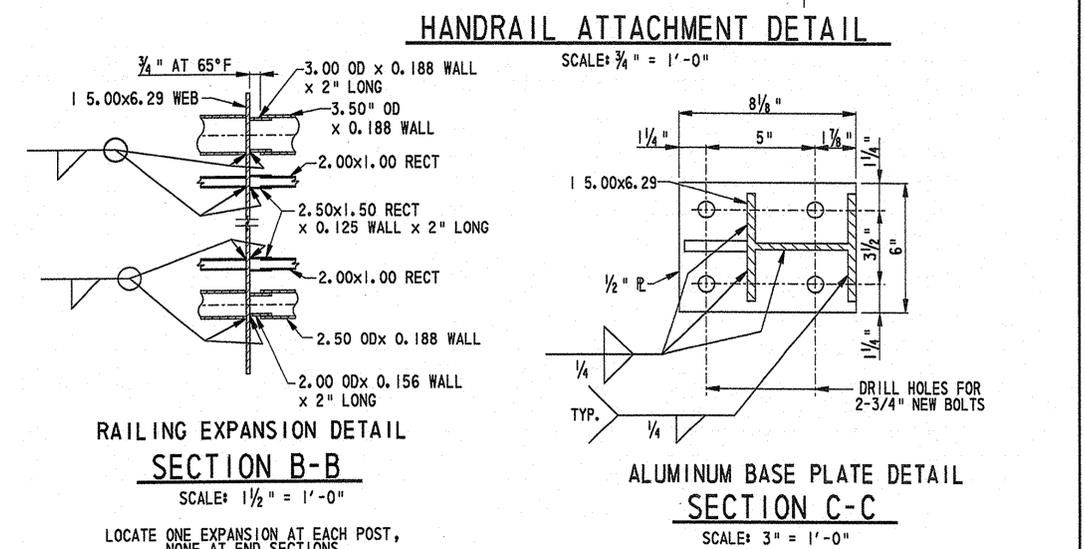
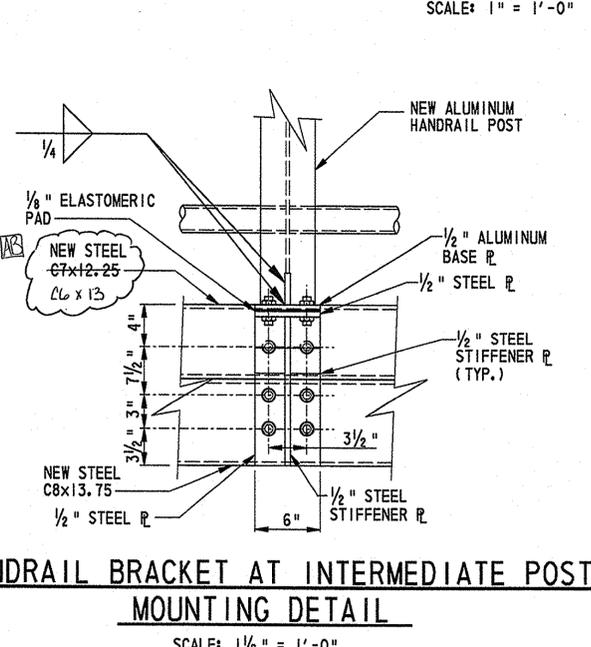
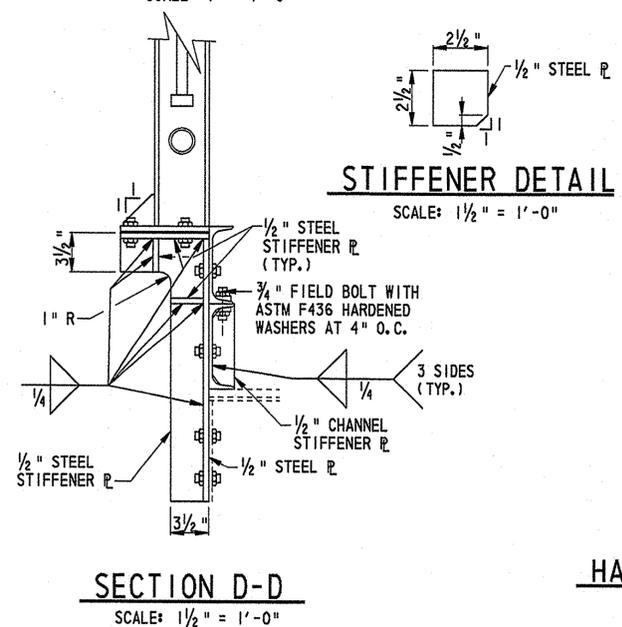
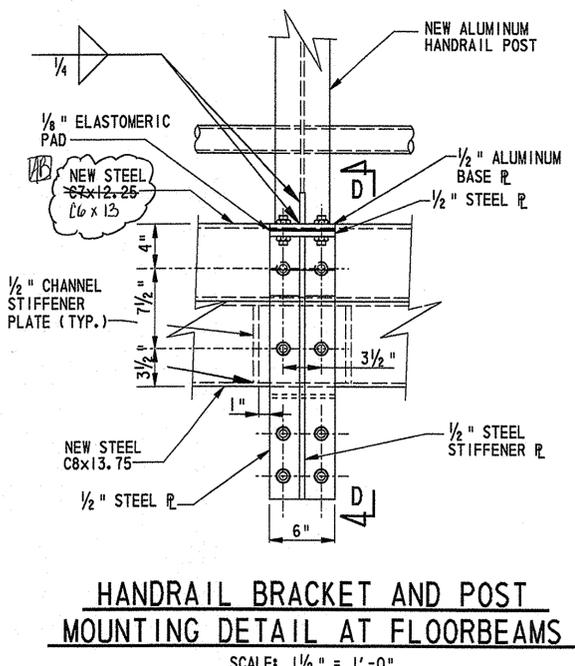
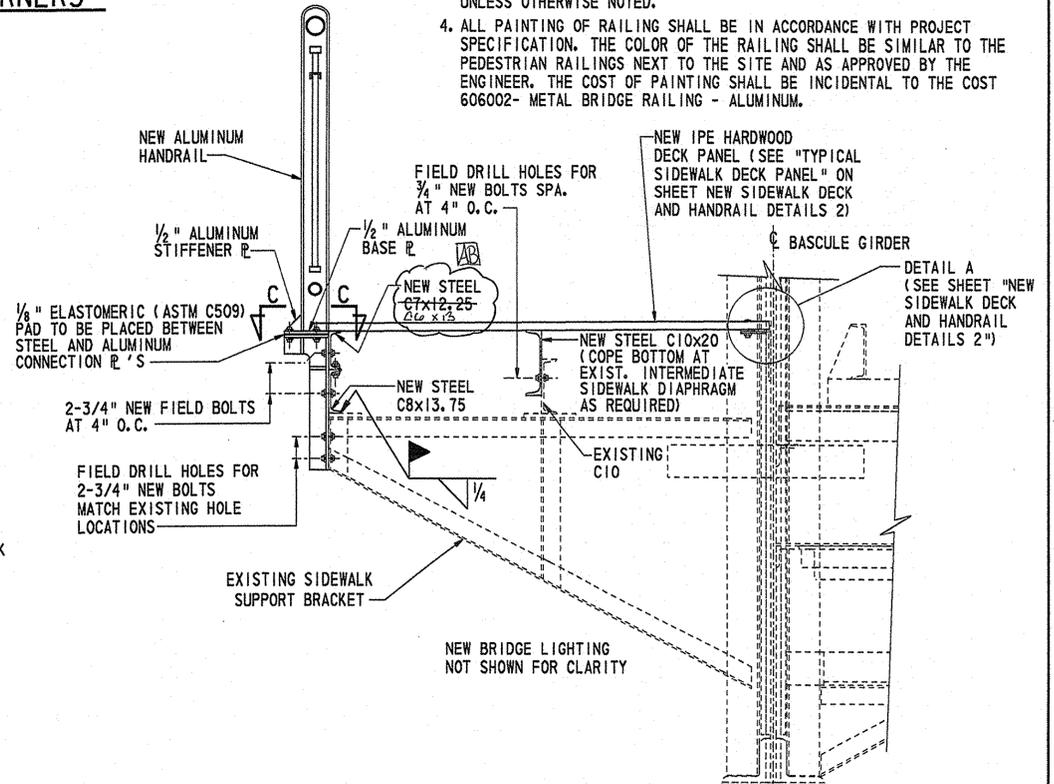
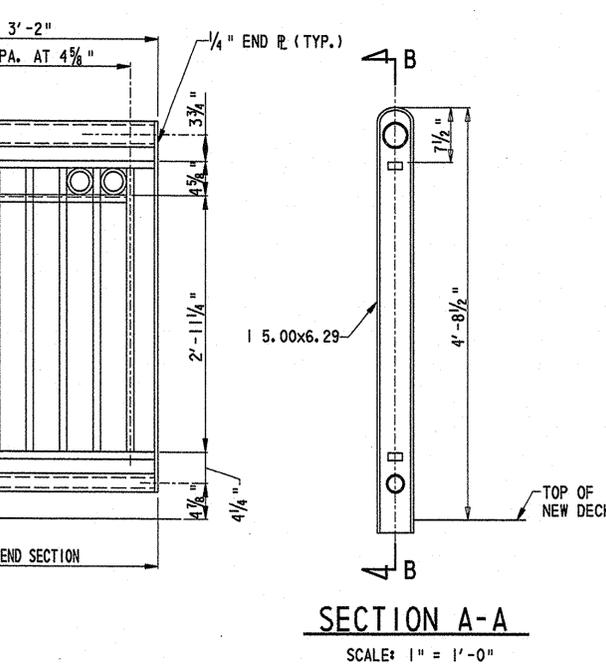
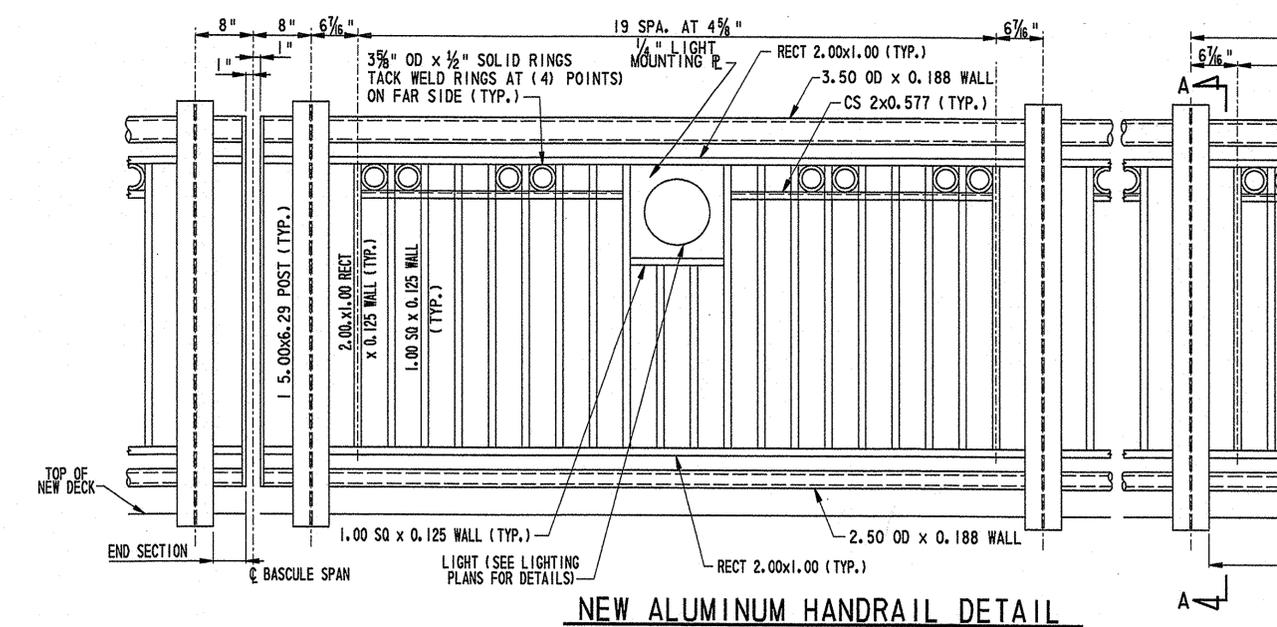
BR 688 SOUTH MARKET STREET BRIDGE REHABILITATION

REVISIONS	
NEW SHEET	JFB 3/31/04



AS BUILT

- NOTES:**
1. ALL ALUMINUM HANDRAIL MATERIAL SHALL BE ALUMINUM ALLOY 6061-T6, AND WELDING SHALL CONFORM TO AWS D1.2-97 STRUCTURAL WELDING CODE-ALUMINUM. USE FILLER ALLOY 5183 OR 5556 FOR ALL ALUMINUM WELDS
 2. ALL STRUCTURAL STEEL SHALL BE AASHTO M 270, GRADE 36.
 3. ALL BOLTS SHALL BE ASTM A325 EXCEPT CARRIAGE BOLTS WHICH SHALL BE GRADE 5 ZINC-PLATED CONFORMING TO SAE J429 WITH ROCKWELL HARDNESS C25 AND TENSILE STRENGTH OF 120,000 PSI AND BOLTS CONNECTING ALUMINUM TO STEEL SHALL BE STAINLESS STEEL ASTM F-593 (MINIMUM YIELD STRENGTH OF 30 KSI), AND SHALL BE COATED WITH INORGANIC ZINC, UNLESS OTHERWISE NOTED.
 4. ALL PAINTING OF RAILING SHALL BE IN ACCORDANCE WITH PROJECT SPECIFICATION. THE COLOR OF THE RAILING SHALL BE SIMILAR TO THE PEDESTRIAN RAILINGS NEXT TO THE SITE AND AS APPROVED BY THE ENGINEER. THE COST OF PAINTING SHALL BE INCIDENTAL TO THE COST 606002- METAL BRIDGE RAILING - ALUMINUM.



CADD DESIGN: M/LA; DESIGN: A/B/T; CHKD.: JFB

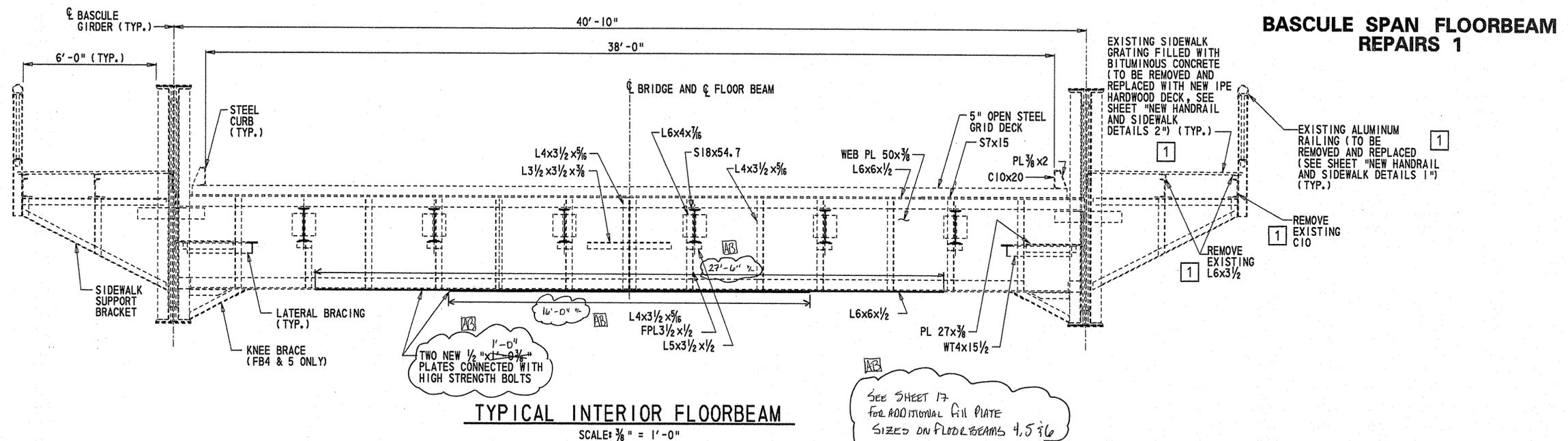
9/21/2006 21-074-07

TEXT SIZE REFERENCE
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 .25

**BR 688
 SOUTH MARKET STREET BRIDGE
 REHABILITATION**

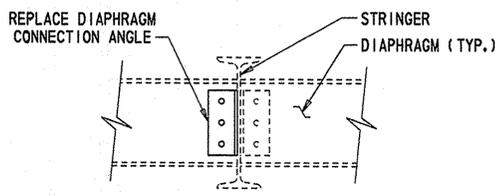
REVISIONS	
1	REVISED NOTES FOR RAILING AND SIDEWALK REPLACEMENT
	JFB 2/26/04

- NOTES: AS BUILT**
- FOR LOCATION OF FLOORBEAM REPAIRS, SEE "FRAMING PLANS".
 - MEMBERS ARE EXISTING UNLESS OTHERWISE STATED.
 - FOR LOCATION OF NEW COVER PLATES, SEE "FRAMING PLANS". COVER PLATES SHALL BE FASTENED WITH 7/8" DIAMETER BOLTS CONFORMING TO ASTM A325.
 - LIMITS OF STIFFENER DETERIORATION ARE APPROXIMATE. CONTRACTOR SHALL VERIFY LIMITS OF DETERIORATION PRIOR TO MAKING REPAIRS.
 - COST TO BE INCLUDED IN PAY ITEM 605585, "STEEL STRUCTURE REPAIR", AS A STIFFENER REPAIR.
 - COST TO BE INCLUDED IN PAY ITEM 605585, "STEEL STRUCTURE REPAIR", AS A LATERAL BRACE CONNECTION PLATE REPLACEMENT.
 - REPLACEMENT IS TYPICAL AT EVERY FLOORBEAM. COST OF STIFFENER REPLACEMENT IS PER FLOORBEAM AND IS TO BE INCLUDED IN PAY ITEM 605585, "STEEL STRUCTURE REPAIR", AS A STIFFENER REPLACEMENT.
 - COST TO BE INCLUDED IN PAY ITEM 605585, "STEEL STRUCTURE REPAIR", AS A COVER PLATE INSTALLATION.
 - COST TO BE INCLUDED IN PAY ITEM 605585, "STEEL STRUCTURE REPAIR", AS A DIAPHRAGM CONNECTION ANGLE REPLACEMENT.



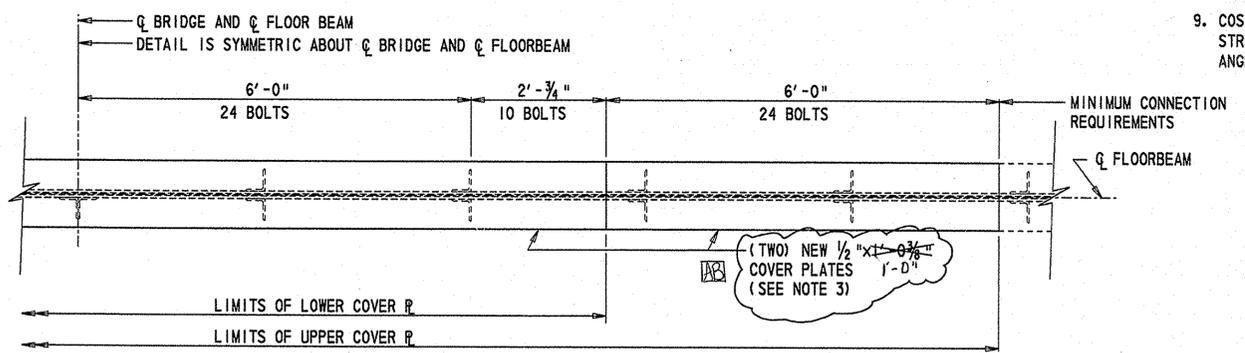
TYPICAL INTERIOR FLOORBEAM
 SCALE: 3/8" = 1'-0"

SEE SHEET 17 FOR ADDITIONAL GIL PLATE SIZES ON FLOORBEAMS 4, 5 & 6



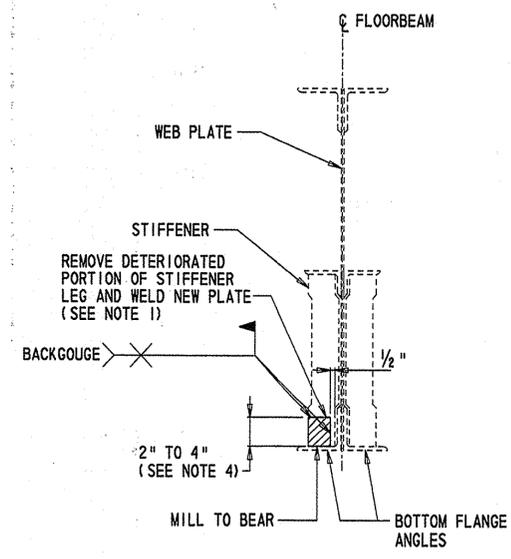
DIAPHRAGM CONNECTION ANGLE REPLACEMENT

(SEE NOTE 9)
 SCALE: 1" = 1'-0"



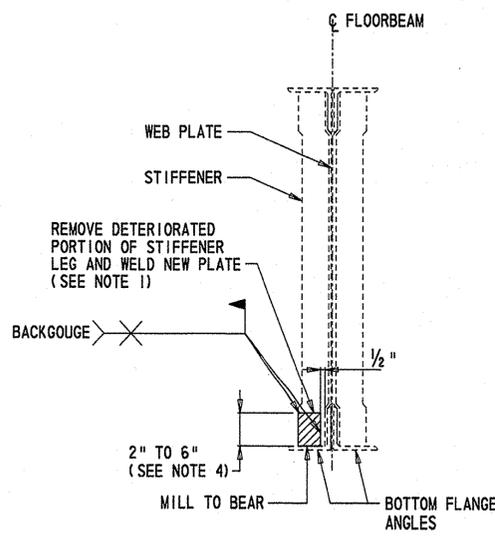
COVER PLATE DETAIL

(SEE NOTE 8)
 SCALE: 3/4" = 1'-0"



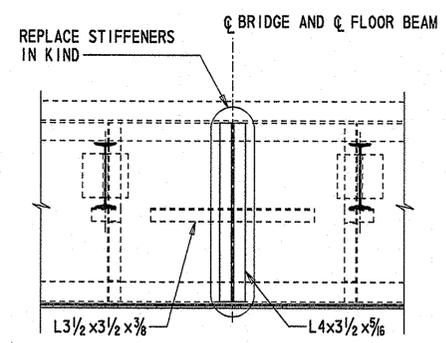
FLOORBEAM SECTION STIFFENER REPAIR AT STRINGER CONNECTION

(SEE NOTE 5)
 SCALE: 1" = 1'-0"



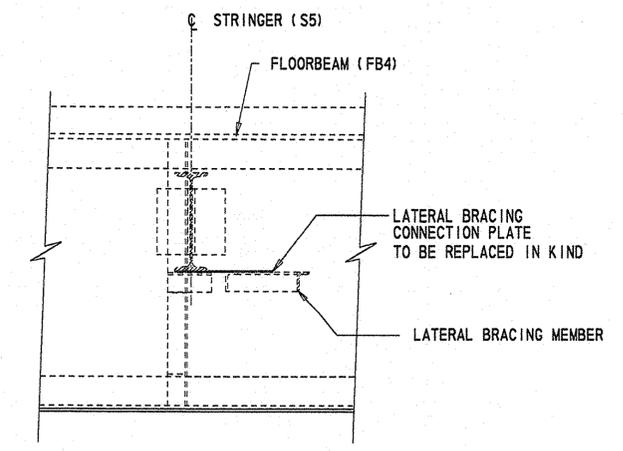
FLOORBEAM SECTION STIFFENER REPAIR

(SEE NOTE 5)
 SCALE: 1" = 1'-0"



STIFFENER REPLACEMENT

(SEE NOTE 7)
 SCALE: 1/2" = 1'-0"



LATERAL BRACE CONNECTION PLATE REPLACEMENT (NORTH LEAF)

(SEE NOTE 6)
 SCALE: 3/4" = 1'-0"

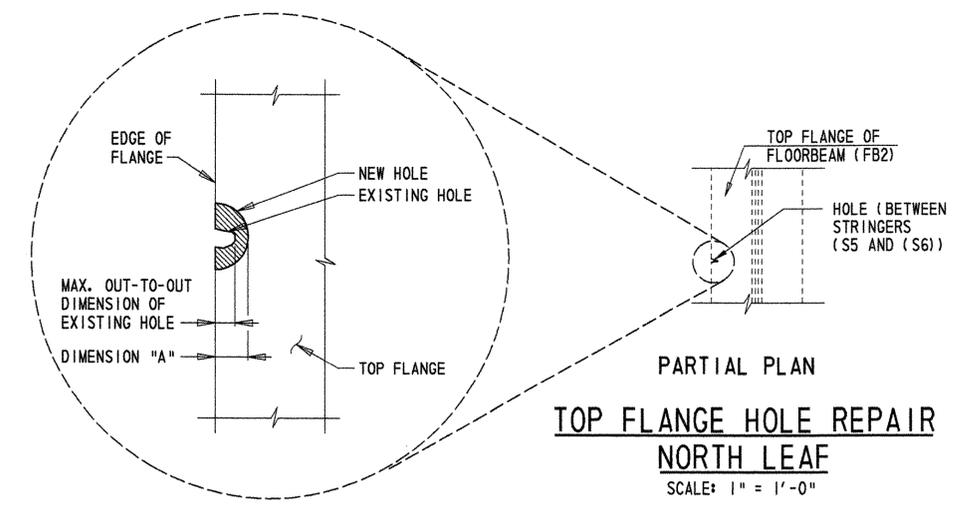
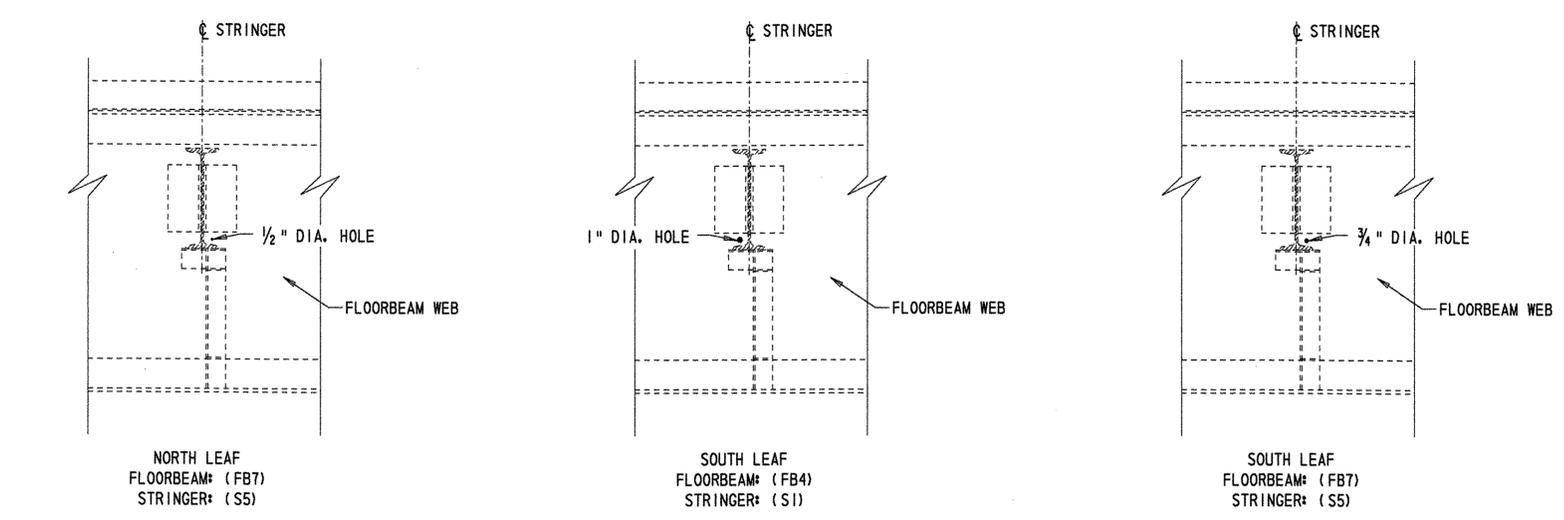
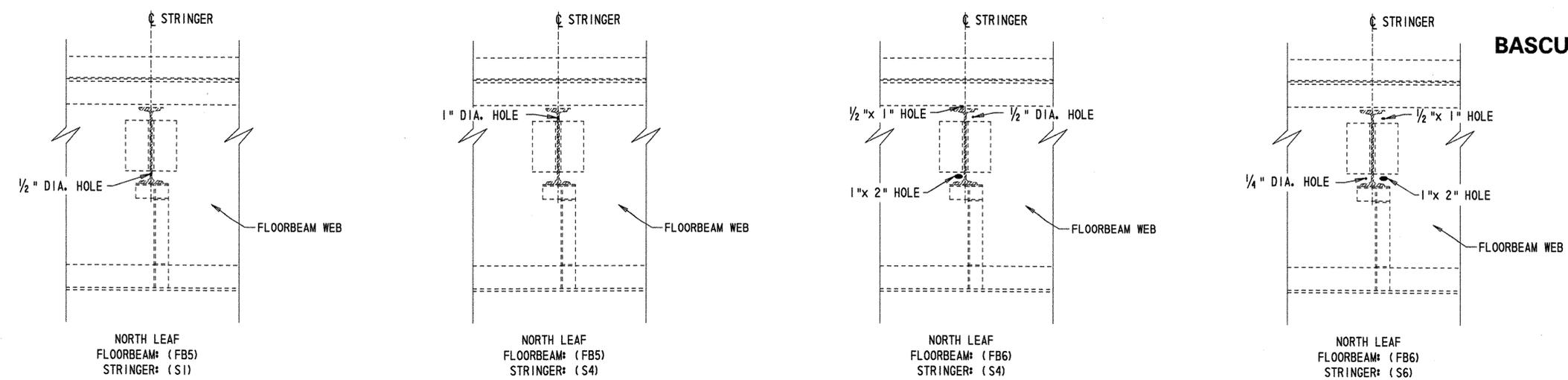
CADD DESIGN M.L.A./D.M. DESIGN A.B.T. CHKD. J.R.W.

9/21/2006 21-074-07

TEXT SIZE REFERENCE
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 .1875
 .25

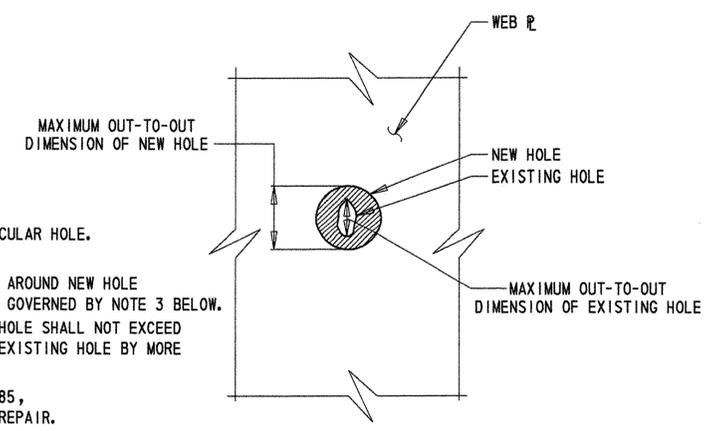
BASCULE SPAN FLOORBEAM REPAIRS 2

BR 688	
SOUTH MARKET STREET BRIDGE	
REHABILITATION	
REVISIONS	



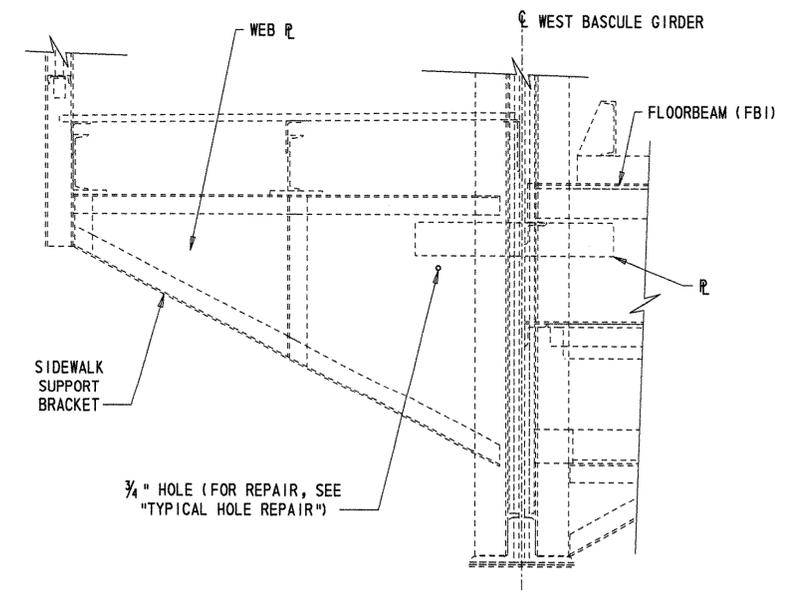
- NOTES:**
- FOR LOCATION OF FLOORBEAMS AND STRINGERS SEE SHEET "FRAMING PLAN - NORTH SPAN" AND "FRAMING PLAN - SOUTH SPAN".
 - FOR ADDITIONAL FLOORBEAM REPAIRS, SEE THE FOLLOWING SHEETS: "BASCULE SPAN FLOORBEAM REPAIRS 1", "FRAMING PLAN - NORTH SPAN", AND "FRAMING PLAN - SOUTH SPAN".
 - CONTRACTOR SHALL REPAIR ANY EXISTING HOLES THAT HAVE NOT BEEN INDICATED ON THIS SHEET.

LOCATION OF WEB HOLES
 SCALE: 3/4" = 1'-0"



TYPICAL HOLE REPAIR
 N. T. S.

- HOLE REPAIR:**
- GRIND EXISTING HOLE TO A SMOOTH, CIRCULAR HOLE. THEN CLEAN AND PAINT.
 - MINIMUM THICKNESS OF PERIMETER METAL AROUND NEW HOLE SHALL BE 1/8", EXCEPT FOR THOSE CASES GOVERNED BY NOTE 3 BELOW.
 - MAXIMUM OUT-TO-OUT DIMENSION OF NEW HOLE SHALL NOT EXCEED THE MAXIMUM OUT-TO-OUT DIMENSION OF EXISTING HOLE BY MORE THAN 1/2".
 - COST TO BE INCLUDED IN PAY ITEM 605585, "STEEL STRUCTURE REPAIR", AS A HOLE REPAIR.



SIDEWALK BRACKET HOLE REPAIR (NORTH LEAF)
 SCALE: 3/4" = 1'-0"

- TOP FLANGE HOLE REPAIR:**
- GRIND EXISTING HOLE TO A SMOOTH, SEMI-CIRCULAR HOLE. CLEAN AND PAINT.
 - MINIMUM THICKNESS OF PERIMETER METAL AROUND NEW HOLE SHALL BE 3/16", EXCEPT AS GOVERNED BY NOTE 3 BELOW.
 - DIMENSION "A" SHALL NOT EXCEED 2".
 - COST TO BE INCLUDED IN PAY ITEM 605585, "STEEL STRUCTURE REPAIR", AS A HOLE REPAIR.

CADD DESIGN M.L.A. DESIGN A.B.T. CHKD. REJ.

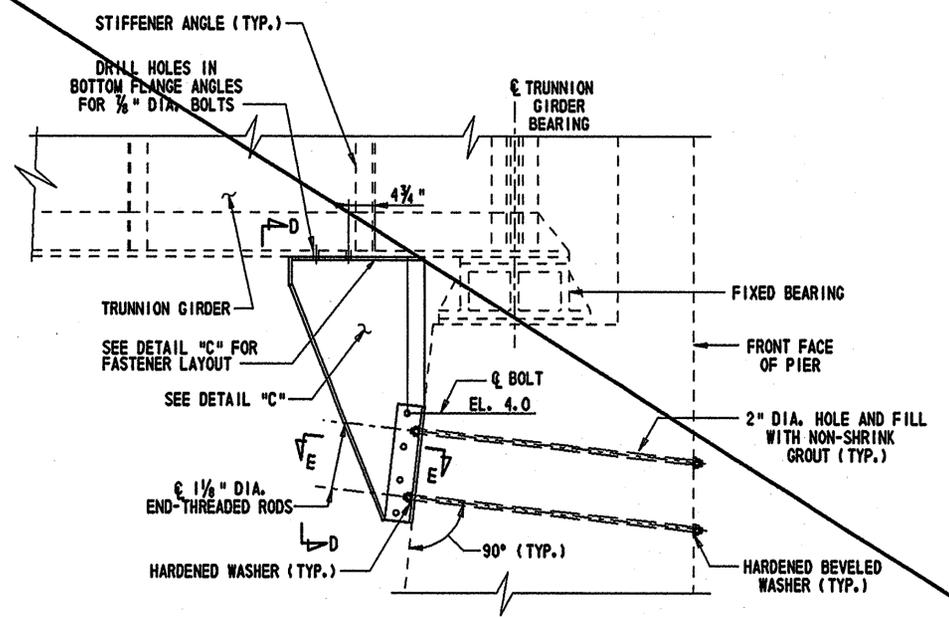
SIZE
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 ABT

**SEISMIC RETROFIT 1:
 TRUNNION GIRDER RESTRAINT BRACKET**

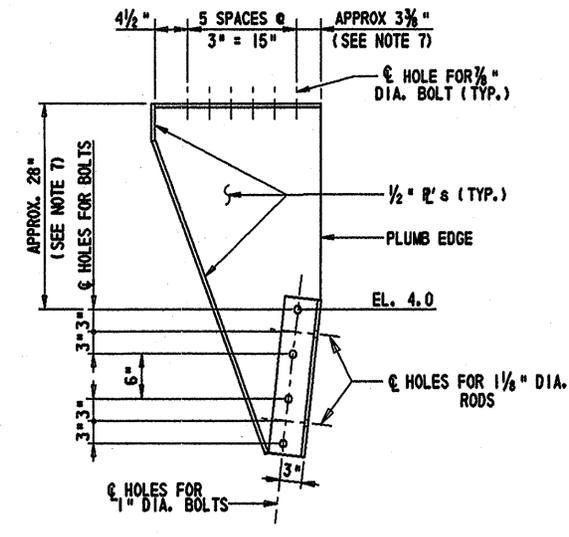
**BR 688
 SOUTH MARKET STREET BRIDGE
 REHABILITATION**

REVISIONS	
131 DELETED SHEET	ABT 11/05/04

DELETED SHEET

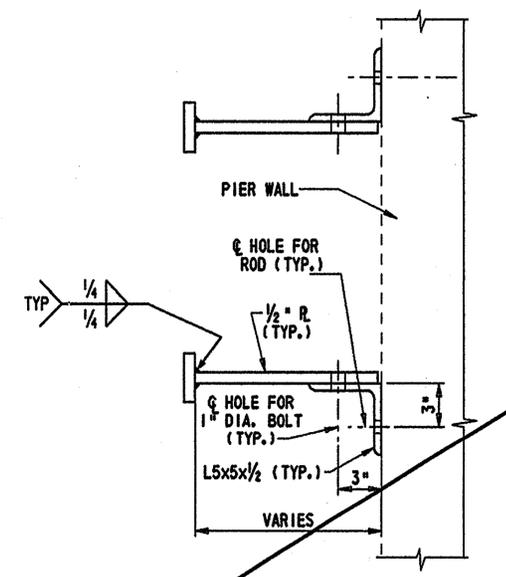


DETAIL "B"
 FOR LOCATION, SEE SHEET "TRUNNION GIRDER REPAIRS"
 SCALE: 3/4" = 1'-0"

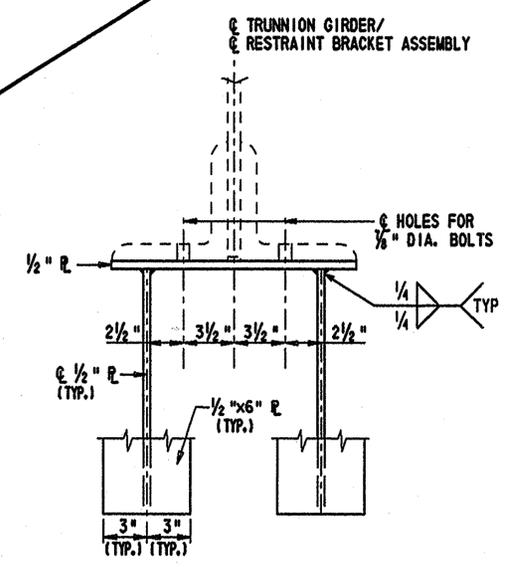


NOTE: TRUNNION GIRDER NOT SHOWN.
DETAIL "C"
RESTRAINT BRACKET
 SCALE: 1" = 1'-0"

- NOTES:**
1. ALL COSTS ASSOCIATED WITH THIS RETROFIT SHALL BE INCLUDED IN PAY ITEM 605679, "SEISMIC RETROFIT".
 2. FOR ADDITIONAL DETAILS, SEE INFORMATIONAL SHEETS.
 3. ALL ANCHOR RODS SHALL CONFORM TO ASTM A354 (GRADE BD). COST OF ANCHOR RODS IS INCIDENTAL TO PAY ITEM 605679, "SEISMIC RETROFIT".
 4. GROUT SHALL BE PROPRIETARY PRE-MIXED PACKAGED, NON-SHRINK, NON-METALLIC GROUT SUCH AS FIVE STAR GROUT (FROM FIVE STAR PRODUCTS, INC.) OR AN APPROVED EQUAL. SHRINKAGE REQUIREMENTS AS PER THE US ARMY CORPS OF ENGINEERS CRD C-621. COST OF GROUT IS INCIDENTAL TO PAY ITEM 605679, "SEISMIC RETROFIT".
 5. SEISMIC RETROFIT SHALL BE DONE AT ALL TRUNNION GIRDER FIXED BEARING LOCATIONS.
 6. ALL BOLT HOLES IN EXISTING STEEL SHALL BE DRILLED, COST IS INCIDENTAL TO PAY ITEM 605679, "SEISMIC RETROFIT".
 7. PRIOR TO SUBMITTING SHOP DRAWINGS, CONTRACTOR SHALL VERIFY ALL NECESSARY DIMENSIONS IN THE FIELD.



SECTION E-E
 SCALE: 2" = 1'-0"



SECTION D-D
 N.T.S.

FEET/12/1000
 TEXT SIZE
 REFERENCE
 .125
 .1875
 .25

0 1 2 3 4 5 6 7 8 9
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 90 91 92 93 94 95 96 97 98 99

BR. I-688

CONTRACT	COUNTY	FEDERAL AID PROJECT NO.	SHEET NO.	TOTAL SHTS.
21-074-07	NEW CASTLE	EBRN-W029 121	29	169

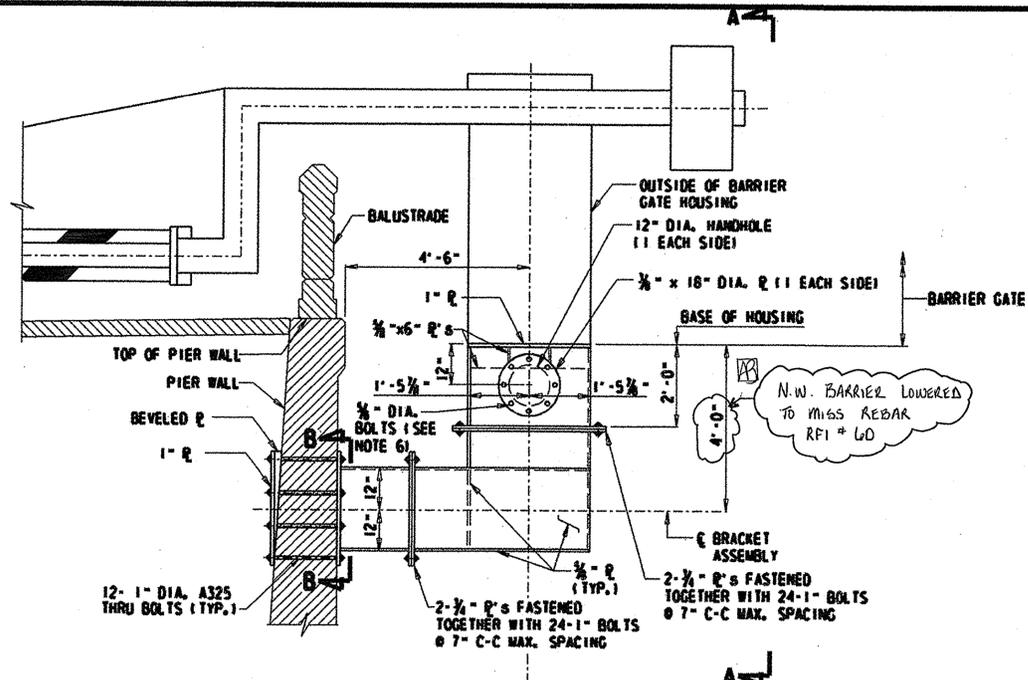
BR 688
 SOUTH MARKET STREET BRIDGE
 REHABILITATION

REVISIONS	
ADDENDUM NO. Δ	REVISED NOTE TO

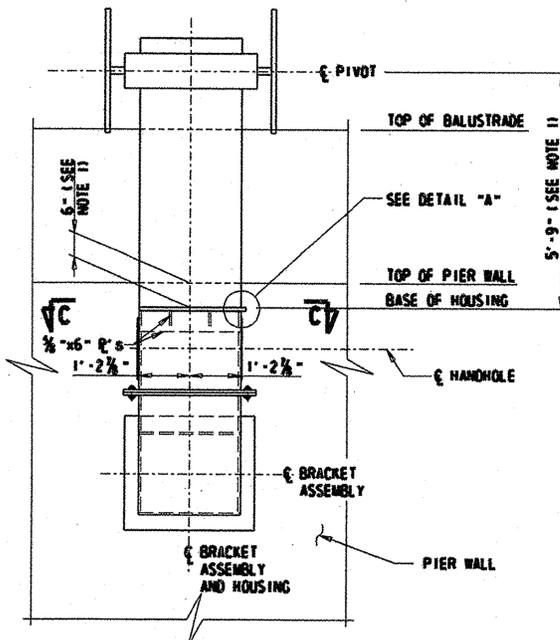
NOTES:

AS BUILT

- THE LOCATION SHOWN FOR THE BASE OF THE HOUSING IS BASED ON THE ASSUMED DIMENSION OF 5'-9" FROM THE ϵ PIVOT TO THE BASE OF HOUSING (SEE SECTION A-A). CONTRACTOR SHALL VERIFY THE 5'-9" DIMENSION BEFORE INSTALLING THE BARRIER GATE AND ASSEMBLY.
- FOR DETAILS OF BARRIER GATE PLATFORM, SEE SHEET "BARRIER GATE PLATFORM".
- ALL BOLTS SHALL CONFORM TO ASTM A325.
- BARRIER GATE HOUSING AND FOUNDATION SHALL BE PLUMB.
- FOR LOCATION OF THE BARRIER AND WARNING GATES SEE SHEET "BARRIER AND WARNING GATES PLAN AND ELEVATION".
- WELD NUTS TO INSIDE OF BOX.
- THE BRACKET AND ASSEMBLY SHALL BE PAINTED, COST TO BE INCLUDED IN PAY ITEM 605005, "PAINTING, MOISTURE-CURED URETHANE SYSTEM".
- THE COST OF THE BARRIER GATE FOUNDATIONS SHALL BE INCLUDED IN PAY ITEM 763599, "BARRIER GATES".
- THE BARRIER GATE FOUNDATION AND PLATFORM SHALL BE PAINTED A CONCRETE TAN, TO MATCH THE EXISTING CONCRETE AS CLOSELY AS POSSIBLE. THIS ITEM IS CONSIDERED INCIDENTAL TO PAY ITEM 605005, "PAINTING, MOISTURE-CURED URETHANE SYSTEM". THE COLOR SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO PAINTING.
- TO THE COST OF THE WARNING GATE FOUNDATION SHALL BE INCLUDED IN PAY ITEM 602002, "PORTLAND CEMENT CONCRETE MASONRY, CLASS B".
- TO THE COST OF THE WARNING GATE FOUNDATION INCLUDING REINFORCING STEEL AND ALL OTHER ITEMS NEEDED FOR CONSTRUCTION OF THE FOUNDATIONS AND SHALL BE INCIDENTAL TO PAY ITEM 602002, "PORTLAND CEMENT CONCRETE MASONRY, CLASS B".

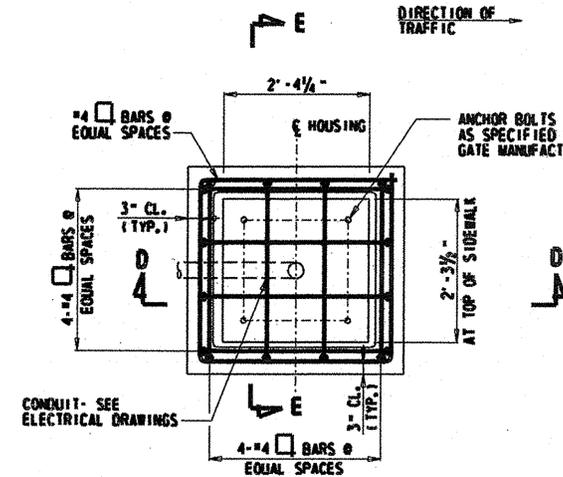
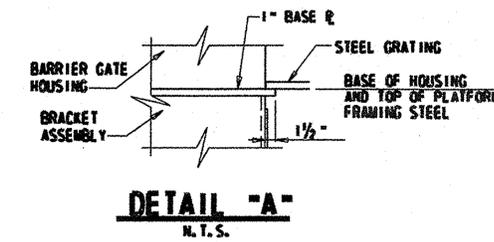


BARRIER GATE HOUSING FOUNDATION (BOX BRACKET)
 SIDE ELEVATION
 SCALE: 1/2" = 1'-0"

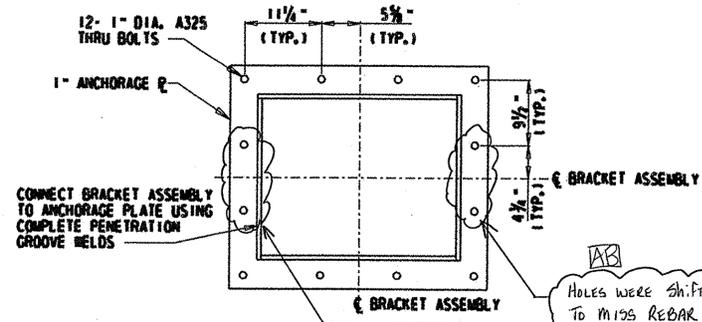


SECTION A-A
 SCALE: 1/2" = 1'-0"

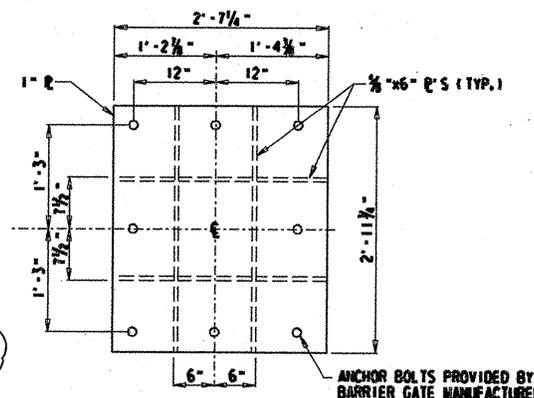
BARRIER AND WARNING GATE FOUNDATIONS



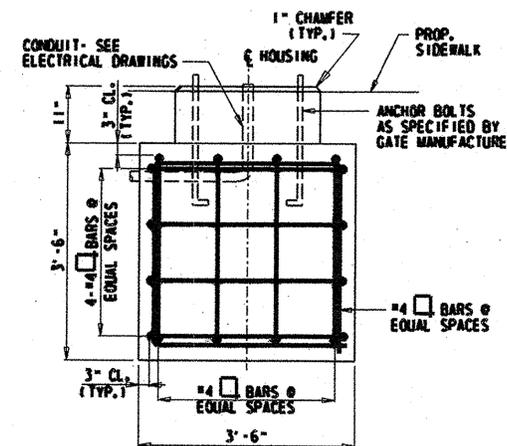
WARNING GATE FOUNDATION PLAN
 SCALE: 1/4" = 1'-0"



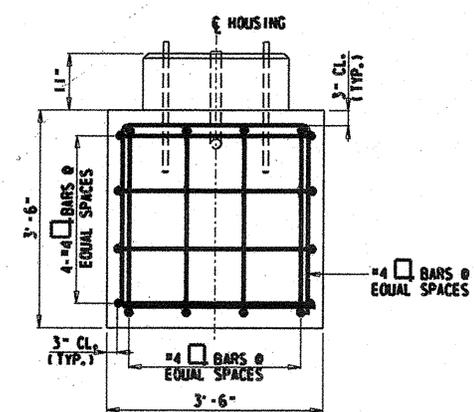
SECTION B-B
 SCALE: 1" = 1'-0"



SECTION C-C
 SCALE: 1" = 1'-0"



SECTION D-D
 SCALE: 1/4" = 1'-0"



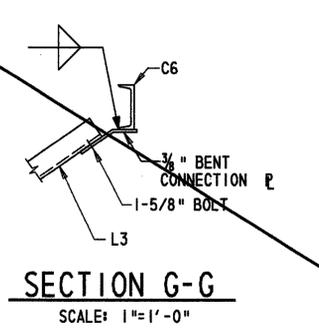
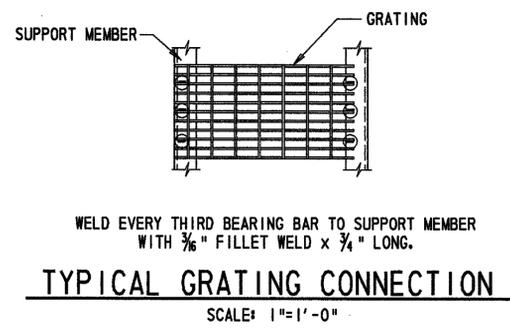
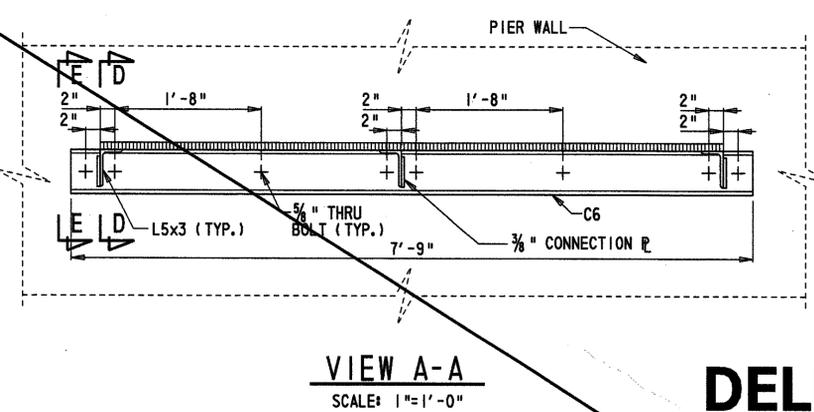
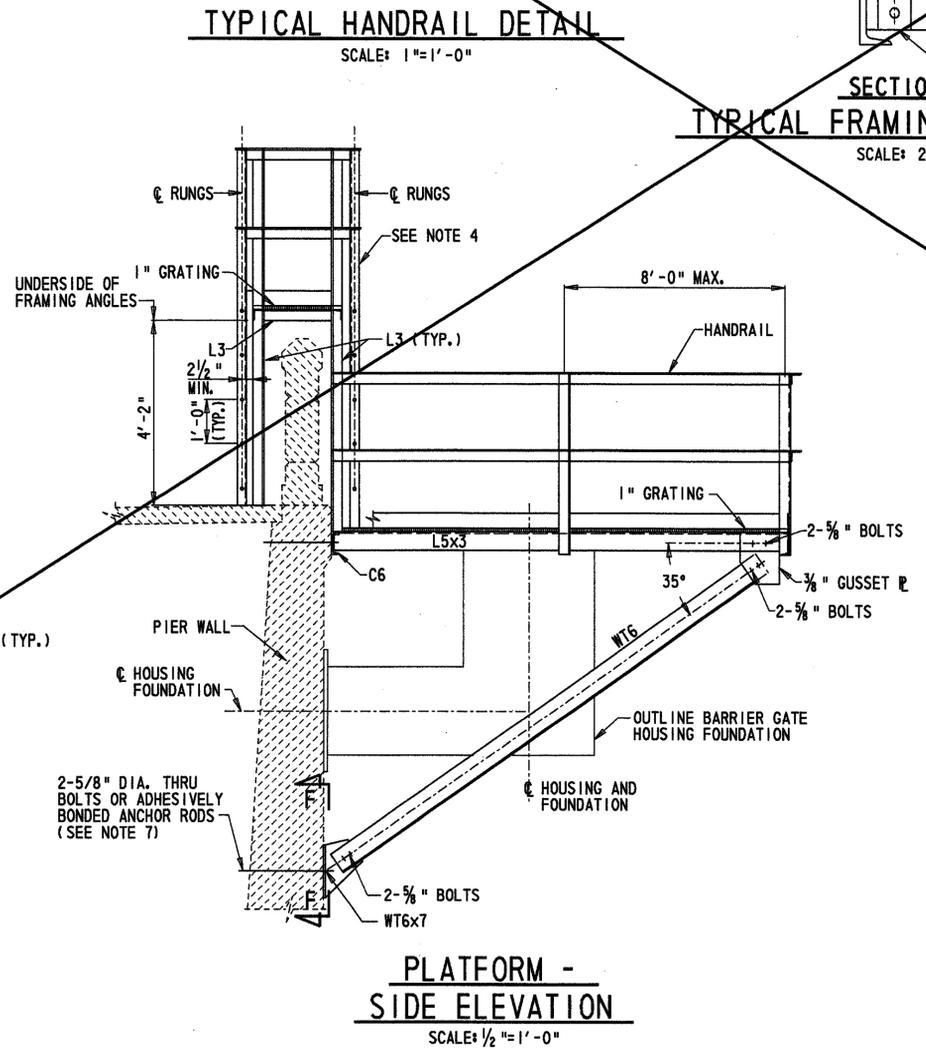
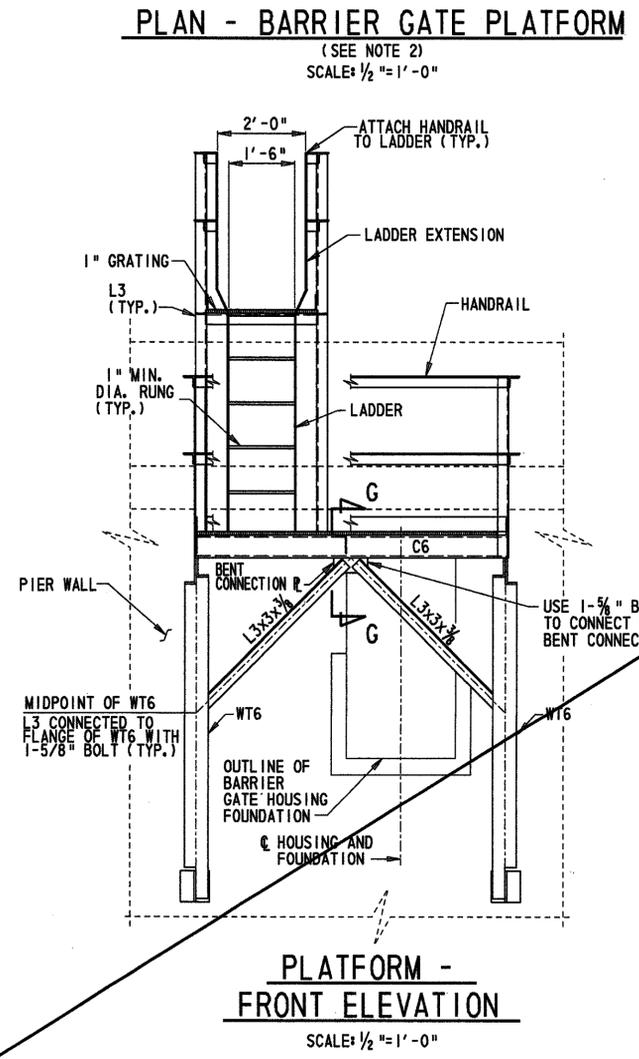
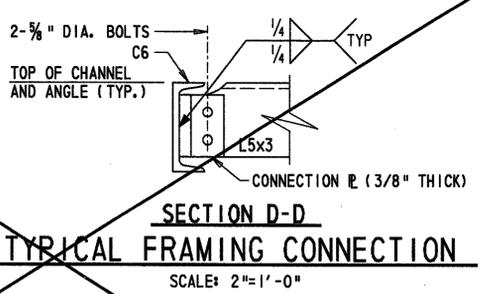
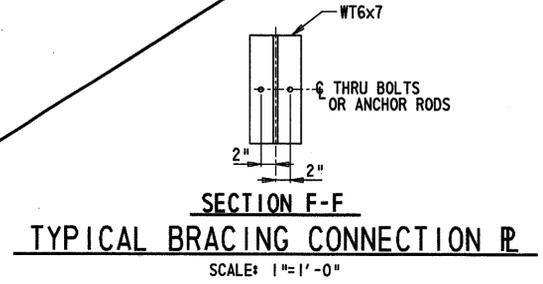
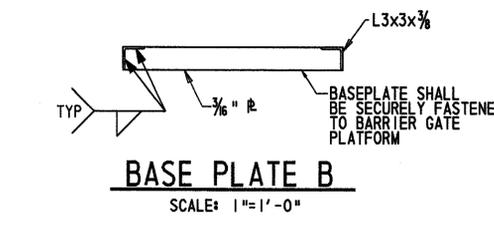
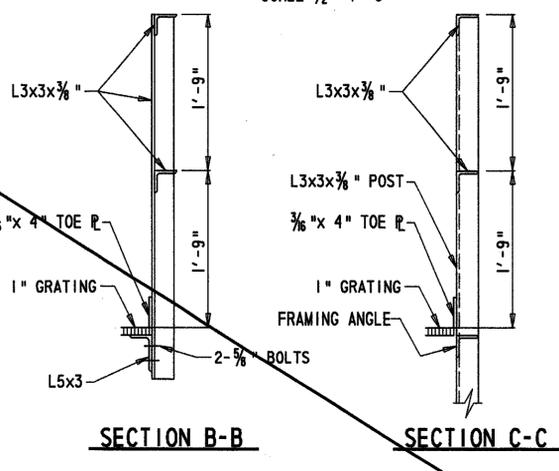
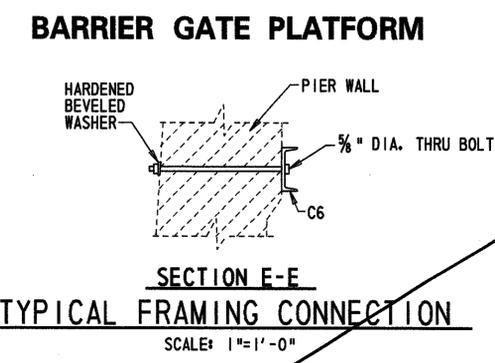
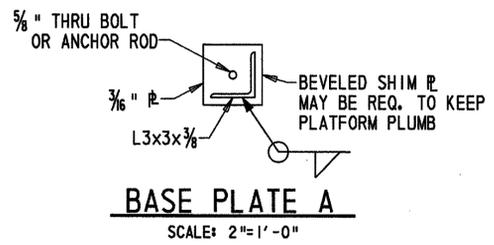
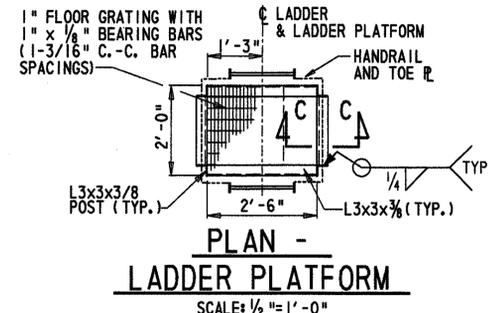
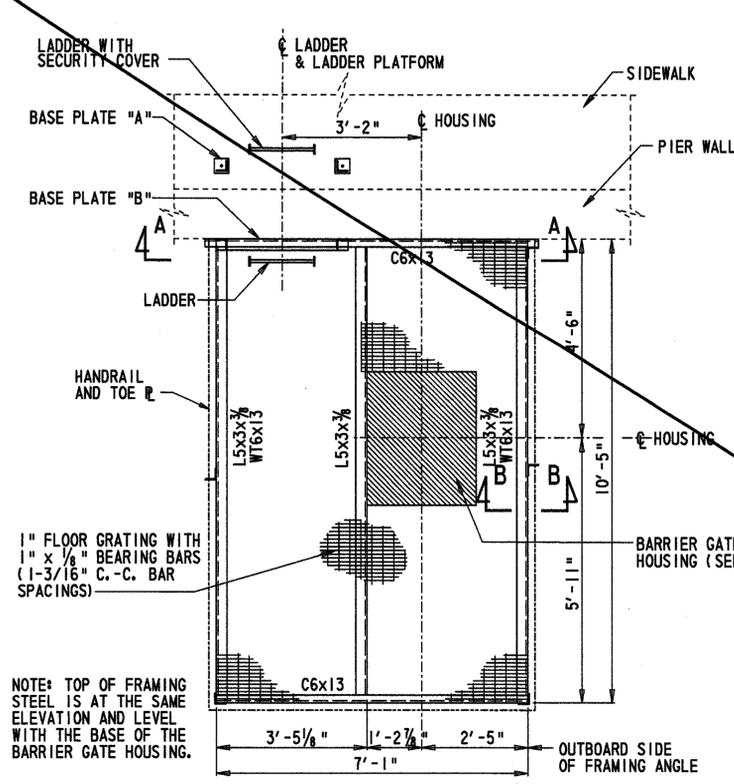
SECTION E-E
 SCALE: 1/4" = 1'-0"

CADD DESIGN
 M.L.A.
 DESIGN
 A.B.T.
 CHKD.
 R.E.J.

9/21/2006 21-074-07

TEXT SIZE REFERENCE
 .125
 .1875
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BR 688	
SOUTH MARKET STREET BRIDGE	
REHABILITATION	
REVISIONS	
2 DELETED SHEET	ABT 6/02/04



- NOTES:**
- BOLTS AND THRU BOLTS SHALL CONFORM TO ASTM 325. ANCHOR RODS SHALL CONFORM TO ASTM A354, GRADE BD.
 - FOR CLARITY MOST OF THE DETAILS FOR THE BARRIER GATE AND THE BARRIER GATE FOUNDATION HAVE BEEN OMITTED FROM THIS SHEET. FOR THOSE DETAILS, SEE SHEET "BARRIER AND WARNING GATE FOUNDATION" AND "BARRIER AND WARNING GATES". FOR LOCATION OF BARRIER GATES, SEE SHEET "BARRIER AND WARNING GATES".
 - CONTRACTOR SHALL VERIFY THAT BARRIER GATE AND FOUNDATION ARE POSITIONED PROPERLY BEFORE CONSTRUCTING BARRIER GATE PLATFORM.
 - LADDER AND LADDER PLATFORM SHALL BE CENTERED ABOUT THE BALUSTRADE, AND MUST COMPLY WITH ALL APPLICABLE OSHA STANDARDS.
 - COST OF THIS PLATFORM TO BE INCLUDED IN PAY ITEM 763599, "BARRIER GATES".
 - THE ENTIRE BARRIER GATE PLATFORM ASSEMBLY SHALL BE SUBMITTED FOR APPROVAL. ALL DETAILS ON THIS SHEET ARE PART OF THE BARRIER GATE PLATFORM. PRIOR TO SUBMISSION, ALL DIMENSIONS SHALL BE VERIFIED IN THE FIELD.
 - WHERE THE CONTRACTOR HAS THE OPTION TO USE ADHESIVE ANCHOR RODS, THE ANCHOR ROD SHALL BE EMBEDDED A MINIMUM OF 12" INTO THE CONCRETE. THE ADHESIVE SHALL BE CAPABLE OF DEVELOPING THE FULL YIELD STRENGTH OF THE ANCHOR ROD.
 - THE BARRIER GATE FOUNDATION AND PLATFORM SHALL BE PAINTED A CONCRETE TAN, TO MATCH THE EXISTING CONCRETE AS CLOSELY AS POSSIBLE. THIS ITEM IS CONSIDERED INCIDENTAL TO PAY ITEM 605005, "PAINTING, MOISTURE-CURED URETHANE SYSTEM". THE COLOR SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO PAINTING.

DELETED SHEET

CADD DESIGN M.L.A. DESIGN ABT CHKD. JFB

TEXT SIZE
REFERENCE
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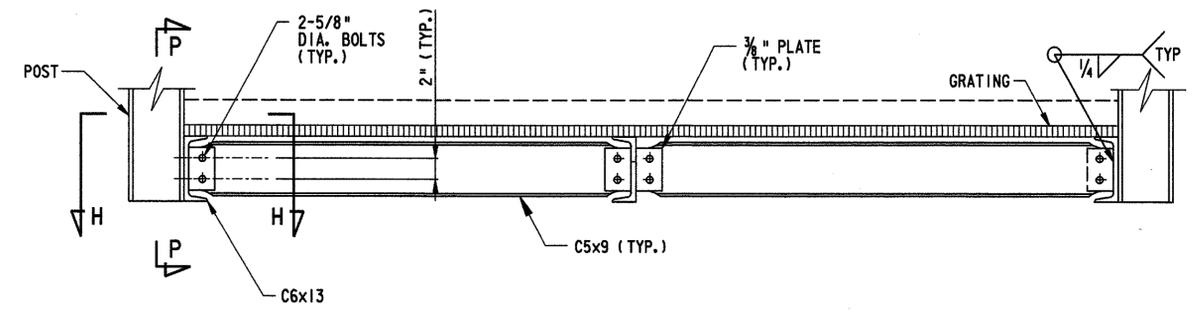
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BARRIER GATE PLATFORM - 2

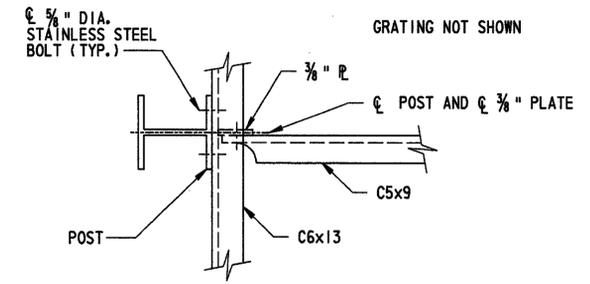
**BR 688
SOUTH MARKET STREET BRIDGE
REHABILITATION**

REVISIONS	
2	NEW SHEET
	ABT 6/02/04

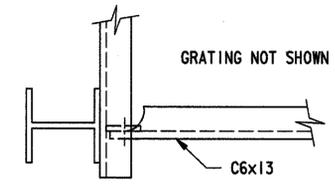
NOTES:
1. ALL NOTES ON SHEET NO. 30A SHALL APPLY TO THE DETAILS SHOWN ON THIS SHEET.



SECTION B-B
SCALE: 1 1/2" = 1'-0"

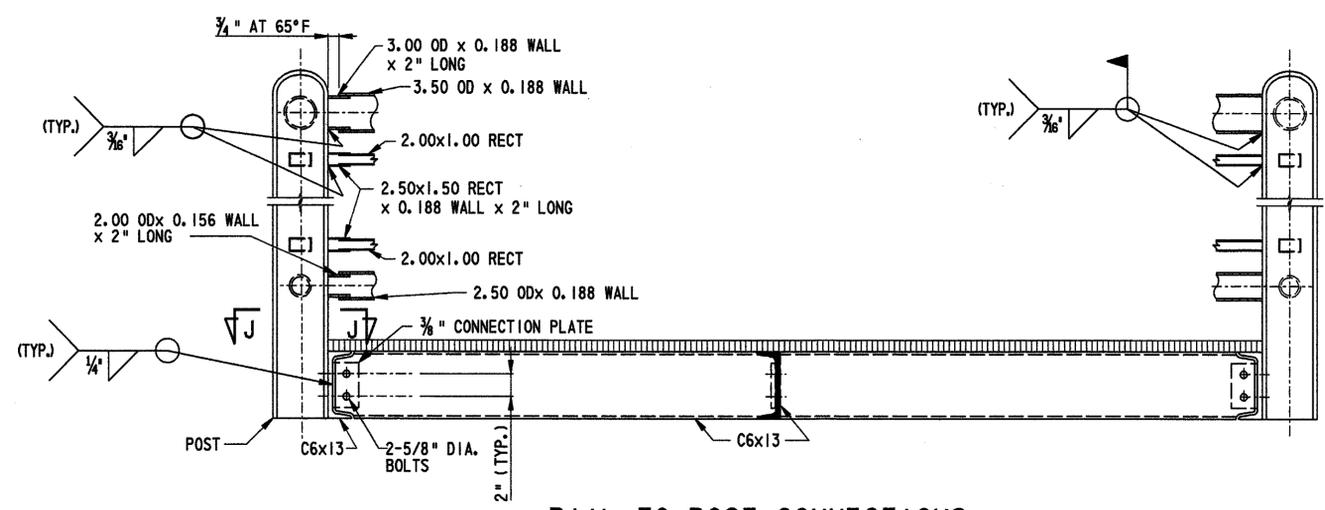


SECTION H-H
SCALE: 2" = 1'-0"

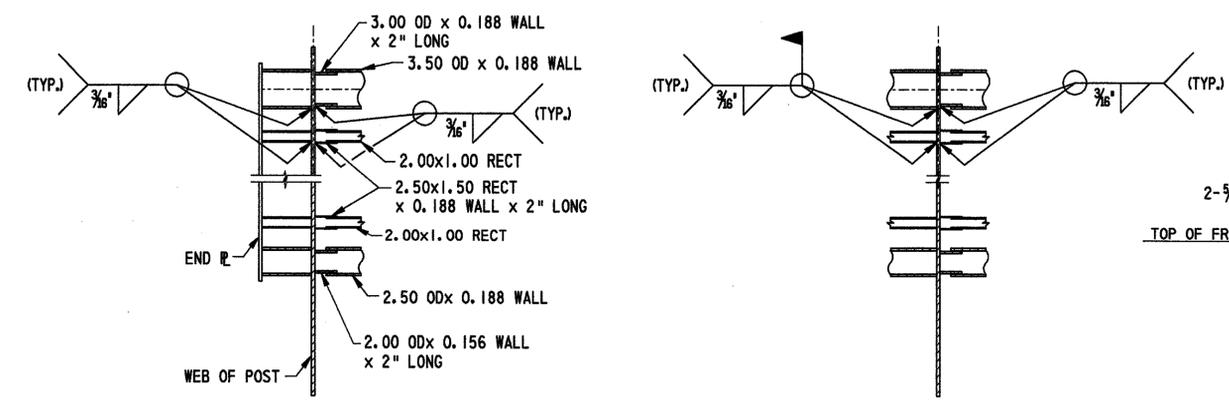


SECTION J-J
SCALE: 2" = 1'-0"

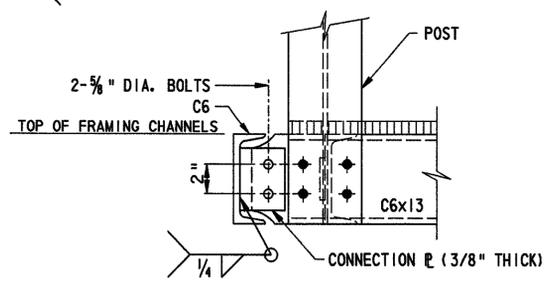
(DETAILS ARE SIMILAR TO VIEW H-H, EXCEPT WHERE SHOWN OTHERWISE)



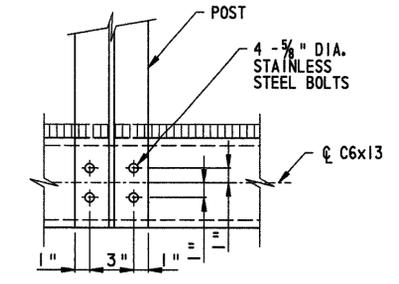
RAIL-TO-POST CONNECTIONS
SECTION M-M
SCALE: 1 1/2" = 1'-0"



RAIL-TO-POST CONNECTIONS
SECTION L-L
SCALE: 1 1/2" = 1'-0"



SECTION D-D
TYPICAL FRAMING CONNECTION
SCALE: 2" = 1'-0"



SECTION P-P
TYPICAL POST CONNECTION
SCALE: 2" = 1'-0"

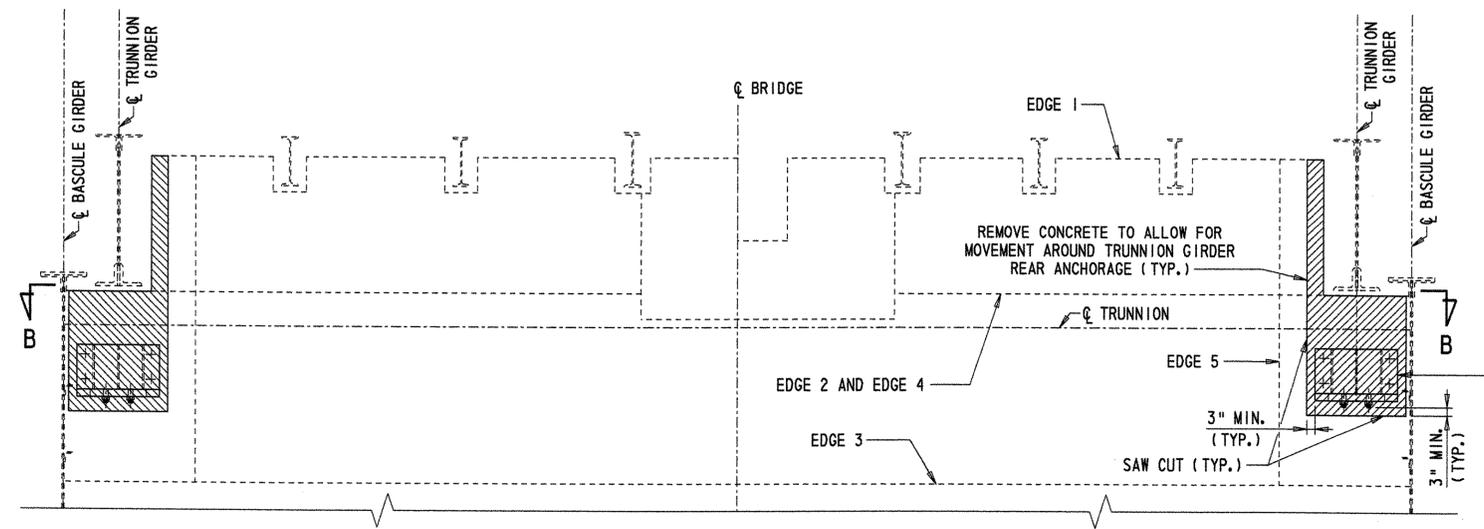
CADD DESIGN DM DESIGN ABT CHKD. JFB

TEXT SIZE REFERENCE
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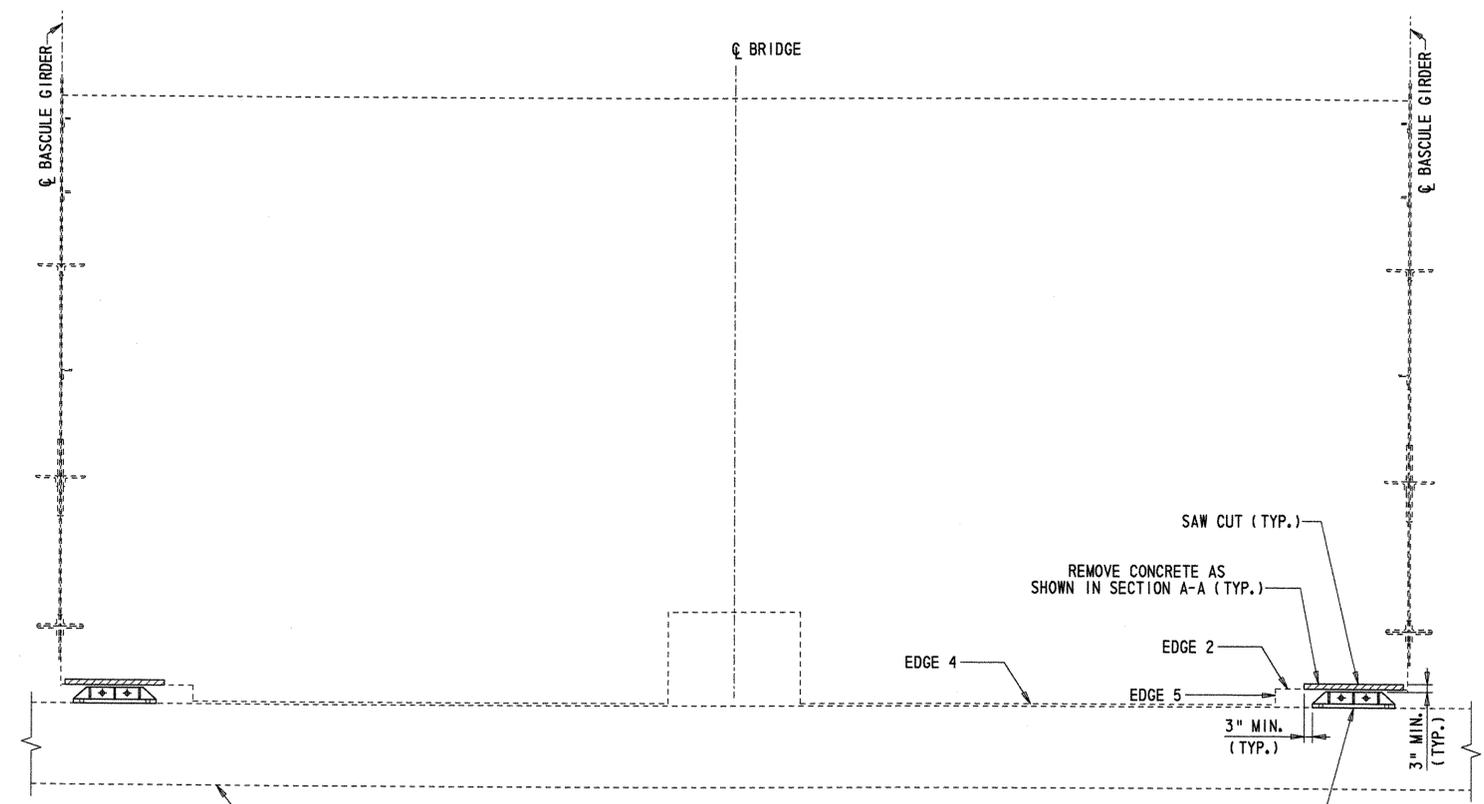
COUNTERWEIGHT MODIFICATION PLAN

BR 688
 SOUTH MARKET STREET BRIDGE
 REHABILITATION

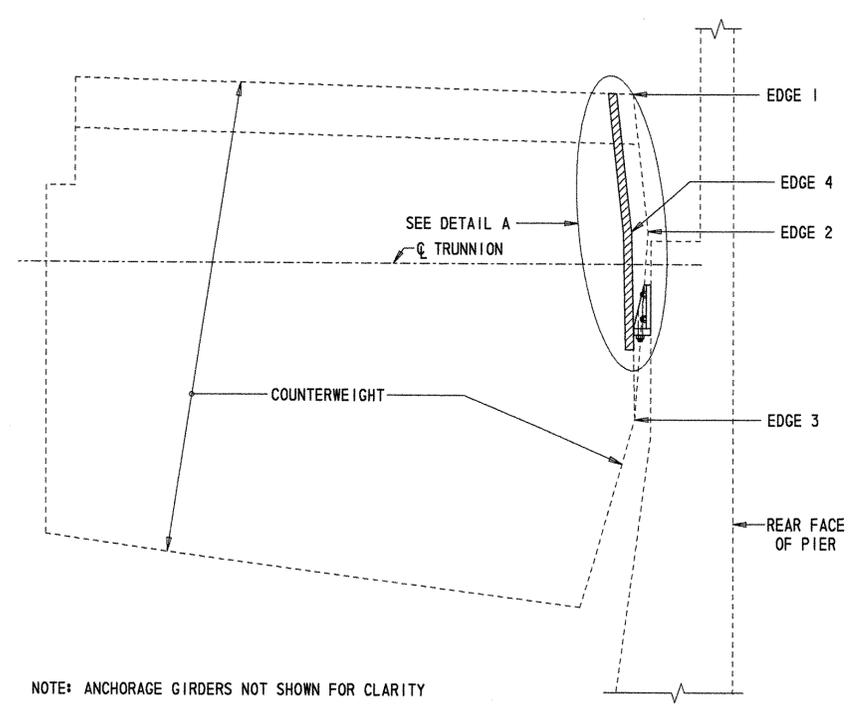
REVISIONS	



SECTION A-A
 SCALE: 3/8" = 1'-0"

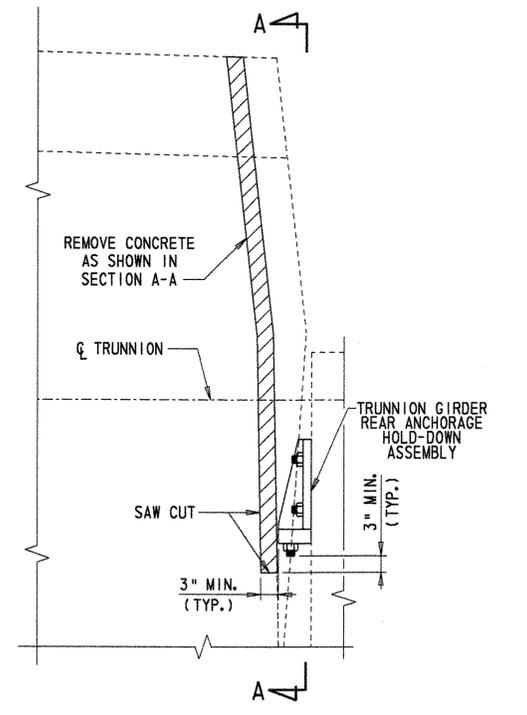


SECTION B-B
 SCALE: 3/8" = 1'-0"



NOTE: ANCHORAGE GIRDERS NOT SHOWN FOR CLARITY

SECTION THROUGH PIER
 SCALE: 3/8" = 1'-0"



DETAIL A
 SCALE: 3/4" = 1'-0"

- NOTES:
- COUNTERWEIGHTS IN BOTH PIERS SHALL BE MODIFIED AS SHOWN, COST TO BE INCIDENTAL TO PAY ITEM 605585, "STEEL STRUCTURE REPAIR", AS PART OF TRUNNION GIRDER REAR ANCHORAGE REPAIR.
 - FOR ADDITIONAL INFORMATION SEE REFERENCE SHEET "COUNTERWEIGHT".
 - THE CONTRACTOR SHALL VERIFY THAT THE REMOVAL LIMITS OF THE COUNTERWEIGHT CONCRETE ARE SUFFICIENT AS TO PERMIT COUNTERWEIGHT MOVEMENT AROUND THE NEW TRUNNION GIRDER REAR ANCHORAGE. FOR TRUNNION GIRDER REAR ANCHORAGE REPAIR DETAILS, SEE SHEET "BEARING REPAIR DETAILS 2".

CADD DESIGN E/S DESIGN REJ CHKD. JFB

TEXT SIZE
REFERENCE
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.1875
.25

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BR. I-688

CONTRACT	COUNTY	FEDERAL AID PROJECT NO.	SHEET NO.	TOTAL SHYS.
21-074-07	NEW CASTLE	EBHN-NO29 (2)	32	169

ANCHORAGE SPAN COUNTERWEIGHT MECHANICAL SUPPORT REPAIRS

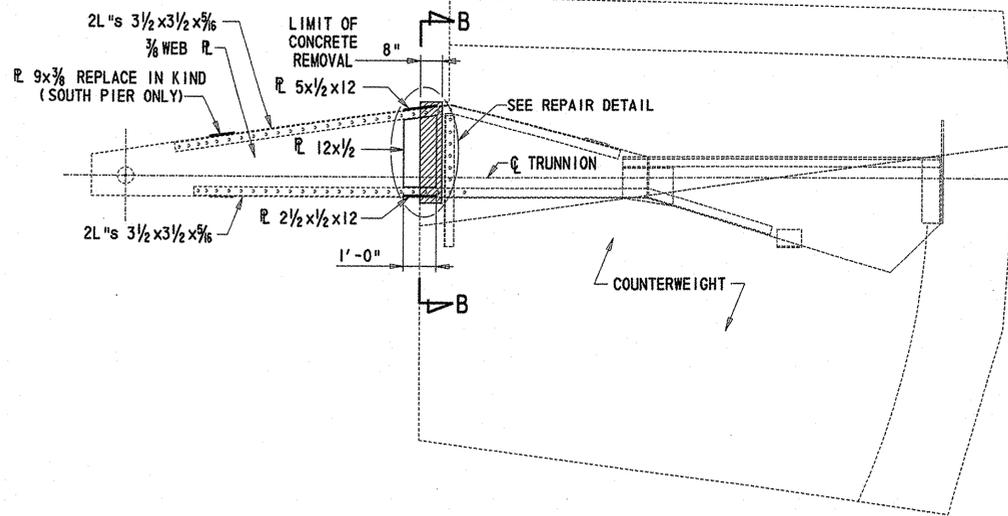
BR 688 SOUTH MARKET STREET BRIDGE REHABILITATION

REVISIONS

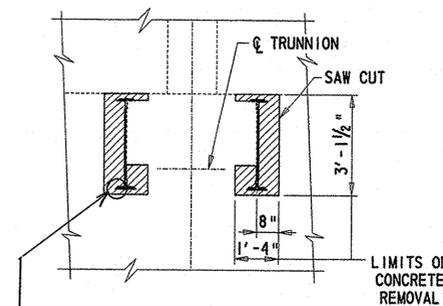
AS BUILT

NOTES:

- COUNTERWEIGHTS IN BOTH PIERS SHALL BE MODIFIED AS SHOWN, COST TO BE INCIDENTAL TO PAY ITEM 605585, "STEEL STRUCTURE REPAIR", AS A MECHANICAL SUPPORT REPAIR.
- FOR ADDITIONAL INFORMATION SEE REFERENCE SHEET "COUNTERWEIGHT".
- THE CONTRACTOR SHALL VERIFY THAT THE REMOVAL LIMITS OF THE COUNTERWEIGHT CONCRETE ARE SUFFICIENT AS TO PERMIT COUNTERWEIGHT MOVEMENT AROUND THE NEW TRUNNION GIRDER REAR ANCHORAGE. FOR TRUNNION GIRDER REAR ANCHORAGE REPAIR DETAILS, SEE SHEET "BEARING REPAIR DETAILS 2".

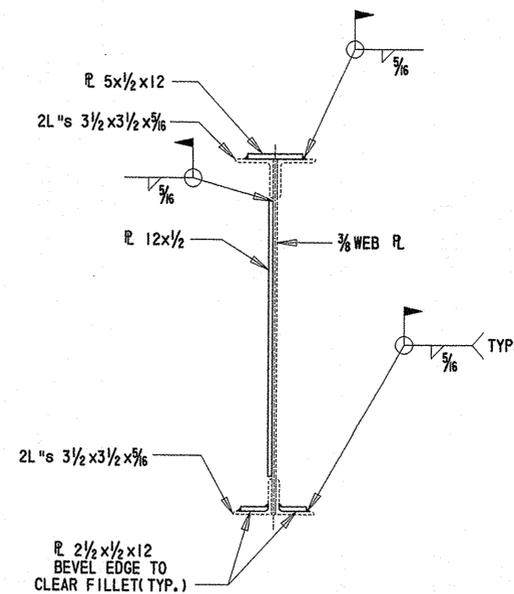


SECTION A-A
SCALE: 3/8" = 1'-0"

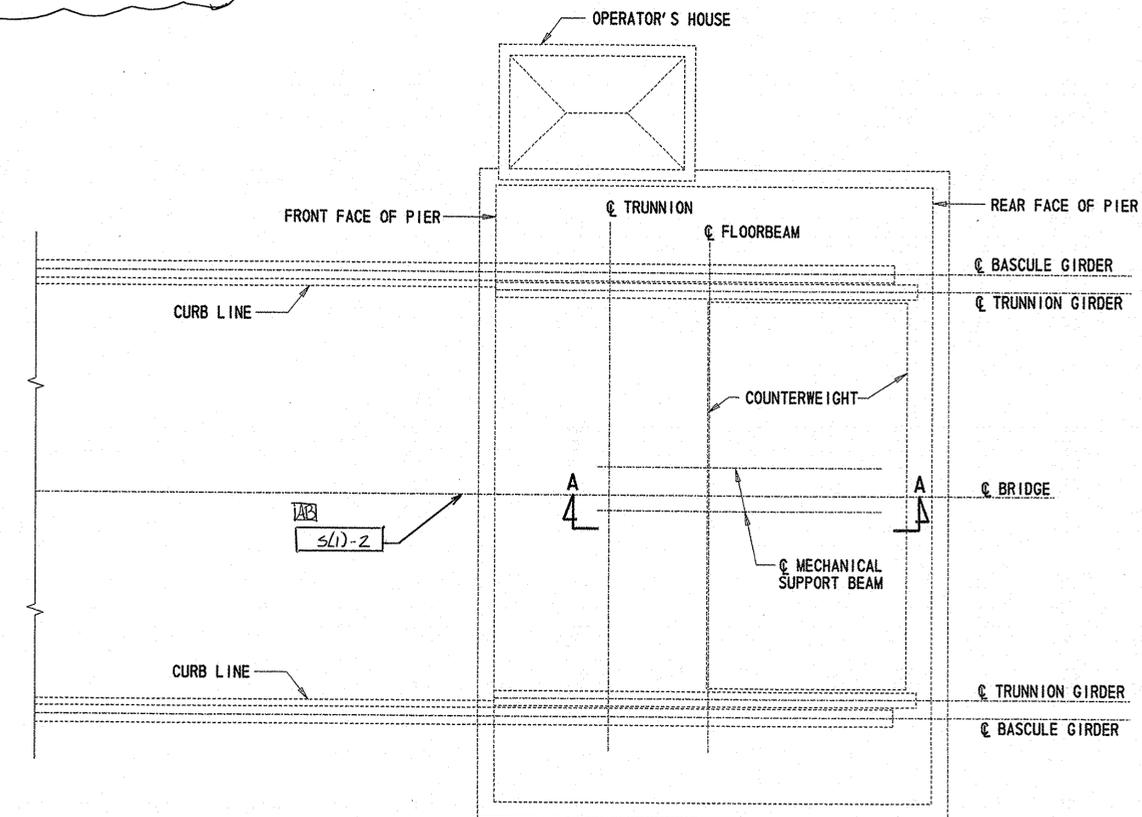


SECTION B-B
SCALE: 3/8" = 1'-0"

SOUTH COUNTERWEIGHT WEST BEAM BOTTOM FLANGE ANGLE 2'-6" LENGTH WAS DETERIORATED WAS REPAIR & REPLACED



REPAIR DETAIL
SCALE: 1" = 1'-0"

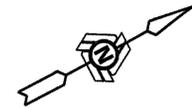


PARTIAL PLAN AT NORTH PIER
(SOUTH PIER SIMILAR)
SCALE: 1/8" = 1'-0"

CADD DESIGN R/S DESIGN RAM CHKD. JRW

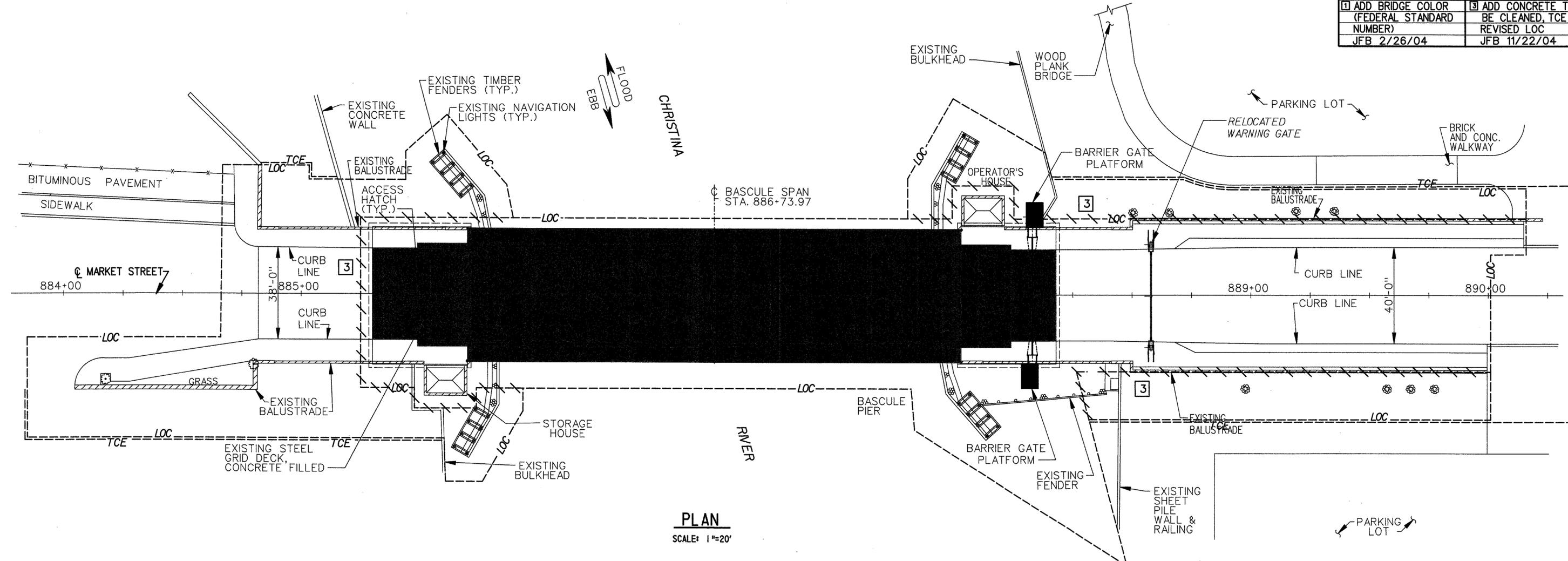
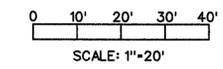
9/21/2006 21-074-07

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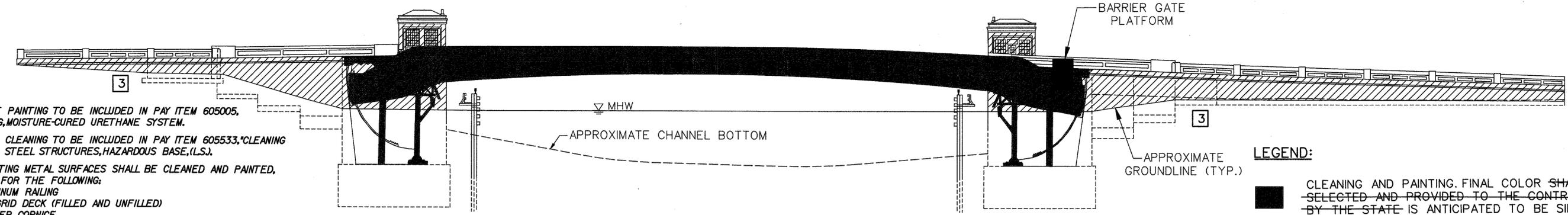


BR 688 SOUTH MARKET STREET BRIDGE REHABILITATION	
REVISIONS	
1 ADD BRIDGE COLOR (FEDERAL STANDARD NUMBER)	3 ADD CONCRETE TO BE CLEANED, TCE REVISED LOC
JFB 2/26/04	JFB 11/22/04

PAINTING KEY PLAN



PLAN
SCALE: 1"=20'

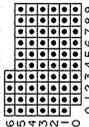


ELEVATION
SCALE: 1"=20'

- NOTES:**
- COST OF PAINTING TO BE INCLUDED IN PAY ITEM 605005, "PAINTING, MOISTURE-CURED URETHANE SYSTEM."
 - COST OF CLEANING TO BE INCLUDED IN PAY ITEM 605533, "CLEANING EXISTING STEEL STRUCTURES, HAZARDOUS BASE, (L.S.)."
 - ALL EXISTING METAL SURFACES SHALL BE CLEANED AND PAINTED, EXCEPT FOR THE FOLLOWING:
 - ALUMINUM RAILING
 - ALL GRID DECK (FILLED AND UNFILLED)
 - COPPER CORNICE
 - BARRIER GATE HOUSING
 - EXPOSED CONCRETE SURFACES, INCLUDING THE FACE AT THE PIT PIER, BRICK ON OPERATOR/STORAGE HOUSES AND APPROACH WALL SHALL BE CLEANED FROM THE GROUNDLINE OR HIGH WATER LINE.
 - NEW RAILING ON PARAPET NOT SHOWN.

- LEGEND:**
- CLEANING AND PAINTING. FINAL COLOR SHALL BE SELECTED AND PROVIDED TO THE CONTRACTOR BY THE STATE IS ANTICIPATED TO BE SIMILAR TO FEDERAL STANDARD NO. 27769 1
 - PAINTING (CONCRETE TAN TO MATCH THE EXISTING CONCRETE AS CLOSELY AS POSSIBLE) (BARRIER GATE PLATFORM ONLY)
 - CONCRETE TO BE CLEANED AS PART OF ADDITIONAL WORK-004, REMOVE AND REPLACE EXISTING PEDESTRIAN PARAPET 3

CADD DESIGN EVS
 DESIGN JFB
 CHKD.
 EVS



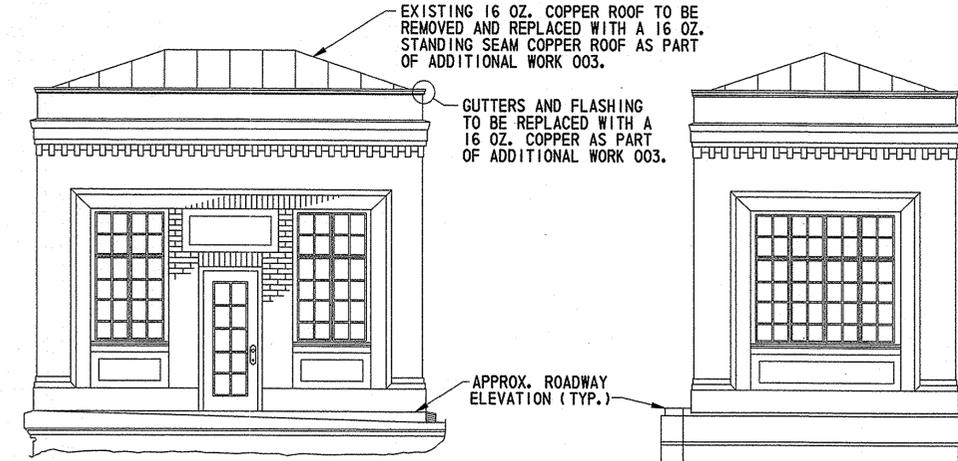
BR. I-688

CONTRACT	COUNTY	FEDERAL AID PROJECT NO.	SHEET NO.	TOTAL SHTS.
21-074-07	NEW CASTLE	EBHN-N029 (2)	33A	169

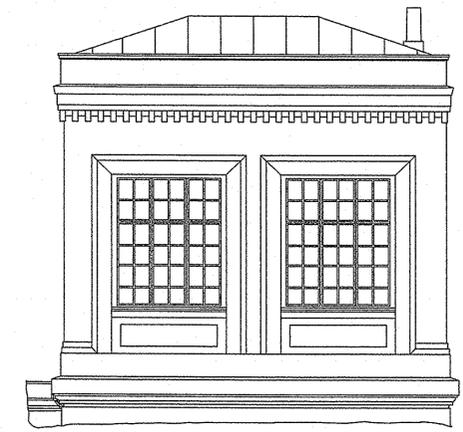
**BR 688
SOUTH MARKET STREET BRIDGE
REHABILITATION**

REVISIONS	
NEW SHEET	JFB 11/22/04

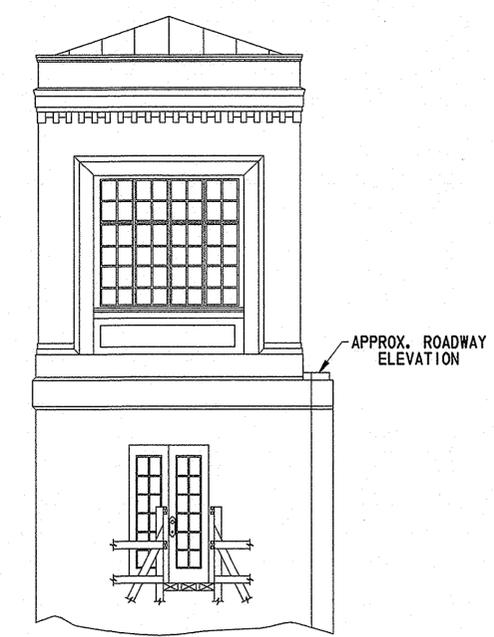
OPERATOR AND STORAGE HOUSE DETAILS



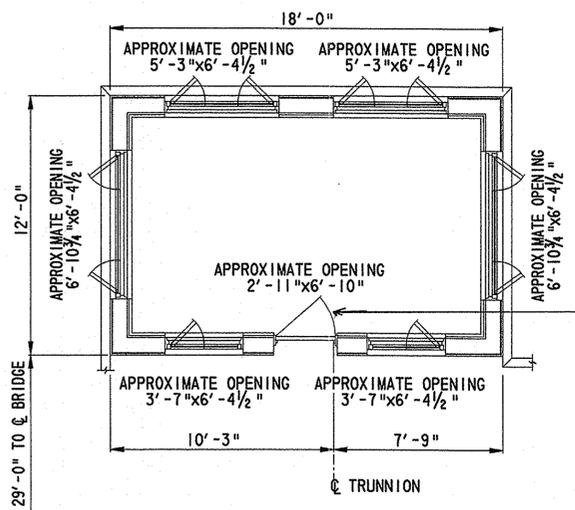
FRONT ELEVATION
SCALE: 1/4" = 1'-0"



REAR ELEVATION
SCALE: 1/4" = 1'-0"



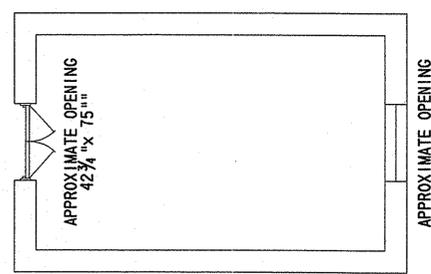
OPERATOR HOUSE - SOUTH FACE
SCALE: 1/4" = 1'-0"
DOOR AT SOUTH FACE OF STORAGE HOUSE EXITS AT GROUND LEVEL



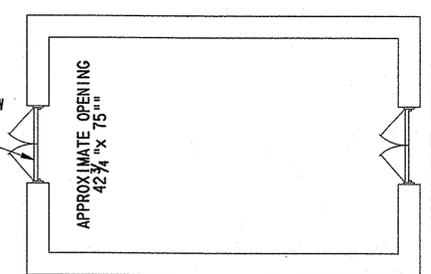
OPERATOR HOUSE - NORTH FACE
SCALE: 3/8" = 1'-0"
ON STORAGE HOUSE, LOWER WINDOW TO BE REPLACED WITH A DOOR - REGRADING WILL BE REQUIRED AT NEW DOOR AND CONSIDERED INCIDENTAL TO ADDITIONAL WORK 003-OPERATOR AND STORAGE HOUSE ENHANCEMENTS.

NOTE: STORAGE HOUSE DOOR SWING IS OPPOSITE HAND

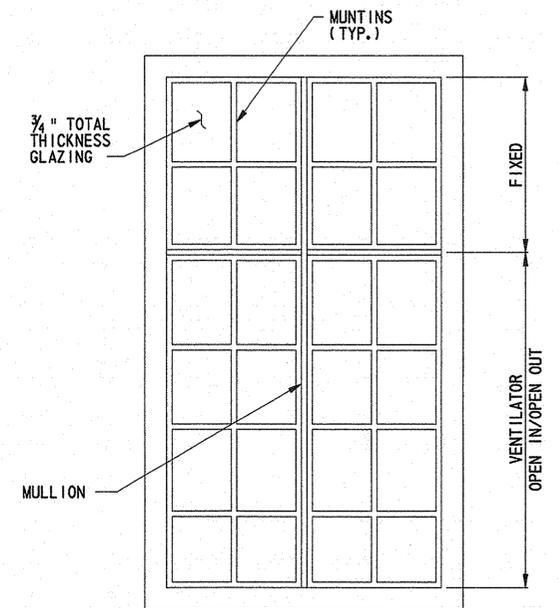
OPERATOR HOUSE - STREET LEVEL
SCALE: 1/4" = 1'-0"
SHOWING ARRANGEMENT OF WINDOWS AND DOORS IN NORTH HOUSE (STORAGE HOUSE OPPOSITE HAND)



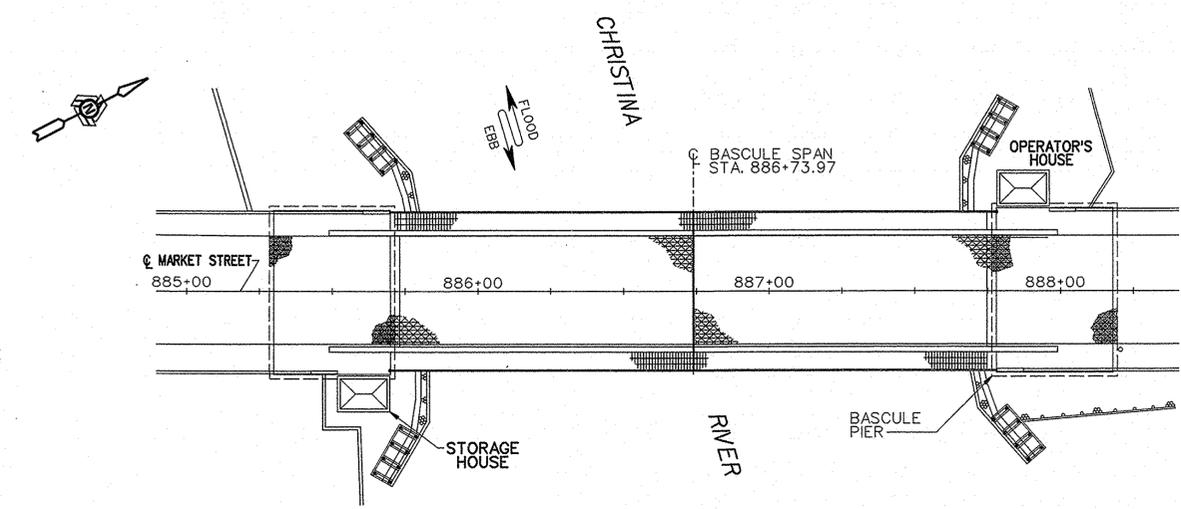
OPERATOR HOUSE - LOWER LEVEL
SCALE: 1/4" = 1'-0"



STORAGE HOUSE - LOWER LEVEL
SCALE: 1/4" = 1'-0"



TYPICAL WINDOW DETAIL
N. T. S.
NOTE: SEE OPERATOR HOUSE- STREET LEVEL PLAN FOR OPERATOR AND STORAGE HOUSE WINDOW HINGE LOCATIONS.



KEY PLAN
N. T. S.

CAAD DESIGN DM DESIGN DM CHD. JFB

9/21/2006 21-074-07

TEXT SIZE
 REFERENCE
 .125
 .1875
 .25

0123456789
 0123456789
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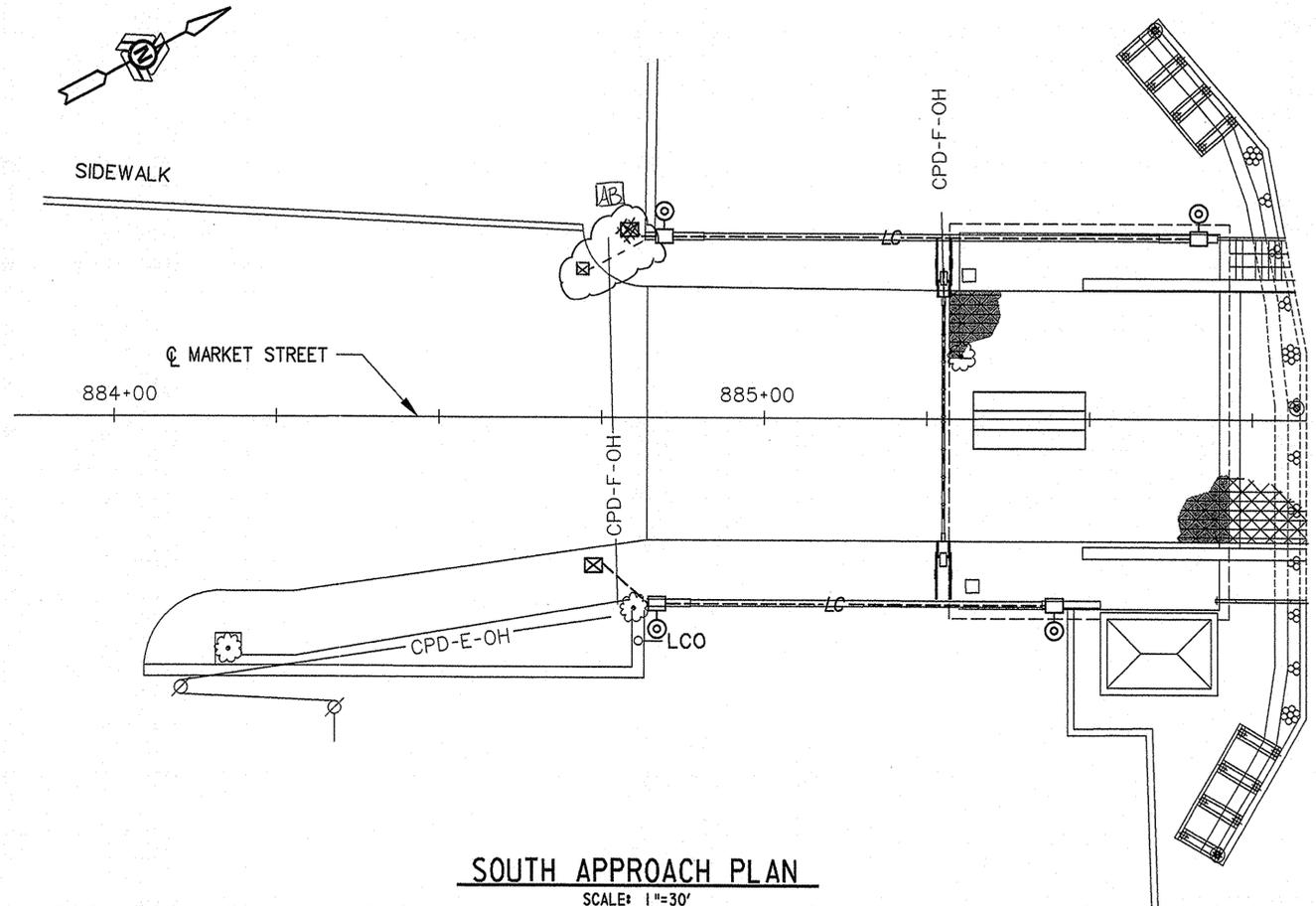
BR. 1-688	CONTRACT 21-074-07	COUNTY NEW CASTLE	FEDERAL AID PROJECT NO. EBHN-N029 (2)	SHEET NO. 34A	TOTAL SHTS. 169
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APPROACH LIGHTING

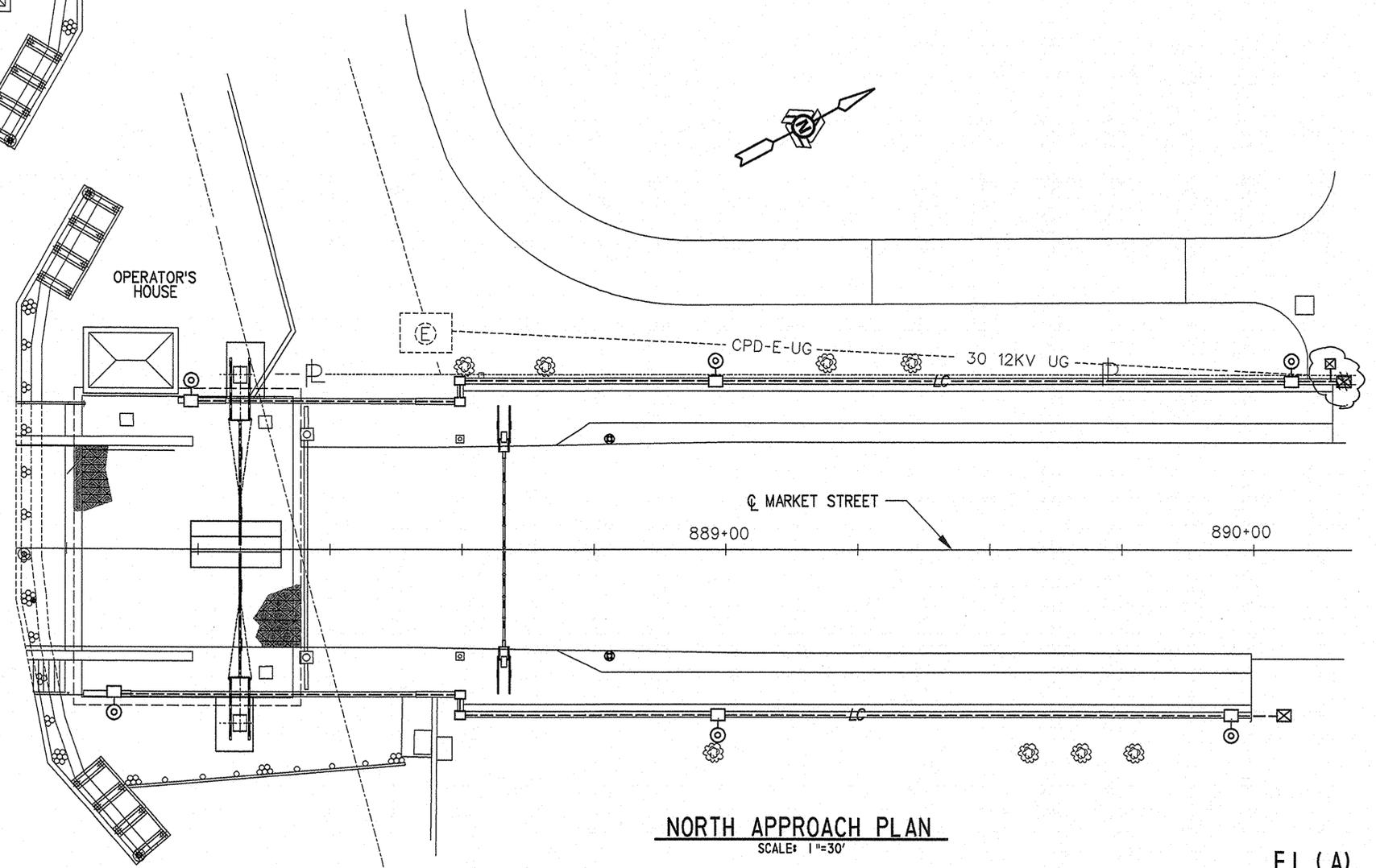
**BR 688
 SOUTH MARKET STREET BRIDGE
 REHABILITATION**

REVISIONS	
3	ADDED NEW SHEET LRB/RLR 9/29/04

AS BUILT



SOUTH APPROACH PLAN
 SCALE: 1"=30'



NORTH APPROACH PLAN
 SCALE: 1"=30'

LEGEND

- ⊙ LIGHT POLE FOUNDATIONS
- LC - NEW 2" DIA. CONDUIT EMBEDDED IN NEW PARAPET
- LCO - NEW 2 1/2" DIA. CONDUIT UNDERGROUND
- NEW 12"x12"x8" JUNCTION BOX EMBEDDED IN NEW PARAPET
- ⊗ NEW TYPE 1 JUNCTION WELL EMBEDDED IN SIDEWALK

NOTES:

1. LOCATIONS OF JUNCTION BOXES EMBEDDED IN SIDEWALK ARE APPROXIMATE. FINAL LOCATIONS SHALL BE COORDINATED WITH POWER SUPPLIER.
2. FOR PARAPET LIGHTING MOUNTING DETAILS, SEE SHEET 63.
3. LOCATIONS OF FIXTURES AND JUNCTION BOXES IN PARAPETS ARE APPROXIMATE. THEY SHALL BE LOCATED AT THE LIGHT POLE FOUNDATIONS WHICH ARE SHOWN ON SHEET NO. 6B, 6C, 6D AND 6E.
4. ALL RESTORATION WORK ASSOCIATED WITH THE INSTALLATION OF THE TYPE 1 JUNCTION WELLS AND CONDUIT IS CONSIDERED INCIDENTAL TO THE PAY ITEM 744001, "CONDUIT JUNCTION WELLS".
5. EXPANSION COUPLINGS FOR THE CONDUIT SHALL BE PROVIDED AT ALL EXPANSION JOINTS IN THE PARAPET.

AD CADD DESIGN RLR DESIGN TBD CHKD. OCT

9/21/2006 21-074-07

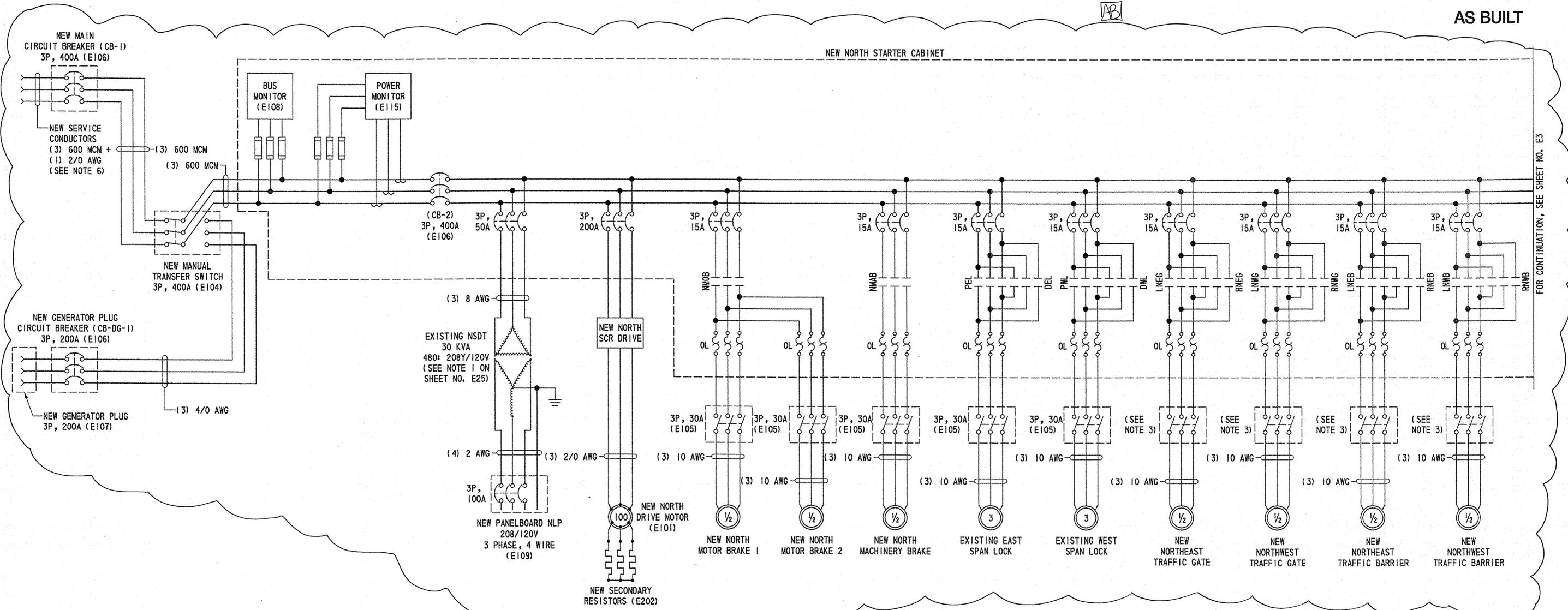
EI (A)

THREE LINE DIAGRAM - 1

BR 688
SOUTH MARKET STREET BRIDGE
REHABILITATION

REVISIONS

AS BUILT



FOR CONTINUATION, SEE SHEET NO. E3

LEGEND: (FOR THREE LINE DIAGRAMS)

- CIRCUIT BREAKER
- OVERLOAD RELAY
- FUSE
- MOTOR (HORSEPOWER AS SHOWN)
- MOTOR DISCONNECT SWITCH
- CONTACTOR
- MANUAL TRANSFER SWITCH
- TRANSFORMER

NOTE:
SEE LINK CONTROL SYSTEM
DRAWINGS FOR ADDITIONAL
DETAILS

NOTES:

- THIS THREE LINE DIAGRAM IS DIAGRAMMATIC AND IS NOT INTENDED TO SHOW CONTROLS, WIRING AND EQUIPMENT IN THEIR EXACT PHYSICAL RELATIONSHIP.
- IN ADDITION TO CONDUCTORS SHOWN, ALL CONDUITS SHALL INCLUDE A GROUND CONDUCTOR SIZED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.
- MOTOR DISCONNECT SWITCHES FOR BARRIER AND TRAFFIC GATES SHALL BE INTEGRAL TO THE EQUIPMENT, SIZED AS REQUIRED, AND SUPPLIED BY THE GATE AND BARRIER MANUFACTURERS.
- ALL WIRE, CABLE, BUS BARS, TERMINAL BLOCKS, CONTACTS, GROUNDING AND BONDING CONDUCTORS, ETC. SHALL BE COPPER.
- MOTOR CIRCUIT PROTECTIVE DEVICE RATINGS SHALL BE DETERMINED BY CONTROL CIRCUIT MANUFACTURER. ALL OVERLOADS SHALL BE SIZED APPROPRIATELY UTILIZING ACTUAL NAME PLATE DATA OF APPROVED EQUIPMENT.
- THE SIZE 2/0 AWG GROUNDED SERVICE CONDUCTOR SHALL BE TERMINATED ON GROUND BARS IN THE MAIN CIRCUIT BREAKER, THE MANUAL TRANSFER SWITCH, AND THE NORTH STARTER CABINET. SEE SPECIFICATIONS FOR FURTHER GROUNDING REQUIREMENTS.
- A SIZE 6 AWG EQUIPMENT BONDING JUMPER SHALL BE INSTALLED BETWEEN THE NORTH AND SOUTH STARTER CABINETS GROUND BARS AND THE EXISTING SUBMARINE CABLE SUPPORT FITTINGS.

TLDI
CADD DESIGN
R/L/R
DESIGN
M/E/A
CHKD.
L/R/B

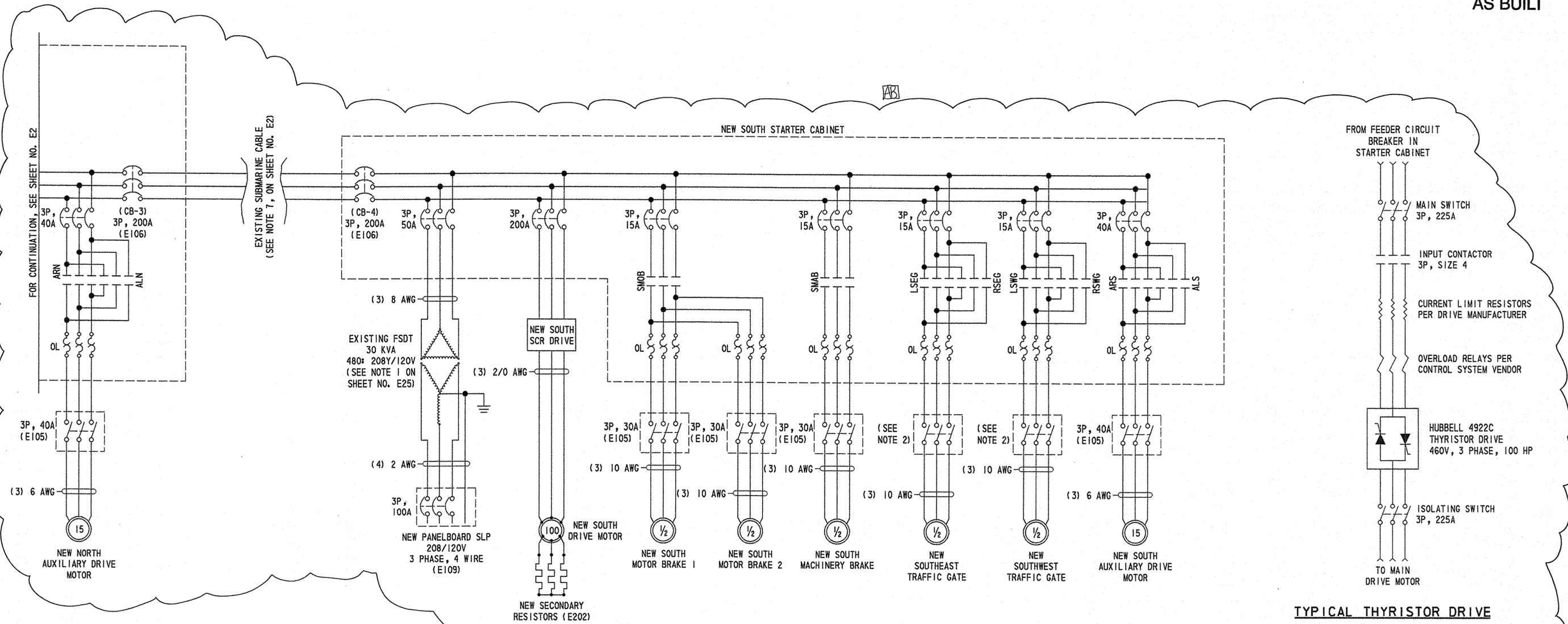
9/21/2006 21-074-07

THREE LINE DIAGRAM - 2

BR 688
SOUTH MARKET STREET BRIDGE
REHABILITATION

REVISIONS

AS BUILT



NOTE: **AB**
SEE LINK CONTROL SYSTEMS
DRAWINGS FOR ADDITIONAL
DETAILS.

TYPICAL THYRISTOR DRIVE
POWER WIRING DIAGRAM

NOTE: NOT ALL COMPONENTS REQUIRED TO PROVIDE A COMPLETE, FUNCTIONAL DRIVE SYSTEM ARE SHOWN

NOTES:

1. FOR LEGEND AND NOTES, SEE SHEET NO. E2.
2. MOTOR DISCONNECT SWITCHES FOR BARRIER AND TRAFFIC GATES SHALL BE INTEGRAL TO THE EQUIPMENT, SIZED AS REQUIRED, AND SUPPLIED BY THE GATE AND BARRIER MANUFACTURERS.

TLD2
 CADD DESIGN
 P/LR
 DESIGN
 MEA
 CHKD.
 LRB

9/21/2006 21-074-07

TEXT SIZE
REFERENCE
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.1875
.25

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BR. 1-688

CONTRACT	COUNTY	FEDERAL AID PROJECT NO.	SHEET NO.	TOTAL SHTS.
21-074-07	NEW CASTLE	EBHN-N029 (2)	37	169

PANELBOARD SCHEDULES

BR 688
SOUTH MARKET STREET BRIDGE
REHABILITATION

REVISIONS	
1] ADDED PEDESTRIAN LIGHTING 2-20-04	LRB

AS BUILT

PANELBOARD NSLP												
VOLTAGE: 208Y/120			PHASE: 3		WIRE: 4		AMPERES: 225		MAIN: 100A MCB		A. I. R.: 10,000	
CIRCUIT NO.	BREAKER		SERVICE TO:	CONDUCTORS	CONDUCTORS	SERVICE TO:	BREAKER		CIRCUIT NO.			
	POLES	AMPS					AMPS	POLES				
1	1	20	UPSTAIRS LIGHTS	(2) 12 AWG	(2) 12 AWG	MACHINERY ROOM LIGHTS	20	1	2			
3	1	20	UPSTAIRS RECEPTACLES	(2) 12 AWG	(2) 12 AWG	MACHINERY ROOM RECEPTACLES	20	1	4			
5	1	20	CANOPY LIGHTS	(2) 12 AWG	(2) 12 AWG	MACHINERY ROOM RECEPTACLES	20	1	6			
7	1	20	COUNTERWEIGHT PIT LIGHTS	(2) 12 AWG	(2) 12 AWG	HEAT TRACE	20	1	8			
9	1	20	NORTH NAVIGATION LIGHTS	(2) 10 AWG	(2) 12 AWG	CABINETS LIGHTS AND HEATERS	20	1	10			
11	1	20	HOT WATER HEATER	(2) 12 AWG	(2) 12 AWG	CONTROL CIRCUIT	20	1	12			
13			SPARE		(2) 12 AWG	FLOODLIGHTS	20	1	14			
13	1	20	1] NORTHWEST PEDESTRIAN LIGHTING	(2) 10 AWG	(2) 10 AWG	TRAFFIC SIGNALS	20	1	16			
15	1	20	NORTH GATES AND BARRIERS LIGHTS / GONGS	(2) 10 AWG	(2) 10 AWG	NORTH BARRIERS HEAT AND RECEPTACLES	20	1	18			
17	1	20	NORTH GATES HEAT AND RECEPTACLES	(2) 10 AWG	(2) 12 AWG	PUMP PLATFORM LIGHTS	20	1	20			
19	1	20	AUXILIARY CONTROL CIRCUIT	(2) 12 AWG	(2) 12 AWG	UPSTAIRS HEATER	20	2	22			
21	2	30	DUPLEX SUMP PUMPS	(2) 10 AWG	(2) 12 AWG	CEILING FAN	20	1	24			
23	2	20	MACHINERY ROOM HEATER	(2) 12 AWG	(2) 12 AWG	BATHROOM BASEBOARD HEATER	20	1	26			
25	2	20	MACHINERY ROOM HEATER	(2) 12 AWG	(2) 12 AWG	REFRIGERATOR	20	1	28			
27	2	15	AIR CONDITIONER	(2) 12 AWG	(2) 12 AWG	MICROWAVE	20	1	30			
29			SPARE			SPARE			32			
29	1	20	1] NORTHWEST FLOODLIGHTS	(2) 10 AWG	(2) 12 AWG	1] NORTHEAST FLOODLIGHTS	20	1	32			
31			SPARE									
31	1	20	1] NORTHEAST PEDESTRIAN LIGHTING	(2) 10 AWG								

PANELBOARD FSLP												
VOLTAGE: 208Y/120			PHASE: 3		WIRE: 4		AMPERES: 225		MAIN: 100A MCB		A. I. R.: 10,000	
CIRCUIT NO.	BREAKER		SERVICE TO:	CONDUCTORS	CONDUCTORS	SERVICE TO:	BREAKER		CIRCUIT NO.			
	POLES	AMPS					AMPS	POLES				
1	1	20	UPSTAIRS LIGHTS	(2) 12 AWG	(2) 12 AWG	MACHINERY ROOM LIGHTS	20	1	2			
3	1	20	UPSTAIRS RECEPTACLES	(2) 12 AWG	(2) 12 AWG	MACHINERY ROOM RECEPTACLES	20	1	4			
5	1	20	CANOPY LIGHTS	(2) 12 AWG	(2) 12 AWG	MACHINERY ROOM RECEPTACLES	20	1	6			
7	1	20	COUNTERWEIGHT PIT LIGHTS	(2) 12 AWG	(2) 12 AWG	CABINETS LIGHTS AND HEATERS	20	1	8			
9	1	20	SOUTH NAVIGATION LIGHTS	(2) 10 AWG	(2) 10 AWG	SOUTH GATES HEAT AND RECEPTACLES	20	1	10			
11	1	20	SOUTH GATES LIGHTS / GONGS	(2) 10 AWG	(2) 12 AWG	PUMP PLATFORM LIGHTS	20	1	12			
13	2	20	UPSTAIRS HEATER	(2) 12 AWG	(2) 12 AWG	UP STAIR MACHINERY ROOM HEATER	20	1	14			
15	2	20	UPSTAIRS HEATER	(2) 12 AWG	(2) 12 AWG	UP STAIR MACHINERY ROOM HEATER	20	1	16			
17	2	30	DUPLEX SUMP PUMP SPARE	(2) 10 AWG		SPARE			18			
19			SPARE		(2) 10 AWG	1] SOUTHWEST PEDESTRIAN LIGHTING	20	1	18			
19	1	20	1] SOUTHWEST FLOODLIGHTS	(2) 10 AWG		SPARE			20			
21	1	20	1] SOUTHEAST FLOODLIGHTS	(2) 10 AWG	(2) 10 AWG	1] SOUTHEAST PEDESTRIAN LIGHTING	20	1	20			
18			PIT PLATFORM LIGHTS			SPARE			22			
19			PHOTO CELL CIRCUIT		29	PED. HANDRAIL LIGHTS - WEST						
20			SPARE		30	Sump Pump (50 Amp - 3 Ø)						
21			SPARE		31	UNDERBRIDGE FLOODS - EAST						
22			SPARE		32	Sump Pump (50 Amp - 3 Ø)						
23			PED. HANDRAIL LIGHTS - EAST									
24			SPARE									
25			UNDERBRIDGE FLOODS - WEST									
26			SPARE									
27			SPARE									
28			Sump Pump (50 Amp - 3 Ø)									

NOTES:

1. PANELBOARDS SHALL INCLUDE TRANSIENT VOLTAGE SURGE SUPPRESSION, EITHER INTEGRAL TO THE PANELBOARD OR EXTERNALLY MOUNTED.

PS CADD DESIGN ALR DESIGN MEA CHKD. LRB

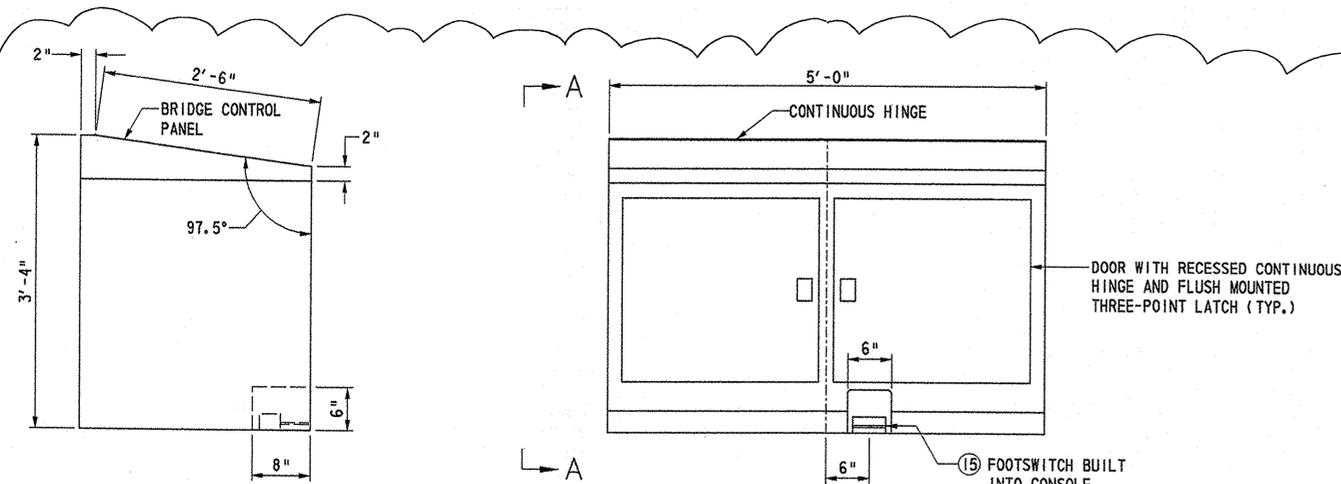
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**BR 688
SOUTH MARKET STREET BRIDGE
REHABILITATION**

REVISIONS

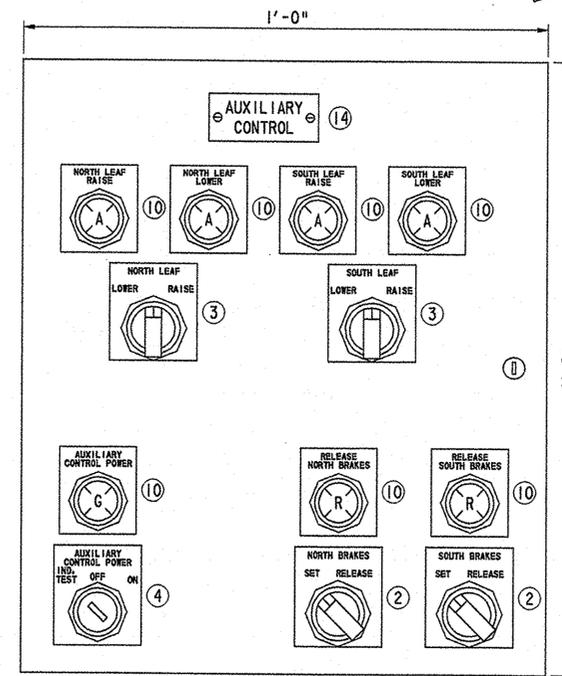
AS BUILT

CONTROL CONSOLE DETAILS - 1



VIEW A-A
SCALE: 1" = 1'-0"

CONTROL CONSOLE
SCALE: 1" = 1'-0"



AUXILIARY CONTROL PANEL
SCALE: 6" = 1'-0"

CONTROL CONSOLE DEVICES LEGEND			
DEVICE NUMBER	DESCRIPTION	MANUFACTURER	MODEL
①	SPAN CONTROL SWITCH - TWO POSITION, SPRING RETURN TO CENTER, WITH PISTOL TYPE HANDLE	KRAUS & NAIMER (AMERICAN SOLENOID)	CA11
②	SELECTOR SWITCH - 30.5MM, TWO POSITION MAINTAINED	ALLEN-BRADLEY	800T
③	SELECTOR SWITCH - 30.5MM, THREE POSITION, SPRING RETURN TO CENTER	ALLEN-BRADLEY	800T
④	SELECTOR SWITCH - 30.5MM, THREE POSITION, MAINTAINED, KEY OPERATED	ALLEN-BRADLEY	800T
⑤	SELECTOR SWITCH - 30.5MM, THREE POSITION, MAINTAINED	ALLEN-BRADLEY	800T
⑥	SELECTOR SWITCH - 30.5MM, TWO POSITION, MAINTAINED, WITH LOCKABLE COVER (800T-N163)	ALLEN-BRADLEY	800T
⑦	SELECTOR SWITCH - 30.5MM, THREE POSITION, MAINTAINED, WITH LOCKABLE COVER (800T-N163)	ALLEN-BRADLEY	800T
⑧	PUSHBUTTON - 30.5MM, MOMENTARY, FLUSH HEAD	ALLEN-BRADLEY	800T
⑨	EMERGENCY STOP PUSHBUTTON - 30.5MM, MUSHROOM HEAD, MAINTAINED, TWIST/PULL TO RELEASE, ILLUMINATED WHEN PUSHED	ALLEN-BRADLEY	800T
⑩	PILOT LIGHT - 30.5MM, FULL VOLTAGE, DUAL INPUT, COLOR AS INDICATED	CONTROL CONCEPTS	RTL U
⑪	POWER METER DISPLAY - THREE PHASE VOLTAGE, CURRENT AND POWER	ELECTRO INDUSTRIES	FUTURA-P34
⑫	MOTOR CURRENT METER - COMBINATION ANALOG AND DIGAL SWITCHBOARD METER	CROMPTON	077-D1
⑬	SPAN POSITION INDICATOR - LED BARGRAPH TYPE DRAFT GAUGE	WESCHLER	BD-101
⑭	ENGRAVED LEGEND PLATE - PLASTIC, WHITE TEXT ON BLACK BACKGROUND, 1/4 INCH LETTERS	—	—
⑮	FOOTSWITCH - TWO POSITION, SPRING RETURN	GEMCO	1025 SERIES
⑯	18 INCH, 2.4 WATT GOOSENECK LAMPS WITH COMMON DIMMER CONTROL	LITTLITE	P-SERIES

NOTE: **AB**
SEE LINK CONTROL SYSTEMS DRAWINGS FOR ADDITIONAL DETAILS.

AB

NOTES:

- SEE DETAILED DESCRIPTION OF CONTROL CONSOLES IN THE SPECIFICATIONS.
- LEGEND PLATES SHALL BE ENGRAVED PLASTIC, BLACK WITH WHITE LETTERS. LEGEND PLATES NOT INTEGRAL TO DEVICES SHALL BE ATTACHED WITH STAINLESS STEEL SCREWS. DEVICE LEGEND PLATES SHALL BE FLUSH WITH CONSOLE SURFACE AND NOT BOW OR WARP WHEN DEVICE SECURELY TIGHTENED.
- CUSTOM LEGEND AS SHOWN. CONTRACTOR SHALL DETERMINE SPAN FULL OPEN POSITION IN DEGREES. RED LINE, 1/8" WIDE SHALL BE APPLIED TO INDICATE EXACT SPAN FULL OPEN POSITION, APPROXIMATELY 75 DEGREES.
- TO THE EXTENT POSSIBLE, THE COLOR OF ALL DEVICE TRIM RUNGS SHALL MATCH.

CDD I
 CADD DESIGN
 RLR
 DESIGN
 MEA
 CHKD.
 OCT

9/21/2006 21-074-07

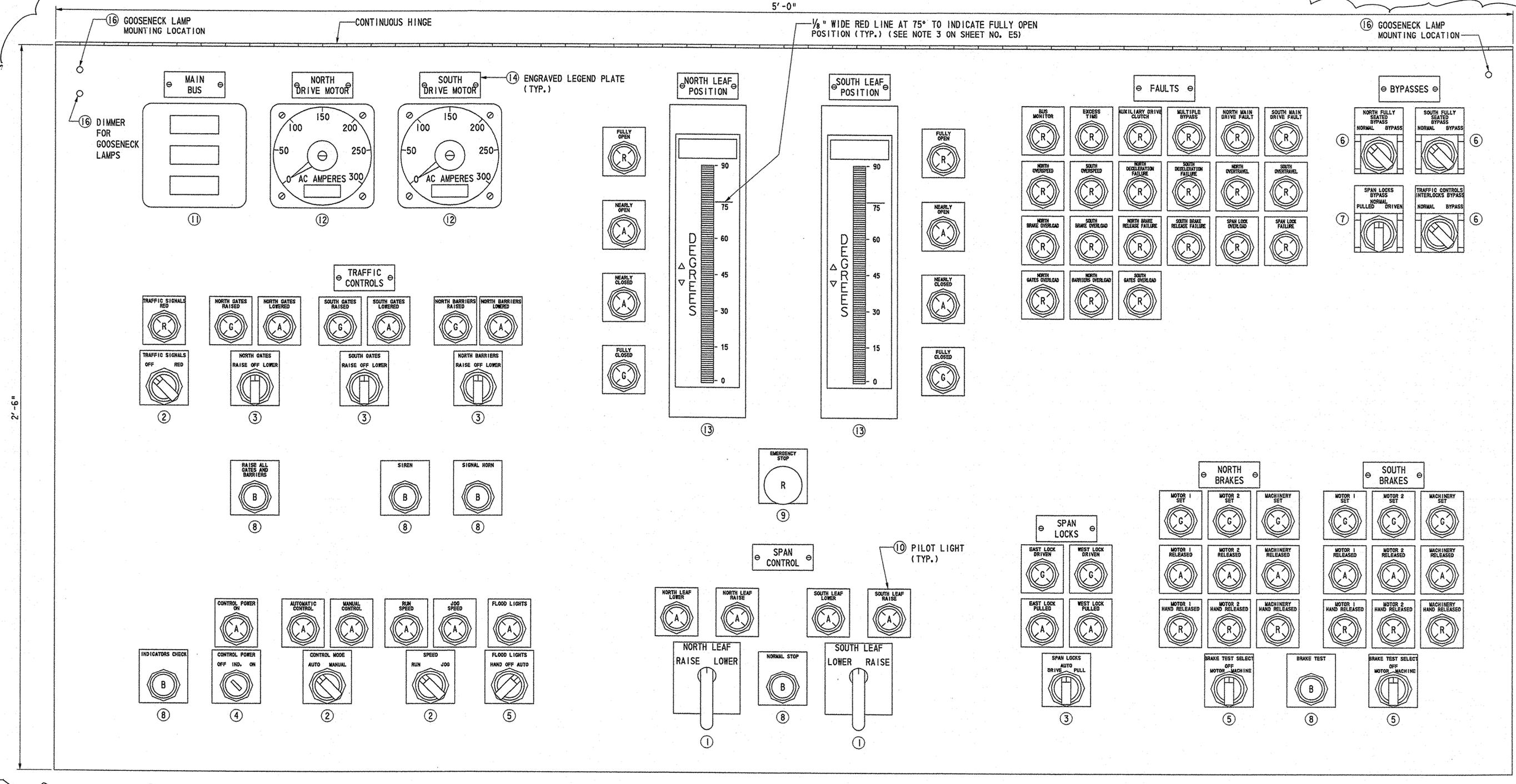
BR 688	
SOUTH MARKET STREET BRIDGE	
REHABILITATION	
REVISIONS	

LEGEND
DEVICE COLOR CODE
 A-AMBER
 B-BLACK
 G-GREEN
 R-RED
 Y-YELLOW
 SELECTOR SWITCH LEVERS-BLACK

NOTES:
 1. FOR CONTROL CONSOLE DEVICES LEGEND, SEE SHEET NO. E5.

NOTE:
 SEE LINK CONTROL SYSTEM DRAWINGS FOR ADDITIONAL DETAILS.

CONTROL CONSOLE DETAILS - 2
AS BUILT



BRIDGE CONTROL PANEL
 SCALE: 6" = 1'-0"

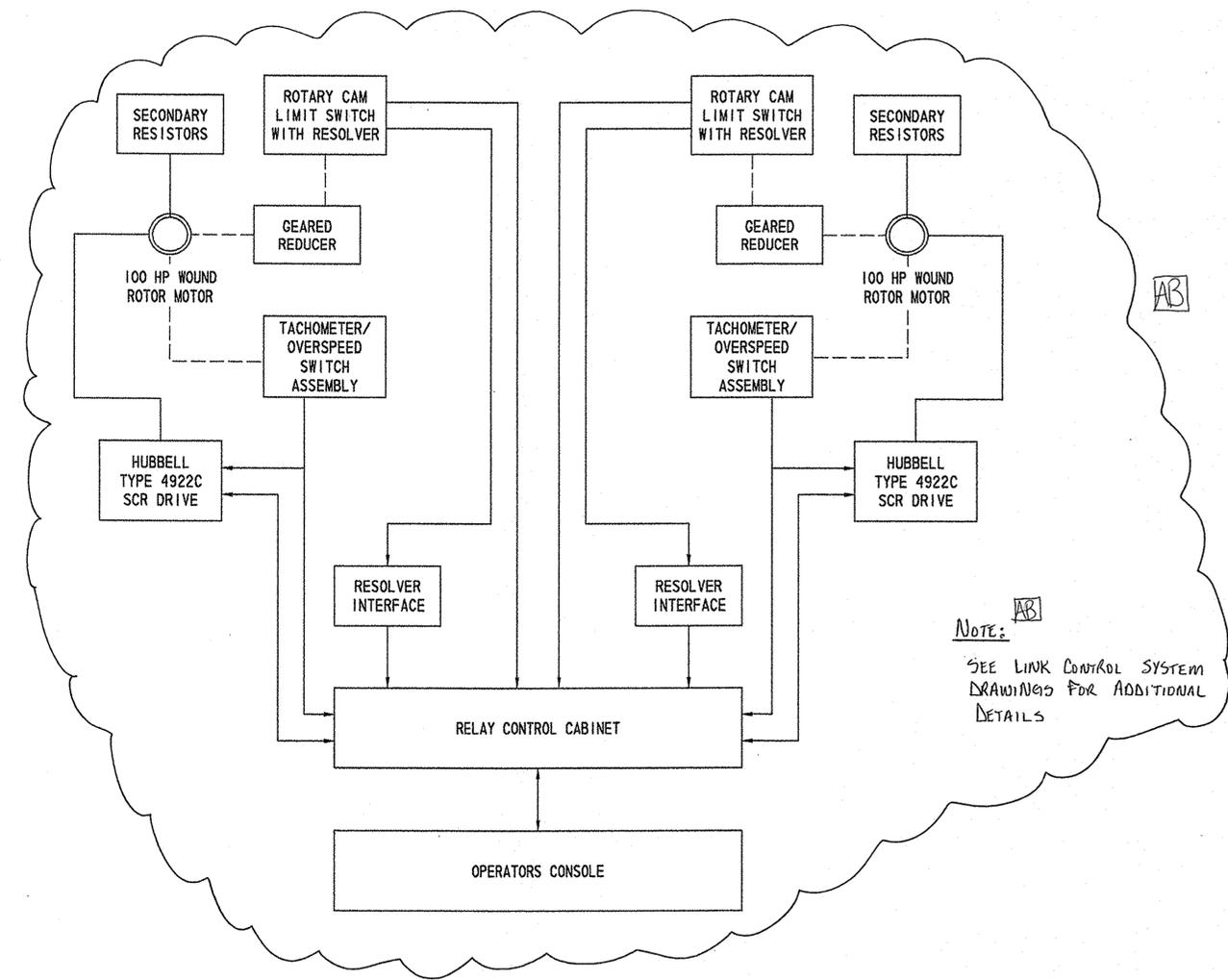
CADD DESIGN: RLR, MEA, OCT
 CHKD.: OCT

9/21/2006 21-074-07

DRIVE SYSTEM BLOCK DIAGRAM

BR 688	
SOUTH MARKET STREET BRIDGE	
REHABILITATION	
REVISIONS	

AS BUILT



NOTE: ^{AB}
 SEE LINK CONTROL SYSTEM DRAWINGS FOR ADDITIONAL DETAILS

DSBD
 CADD DESIGN _____ RLR _____ DESIGN _____ MEA _____ CHKD. _____ OCT _____

9/21/2006 21-074-07

**BR 688
SOUTH MARKET STREET BRIDGE
REHABILITATION**

REVISONS

AS BUILT

CONTROL CIRCUIT ABBREVIATION (CONTINUED)

SYMBOL	DESCRIPTION
SWGOL	SOUTHWEST GATE OVERLOAD
SWGR	SOUTHWEST GATE RAISED
TCIBP	TRAFFIC CONTROL INTERLOCKS BYPASS
TSR	TRAFFIC SIGNAL RED
WLD	WEST SPAN LOCK DRIVEN
WLHC	WEST LOCK HAND CRANK
WLOL	WEST SPAN LOCK OVERLOAD
WLP	WEST SPAN LOCK PULLED

NOTE:

SEE LINK CONTROL SYSTEMS
DRAWINGS FOR ADDITIONAL
DETAILS

CONTROL CIRCUIT LEGEND

- SELECTOR SWITCH
- PUSH-ON, PULL-OFF PUSHBUTTON
- CONTROL RELAY COIL
- TIMING RELAY COIL
- TIMING RELAY CONTACT
- TIME DELAY CLOSED (IN SECONDS)
- TIMING RELAY CONTACT
- TIME DELAY OPEN (IN SECONDS)
- NORMALLY OPEN CONTACT
- NORMALLY CLOSED CONTACT
- CONTACTOR COIL
- TOGGLE SWITCH
- (#) DENOTES POLE NUMBER
- PUSH-ON PUSHBUTTON
- PUSH-OFF PUSHBUTTON
- FOOT SWITCH
- LIMIT SWITCH (NORMALLY OPEN CONTACT)
- LIMIT SWITCH (NORMALLY CLOSED CONTACT)
- INDICATING LIGHT
- A DENOTES AMBER
- G DENOTES GREEN
- R DENOTES RED
- Y DENOTES YELLOW
- CENTRIFUGAL OVERSPEED SWITCH

NOTES:

- ANY CIRCUIT ABBREVIATION PREFIXED BY "LS" DENOTES A LIMIT SWITCH DEVICE.
- ANY CIRCUIT ABBREVIATION PREFIXED BY "OL" DENOTES AND OVERLOAD RELAY.

CONTROL CIRCUIT ABBREVIATION

SYMBOL	DESCRIPTION
AC	AUTOMATIC CONTROL
ACP	AUXILIARY CONTROL POWER
ADCN	AUXILIARY DRIVE CLUTCH NORTH
ADCP	AUXILIARY DRIVE CONTROL POWER
ADCS	AUXILIARY DRIVE CLUTCH SOUTH
ALN	AUXILIARY LOWER NORTH
ALS	AUXILIARY LOWER SOUTH
ANBR	AUXILIARY NORTH BRAKES RELEASE
ARN	AUXILIARY RAISE NORTH
ARP	AUTO RUN PERMISSION
ARS	AUXILIARY RAISE SOUTH
ASBR	AUXILIARY SOUTH BRAKES RELEASE
BM	BUS MONITOR
BHRSN	BRAKE HAND RELEASED SHUTDOWN NORTH
BHRSS	BRAKE HAND RELEASED SHUTDOWN SOUTH
BOLN	BRAKE OVERLOAD NORTH
BOLS	BRAKE OVERLOAD SOUTH
BYPF	MULTIPLE BYPASS INTERLOCK
CLHCE	SPAN LOCK HAND CRANK EAST
CLHCW	SPAN LOCK HAND CRANK WEST
CP	CONTROL POWER
CSN	CREEP SPEED NORTH
CSS	CREEP SPEED SOUTH
DEL	DRIVE EAST SPAN LOCK
DWL	DRIVE WEST SPAN LOCK
ELD	EAST SPAN LOCK DRIVEN
ELHC	EAST LOCK HAND CRANK
ELOL	EAST SPAN LOCK OVERLOAD
ELP	EAST SPAN LOCK PULLED
ETF	EXCESS TIME FAULT
FCBPN	FULLY CLOSED BYPASS NORTH
FCBPS	FULLY CLOSED BYPASS SOUTH
FCN	FULLY CLOSED NORTH
FCS	FULLY CLOSED SOUTH
FCT2N	FULLY CLOSED TIMER 2 NORTH
FCT2S	FULLY CLOSED TIMER 2 SOUTH
FCT1N	FULLY CLOSED TIMER 1 NORTH
FCT1S	FULLY CLOSED TIMER 1 SOUTH
FON	FULL OPEN NORTH
FOS	FULL OPEN SOUTH
IL	INDICATING LIGHTS
JS	JOG SPEED
JSN	JOG SPEED NORTH
JSS	JOG SPEED SOUTH
LDBP	SPAN LOCKS DRIVEN BYPASS
LDBP	SPAN LOCKS DRIVEN BYPASS
LF	LOCK FAILURE
LMN	LOWER MAIN MOTOR NORTH
LMMS	LOWER MAIN MOTOR SOUTH
LNEB	LOWER NORTHEAST BARRIER
LNEG	LOWER NORTHEAST GATE
LNWB	LOWER NORTHEAST BARRIER
LNWG	LOWER NORTHWEST GATE
LPBP	SPAN LOCKS PULLED BYPASS
LSEG	LOWER SOUTHEAST GATE
LSWG	LOWER SOUTHWEST GATE
MABHRN	MACHINERY BRAKE HAND RELEASED NORTH
MABHRS	MACHINERY BRAKE HAND RELEASED SOUTH
MABN	MACHINERY BRAKE NORTH
MABRN	MACHINERY BRAKE RELEASED NORTH
MABRS	MACHINERY BRAKE RELEASED SOUTH

CONTROL CIRCUIT ABBREVIATION (CONTINUED)

SYMBOL	DESCRIPTION
MABS	MACHINERY BRAKE SOUTH
MABSN	MACHINERY BRAKE SET NORTH
MABSS	MACHINERY BRAKE SET SOUTH
MC	MANUAL CONTROL
MDFN	MAIN DRIVE FAULT NORTH
MDFS	MAIN DRIVE FAULT SOUTH
MDRT	MAIN DRIVE RUN TIMER
MDTMR	MAIN DRIVE TIMER
MLN	MASTER LOWER NORTH
MLS	MASTER LOWER SOUTH
MOB1HRN	MOTOR BRAKE HAND RELEASED NORTH
MOB1HRS	MOTOR BRAKE HAND RELEASED SOUTH
MOB1N	MOTOR BRAKE 1 NORTH
MOB1RN	MOTOR BRAKE 1 RELEASED NORTH
MOB1RS	MOTOR BRAKE 1 RELEASED SOUTH
MOB1S	MOTOR BRAKE 1 SOUTH
MOB1SN	MOTOR BRAKE 1 SET NORTH
MOB1SS	MOTOR BRAKE 1 SET SOUTH
MOB2HRN	MOTOR BRAKE HAND RELEASED NORTH
MOB2HRS	MOTOR BRAKE HAND RELEASED SOUTH
MOB2N	MOTOR BRAKE 2 NORTH
MOB2RN	MOTOR BRAKE 2 RELEASED NORTH
MOB2RS	MOTOR BRAKE 2 RELEASED SOUTH
MOB2S	MOTOR BRAKE 2 SOUTH
MOB2SN	MOTOR BRAKE 2 SET NORTH
MOB2SS	MOTOR BRAKE 2 SET SOUTH
MRN	MASTER RAISE NORTH
MRS	MASTER RAISE SOUTH
NBOL	NORTH BARRIERS OVERLOAD
NBRF	NORTH BRAKES RELEASE FAILURE
NBT1	NORTH BARRIERS TIMER 1
NBT2	NORTH BARRIERS TIMER 2
NCN	NEAR CLOSED NORTH
NCS	NEAR CLOSED SOUTH
NCTN	NEAR CLOSED TIMER NORTH
NCTS	NEAR CLOSED TIMER SOUTH
NDF	NORTH DECELERATION FAILURE
NEB	NORTHEAST TRAFFIC BARRIER
NEBHC	NORTHEAST BARRIER HAND CRANK
NEBL	NORTHEAST BARRIER LOWERED
NEBOL	NORTHEAST BARRIER OVERLOAD
NEBR	NORTHEAST BARRIER RAISED
NEG	NORTHEAST TRAFFIC GATE
NEGHC	NORTHEAST GATE HAND CRANK
NEGOL	NORTHEAST GATE OVERLOAD
NEGL	NORTHEAST GATE LOWERED
NEGR	NORTHEAST GATE RAISED
NGOL	NORTH GATES OVERLOAD
NMAB	RELEASE NORTH MACHINERY BRAKE
NMD	NORTH MAIN DRIVE (INPUT CONTACTOR)
NMOB	RELEASE NORTH MOTOR BRAKES
NON	NEAR OPEN NORTH
NOS	NEAR OPEN SOUTH
NOTN	NEAR OPEN TIMER NORTH
NOTS	NEAR OPEN TIMER SOUTH
NWB	NORTHWEST TRAFFIC BARRIER
NWBHC	NORTHWEST BARRIER HAND CRANK
NWBL	NORTHWEST BARRIER LOWERED
NWBOL	NORTHWEST BARRIER OVERLOAD
NWBR	NORTHWEST BARRIER RAISED
NWG	NORTHWEST TRAFFIC GATE

CONTROL CIRCUIT ABBREVIATION (CONTINUED)

SYMBOL	DESCRIPTION
NWCHC	NORTHWEST GATE HAND CRANK
NWGL	NORTHWEST GATE LOWERED
NWGOL	NORTHWEST GATE OVERLOAD
NWGR	NORTHWEST GATE RAISED
OL-EL	EAST SPAN LOCK OVERLOAD
OL-NEB	OVERLOAD NORTHEAST BARRIER
OL-NEG	OVERLOAD NORTHEAST GATE
OL-NEG	OVERLOAD NORTHEAST GATE
OL-NWB	OVERLOAD NORTHWEST BARRIER
OL-NWG	OVERLOAD NORTHWEST GATE
OL-SEG	OVERLOAD SOUTHEAST GATE
OL-SWG	OVERLOAD SOUTHWEST GATE
OL-WL	WEST SPAN LOCK OVERLOAD
OSN	OVERSPEED NORTH
OSS	OVERSPEED SOUTH
OTN	OVERTRAVEL NORTH
OTS	OVERTRAVEL SOUTH
PEL	PULL EAST LOCK
PWL	PULL WEST LOCK
RAGB	RAISE ALL GATES AND BARRIERS
RBN	RELEASE NORTH BRAKES
RBS	RELEASE SOUTH BRAKES
RCN	NORTH ROTARY CAM
RCS	SOUTH ROTARY CAM
RMMN	RAISE MAIN MOTOR NORTH
RMMS	RAISE MAIN MOTOR SOUTH
RNEB	RAISE NORTHEAST BARRIER
RNEG	RAISE NORTHEAST GATE
RNWB	RAISE NORTHWEST BARRIER
RNWG	RAISE NORTHWEST GATE
RS	RUN SPEED
RSEG	RAISE SOUTHEAST GATE
RSN	RUN SPEED NORTH
RSS	RUN SPEED SOUTH
RSWG	RAISE SOUTHWEST GATE
SBRF	SOUTH BRAKES RELEASE FAILURE
SDF	SOUTH DECELERATION FAILURE
SEG	SOUTHEAST TRAFFIC GATE
SEGHC	SOUTHEAST GATE HAND CRANK
SEGL	SOUTHEAST GATE LOWERED
SEGOL	SOUTHEAST GATE OVERLOAD
SEGR	SOUTHEAST GATE RAISED
SGOL	SOUTH GATES OVERLOAD
SH	SIGNAL HORN
SMAB	RELEASE SOUTH MACHINERY BRAKE
SMD	SOUTH MAIN DRIVE (INPUT CONTACTOR)
SMF	SYSTEM FAULT
SMFT	SYSTEM FAULT TIMER
SMOB	RELEASE SOUTH MOTOR BRAKE
SS-N1	SPEED SWITCH NORTH 1
SS-N2	SPEED SWITCH NORTH 2
SS-S1	SPEED SWITCH SOUTH 1
SS-S2	SPEED SWITCH SOUTH 2
ST	STOP TIMER
SWG	SOUTHWEST TRAFFIC GATE
SWGHC	SOUTHWEST GATE HAND CRANK
SWGOL	SOUTHWEST GATE LOWERED

CCL 1 CADD DESIGN RLR DESIGN BBB CHKD. OCT

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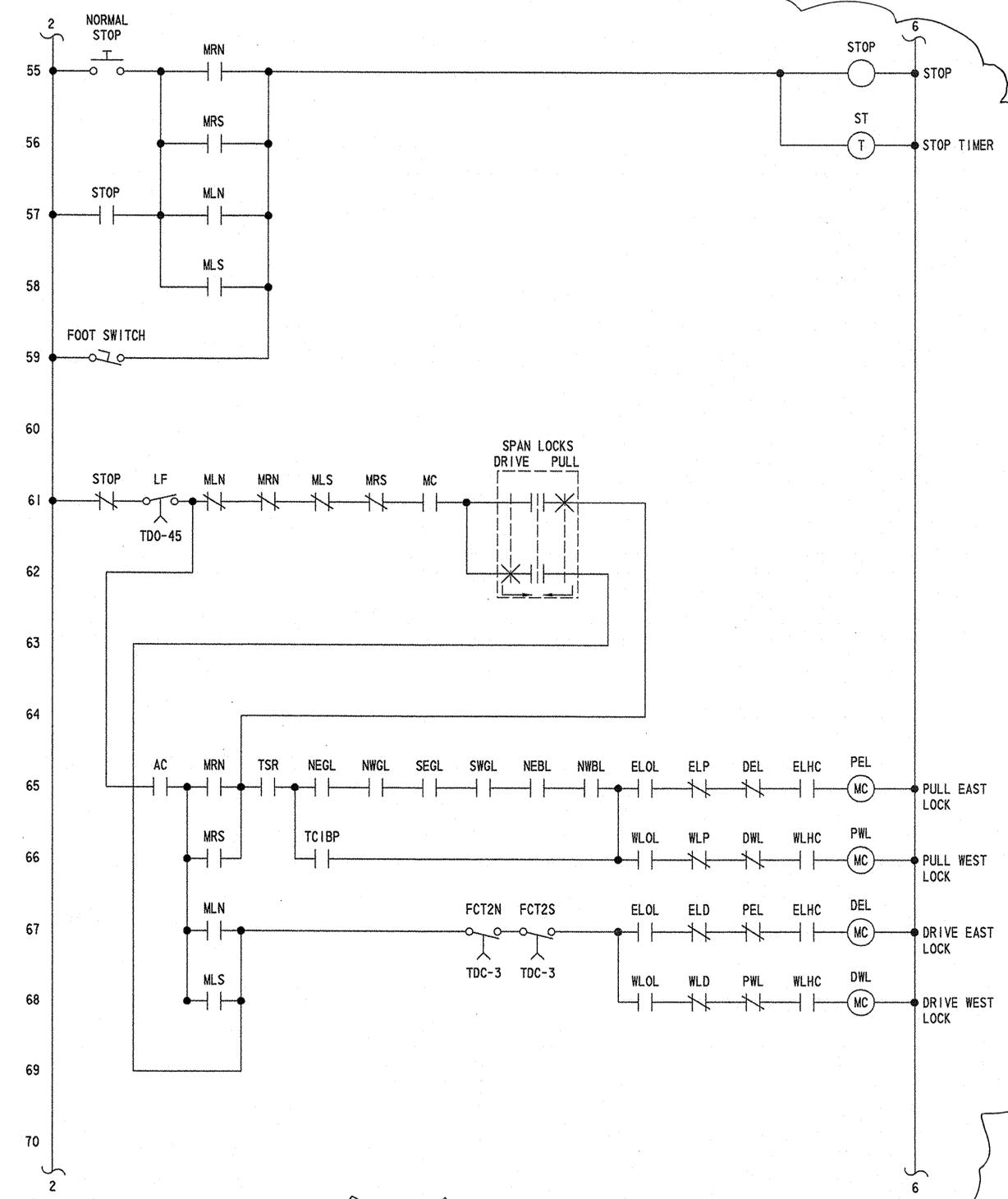
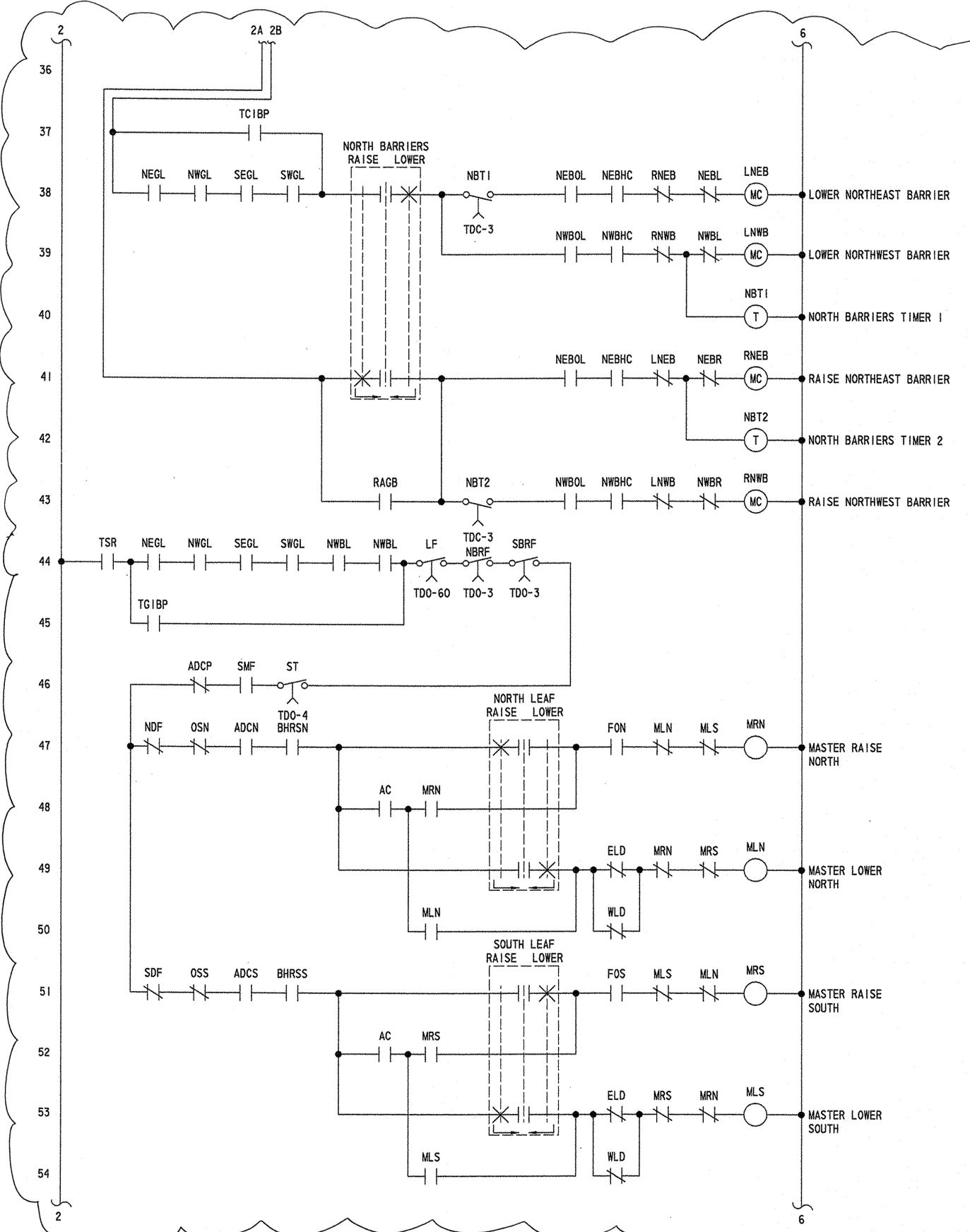
BR 688
SOUTH MARKET STREET BRIDGE
REHABILITATION

REVISIONS	

CONTROL CIRCUIT - 2

NOTE: AB
 SEE LINK CONTROL SYSTEM
 DRAWINGS FOR ADDITIONAL
 DETAILS.

AS BUILT



CADD DESIGN: RLR
 DESIGN: MEA
 CHKD.: OCT
 CC2

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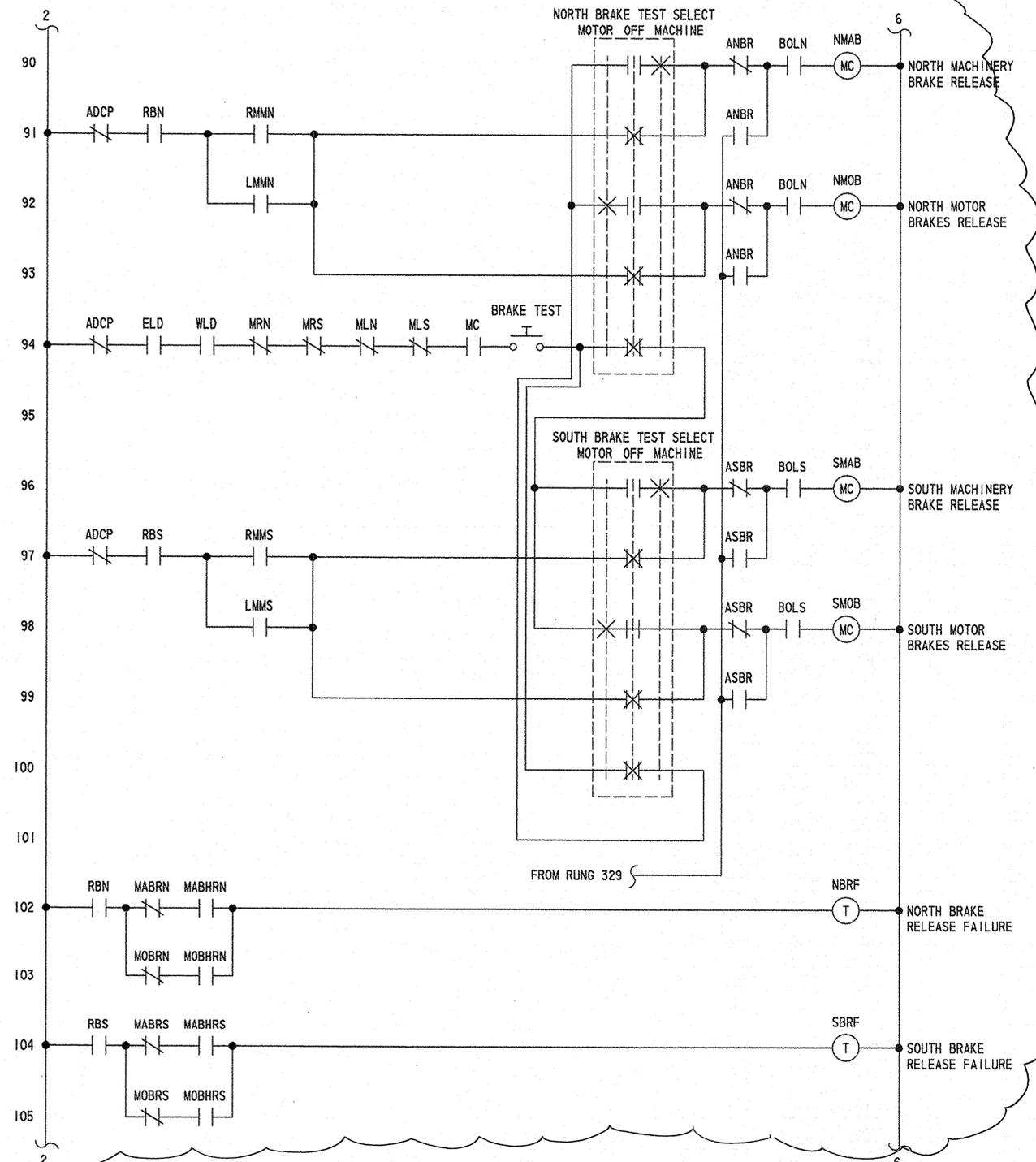
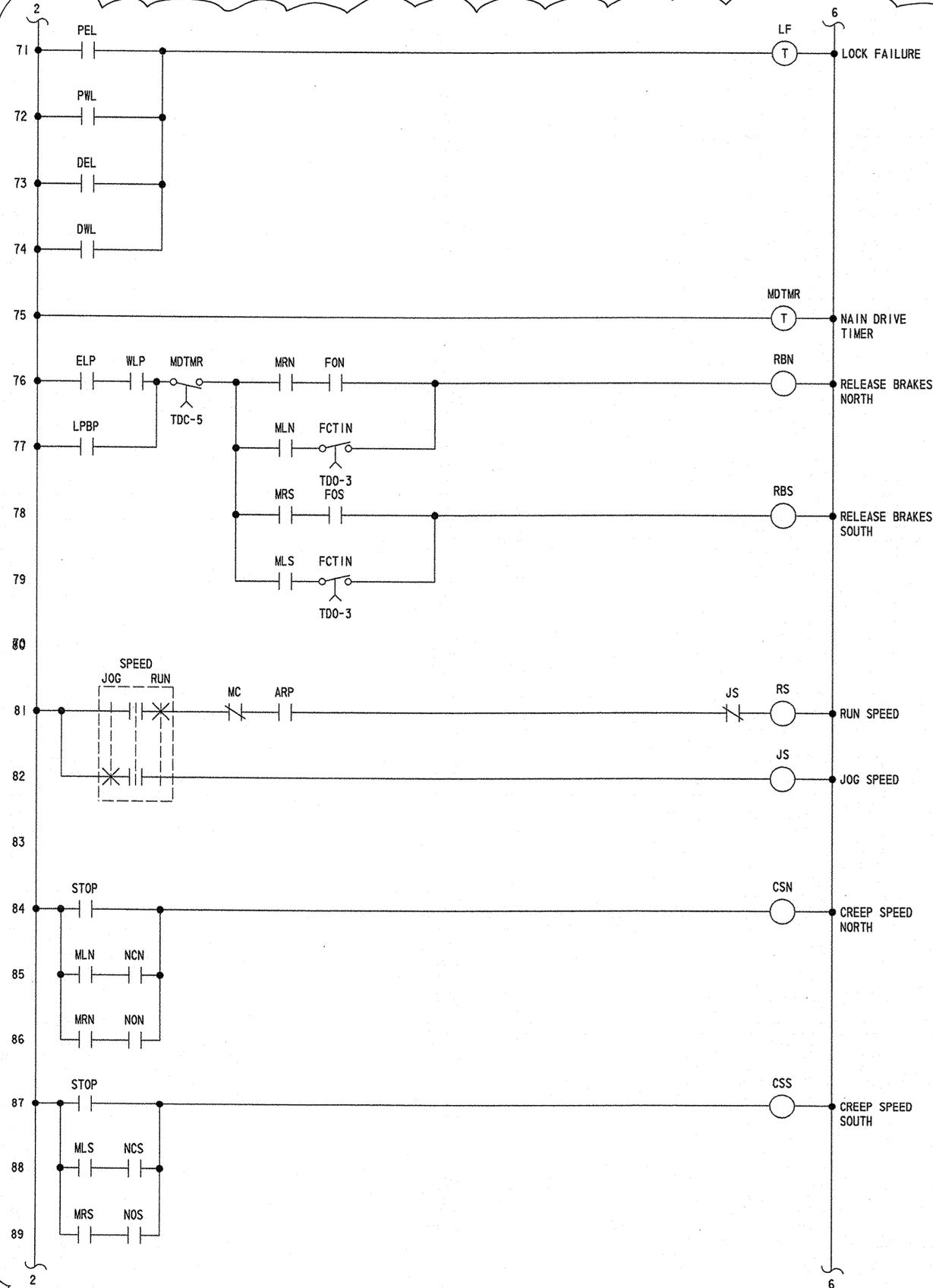
BR 688
SOUTH MARKET STREET BRIDGE
REHABILITATION

REVISIONS

CONTROL CIRCUIT - 3

AS BUILT

NOTE: SEE LINK CONTROL SYSTEMS DRAWING FOR ADDITIONAL DETAILS.



CADD DESIGN RLP DESIGN MEA CHKD. OCT
 CC3

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