

CITY OF O'FALLON

ST. CHARLES COUNTY, MISSOURI

CONSTRUCTION PLANS

APRIL 12, 2007

DESIGN DESIGNATION
V = 35 MPH SONDEREN ROAD

FUNCTIONAL CLASS:
SONDEREN ROAD = LOCAL COLLECTOR

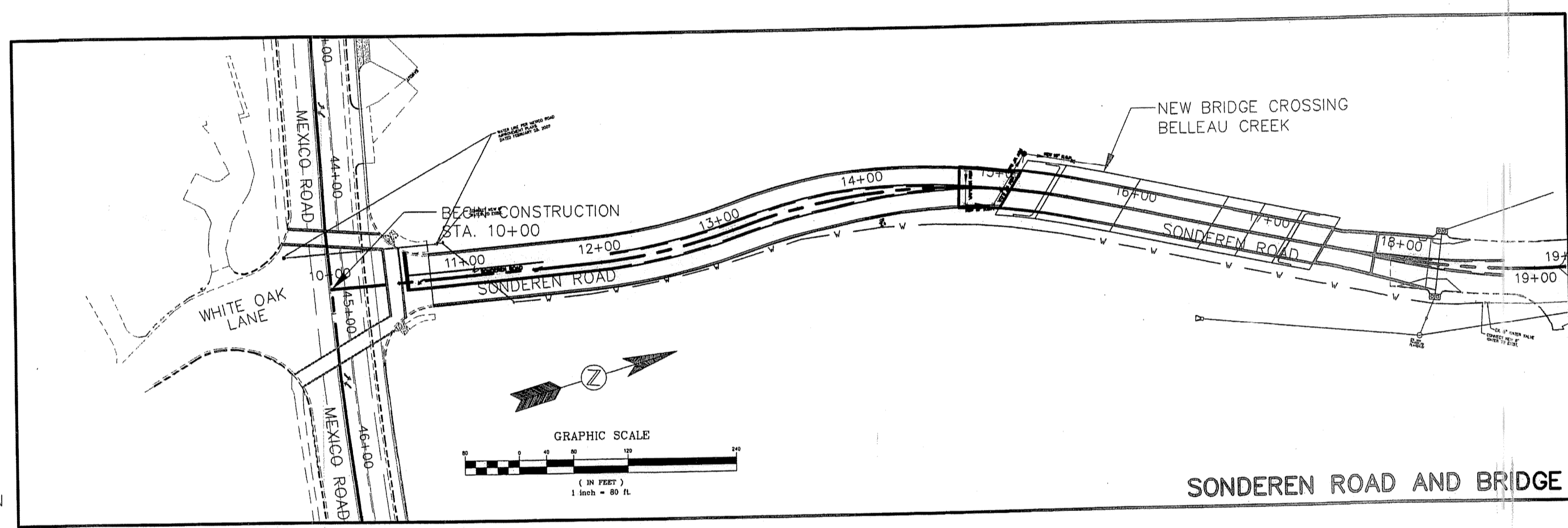
ADI
SONDEREN ROAD = 5,700, 3% TRUCK (1% mu)

INDEX OF SHEETS

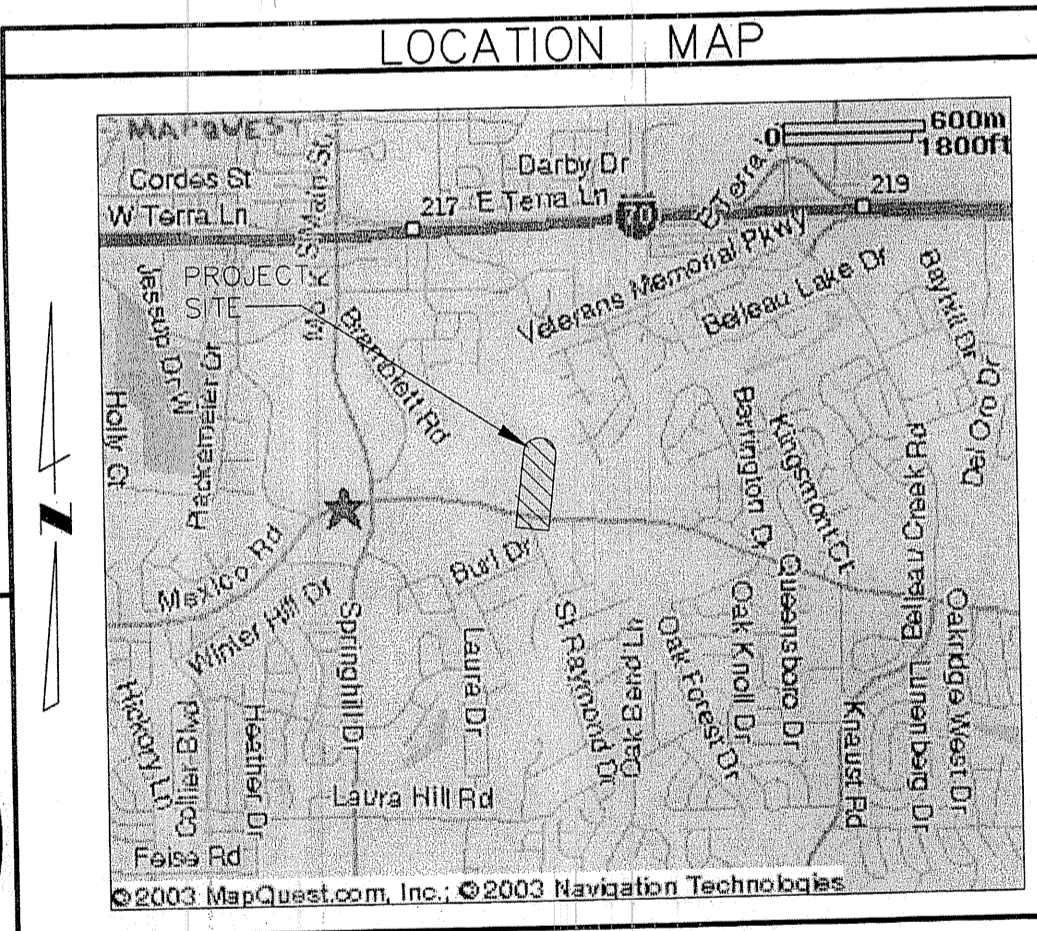
SHEET NO.	DESCRIPTION
G1	COVER SHEET
C0	SUMMARY OF QUANTITIES
C1	TYPICAL SECTIONS
C2	REFERENCE TIE SHEET, SOIL BORINGS, NOTES
C3-C4	PLAN & PROFILE SHEETS
C5	SEWER PROFILES
C6-C7	CROSS SECTIONS
C8	BRIDGE GRADING DETAILS
C9	STRIPING, SIGNING & EROSION CONTROL
C10	TRAFFIC HANDLING PLANS
C11	DRAINAGE AREA MAP
C12-C22	DETAILS
C23	STREET LIGHTING LAYOUT
B1-B25	BRIDGE PLANS

CONVENTIONAL SIGNS (USED IN PLANS)

DESCRIPTION	EXISTING	NEW
RIGHT-OF-WAY	EX. R/W	PROPOSED R/W
PROPERTY LINE		
PERMANENT DRAINAGE EASEMENT		
TEMPORARY CONSTRUCTION EASEMENT		
UTILITY POLE (TYPE SPECIFIED: PP-POWER, TP-TELEPHONE)		
UTILITY LINE (TYPE SPECIFIED: OHE-OVERHEAD ELEC., T-TELEPHONE, C-CABLE TV)		
GUY WIRE		
UNDERGROUND CONDUIT OR CABLE (TYPE SPECIFIED: T-TELEPHONE, E-ELECTRIC)		
UTILITY MANHOLE (TYPE SPECIFIED: T-TELEPHONE, E-ELECTRIC, W-WATER)		
LIGHT STANDARD		
TRAFFIC SIGNAL		
TRAFFIC CONTROLLER		
TRAFFIC PULL BOX		
PIPE LINE (OWNER SPECIFIED)		
UTILITY MAIN (SIZE AND TYPE SPECIFIED)		
GAS & WATER VALVE		
GAS & WATER SERVICE VALVE		
WATER METER		
SPRINKLER HEAD		
FIRE HYDRANT		
THRUST BLOCK		
CLEAN OUT		
SANITARY SEWER		
STORM SEWER		
SEWER MANHOLE		
GRATED INLET		
CURB INLET (SINGLE)		
DOUBLE CURB INLET		
INDET. OF NEW OR MOD. SEWER STRUCT		
CONSTRUCTION LIMITS		
CONCRETE PAVEMENT		
ASPHALTIC CONCRETE PAVEMENT		
CONCRETE PAVEMENT REMOVAL		
TREE OR SHRUB (DESIGNATE DIA.)		
HEDGE OR TREELINE		
FENCE		
GUARDRAIL		
SIGN		
BUILDING		
MAIL BOX		
TO BE REMOVED (TBR)		
TO BE ABANDONED (TBA)		
USE IN PLACE (UIP)		
TO BE REMOVED AND REPLACED (TBR&R)		
TO BE REMOVED BY OTHERS (TBRBO)		
TO BE REMOVED AND REPLACED BY OTHERS (TBR&RBO)		
ADJUST TO GRADE (ATG)		
ADJUST TO GRADE BY OTHERS (ATGBO)		
GEOTECHNICAL BORING		
CONCRETE PAVEMENT WIDENING		



- UTILITY CONTACTS:**
- CUivre River Electric**
CONTACT: STAN WINKLE
1112 EAST CHERRY STREET
TROY, MO 63379
800-392-3709
 - SOUTHWESTERN BELL TELEPHONE**
CONTACT: DENNIS O'LEARY
402 NORTH 3RD STREET
ST. CHARLES, MO 63301
636-949-4228
 - LACLEDE GAS**
CONTACT: GARY DRIKOW
3950 FOREST PARK BLVD.
ST. LOUIS, MO 63108
314-658-5417
 - AMEREN UE**
CONTACT: JIM HOVIS
200 NORTH CALLAHAN RD.
MC WZ-858
WENTZVILLE, MO 63385
(636) 639-8312
 - SCHOOL DISTRICT**
CONTACT: DR. BERNARD DUBRAY
FORT ZUMWALT SCHOOL DISTRICT
110 VIRGIL
O'FALLON, MO 63366
(636) 272-6620
 - ST. CHARLES COUNTY ROAD BOARD**
CONTACT: JOHN GRIEFZU
DIRECTOR OF TRANSPORTATION
201 NORTH SECOND STREET
ST. CHARLES, MO 63301
 - DUCKETT CREEK SANITARY DISTRICT**
CONTACT: MIKE O'BRIEN
3550 HIGHWAY K
ST. CHARLES, MO 63304
636-441-1244
 - EXPLORER PIPELINE CO.**
CONTACT: LAYTON WILSON/RICK THOMPSON
1355 ROBBINS ROAD
EAST ALTON, IL 62024
618-251-0250
 - O'FALLON FIRE PROTECTION DISTRICT**
CONTACT: MARK MORRISON
119 EAST ELM ST
O'FALLON, MO 63366
(636) 240-5312 EXT. 107
 - ALLIANCE**
CONTACT: GARY JOHNSON
410 EAST ELM STREET
O'FALLON, MO 63366
(636) 272-6818 EXT. 207
 - MISSOURI AMERICAN WATER**
CONTACT: DEREK LINAM
535 NORTH NEW BALLAS
ST. LOUIS, MO 63141
314-996-2286
 - CHARTER COMMUNICATIONS CABLE**
CONTACT: MARK HOFFMAN
4282 SHORELINE DRIVE
EARTH CITY, MO 63045
314-655-1827
CHARTER FIBER
 - CENTURYTEL**
CONTACT: MARCIA GAY
1151 CENTURYTEL DRIVE
P.O. BOX 751
WENTZVILLE, MO 63385
(636) 332-7261



03-115 - SONDEREN BRIDGE & SONDEREN ROAD EXTENSION

LENGTH OF PROJECT

SONDEREN ROAD EXTENSION	
END OF PROJECT	STA 18+29.00
BEGINNING OF PROJECT	STA 10+73.61
APPARENT LENGTH	755.39 FEET

FIMA RM 62 - ELEVATION 493.87
CHISELED SQUARE IN TOP OF THE SOUTH HEADWALL IN THE MIDDLE OF MEXICO ROAD BRIDGE OVER BELLEAU CREEK TRIBUTARY. AS DOCUMENTED ON FIRM 29183C0241 AS (FEET NGVD).

SITE BM A - ELEVATION 539.06
O ON OPEN OF FIRE HYDRANT LOCATED AT THE SOUTHEAST CORNER OF THE INTERSECTION OF MEXICO ROAD AND WHITE OAK LANE.

SITE BM B - ELEVATION 508.86
CHISELED SQUARE ON TOP OF CONCRETE BASE OF TRAFFIC SIGNAL LOCATED ON THE NORTH SIDE OF MEXICO ROAD AT WEST END OF PROJECT.

SITE BM C - ELEVATION 503.57
FOUND CHISELED SQUARE AT THE CENTER OF THE TOP OF CONCRETE HEADWALL OF CULVERT OVER BELLEAU CREEK SOUTH OF MEXICO ROAD AT WEST END OF PROJECT.

SCALES: PLAN 1" = 20'
PROFILE 1" = 20' HORIZ. & 5' VERT.
CROSS SECTION 1" = 10' HORIZ. & VERT.

SEAL

**SONDEREN ROAD
EXTENSION TO MEXICO ROAD
SECT. 33, TOWNSHIP 47N, RANGE 3E**

APPROVED:
STEVE BENDER, P.E.
- CITY ENGINEER

DATE: _____

Designed	CMJ/CMB
Drawn	EBS
Checked	SMS
Date	4-12-07

EDM No. 03804

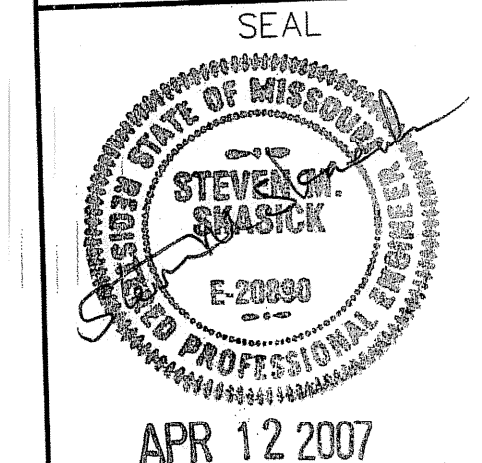
EDM Incorporated
220 Mansion House, 3rd Floor
St. Louis, Missouri 63102
(314) 231-5485 Fax: (314) 231-8167

NEW REMARKS

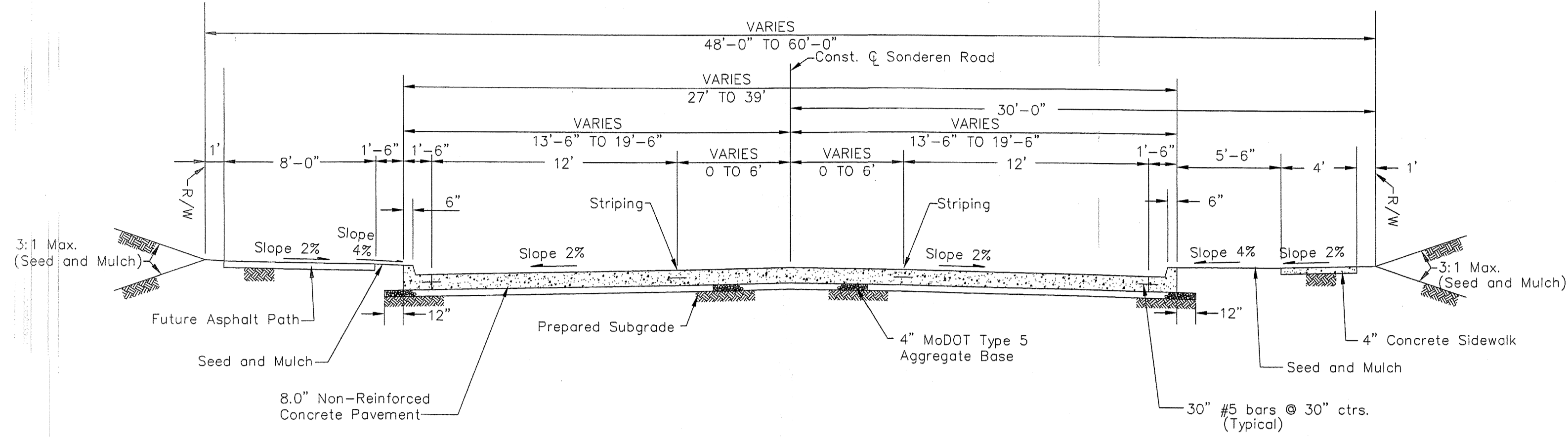
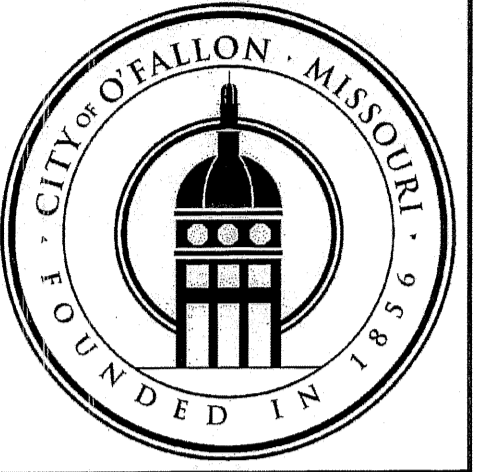


DESCRIPTION	QUANTITY	UNIT	10+73.61-14+00	14+00-18+80						
			SHEET NO. C3	SHEET NO. C4						
ROADWAY ITEMS										
CLEARING AND GRUBBING	1	L.S.	--	--						
TYPE 5 AGGREGATE BASE - 4" THICK	1957	SQ. YD.	1484	473						
CONCRETE BRIDGE APPROACH PAVEMENT - 12" THICK	238.2	SQ. YD.	--	238.2						
CONCRETE SIDEWALK 4" THICK (INCLUDES CURB RAMPS)	229.3	SQ. YD.	145.1	84.2						
CONCRETE PAVEMENT - 8" THICK (NON-REINFORCED)	1707.9	SQ. YD.	1302.3	405.6						
6" VERT. CONC. CURB & GUTTER (1'-6" WIDE)	1041	LF.	653	388						
PAVEMENT MARKINGS - PAINT STRIPING 24" SOLID WHITE STOP BAR	24	LF.	24	--						
PAVEMENT MARKINGS - PAINT STRIPING 4" SOLID WHITE	1611	LF.	753	858						
PAVEMENT MARKINGS - PAINT STRIPING 4" SOLID YELLOW	1544	LF.	686	858						
PAVEMENT MARKINGS - PAINT STRIPING 4" DASHED YELLOW	692	LF.	386	306						
PAVEMENT MARKING - PAINT LEFT ARROW	2	EA.	2	--						
15" REINFORCED CONCRETE PIPE	127	LF.	--	127						
15" CONCRETE FLARED END SECTION	1	EA.	--	1						
MANHOLE	1	EA.	--	4						
GRATE-CURB INLET (2 GRATE W/SIDE INTAKE)	4	EA.	--	--						
REMOVAL OF IMPROVEMENTS	1	L.S.	--	--						
TRAFFIC CONTROL	1.0	ACRE	0.30	0.70						
TYPE 3 MULCH	1.0	ACRE	0.30	0.70						
SEEDING	906.8	CU. YD.	--	906.8						
MODOT TYPE III ROCK BLANKET	4	EA.	--	4						
CRASHWORTHY END TERMINAL	4	EA.	--	4						
BRIDGE ANCHOR SECTION (THRIE BEAM)	4	EA.	--	4						
TRANSITION SECTION	39	LF.	--	39						
FULL DEPTH SAW CUT	903	LF.	331	572						
8" WATER LINE	1	EA.	--	1						
FIRE HYDRANT	1	EA.	--	1						
8" VALVE										
EROSION CONTROL ITEMS										
SILT FENCE	2498	L.F.	677	1821						
BRIDGE ITEMS										
CLASS I EXCAVATION	77	CU. YD.	--	77						
BRIDGE APPROACH SLAB (SUBSTRUCTURE)	228	SQ. YD.	--	228						
CLASS B CONCRETE	162	CU. YD.	--	162						
SAFETY BARRIER CURB	469	LF.	--	469						
LAMINATED NEOPRENE BEARING PAD (TAPERED)	30	EA.	--	30						
PRESTRESSED CONCRETE I-GIRDER, 58 FT SPAN	10	EA.	--	10						
PRESTRESSED CONCRETE I-GIRDER, 65 FT SPAN	5	EA.	--	5						
REINFORCING STEEL (BRIDGES)	18684	LB.	--	18684						
SLAB DRAIN	8	EA.	--	8						
VERTICAL DRAIN AT END BENTS	2	EA.	--	2						
SLAB ON CONCRETE I-GIRDER WITH PRECAST PANEL FORMS	853	SQ. YD.	--	853						
DRILLED PIERS (2'-6" DIA.) - IN SOIL	529	LF.	--	529						
DRILLED PIERS (3'-0" DIA.) - IN SOIL	138	LF.	--	138						
DRILLED PIERS (2'-6" DIA.) - IN ROCK	56	LF.	--	56						
DRILLED PIERS (3'-0" DIA.) - IN ROCK	57	LF.	--	57						
PEDESTRIAN FENCE 4'-6" (STRUCTURES)	468	LF.	--	468						
BRIDGE BARRIER CURB RAIL (22")	466	LF.	--	466						
SETTLEMENT PLATE	10	EA.	--	10						
EARTHWORK										
EXCAVATION - UNCLASSIFIED	5821	CU. YD.	--	--						
COMPACTING EMBANKMENT(SINKAGE NOT INCLUDED)	5821	CU. YD.	--	--						
EMBANKMENT IN PLACE (BORROW)	4042	CU. YD.	--	--						
LIGHTING										
LIGHTING BASE AND POLE W/CONDUIT AND PULL TAPE	3	EA.	1	2						
SECONDARY POWER PEDESTAL	2	EA.	1	1						

DISCLAIMER OF RESPONSIBILITY
 I HEREBY SPECIFY THAT THE DOCUMENTS INTENDED TO BE AUTHENTICATED BY MY SEAL, ARE LIMITED TO THIS SHEET, AND I HEREBY DISCLAIM ANY RESPONSIBILITY FOR ALL OTHER DRAWINGS, SPECIFICATIONS, ESTIMATES, REPORTS OR OTHER DOCUMENTS OR INSTRUMENTS RELATING TO OR INTENDED TO BE USED FOR ANY PART OR PARTS OF THE ARCHITECTURAL OR ENGINEERING PROJECT OR SURVEY.

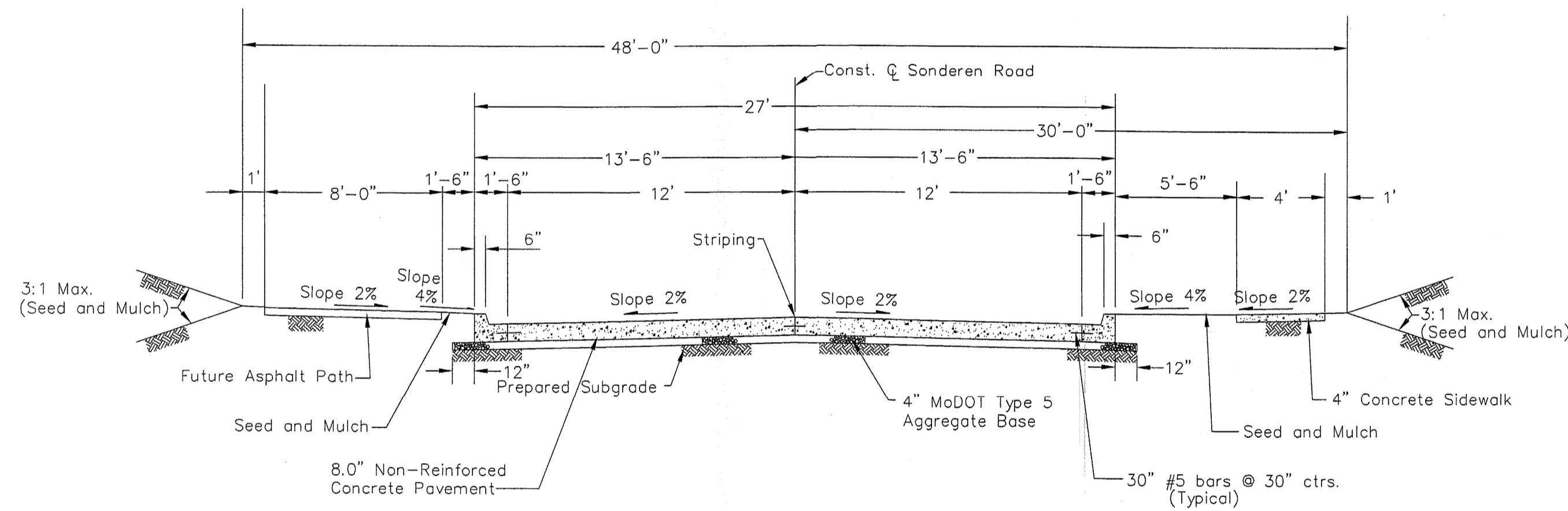


Designed CMJ/CMB
 Drawn EBS
 Checked SMS
 Date 4-12-07
 EDM No. 03804
EDM EDM Incorporated
 220 Mansion House, 3rd Floor
 St. Louis, Missouri 63102
 (314) 231-5485 Fax: (314) 231-8167



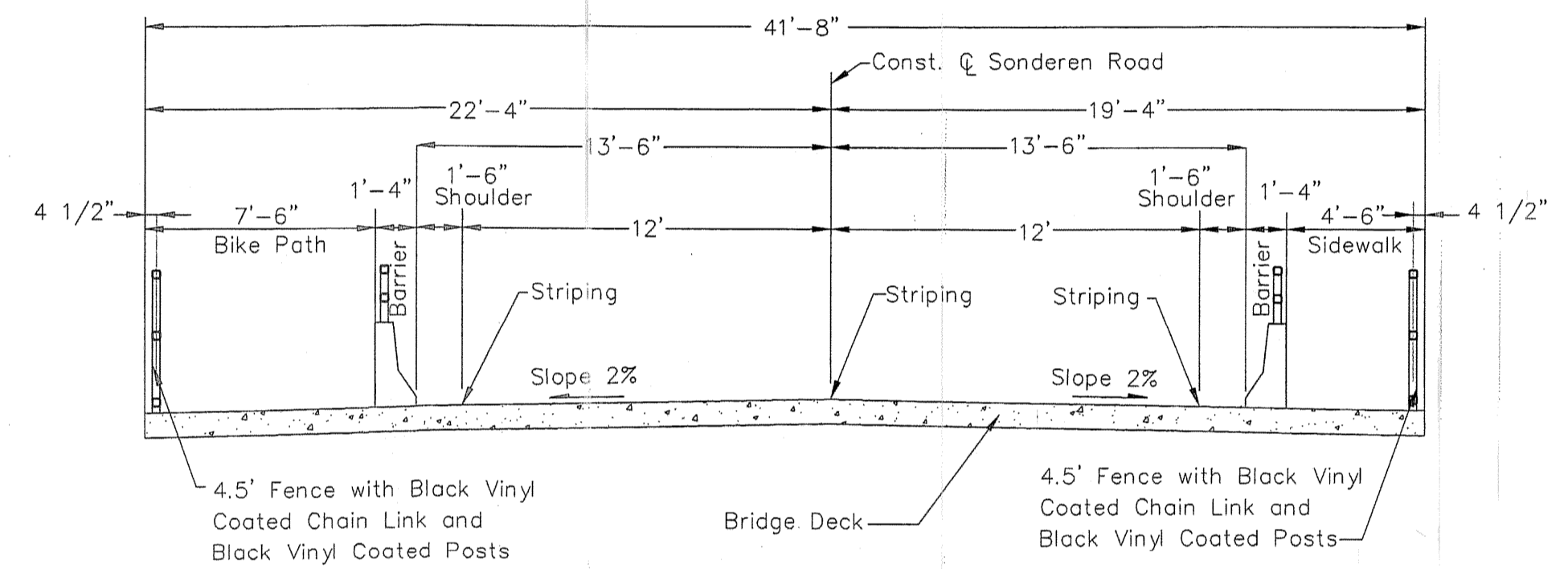
SONDEREN ROAD TAPERED SECTION

NOT TO SCALE
 Sta. 13+75.00 to Sta. 15+00.00
 Sta. 17+55.00 to Sta. 18+29.00



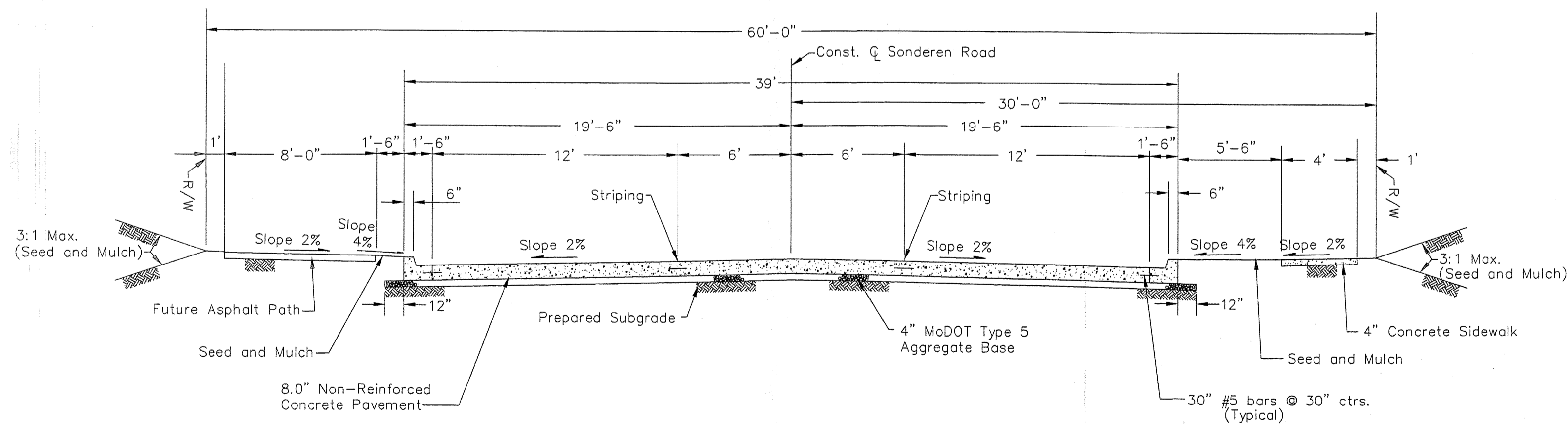
SONDEREN ROAD TWO LANE SECTION (NORMAL CROWN)

NOT TO SCALE
 Sta. 15+00.00 to Sta. 15+08.09
 Sta. 17+43.00 to Sta. 17+55.00



SONDEREN ROAD BRIDGE SECTION (NORMAL CROWN)

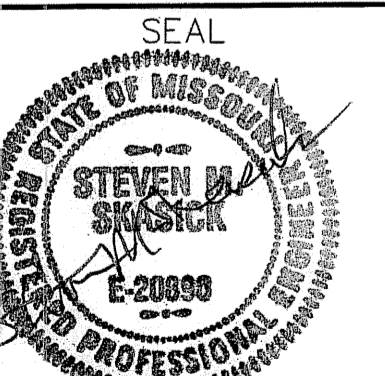
NOT TO SCALE
 Sta. 15+08.09 to Sta. 17+43



SONDEREN ROAD THREE LANE SECTION (NORMAL CROWN)

NOT TO SCALE
 Sta. 10+73.61 to Sta. 13+75.00

DISCLAIMER OF RESPONSIBILITY
 I HEREBY SPECIFY THAT THE DOCUMENTS INTENDED TO BE AUTHENTICATED BY MY SEAL ARE LIMITED TO THIS SHEET, AND I HEREBY DISCLAIM ANY RESPONSIBILITY FOR ALL OTHER DRAWINGS, SPECIFICATIONS, ESTIMATES, REPORTS OR OTHER DOCUMENTS OR INSTRUMENTS RELATING TO OR INTENDED TO BE USED FOR ANY PART OR PARTS OF THE ARCHITECTURAL OR ENGINEERING PROJECT OR SURVEY.



APR 12 2007

Designed CMU/CMB
 Drawn EBS
 Checked SMS
 Date 4-12-07

EDM No. 03504
EDM EDM Incorporated
 220 Mansion House, 3rd Floor
 St. Louis, Missouri 63102
 (314) 231-5485 Fax: (314) 231-8167

GENERAL NOTES

STORM SEWER NOTES

- All manhole tops built without elevations furnished by the Engineer will be the responsibility of the sewer contractor.
- All filled places, including trench back fills, under buildings, proposed storm and sanitary sewer lines and/or paved areas, shall be compacted to 90% maximum density as determined by the "Modified AASHTO T-180 Compaction Test," (A.S.T.M.-D-1557). All filled places within public roadways shall be compacted to 95% of maximum density as determined by the "Standard Proctor Test AASHTO T-99, Method C" (A.S.T.M.-D-698).
- All trench back fills under paved areas shall be granular back fill, and shall be compacted to 90% of the maximum density as determined by the "Modified AASHTO T-180 Compaction Test," (A.S.T.M.-D-1557). All other trench back fills may be earth material (free of large clods or stones). All trench back fills shall be mechanically compacted in 6" lifts.
- Brick shall not be used in the construction of storm sewer manholes.
- All pipes shall have positive drainage through manholes. No flat base structures are allowed. Structures shall have a 0.2' min. difference in invert elevation.
- All construction and materials shall conform to the current construction standards of the City of O'Fallon.
- Concrete pipe for storm sewers shall be Class III, A.S.T.M. C-76 with a minimum diameter of 12" except in the R.O.W. it shall be 15".
- Concrete pipe joints shall be M.S.D. type "A" approved compression-type joints and shall conform to the requirements of the specifications for joints for circular concrete sewer and culvert pipe, using flexible, watertight, rubber-type gaskets (A.S.T.M.-C-443). Band-type gaskets depending entirely on cement for adhesion and resistance to displacement during jointing shall not be used.
- All flared end sections and inlet structures will be concrete.
- All storm sewer pipe installed in the Public Right-of-Way shall be reinforced concrete Class III pipe.
- All concrete pipe or ADS N-12 pipe shall be installed with "O-Ring" Rubber type gaskets per M.S.D. standard construction specifications or manufacturer.
- All construction methods and practices shall conform with current OSHA standards.
- Top of Gate elevations are to center of gates. Gate inlets shall be set with a 2.0% cross slope. All gate inlets shall be constructed with side intakes.

GENERAL NOTES

- No area shall be cleared without the permission of the Project Engineer.
- Easements shall be provided for sanitary sewers, and all utilities on the Record Plat. See Record Plat for location and size of easements.
- A 25' building line shall be established along all Public Rights-of-Way.
- The contractor shall notify the City of O'Fallon 48 hours prior to construction for coordination and inspection of any utility, water, or sewer installation.
- All existing site improvements disturbed, damaged or destroyed shall be repaired or replaced to closely match pre-construction conditions. Any area disturbed outside of the construction limits shall be repaired or replaced by the contractor at the contractor's expense.
- The contractor shall prevent all storm, surface water, mud and construction debris from entering the existing sanitary sewer system.
- All construction and materials shall conform to the current construction standards of the City of O'Fallon. Where conflicts exist, the contractor shall notify the Engineer for resolution.
- Site will comply with current Americans with Disabilities Act (ADA) requirements.
- All dimensions are to back of curb, unless otherwise noted.
- All construction methods and practices shall conform with current OSHA standards.
- All new driveways shall match existing driveway finish, except as noted otherwise. Drive aprons shall be concrete with standard broom finish.
- Topographic survey performed by:
Burdine and Associates
1638 Jeffco Blvd. Arnold, MO 63010
636-282-1600
- Fencing, posts and fence hardware system shall be per manufacturer specifications and conform to the current construction standards of the City of O'Fallon. Said shop drawings shall be submitted to the City of O'Fallon for approval prior to construction.

UTILITY NOTES

- Underground utilities have been plotted from available information and therefore their locations shall be considered approximate only. The verification of the location of all underground utilities, either shown or not shown on these plans shall be the responsibility of the contractor, and shall be located prior to any grading or construction of the improvements.
- All filled places, including trench back fills, under buildings, proposed storm and sanitary sewer lines and/or paved areas and all filled places within public roadways shall be compacted to 95% of the maximum density as determined by the "Standard Proctor Test AASHTO T-99, Method C" (A.S.T.M.-D-698).
- All trench back fills under paved areas shall be granular back fill, and shall be compacted to 95% of the maximum density as determined by the "Standard AASHTO T-99 Compaction Test," (A.S.T.M.-D-698). All other trench back fills may be earth material (free of large clods or stones). All trench back fills shall be mechanically compacted in 6" lifts.
- Gas, water and other underground utilities shall not conflict with the depth or horizontal location of existing or proposed sanitary or storm sewers, including house laterals.

WATER NOTES

- All water lines shall be laid at least 10 feet horizontally from any sanitary sewer, storm sewer, or manhole. 18" vertical clearance from outside of pipe to outside of pipe shall be maintained wherever water lines must cross sanitary sewers, laterals, or storm drains. The water line shall be laid at such an elevation that the bottom of the water line is above the top of the drain or sewer. A full length of water pipe shall be centered over the sewer line to be crossed so that the joints will be equally distant from the sewer and as remote therefrom as possible. This vertical separation shall be maintained for that portion of the water line located within 10 feet horizontally, of any sewer or drain it crosses.
- All PVC water pipe shall conform to A.S.T.M.-D-2241, SDR 21 Standard Specification for P.V.C. Pressure Pipe, 200 P.S.I. working pressure for water, with approved joint.
- Water lines, valves, sleeved, meters, and fittings shall meet all specifications and installation requirements of Public Water Supply District No. 2 of St. Charles County.
- All water hydrants and valves shall be ductile iron and installed in accordance with plans and details. All ductile iron pipe for water mains shall conform to A.W.W.A. Specifications C-106 and/or C-108. The ductile iron fittings shall conform to A.W.W.A. Specification C-110. All rubber gasket joints for water ductile iron pressure pipe and fittings shall conform to A.W.W.A. Specification C-111.
- All trench back fills under paved areas shall be granular back fill, and shall be compacted to 90% of the maximum density as determined by the "Modified AASHTO T-180 Compaction Test," (A.S.T.M.-D-1557). All other trench back fills may be earth material (free of large clods or stones). All trench back fills shall be mechanically compacted in 6" lifts.
- All blocking and restrained joints shall be provided, as required. Their cost shall be incidental to other water items.

STRIPING NOTES

- Existing striping shall be removed as shown on plan and as directed by the Engineer.
- Contractor shall install all striping. See specification for material and installation details.
- Striping and pavement markings shall be in accordance with the current edition of the "Manual on Uniform Traffic Control Devices" (MUTCD) and current ADA standards.

GRADING NOTES

- All soils tests shall be verified by a Soils Engineer concurrent with the grading and back filling operations.
- All grades shall be within 0.2 feet of those shown on the grading plan.
- No slope shall be steeper than 3:1. All slopes shall be sodded or seeded and mulched. See plan sheets, detail sheets, and specifications for location and installation details.
- Settlement plates in fill areas of more than 15' shall be installed according to specifications and geotechnical recommendations. Estimate for bid computed at 6 gauges south of bridge and 4 gauges north of bridge in fill areas. Actual spacing and locations to be determined by a geotechnical representative hired by the contractor with the approval of the city engineer. Piers shall be drilled after placement and compaction of fill material.

DEMOLITION NOTES

- Contractor shall remove and dispose of all asphalt, concrete, rock, building materials, and all other debris at an approved landfill in accordance with all rules and regulations, including Missouri Department of Natural Resources (MDNR), St. Charles County, and the City of O'Fallon. Some excavated material may be reused as fill if it meets the applicable requirements of the technical specifications.
- Contractor shall remove all rock base when removing pavements.
- Sawcuts shall be considered incidental to removals.
- Contractor shall remove concrete sidewalk at joint nearest the limits of removal.
- Driveways are to be removed to the nearest joint for concrete drives and sawcut edge for asphalt drives.
- Any removal material to be used as fill for the bridge shall be in compliance with Division 200 of the Missouri Standard Specifications for Highway Construction.

SANITARY SEWER NOTES

- All manhole tops built without elevations furnished by the Engineer will be the responsibility of the sewer contractor.
- 8"P.V.C. sanitary sewer pipe shall meet the following standards. A.S.T.M.-D-3034 SDR-35, with wall thickness compression joint A.S.T.M.-D-3212. An appropriate rubber seal water stop as approved by the sewer district shall be installed between P.V.C. pipe and masonry structures.
- All filled places, including trench back fills, under buildings, proposed storm and sanitary sewer lines and/or paved areas, shall be compacted to 95% maximum density as determined by the "Standard Proctor Test AASHTO T-99, Method C" (A.S.T.M.-D-698). All filled places within public roadways shall be compacted to 95% of maximum density as determined by the "Standard Proctor Test AASHTO T-99, Method C" (A.S.T.M.-D-698).
- All trench back fills under paved areas shall be granular back fill, and shall be compacted to 95% of the maximum density as determined by the "Standard AASHTO T-99 Compaction Test," (A.S.T.M.-D-698). All other trench back fills may be earth material (free of large clods or stones). All trench back fills shall be mechanically compacted in 6" lifts.
- All sanitary house connections have been designed so that the minimum vertical distance from the low point of the basement to the flow line of a sanitary sewer at the corresponding house connection is not less than the diameter of the pipe plus the vertical distance of 2 1/2 feet.
- All P.V.C. sanitary sewer is to be SDR-35 or equal with clean 1/2" to 1" granular stone bedding uniformly graded. This bedding shall extend from 4" below the pipe to the springline of the pipe. Immediate back fill over pipe shall consist of same size "clean" or minus stone from spring line of pipe to 12" above the top of pipe.
- All sanitary manholes shall be waterproofed on the exterior in accordance with Missouri Department of Natural Resources specifications 10 CSR-8.120 (7)E.
- Brick shall not be used in the construction of sanitary sewer manholes.
- All pipes shall have positive drainage through manholes. No flat base structures are allowed. Structures shall have a 0.2' min. difference in invert elevation.
- The City of O'Fallon shall be notified 48 hours prior to construction for coordination and inspection.
- Gas, water and other underground utilities shall not conflict with the depth or horizontal location of existing or proposed sanitary or storm sewers, including house laterals.
- All sanitary sewer laterals shall be a minimum of 4" in diameter per City of O'Fallon.

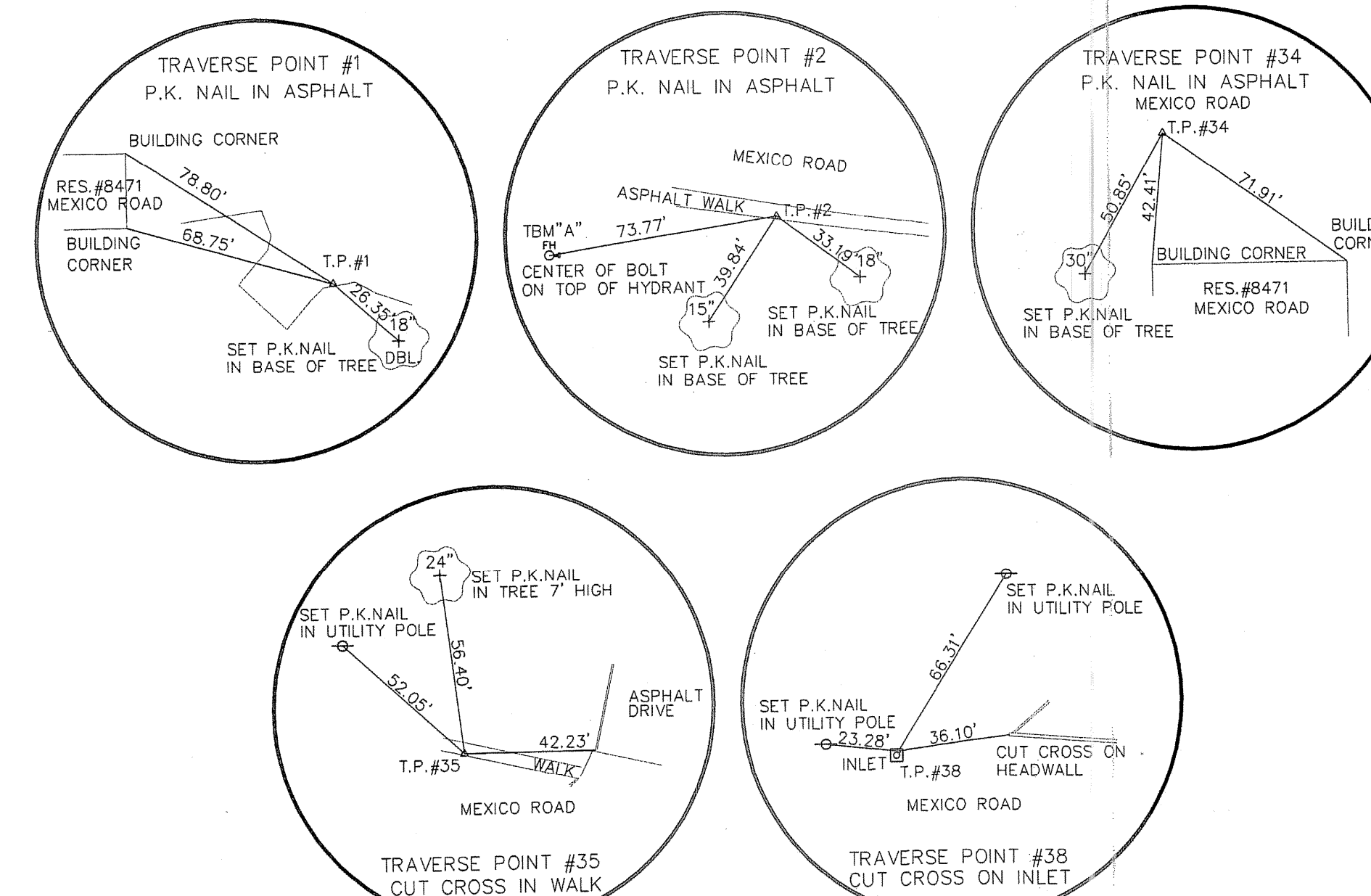
DESIGN CRITERIA:

- CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH MISSOURI STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 1999 AND SUPPLEMENTAL REVISIONS.
- A POLICY ON THE GEOMETRIC DESIGN OF HIGHWAYS AND STREETS BY AASHTO, 1996 AND INTERIM REVISIONS THROUGH 1999.
- MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, BY THE FEDERAL HIGHWAY ADMINISTRATION.
- SPECIFIED CITY OF O'FALLON DESIGN CRITERIA.
- GEOTECHNICAL REPORT "SUBSURFACE EXPLORATION AND FOUNDATION RECOMMENDATIONS, SONDEREN ROAD BRIDGE, O'FALLON, MISSOURI", APRIL 30, 2004 AND ADDENDUM DATED MAY 13, 2004, BY MIDWEST ENGINEERING SERVICES, INC., 1207 WEST TERRA LANE, O'FALLON, MISSOURI, 63366, (636-379-8890), MES PROJECT NO. 15-33093.
- METROPOLITAN ST. LOUIS SEWER DISTRICT (M.S.D.) STANDARD CONSTRUCTION SPECIFICATIONS FOR SEWERS AND DRAINAGE FACILITIES, 2000.
- ST. CHARLES COUNTY SPECIFICATIONS.

PORTLAND CEMENT CONCRETE PAVEMENT DESIGN PARAMETERS	
DESIGN PERIOD (YEARS)	20
18-KIP EQUIVALENT SINGLE AXLE LOADS (ESALS)	6,155,000
RELIABILITY (%)	80
STANDARD DEVIATION	0.39
INITIAL / TERMINAL SERVICEABILITY	4.5 / 2.30
CBR	3.4
SOIL RESILIENT MODULUS (psi)	4,487
MEAN EFFECTIVE K-VALUE (psi)	158
28-DAY PCC MODULUS OF RUPTURE (psi)	550
28-DAY ELASTIC MODULUS OF ELASTICITY (psi)	3,700,000
LOAD TRANSFER COEFFICIENT, J	3.5
DRAINAGE COEFFICIENT	0.97

APPROXIMATE FIELD BORING LOCATIONS			
BORING	STATION	OFFSET	COMMENT
B-1	11+40	0'	DRILLING TERMINATED AT 10 FT.
B-2	13+30	0'	DRILLING TERMINATED AT 10 FT.
B-3	13+92	0'	DRILLING TERMINATED AT 10 FT.
B-4	15+75	0'	AUGER REFUSAL AT 51 FT.
B-5	16+40	0'	DRILLING TERMINATED AT 46 FT.
B-5A	16+50	0'	AUGER REFUSAL AT 15.5 FT.
B-5B	16+45	0'	DRILLING TERMINATED AT 28.5 FT.
B-6	17+05	0'	DRILLING TERMINATED AT 29 FT.
B-7	17+28	0'	DRILLING TERMINATED AT 27.5 FT.
B-7A	17+28	0'	DRILLING TERMINATED AT 49.5 FT.
B-8	16+69	0'	DRILLING TERMINATED AT 28 FT.
B-9	16+03	0'	DRILLING TERMINATED AT 46.5 FT.
B-10	15+44	5'	DRILLING TERMINATED AT 77.5 FT.

* BORING LOCATIONS SHOWN ON PLAN SHEETS.



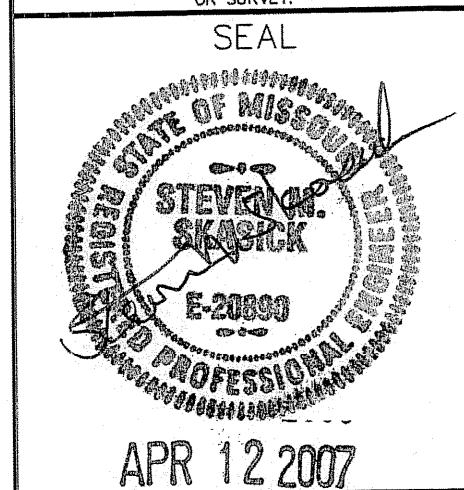
REFERENCE TIES

CITY OF O'FALLON, MISSOURI	
SONDEREN BRIDGE & SONDEREN ROAD EXTENSION	SHEET NO. C2
	TOTAL SHEETS 50



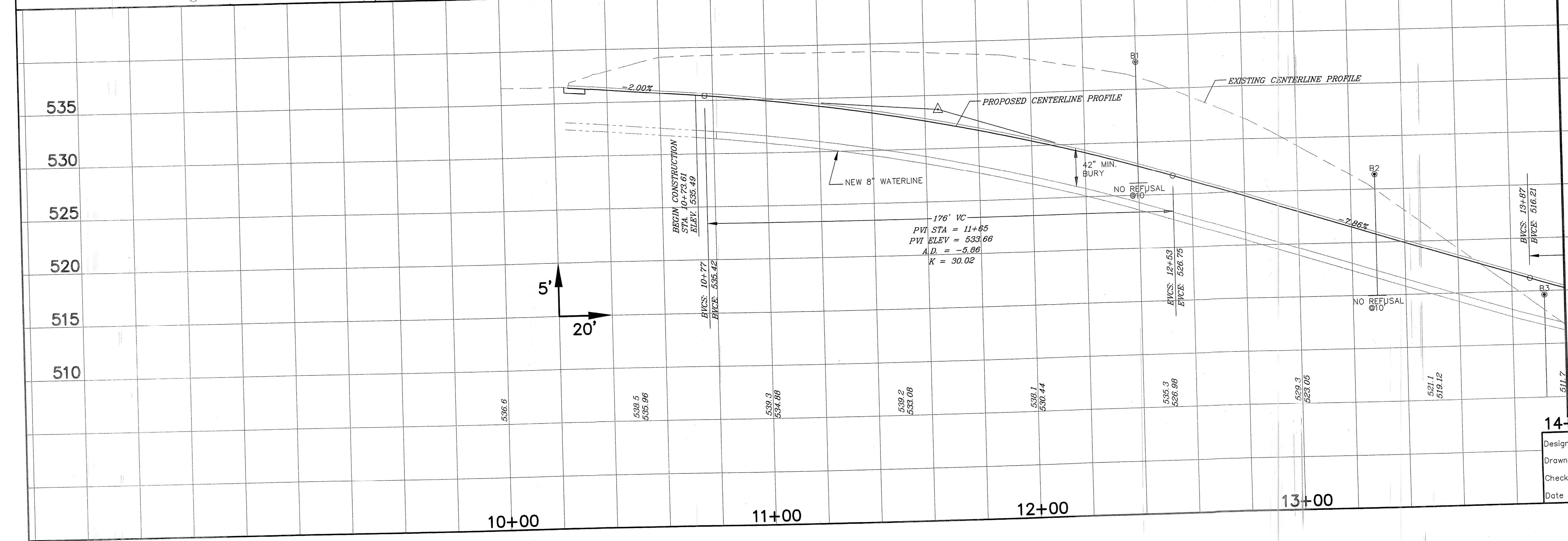
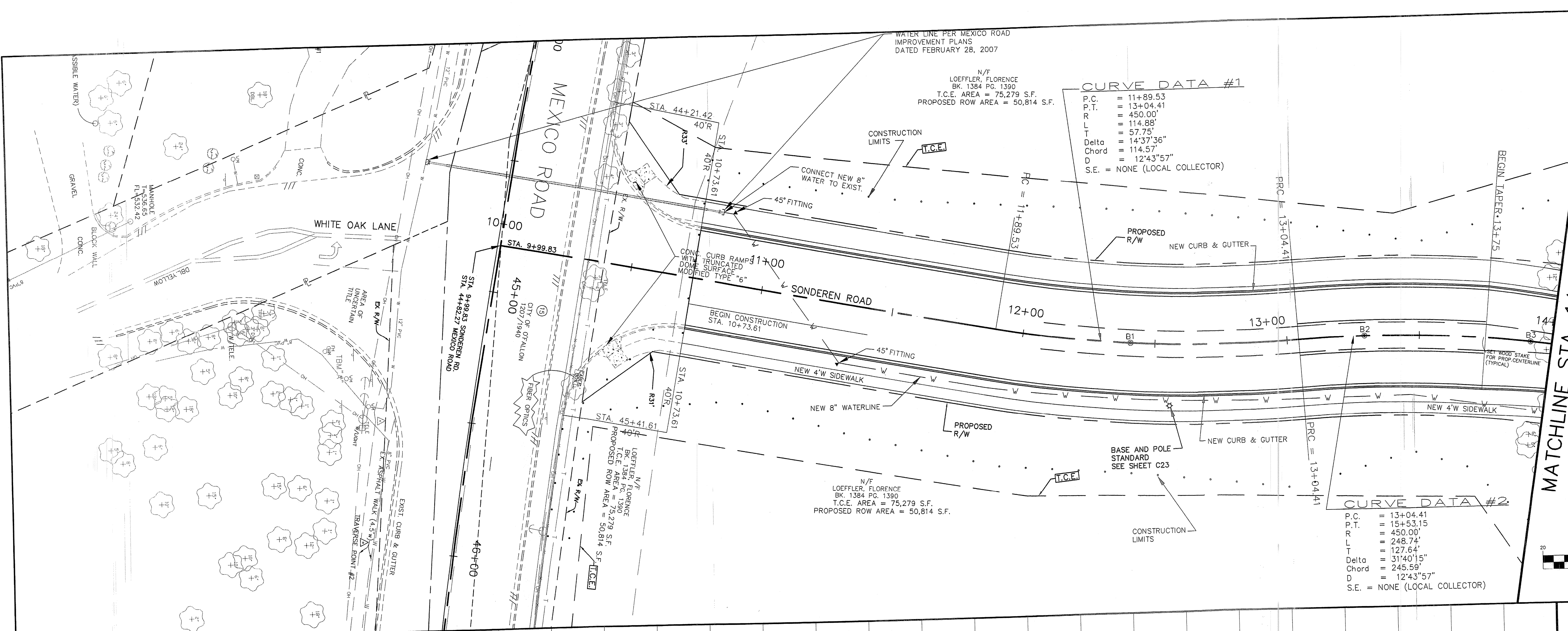
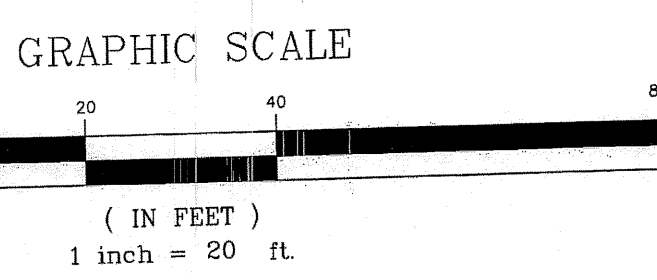
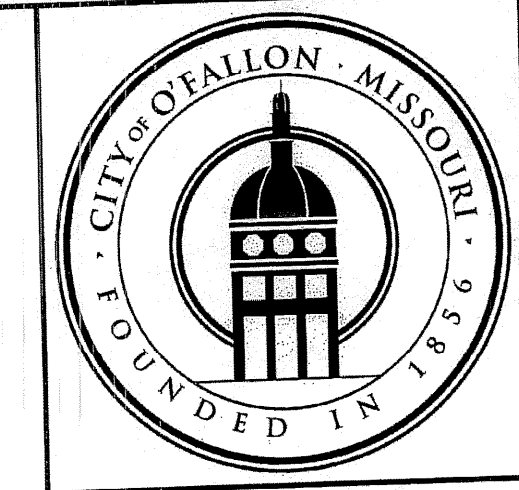
REFERENCE TIES & NOTES

DISCLAIMER OF RESPONSIBILITY
I HEREBY SPECIFY THAT THE DOCUMENTS INTENDED TO BE AUTHENTICATED BY MY SEAL ARE LIMITED TO THIS SHEET, AND I HEREBY DISCLAIM ANY RESPONSIBILITY FOR ALL OTHER DRAWINGS, SPECIFICATIONS, ESTIMATES, REPORTS OR OTHER DOCUMENTS OR INSTRUMENTS RELATING TO OR INTENDED TO BE USED FOR ANY PART OR PARTS OF THE ARCHITECTURAL OR ENGINEERING PROJECT OR SURVEY.



Designed	CMJ/CMB	EDM No. 03804
Drawn	EBS	
Checked	SMS	
Date	4-12-07	

EDM Incorporated
220 Mansion House, 3rd Floor
St. Louis, Missouri 63102
(314) 231-5485 Fax: (314) 231-8167

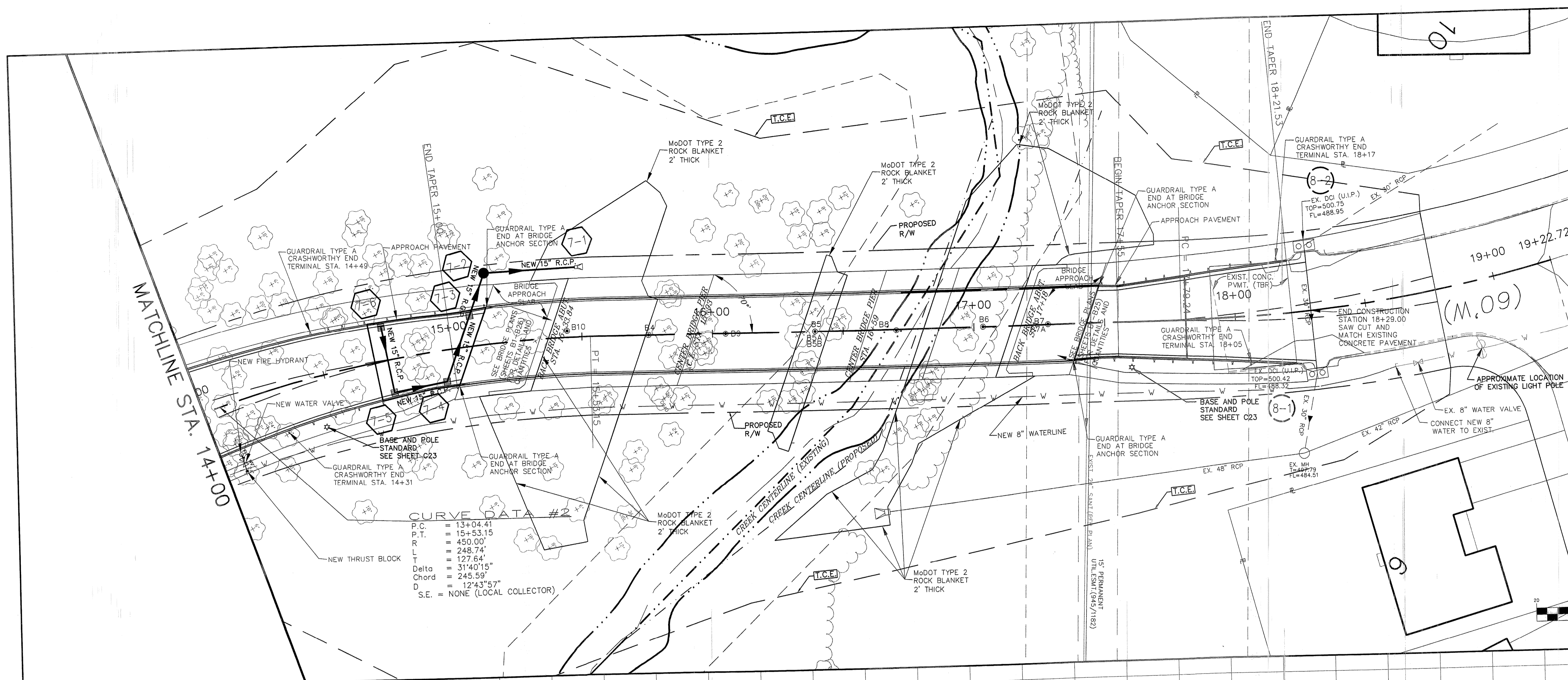
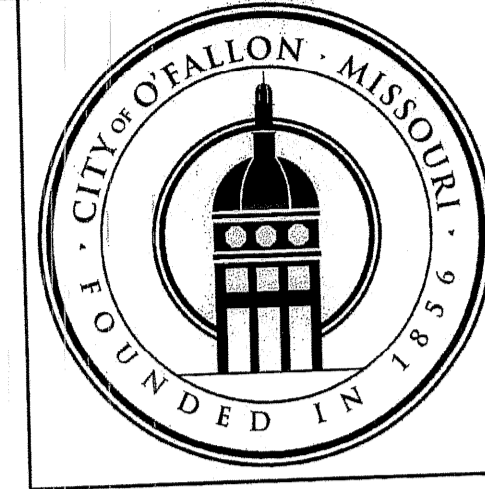


DISCLAIMER OF RESPONSIBILITY
 I HEREBY SPECIFY THAT THE DOCUMENTS INTENDED TO BE AUTHENTICATED BY MY SEAL ARE LIMITED TO THIS SHEET, AND I HEREBY DISCLAIM ANY RESPONSIBILITY FOR ALL OTHER DRAWINGS, SPECIFICATIONS, ESTIMATES, REPORTS OR OTHER DOCUMENTS OR INSTRUMENTS RELATING TO OR INTENDED TO BE USED FOR ANY PART OR PARTS OF THE ARCHITECTURAL OR ENGINEERING PROJECT OR SURVEY.

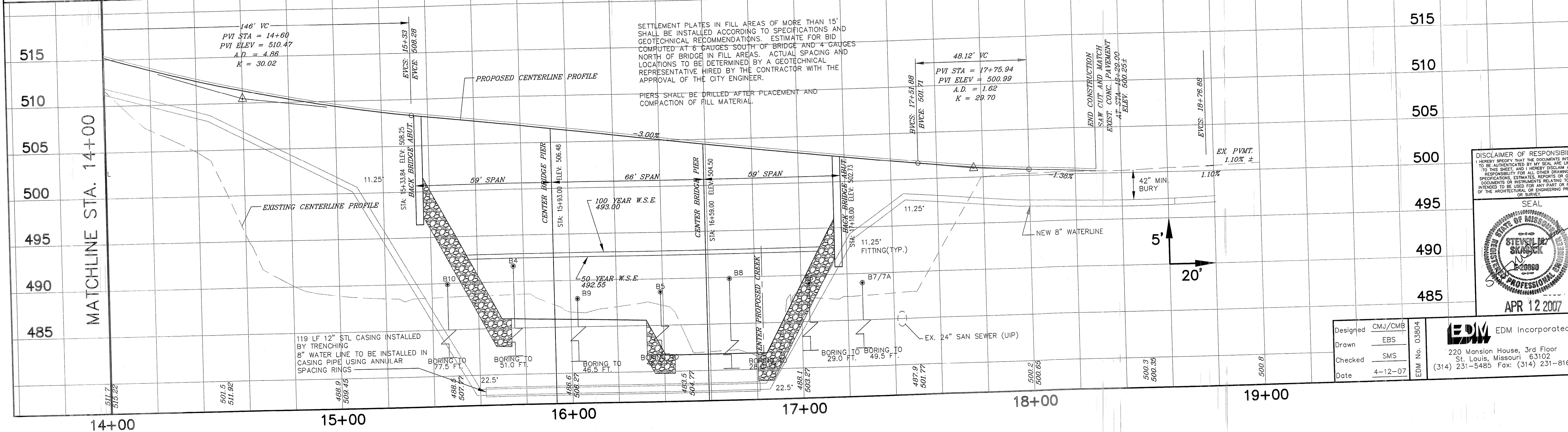
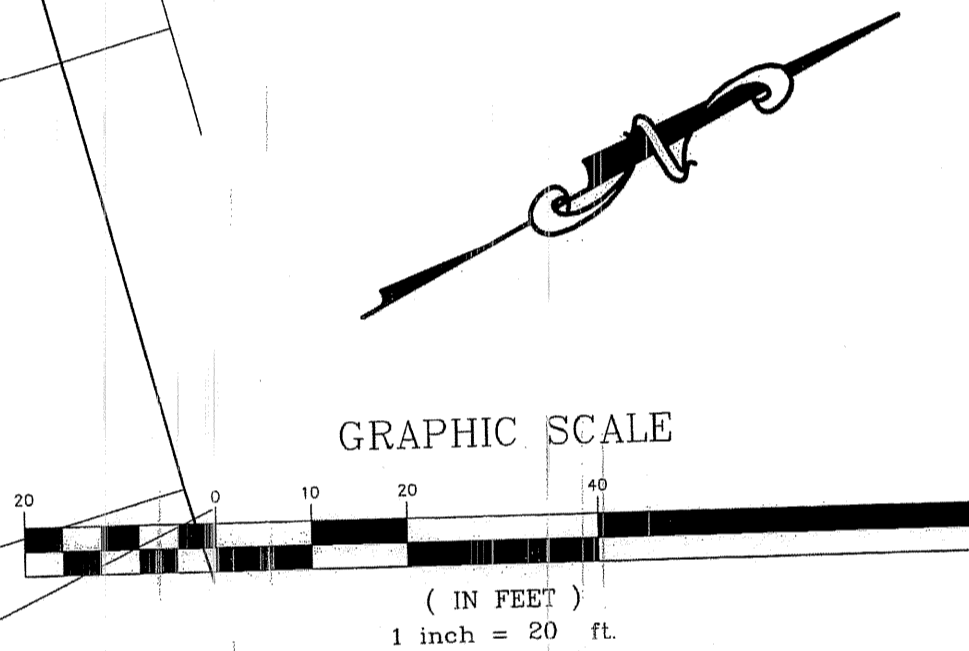
SEAL
 STEVEN W. SKRZYCKI
 PROFESSIONAL ENGINEER
 APR 12 2007

Designed	CMJ/CMB	No.	03604
Drawn	EBS		
Checked	SMS		
Date	4-12-07		

EDM EDM Incorporated
 220 Mansion House, 3rd Floor
 St. Louis, Missouri 63102
 (314) 231-5485 Fax: (314) 231-8167



CURVE DATA #2
 P.C. = 13+04.41
 P.T. = 15+53.15
 R = 450.00'
 L = 248.74'
 T = 127.64'
 Delta = 31°40'15"
 Chord = 245.59'
 D = 12°43'57"
 S.E. = NONE (LOCAL COLLECTOR)



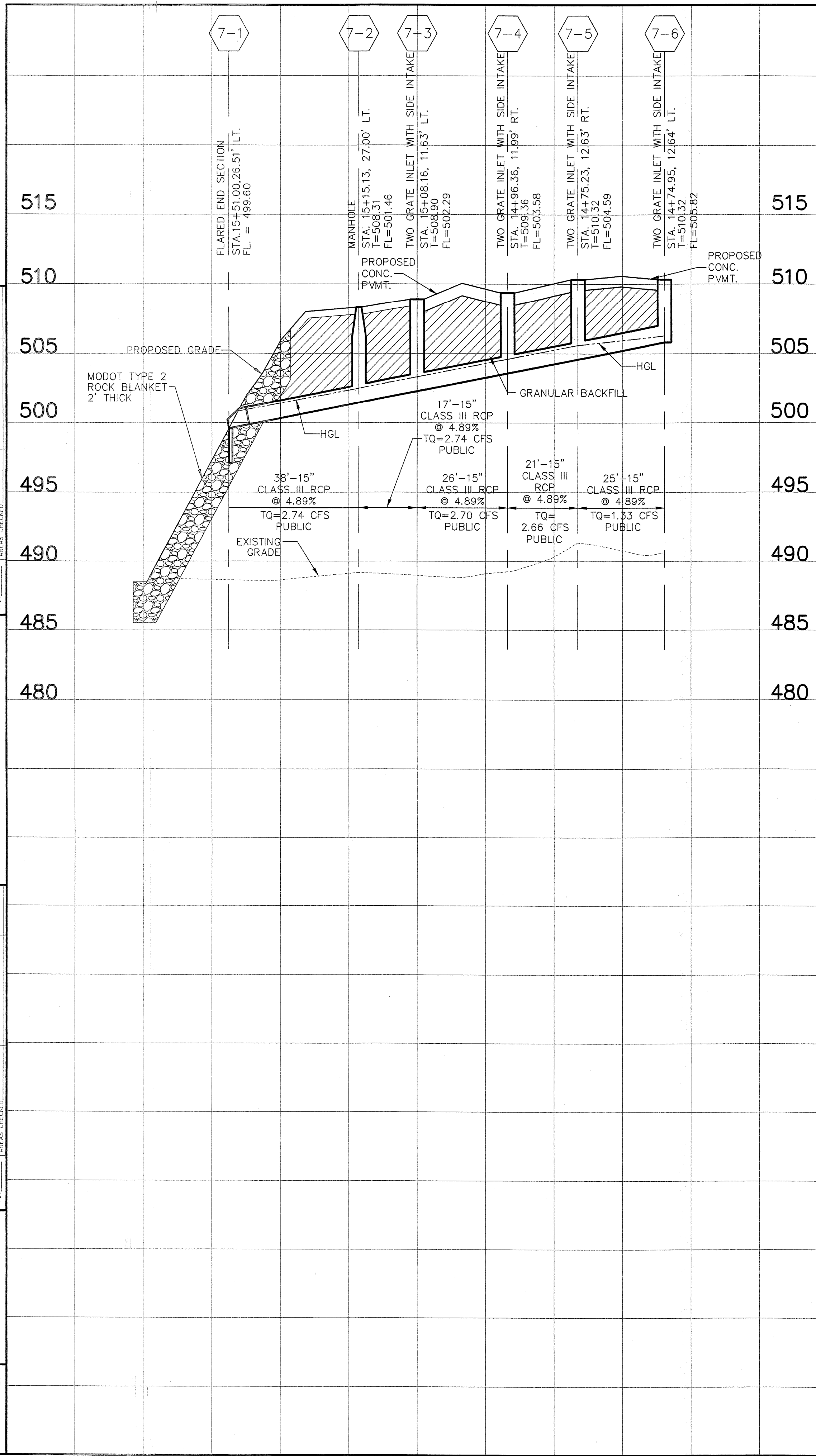
SETTLEMENT PLATES IN FILL AREAS OF MORE THAN 15' SHALL BE INSTALLED ACCORDING TO SPECIFICATIONS AND GEOTECHNICAL RECOMMENDATIONS. ESTIMATE FOR BID COMPUTED AT 6 GAUGES SOUTH OF BRIDGE AND 4 GAUGES NORTH OF BRIDGE IN FILL AREAS. ACTUAL SPACING AND LOCATIONS TO BE DETERMINED BY A GEOTECHNICAL REPRESENTATIVE HIRED BY THE CONTRACTOR WITH THE APPROVAL OF THE CITY ENGINEER.

PIERS SHALL BE DRILLED AFTER PLACEMENT AND COMPACTION OF FILL MATERIAL.

DISCLAIMER OF RESPONSIBILITY
 I HEREBY SPECIFY THAT THE DOCUMENTS INTENDED TO BE AUTHORIZED BY MY SEAL ARE LIMITED TO THIS SHEET, AND I HEREBY DISCLAIM ANY RESPONSIBILITY FOR ALL OTHER DRAWINGS, SPECIFICATIONS, ESTIMATES, REPORTS OR OTHER DOCUMENTS OR INSTRUMENTS RELATING TO OR INTENDED TO BE USED FOR ANY PART OR PARTS OF THE ARCHITECTURAL OR ENGINEERING PROJECT OR SURVEY.

SEAL
 STEVEN L. SKASSEL
 PROFESSIONAL ENGINEER
 APR 12 2007

Designed CMJ/CMB
 Drawn EBS
 Checked SMS
 Date 4-12-07
 EDM No. 035004
 EDM Incorporated
 220 Mansion House, 3rd Floor
 St. Louis, Missouri 63102
 (314) 231-5485 Fax: (314) 231-8167



DATE: _____
 BY: _____
 SURVEYED: _____
 PLOTTED: _____
 FINAL SURVEY: _____
 NOTEBOOK NO.: _____
 AREAS CHECKED: _____

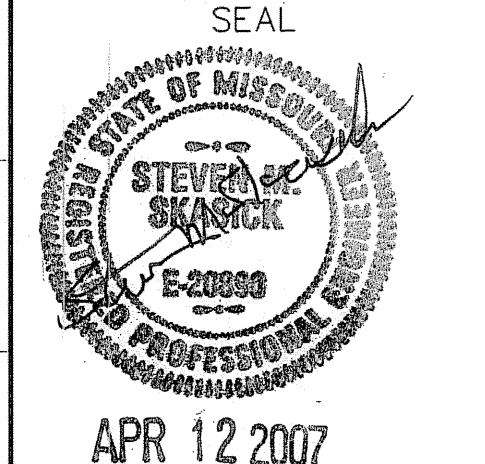
DATE: _____
 BY: _____
 SURVEYED: _____
 PLOTTED: _____
 ORIGINAL SURVEY: _____
 NOTEBOOK NO.: _____
 AREAS CHECKED: _____

DATE: _____
 BY: _____
 SURVEYED: _____
 PLOTTED: _____
 PLOT DATA: _____
 PAPER SIZE: 30
 ROTATION: 90
 SCALE: 1"=20'

NOTE: NO BRICK ALLOWED IN MANHOLE CONSTRUCTION.

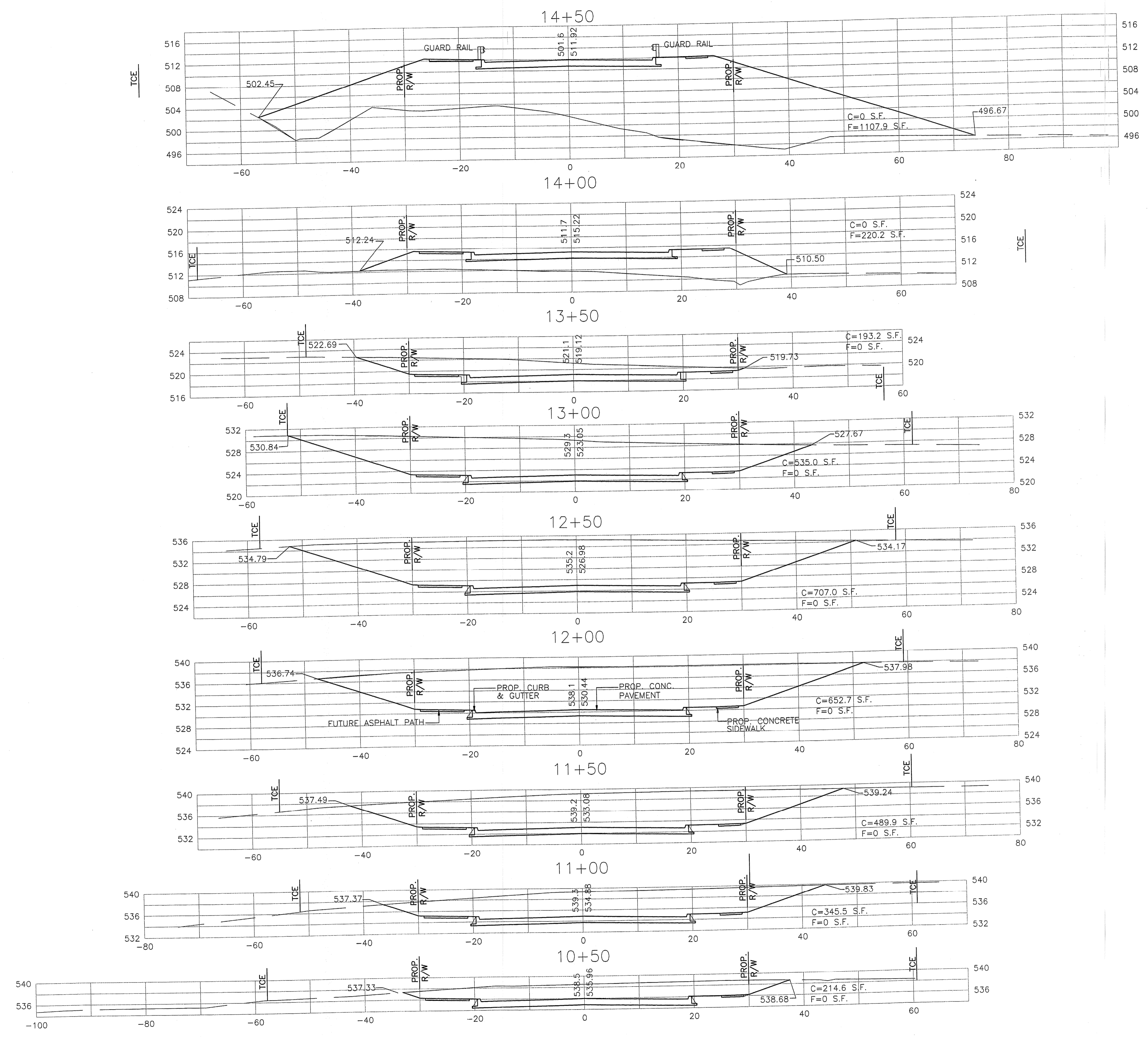
Designed CMJ/CMB
 Drawn EBS
 Checked SMS
 Date 4-12-07
 EDM No. 03804

DISCLAIMER OF RESPONSIBILITY
 I HEREBY SPECIFY THAT THE DOCUMENTS INTENDED TO BE AUTHENTICATED BY MY SEAL ARE LIMITED TO THIS SHEET, AND I HEREBY DISCLAIM ANY RESPONSIBILITY FOR ALL OTHER DRAWINGS, SPECIFICATIONS, ESTIMATES, REPORTS OR OTHER DOCUMENTS OR INSTRUMENTS RELATING TO OR INTENDED TO BE USED FOR ANY PART OR PARTS OF THE ARCHITECTURAL OR ENGINEERING PROJECT OR SUBJECT.



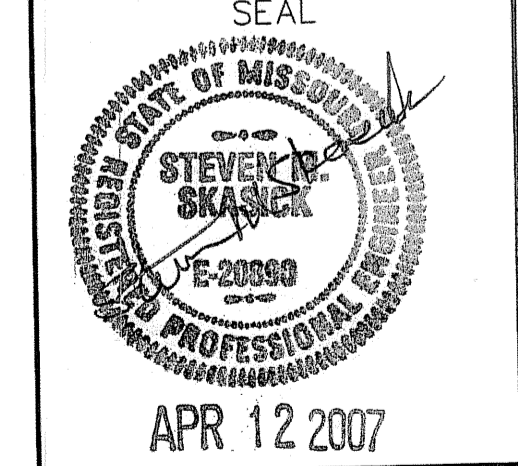
APR 12 2007

EDM EDM Incorporated
 220 Mansion House, 3rd Floor
 St. Louis, Missouri 63102
 (314) 231-5485 Fax: (314) 231-8167



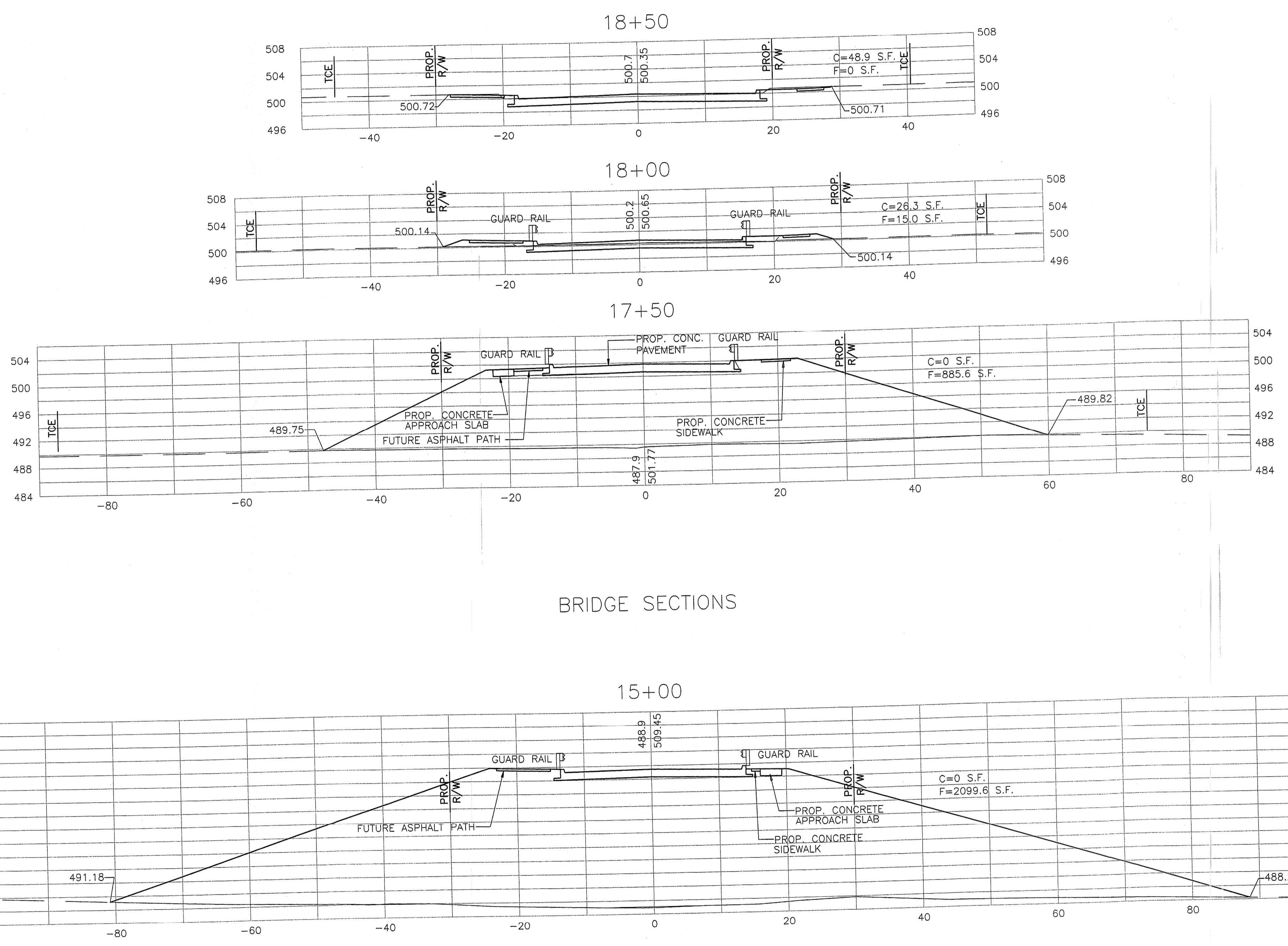
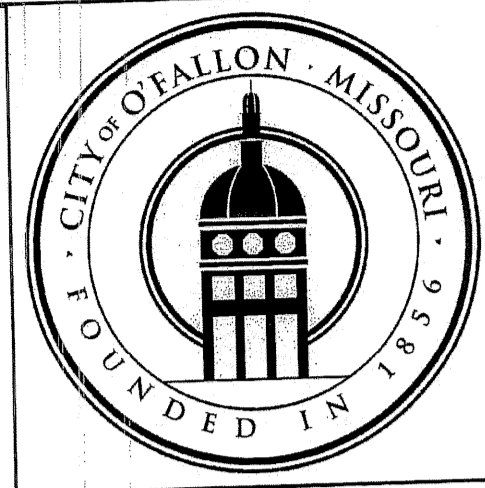
SCALE: 1"=10' HORIZONTAL
 1"=10' VERTICAL

DISCLAIMER OF RESPONSIBILITY
 HEREBY SPECIFY THAT THE DOCUMENTS INTENDED TO BE AUTHENTICATED BY MY SEAL ARE LIMITED TO THIS SHEET, AND I HEREBY DISCLAIM ANY RESPONSIBILITY FOR ALL OTHER DRAWINGS, SPECIFICATIONS, ESTIMATES, REPORTS OR OTHER DOCUMENTS OR INSTRUMENTS RELATING TO OR INTENDED TO BE USED FOR ANY PART OR PARTS OF THE ARCHITECTURAL OR ENGINEERING PROJECT OR SURVEY.



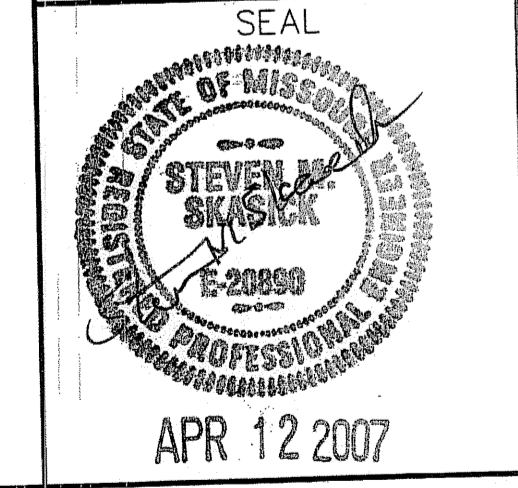
Designed	CMJ/CMB	EDM No. 03804
Drawn	EBS	
Checked	SMS	
Date	4-12-07	

EDM EDM Incorporated
 220 Mansion House, 3rd Floor
 St. Louis, Missouri 63102
 (314) 231-5485 Fax: (314) 231-8167

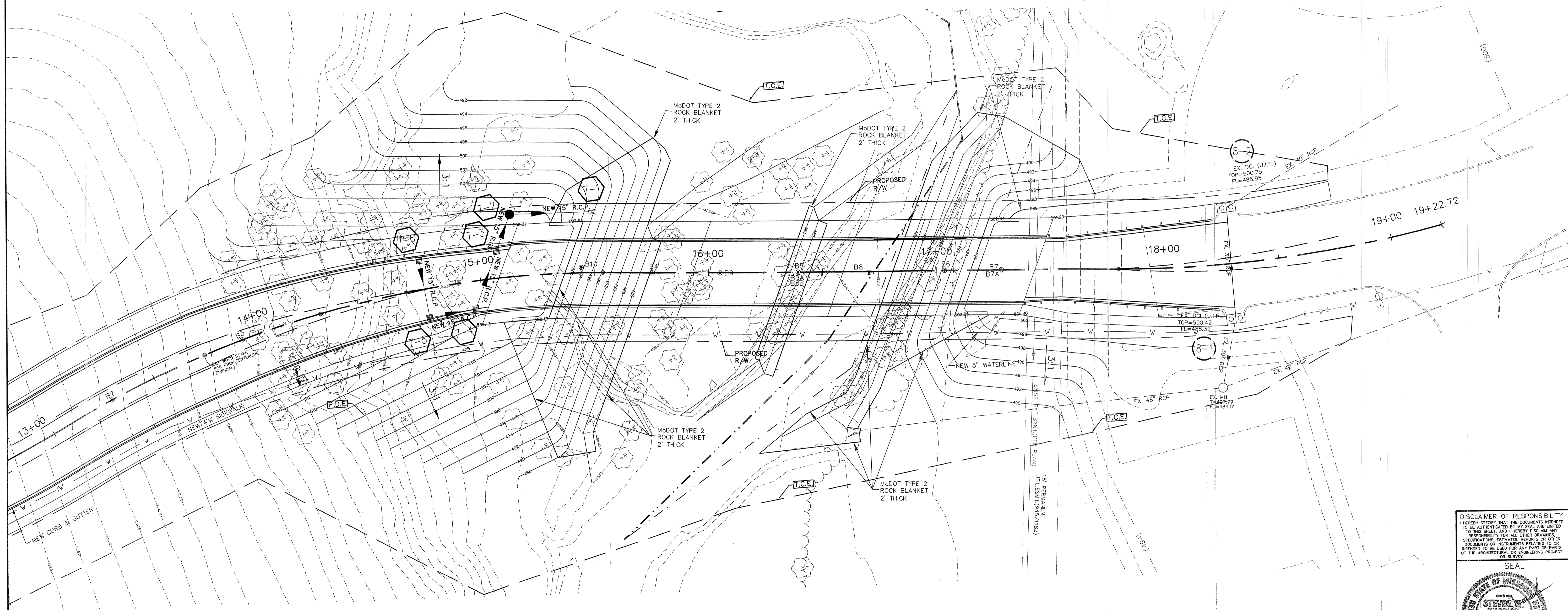
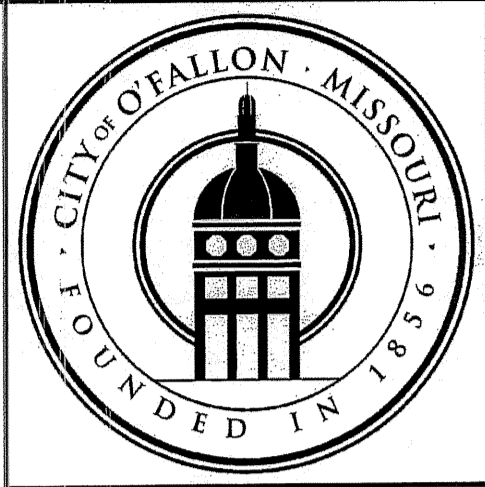
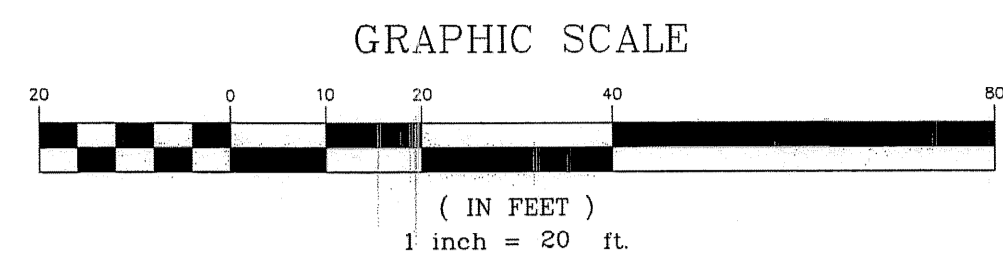


SCALE: 1"=10' HORIZONTAL
 1"=10' VERTICAL

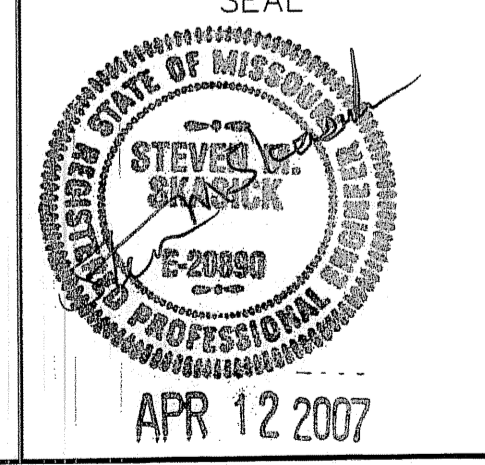
DISCLAIMER OF RESPONSIBILITY
 I HEREBY SPECIFY THAT THE DOCUMENTS INTENDED TO BE AUTHENTICATED BY MY SEAL ARE LIMITED TO THIS SHEET, AND I HEREBY DISCLAIM ANY RESPONSIBILITY FOR ALL OTHER DRAWINGS, SPECIFICATIONS, ESTIMATES, REPORTS OR OTHER DOCUMENTS OR INSTRUMENTS RELATING TO OR INTENDED TO BE USED FOR ANY PART OR PARTS OF THE ARCHITECTURAL OR ENGINEERING PROJECT OR SURVEY.



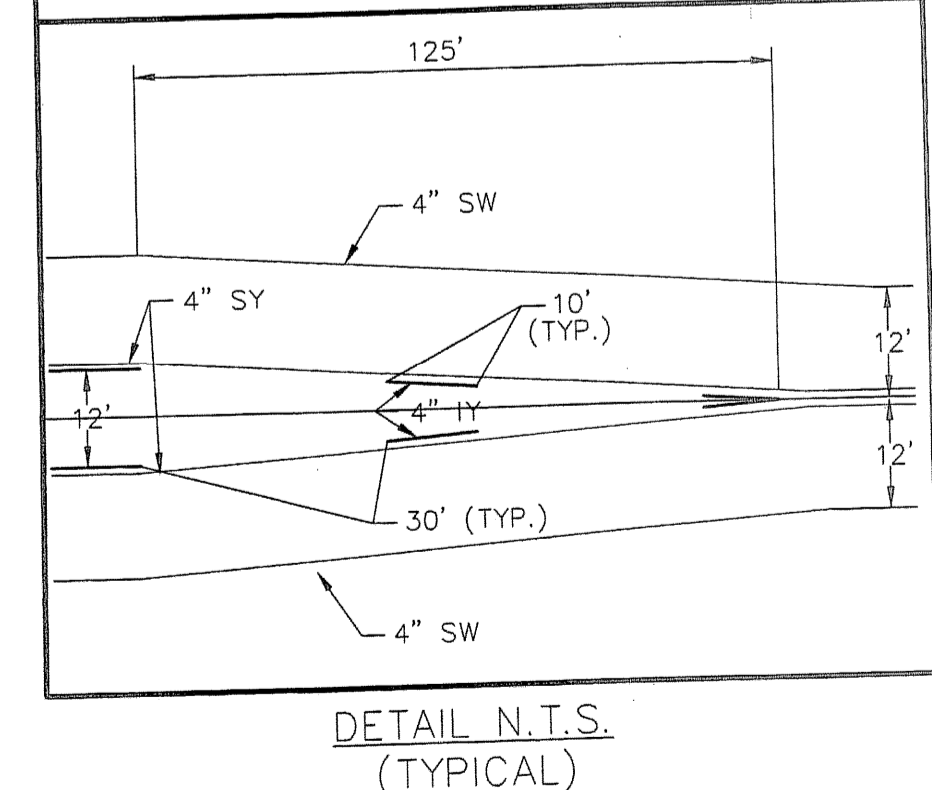
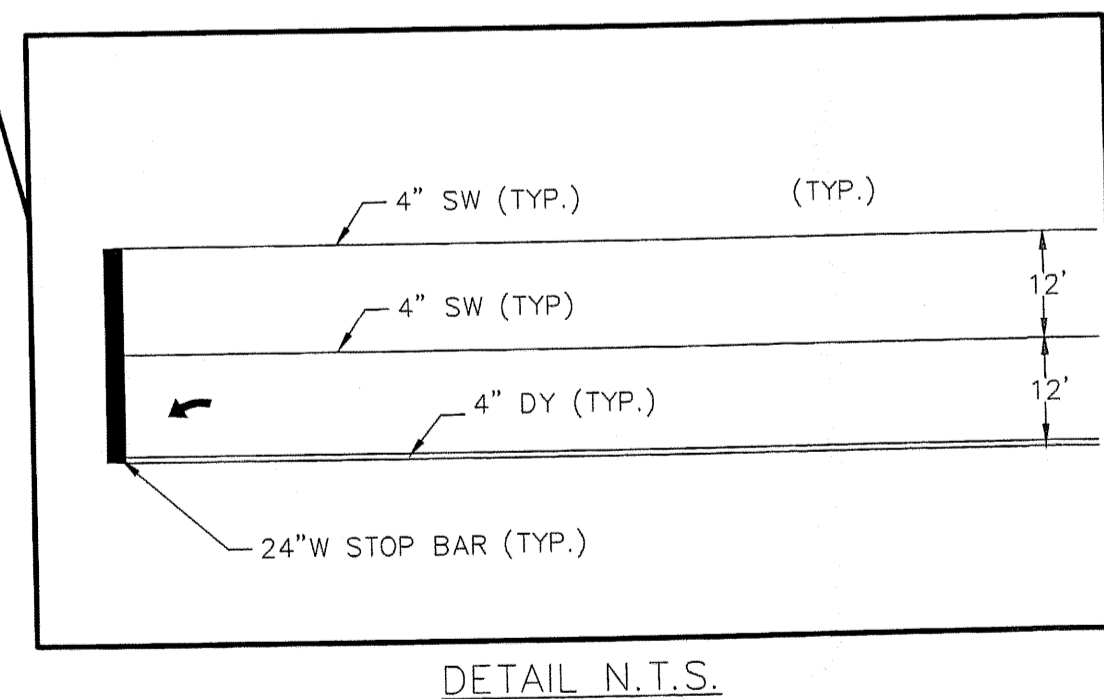
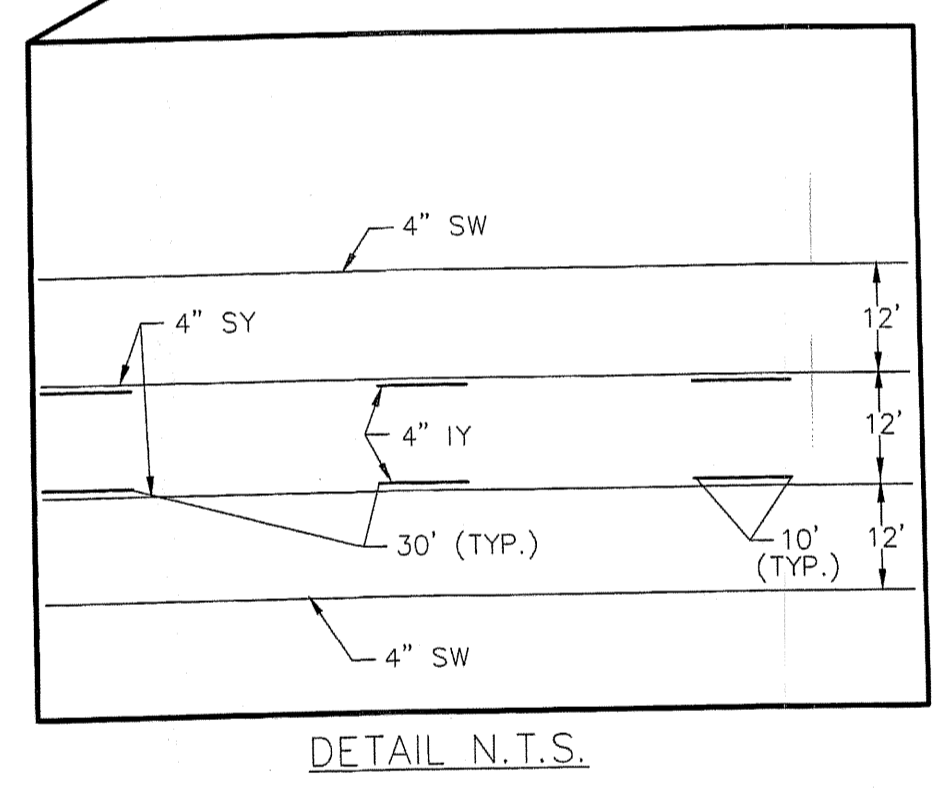
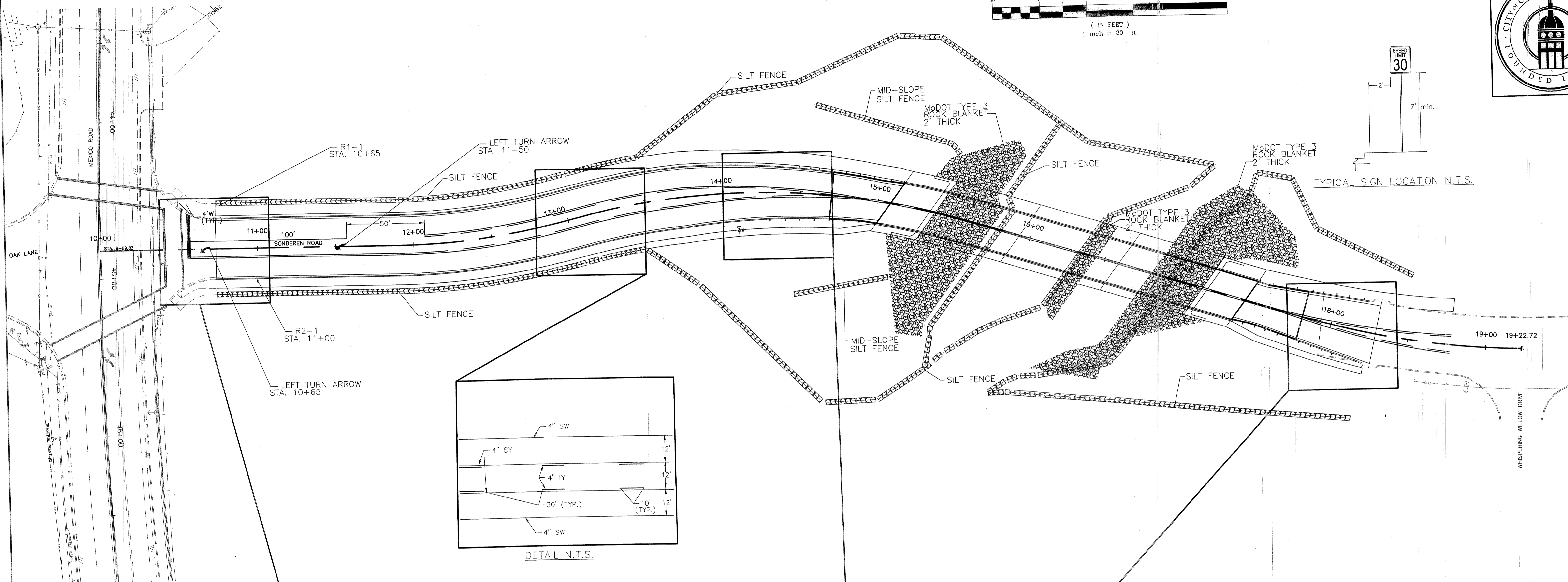
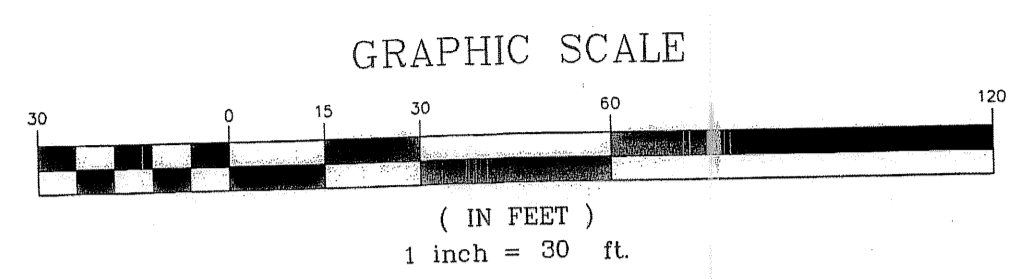
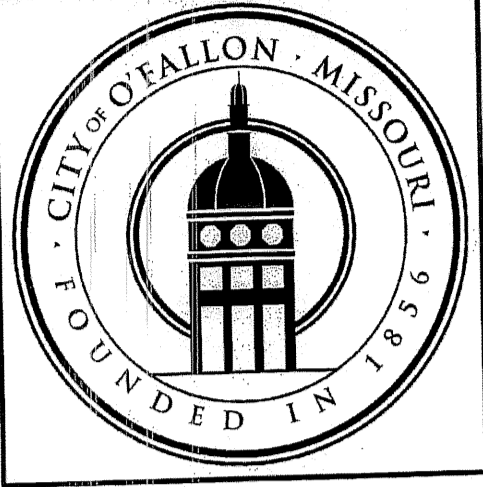
Designed	CMJ/CMB	EDM No. 03804	EDM EDM Incorporated 220 Mansion House, 3rd Floor St. Louis, Missouri 63102 (314) 231-5485 Fax: (314) 231-8167
Drawn	EBS		
Checked	SMS		
Date	4-12-07		



DISCLAIMER OF RESPONSIBILITY
 I HEREBY SPECIFY THAT THE DOCUMENTS INTENDED TO BE AUTHENTICATED BY MY SEAL ARE LIMITED TO THIS SHEET, AND I HEREBY DISCLAIM ANY RESPONSIBILITY FOR ALL OTHER DRAWINGS, SPECIFICATIONS, ESTIMATES, REPORTS OR OTHER DOCUMENTS OR INSTRUMENTS RELATING TO OR INTENDED TO BE USED FOR ANY PART OR PARTS OF THE ARCHITECTURAL OR ENGINEERING PROJECT OR SURVEY.



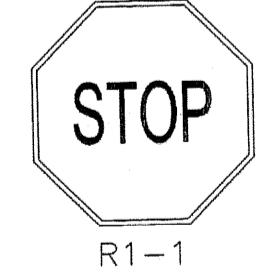
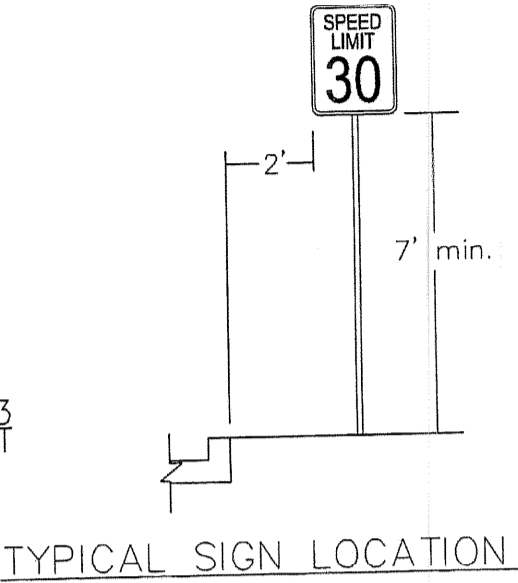
Designed	CMJ/CMB	EDM No. 038004	EDM EDM Incorporated 220 Mansion House, 3rd Floor St. Louis, Missouri 63102 (314) 231-5485 Fax: (314) 231-8167
Drawn	EBS		
Checked	SMS		
Date	4-12-07		



- NOTES**
1. ALL EROSION CONTROL MEASURES SHALL BE IN ACCORDANCE WITH MISSOURI DEPARTMENT OF NATURAL RESOURCES STANDARDS AND CITY OF O'FALLON STANDARDS.
 2. EROSION CONTROL SHALL BE AS APPROVED BY ENGINEER.
 3. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED, AS DIRECTED BY ENGINEER.
 4. ALL STRIPING SHALL BE PAINTED 4" WIDE REFLECTORIZED STRIPES UNLESS OTHERWISE NOTED.
 5. ALL SIGNS AND STRIPING TO BE INSTALLED ACCORDING TO FEDERAL HIGHWAY ASSOCIATION MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

STRIPING ABBREVIATIONS: SW-SOLID WHITE
 SY-SOLID YELLOW
 IW-INTERMITTENT WHITE
 IY-INTERMITTENT YELLOW

EROSION CONTROL LEGEND:
 ROCK BLANKET
 SILT FENCE
 STRAWBALES

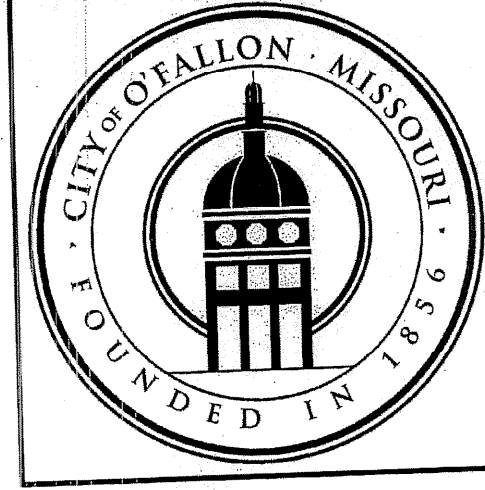


DISCLAIMER OF RESPONSIBILITY
 I HEREBY SPECIFY THAT THE DOCUMENTS INTENDED TO BE AUTHENTICATED BY MY SEAL ARE LIMITED TO THIS SHEET, AND I HEREBY DISCLAIM ANY RESPONSIBILITY FOR ALL OTHER DRAWINGS, SPECIFICATIONS, ESTIMATES, REPORTS OR OTHER DOCUMENTS OR INSTRUMENTS RELATING TO OR INTENDED TO BE USED FOR ANY PART OR PARTS OF THE ARCHITECTURAL OR ENGINEERING PROJECT OR SURVEY.
 SEAL

 APR 12 2007

Designed	CMJ/CMB	EDM No. 03804
Drawn	EBS	
Checked	SMS	
Date	4-12-07	

EDM EDM Incorporated
 220 Mansion House, 3rd Floor
 St. Louis, Missouri 63102
 (314) 231-5485 Fax: (314) 231-8167



LEGEND:

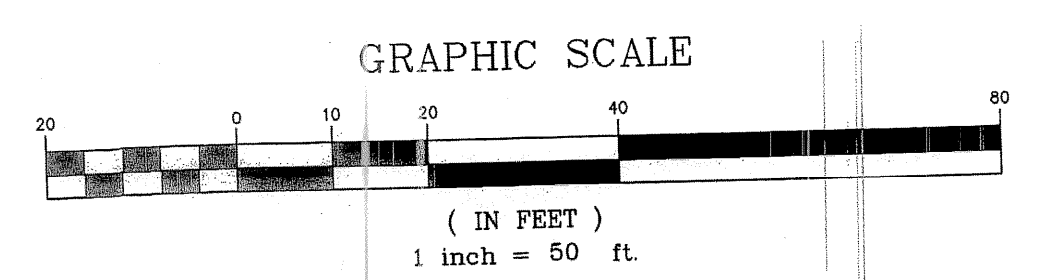
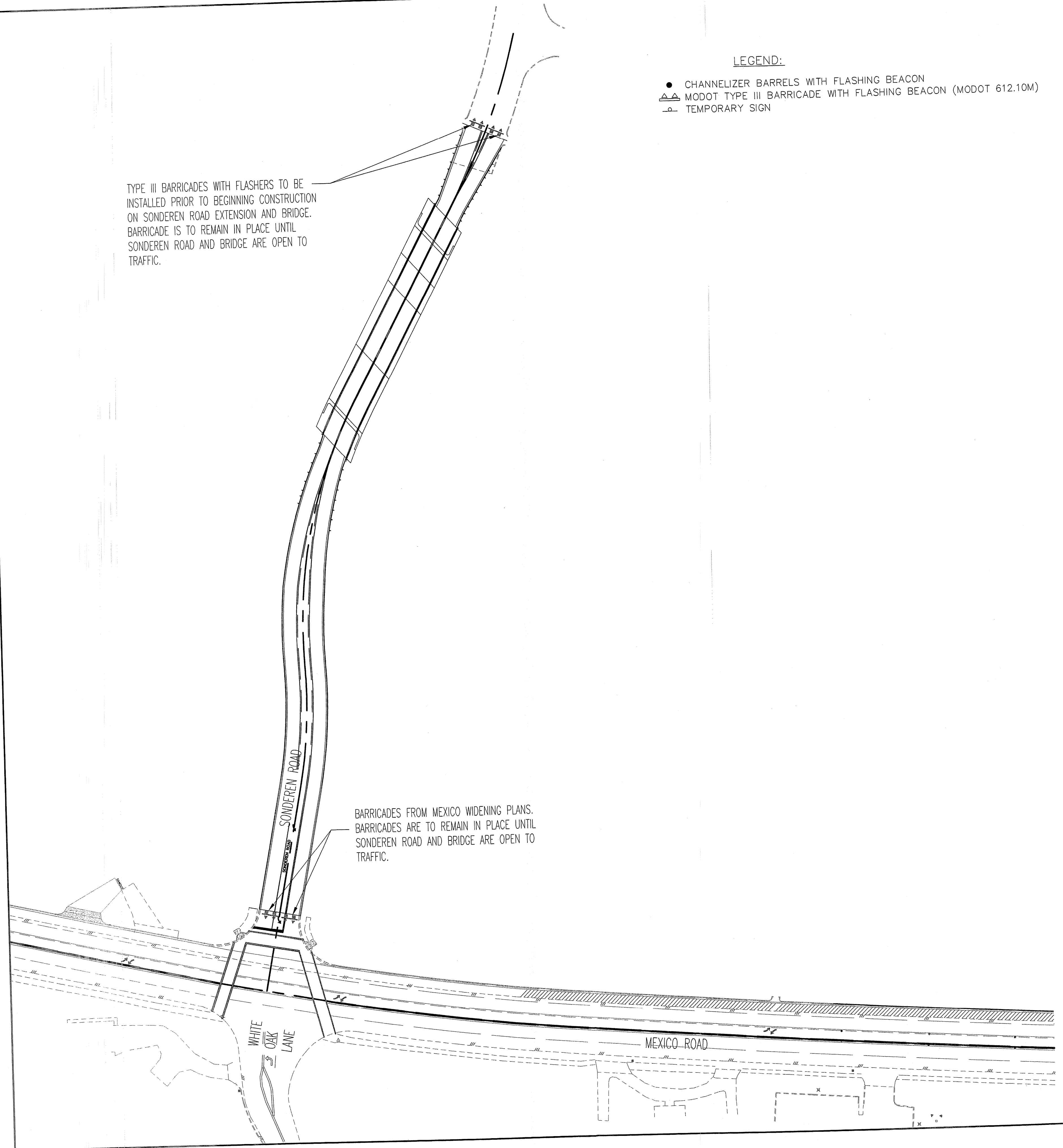
- CHANNELIZER BARRELS WITH FLASHING BEACON
- ▲▲ MODOT TYPE III BARRICADE WITH FLASHING BEACON (MODOT 612.10M)
- TEMPORARY SIGN

PHASING NOTES:

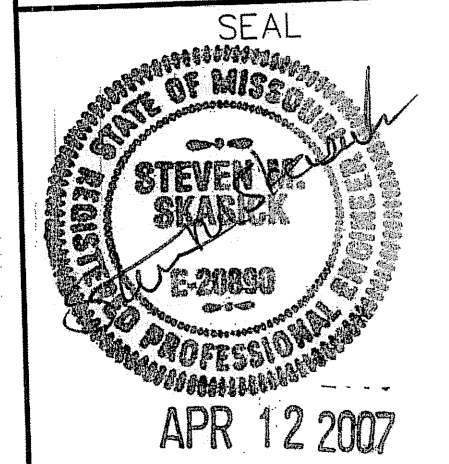
1. ALL CONSTRUCTION SIGNAGE AND TRAFFIC CONTROL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
2. TRAFFIC CONTROL PHASING SHALL BE CONSTRUCTED AS SHOWN ON THE PLANS, EXCEPT AS DIRECTED BY ENGINEER.
3. CONTRACTOR SHALL MAINTAIN VEHICULAR ACCESS TO WHISPERING WILLOW DRIVE AT ALL TIMES.
4. SONDEREN ROAD AND BRIDGE SHALL BE KEPT CLOSED TO TRAFFIC UNTIL ENTIRE PROJECT CONSTRUCTION IS COMPLETE.

TYPE III BARRICADES WITH FLASHERS TO BE INSTALLED PRIOR TO BEGINNING CONSTRUCTION ON SONDEREN ROAD EXTENSION AND BRIDGE. BARRICADE IS TO REMAIN IN PLACE UNTIL SONDEREN ROAD AND BRIDGE ARE OPEN TO TRAFFIC.

BARRICADES FROM MEXICO WIDENING PLANS. BARRICADES ARE TO REMAIN IN PLACE UNTIL SONDEREN ROAD AND BRIDGE ARE OPEN TO TRAFFIC.

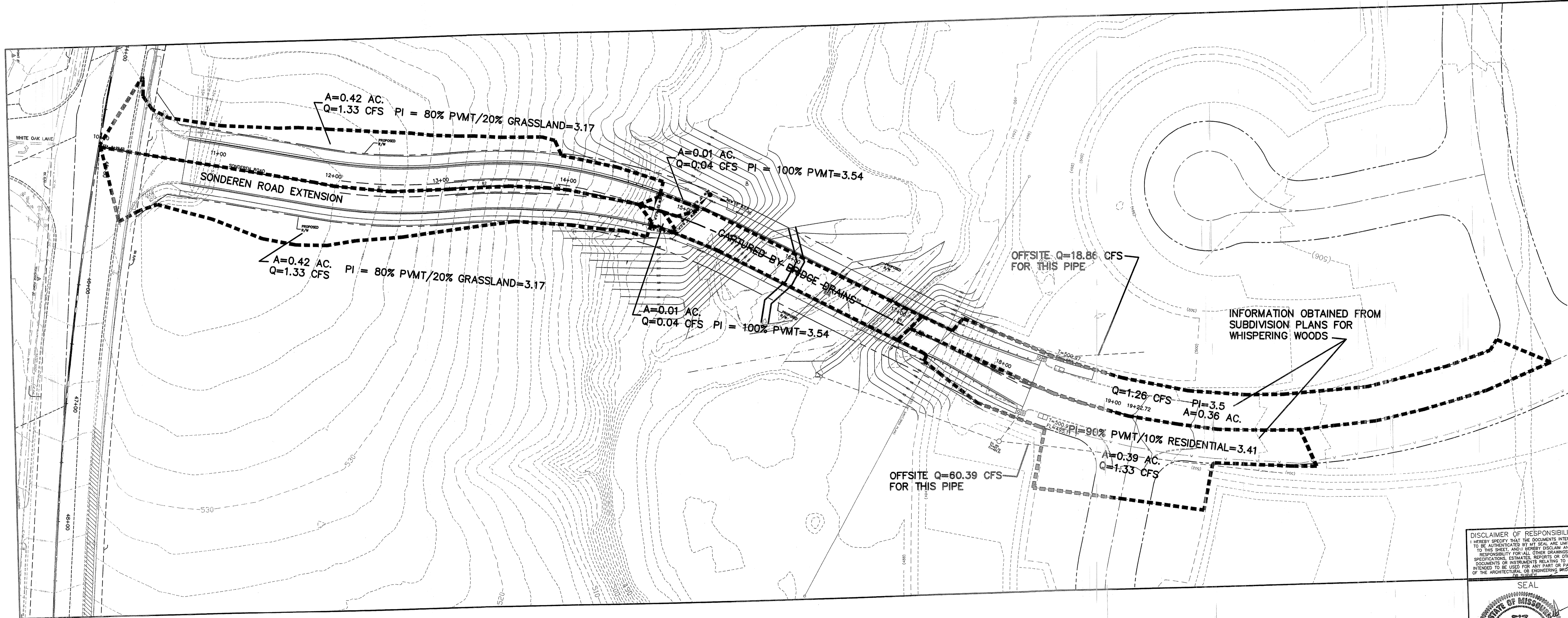


DISCLAIMER OF RESPONSIBILITY
 I HEREBY SPECIFY THAT THE DOCUMENTS INTENDED TO BE AUTHENTICATED BY MY SEAL ARE LIMITED TO THIS SHEET, AND I HEREBY DISCLAIM ANY RESPONSIBILITY FOR ALL OTHER DRAWINGS, SPECIFICATIONS, ESTIMATES, REPORTS OR OTHER DOCUMENTS OR INSTRUMENTS RELATING TO OR INTENDED TO BE USED FOR ANY PART OR PARTS OF THE ARCHITECTURAL OR ENGINEERING PROJECT OR SURVEY.

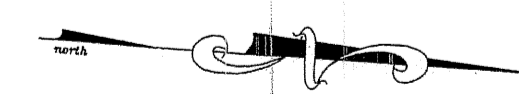
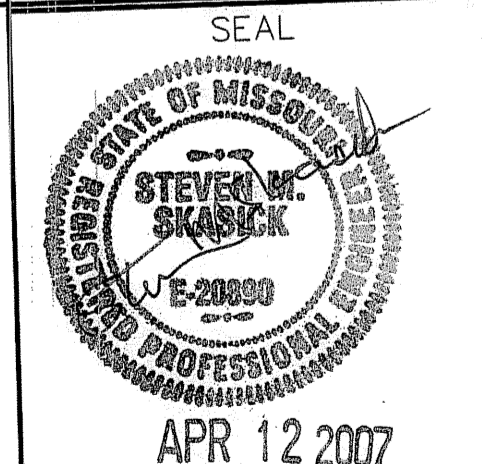


Designed	CMJ/CMB	EDM No. 03804
Drawn	EBS	
Checked	SMS	
Date	4-12-07	

EDM EDM Incorporated
 220 Mansion House, 3rd Floor
 St. Louis, Missouri 63102
 (314) 231-5485 Fax: (314) 231-8167

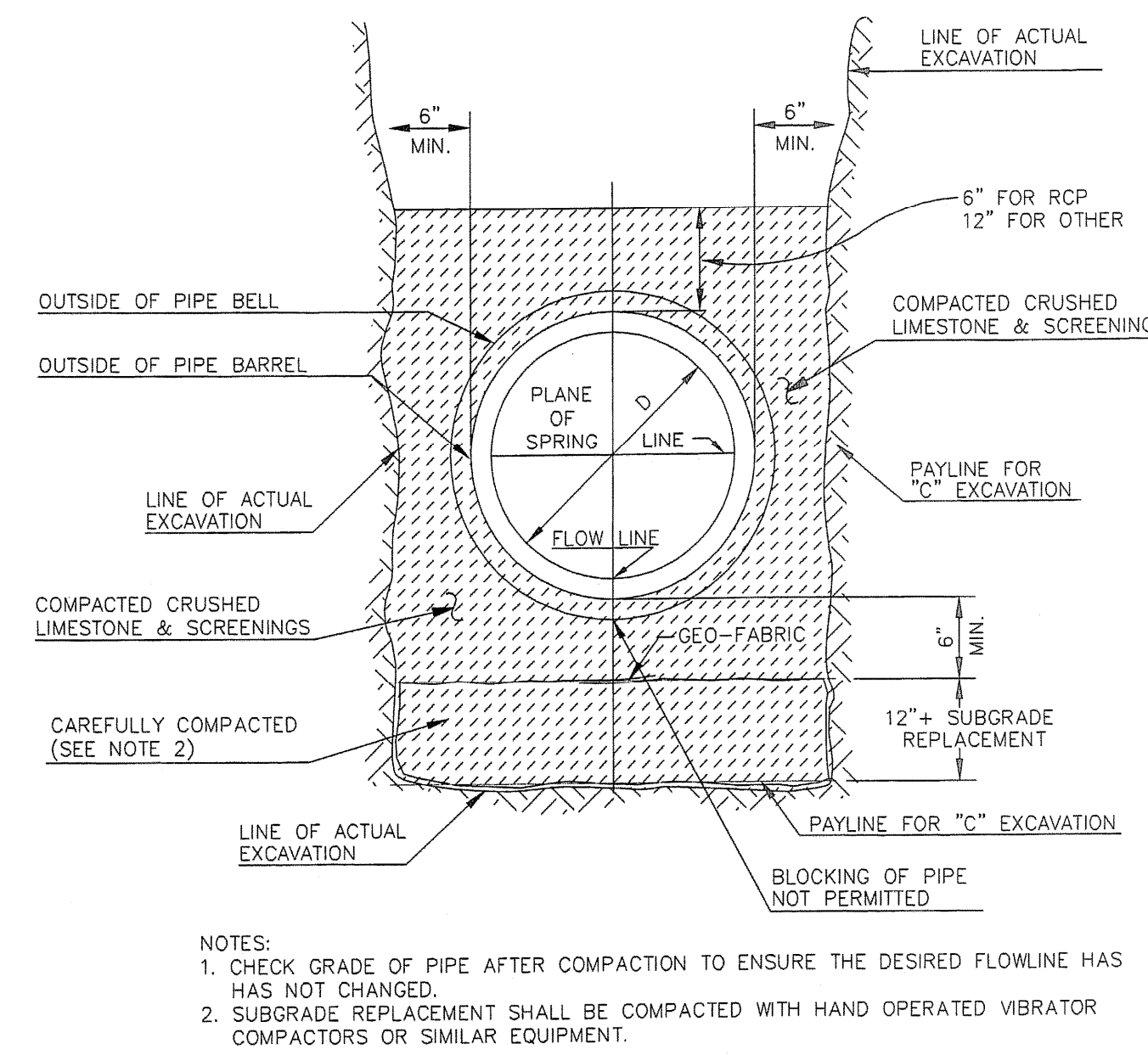
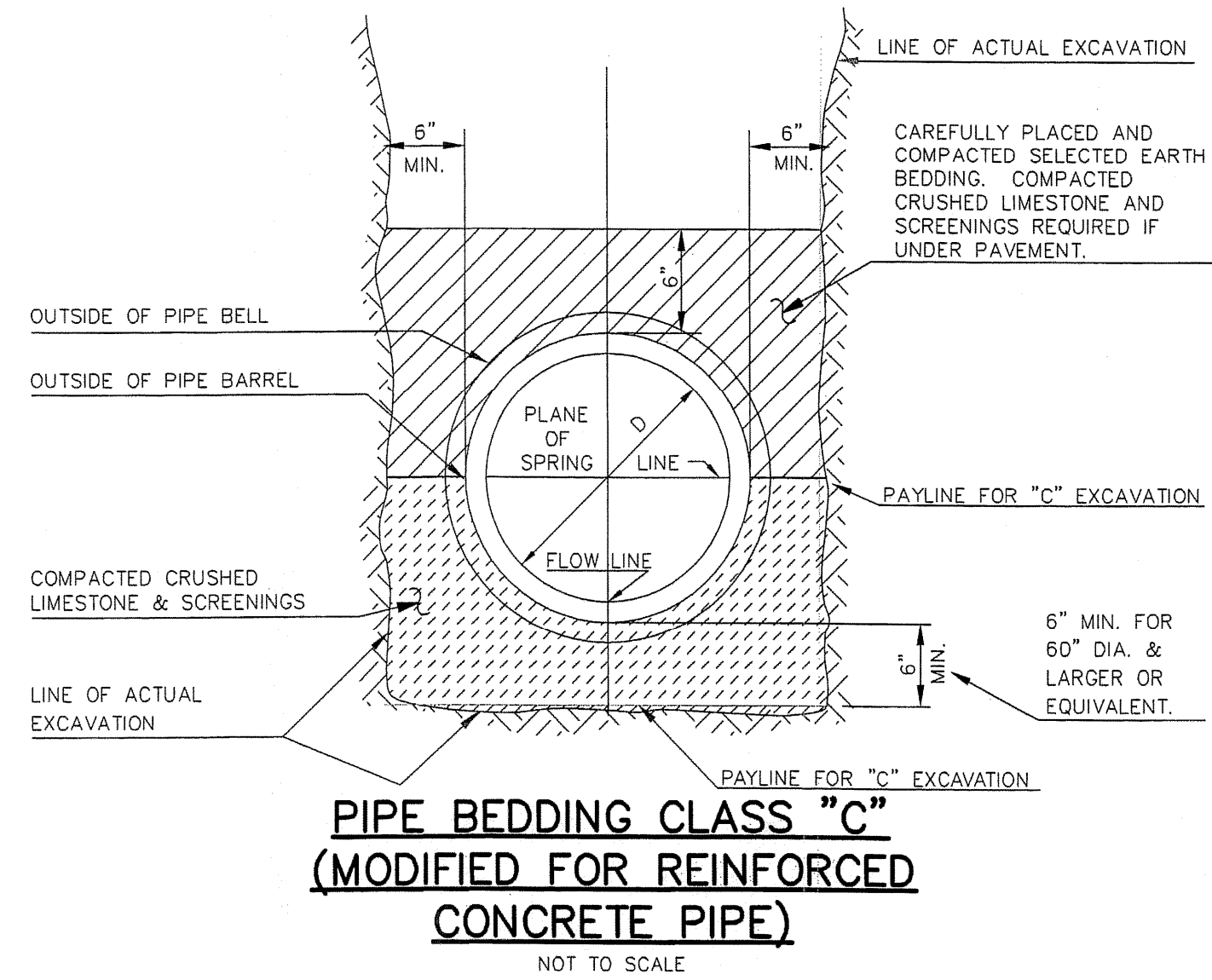
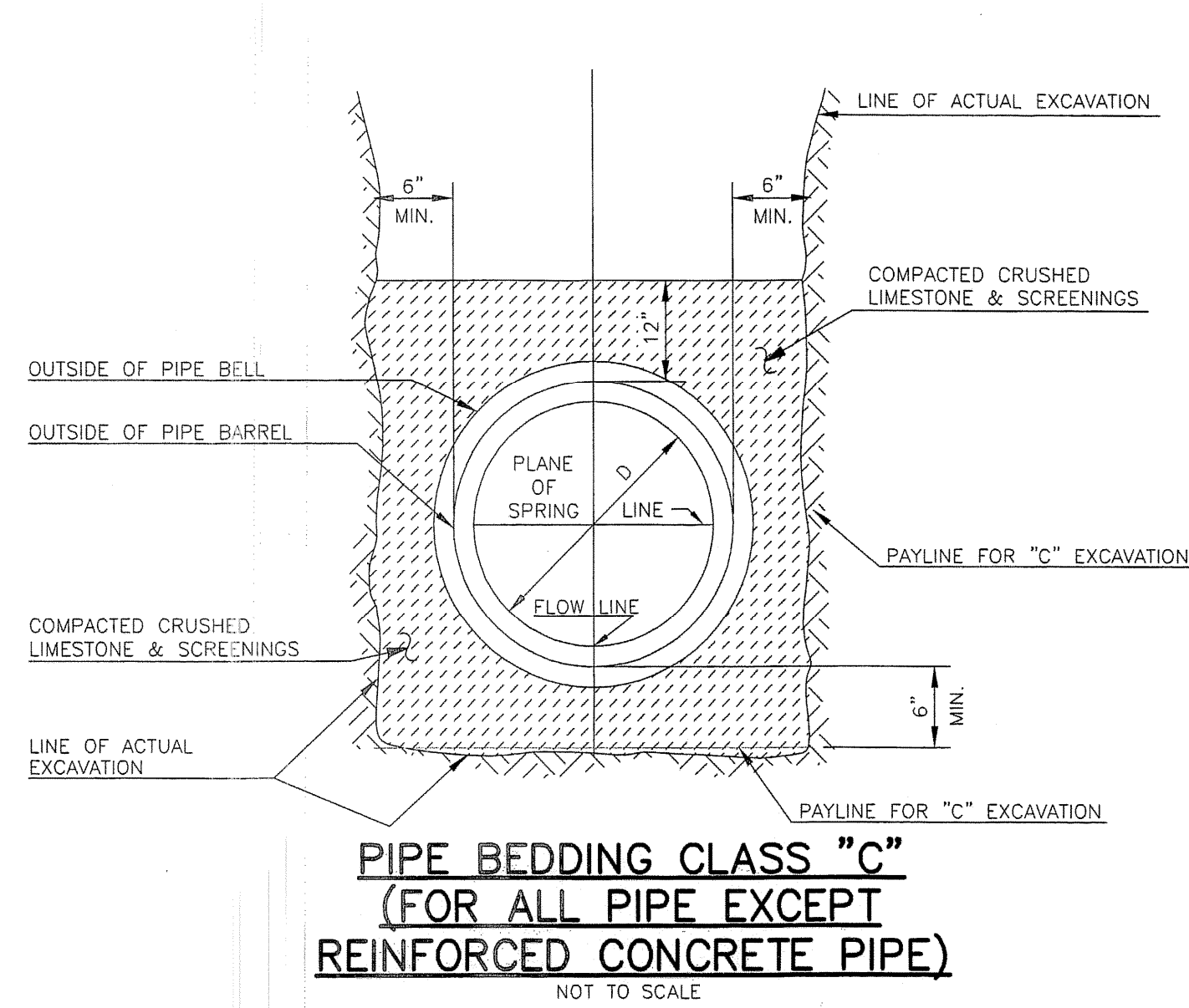


DISCLAIMER OF RESPONSIBILITY
 I HEREBY SPECIFY THAT THE DOCUMENTS INTENDED
 TO BE AUTHORIZED BY MY SEAL ARE LIMITED
 TO THIS SHEET, AND I HEREBY DISCLAIM ANY
 RESPONSIBILITY FOR ALL OTHER DRAWINGS,
 SPECIFICATIONS, ESTIMATES, REPORTS OR OTHER
 DOCUMENTS OR INSTRUMENTS RELATING TO OR
 INTENDED TO BE USED FOR ANY PART OR PARTS
 OF THE ARCHITECTURAL OR ENGINEERING PROJECT
 OR SUBPROJECT.



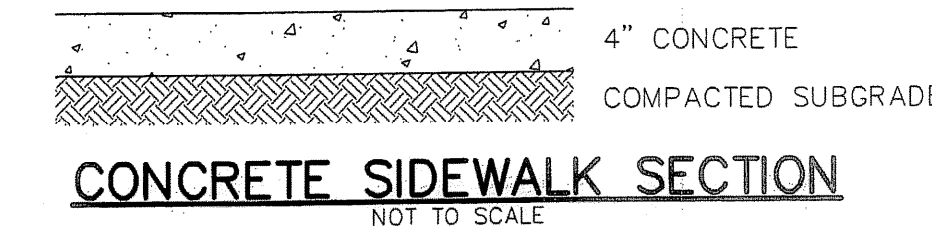
SCALE: 1"=40'

Designed	CMJ/CMB	EDM No. 03604	EDM EDM Incorporated 220 Mansion House, 3rd Floor St. Louis, Missouri 63102 (314) 231-5485 Fax: (314) 231-8167
Drawn	EBS		
Checked	SMS		
Date	4-12-07		



NOTES:
 1. CHECK GRADE OF PIPE AFTER COMPACTION TO ENSURE THE DESIRED FLOWLINE HAS NOT CHANGED.
 2. SUBGRADE REPLACEMENT SHALL BE COMPACTIONED WITH HAND OPERATED VIBRATOR COMPACTORS OR SIMILAR EQUIPMENT.

SPECIAL PIPE BEDDING DETAIL FOR SUBGRADE REPLACEMENT 12" DEPTH OR MORE
 NOT TO SCALE

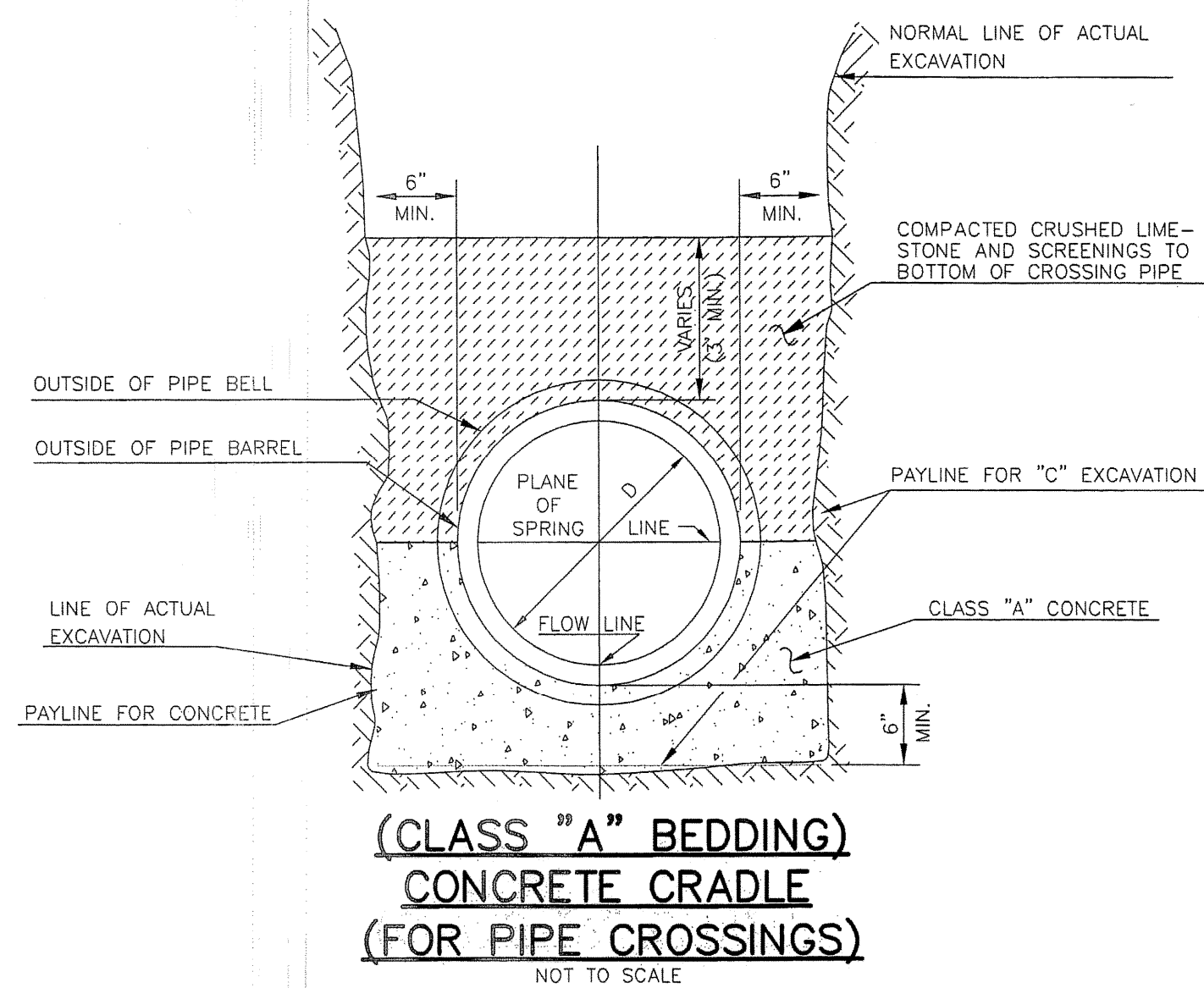


CONCRETE SIDEWALK SECTION
 NOT TO SCALE

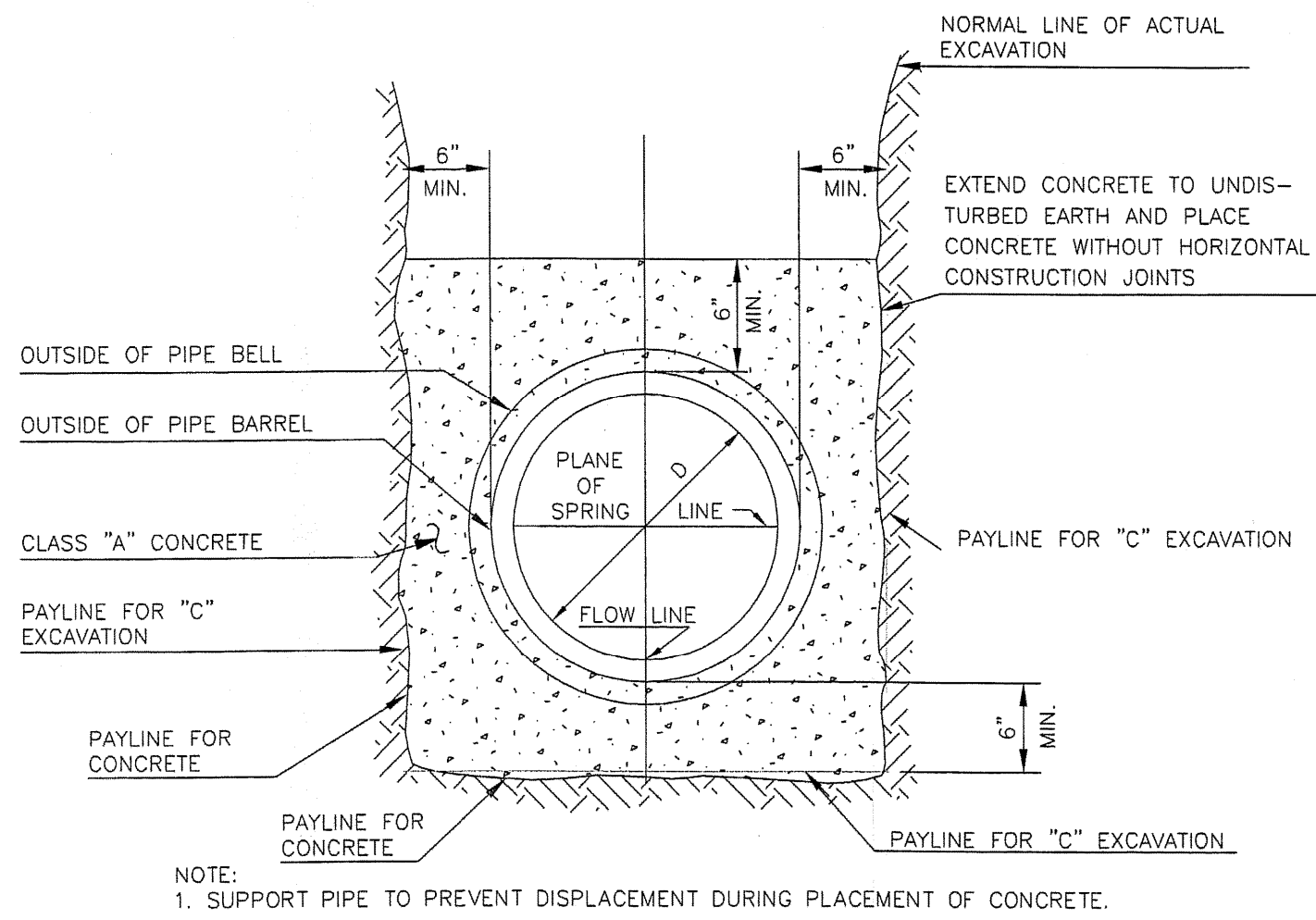
NEW PAVEMENT SECTION—SONDEREN ROAD
 NOT TO SCALE

GENERAL NOTES

- Do not scale drawing. Follow dimensions.
- Refer to Pavement Construction Details for "Integral Vertical Curb and Concrete Pavement Typical Sections and Details," Std. Dwg. C502.01 and "Integral Rolled Curb and Concrete Pavement Typical Sections and Details," Std. Dwg. C502.02 for joint and bar requirements for different street classifications. Note that width and location of each poured portion of the pavement may change the type and location of joint required.
- All deformed bars for joints and curbs shall be Billet Steel Bars conforming to A.S.T.M.615-75, Grade 40.
- Length of the tie bars shall equal the thickness of pavement plus the height of curb less 3". Tie bars shall be placed at 24" centers.
- Transverse or longitudinal construction joints in slip formed pavements may be made with a groover or tool, if such device has been approved in advance by the City.
- The free end of the dowel bar for a length of at least 11 inches shall be coated with an approved graphite grease.
- Type "C" Asphaltic Concrete is to be used in lieu of Type "C" Bituminous Concrete when directed by the City or when specified in the City Contract.
- If monolithic concrete curb is constructed, strike a dummy joint across bottom of ramp at curb line. If concrete curb is doweled-on, block out pavement to provide full depth curb across ramp from outer point of curb taper to outer point of curb taper.

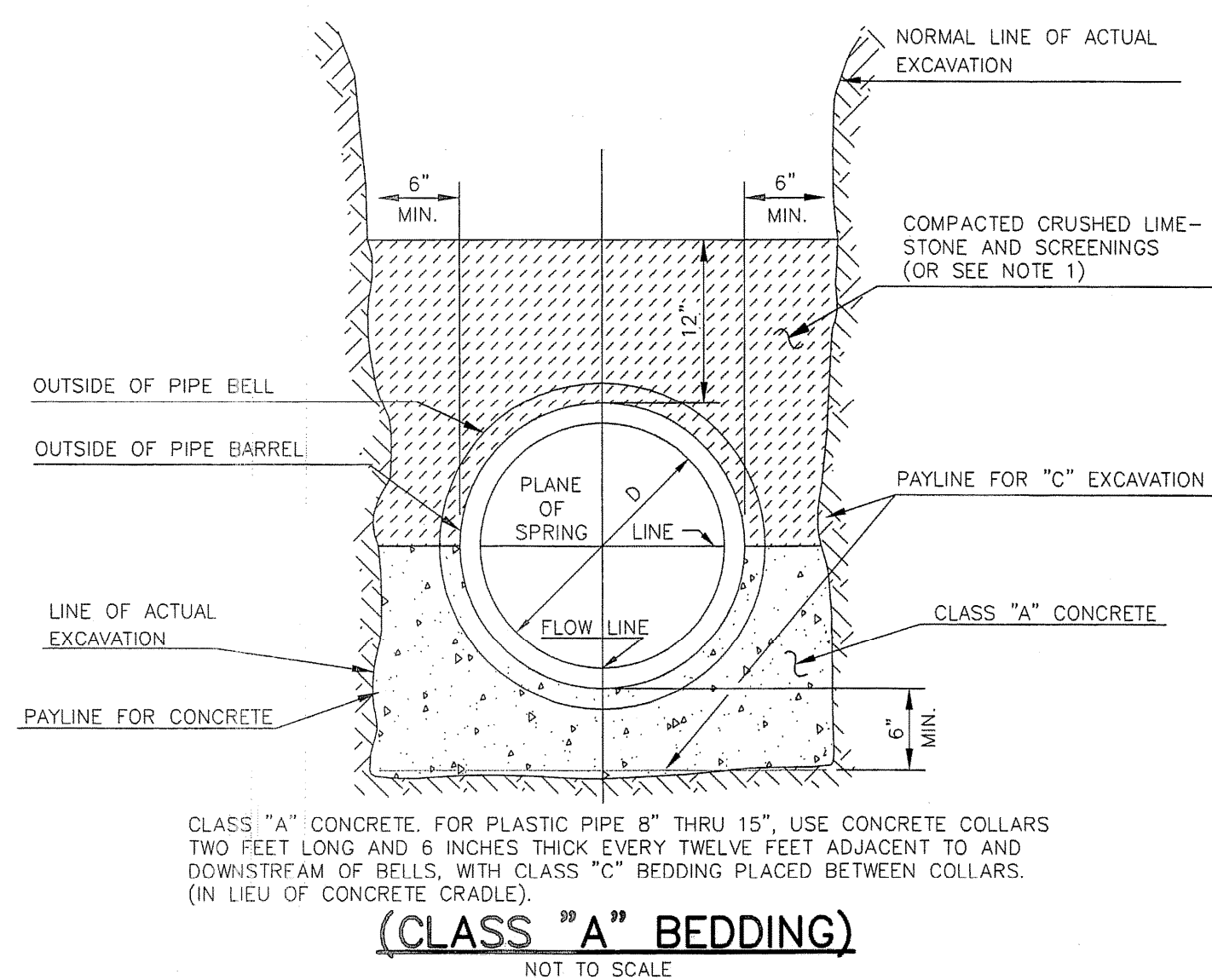


(CLASS "A" BEDDING) CONCRETE CRADLE (FOR PIPE CROSSINGS)
 NOT TO SCALE



NOTE:
 1. SUPPORT PIPE TO PREVENT DISPLACEMENT DURING PLACEMENT OF CONCRETE.

CONCRETE ENCASEMENT
 NOT TO SCALE

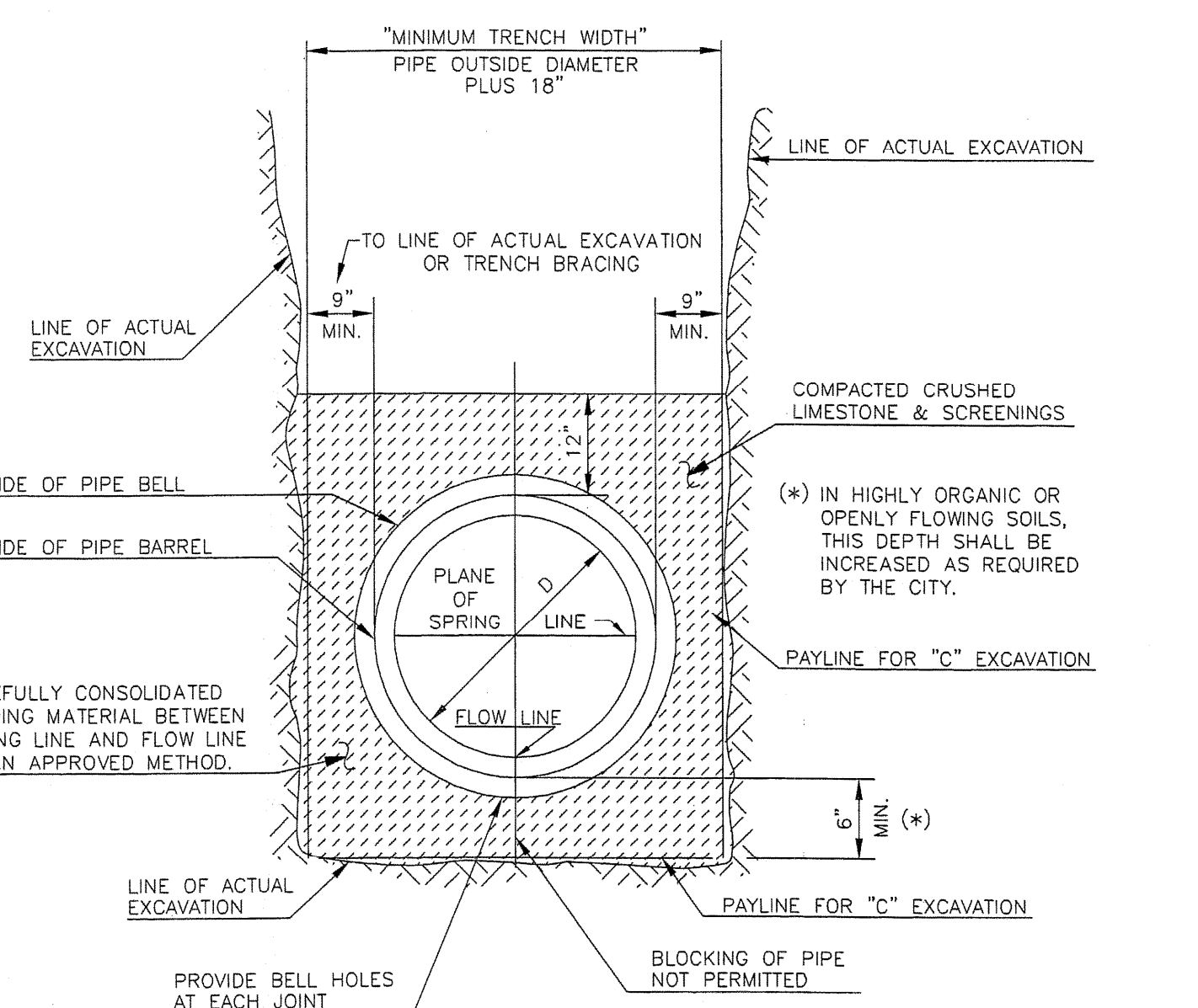


(CLASS "A" BEDDING) CONCRETE CRADLE
 NOT TO SCALE

CLASS "A" CONCRETE: FOR PLASTIC PIPE 8" THRU 15", USE CONCRETE COLLARS TWO FEET LONG AND 6 INCHES THICK EVERY TWELVE FEET ADJACENT TO AND DOWNSTREAM OF BELLS, WITH CLASS "C" BEDDING PLACED BETWEEN COLLARS. (IN LIEU OF CONCRETE CRADLE).

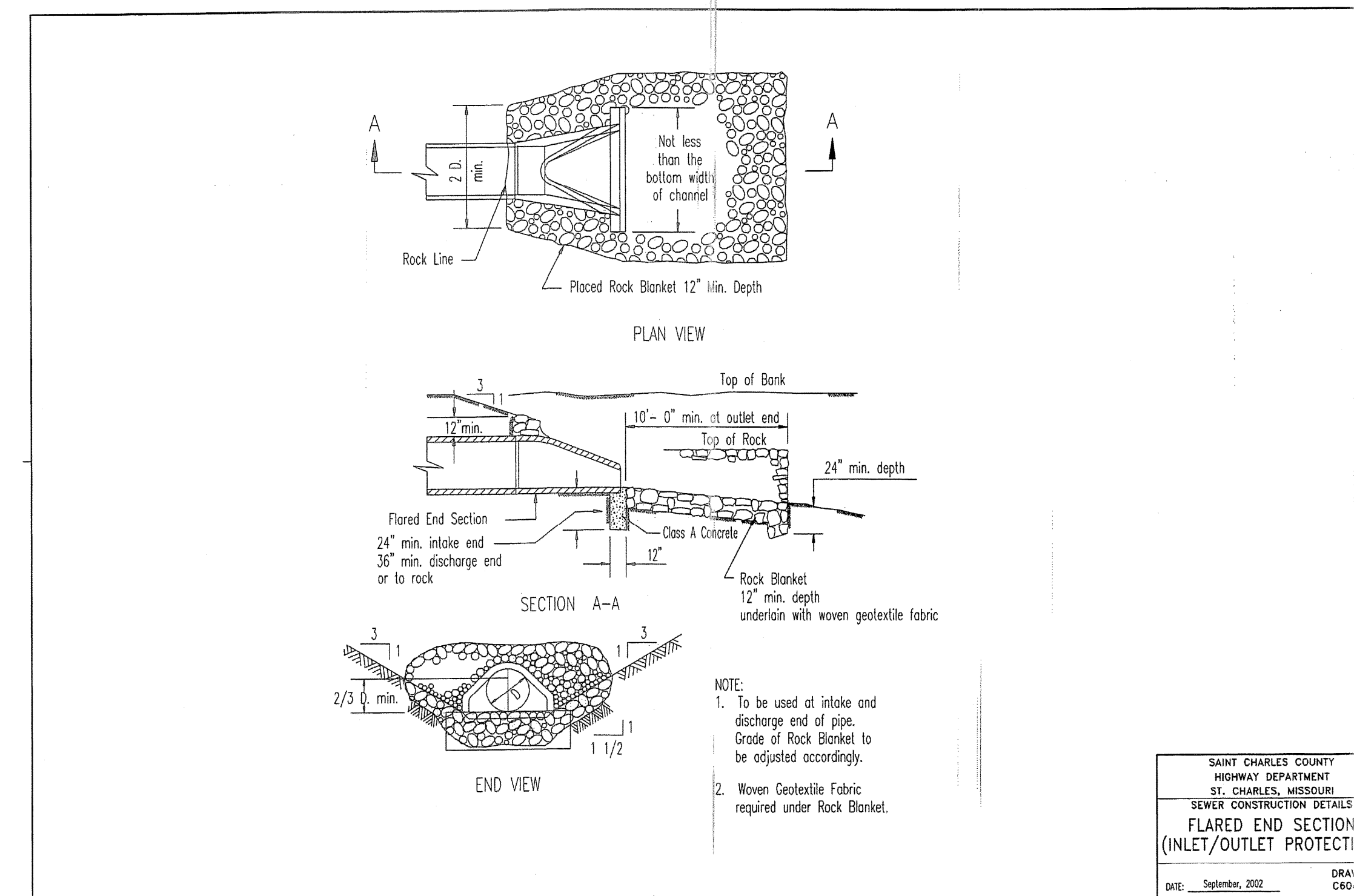
- NOTES:
 1. ONLY FOR PIPE SEWERS ON GRADES 20% TO 50% INCLUSIVE, BED WITH CAREFULLY PLACED AND COMPACTIONED SELECT EARTH BEDDING IN 6" LAYERS (95% STANDARD PROCTOR).
 2. FOR GRADES EXCEEDING 50% OR PLASTIC PIPE GREATER THAN 15" DIAMETER, SEE PROJECT SPECIFICATIONS.

CONCRETE CRADLE



- NOTES:
 1. CHECK GRADE OF PIPE AFTER COMPACTION TO ENSURE THE DESIRED FLOWLINE HAS NOT CHANGED.
 2. ANY TRENCH BRACING USED BELOW THE TOP OF PIPE SHALL BE LEFT IN PLACE.
 3. FOR INSTALLATION IN HIGHLY ORGANIC OR OPENLY FLOWING SOILS, THE ENTIRE PERIMETER OF THE PIPE BEDDING SHALL BE WRAP WITH AN APPROVED FILTER FABRIC OR THE "MINIMUM TRENCH WIDTH" SHALL BE EXPANDED BY INCREASING THE DISTANCE BETWEEN THE SIDE OF THE PIPE AND THE LINE OF ACTUAL EXCAVATION OR TRENCH BRACING TO A MINIMUM OF THE PIPE DIAMETER.

PIPE BEDDING FOR FLEXIBLE PIPE 18"-36" DIAMETER
 NOT TO SCALE



- NOTE:
 1. To be used at intake and discharge end of pipe. Grade of Rock Blanket to be adjusted accordingly.
 2. Woven Geotextile Fabric required under Rock Blanket.

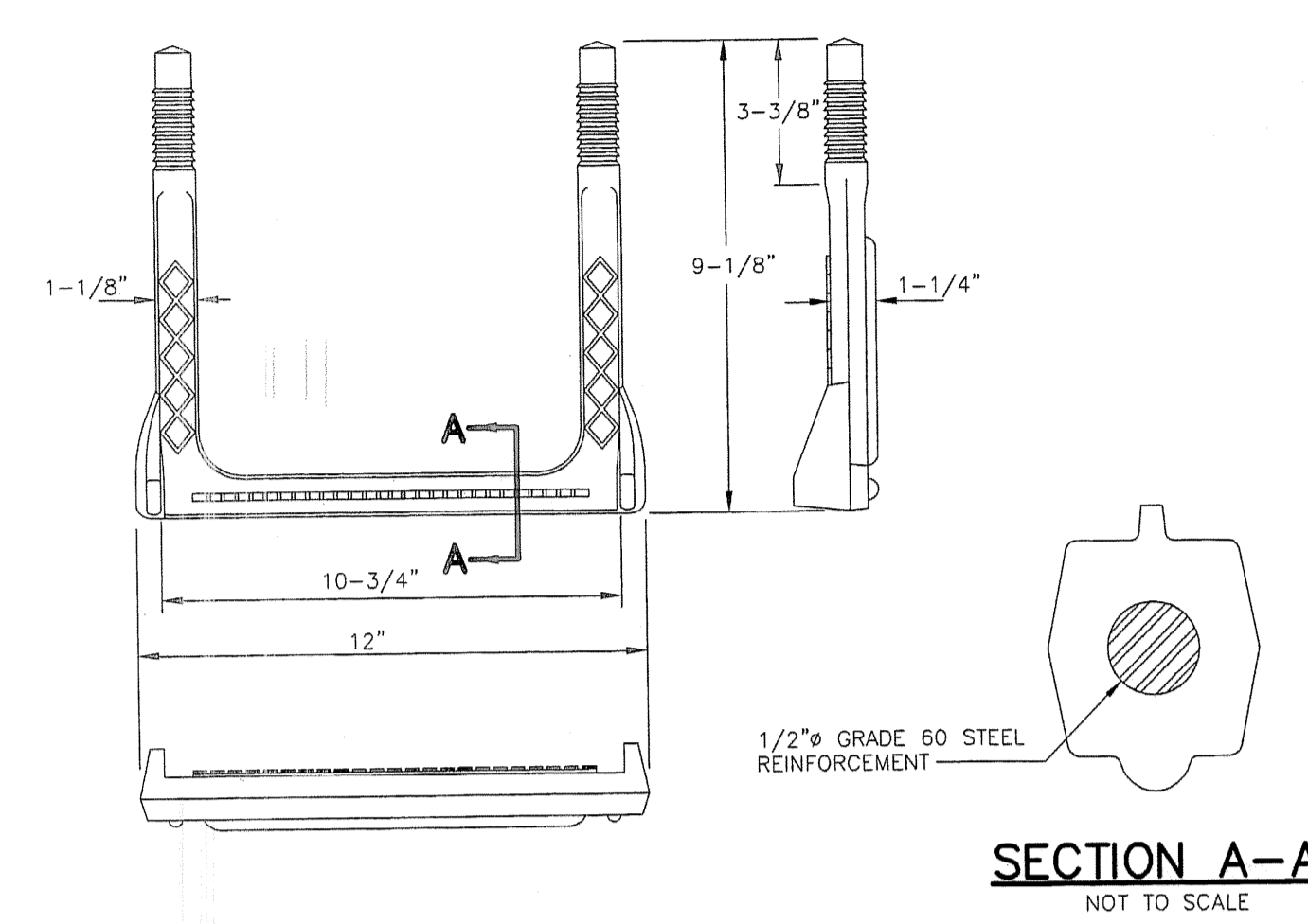
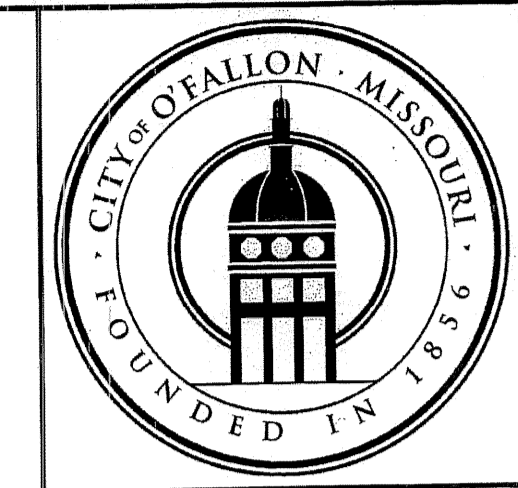
SAINT CHARLES COUNTY
 HIGHWAY DEPARTMENT
 ST. CHARLES, MISSOURI
 SEWER CONSTRUCTION DETAILS
FLARED END SECTION (INLET/OUTLET PROTECTION)
 DATE: September, 2002 DRAWING: C604-42

DISCLAIMER OF RESPONSIBILITY
 I HEREBY SPECIFY THAT THE DOCUMENTS INTENDED TO BE AUTHORIZED BY MY SEAL ARE LIMITED TO THIS SHEET, AND I HEREBY DISCLAIM ANY RESPONSIBILITY FOR ALL OTHER DRAWINGS, SPECIFICATIONS, ESTIMATES, REPORTS OR OTHER DOCUMENTS OR INSTRUMENTS RELATING TO OR INTENDED TO BE USED FOR ANY PART OR PARTS OF THE ARCHITECTURAL OR ENGINEERING PROJECT OR SURVEY.

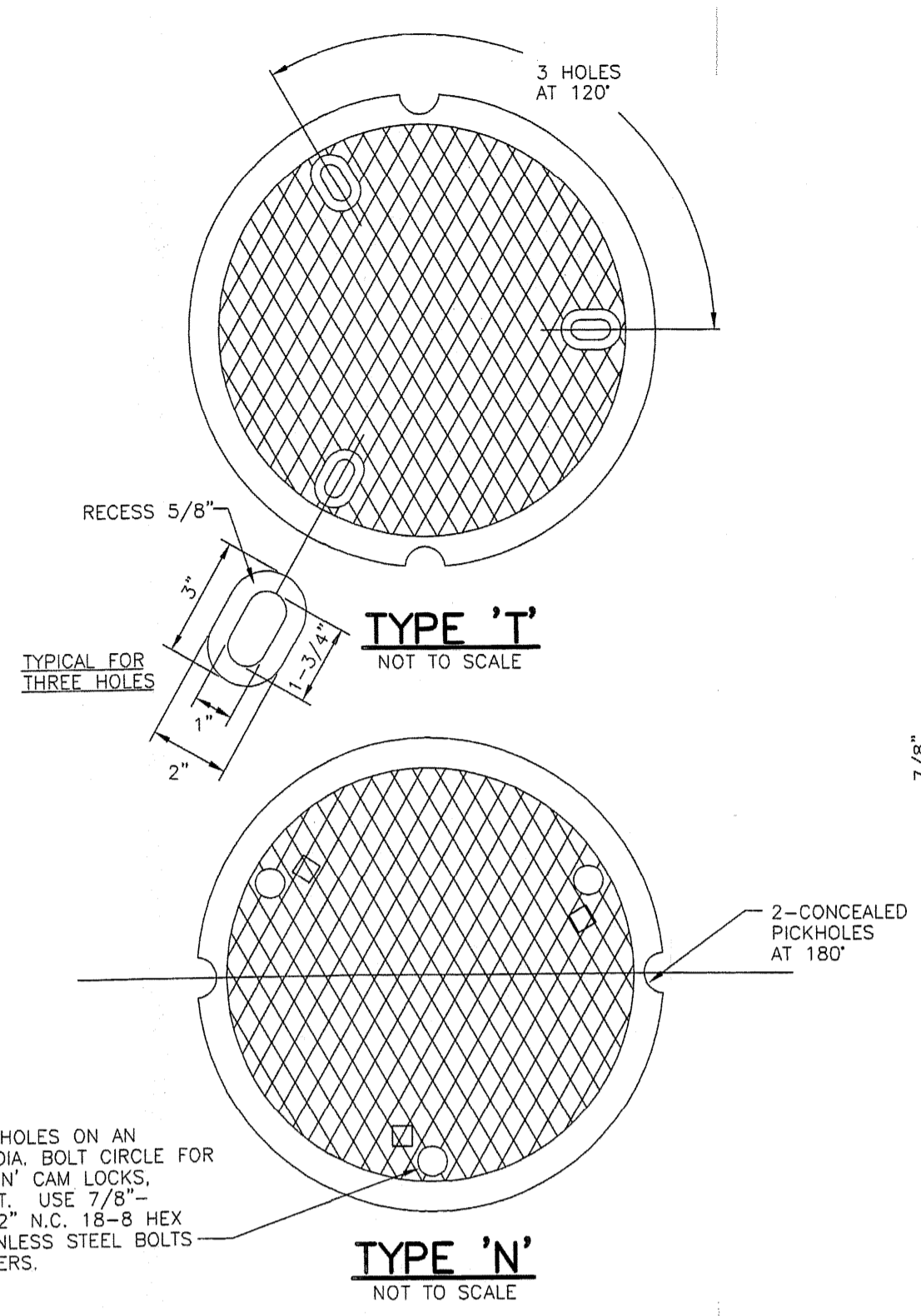
SEAL

 APR 12 2007

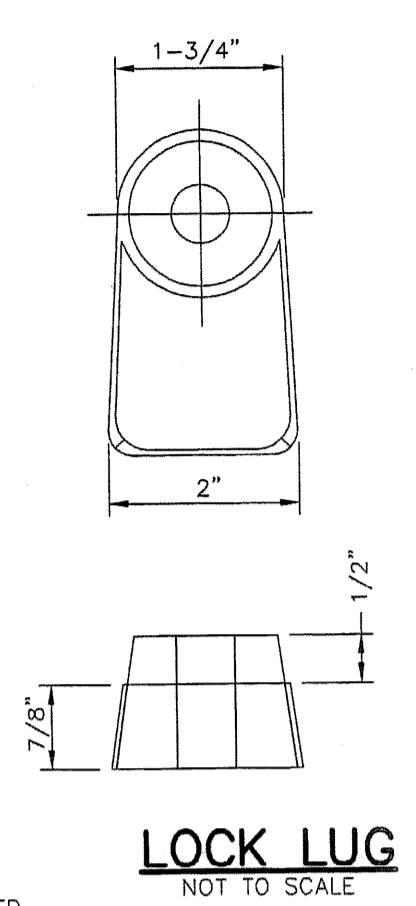
Designed	CMJ/CMB	EDM No. 03804	EDM EDM Incorporated 220 Mansion House, 3rd Floor St. Louis, Missouri 63102 (314) 231-5485 Fax: (314) 231-8167
Drawn	EBS		
Checked	SMS		
Date	4-12-07		



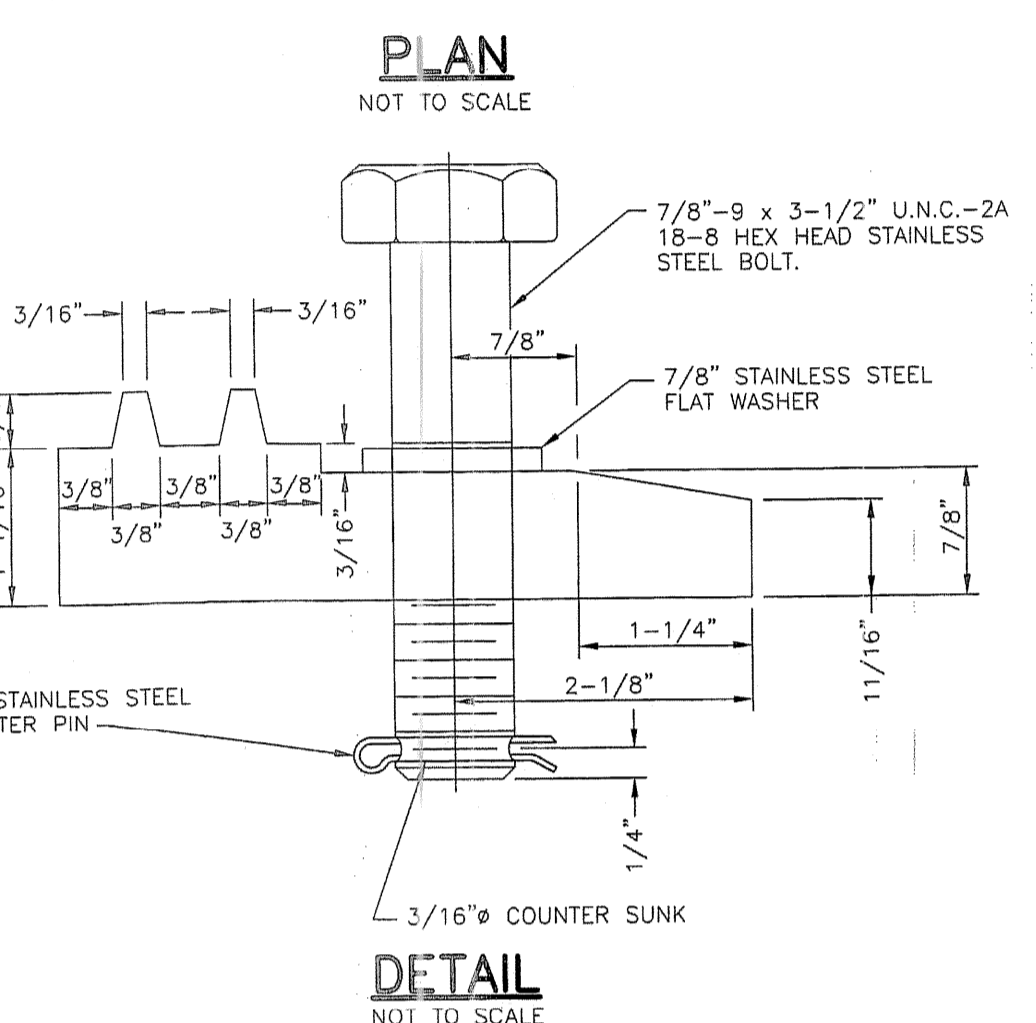
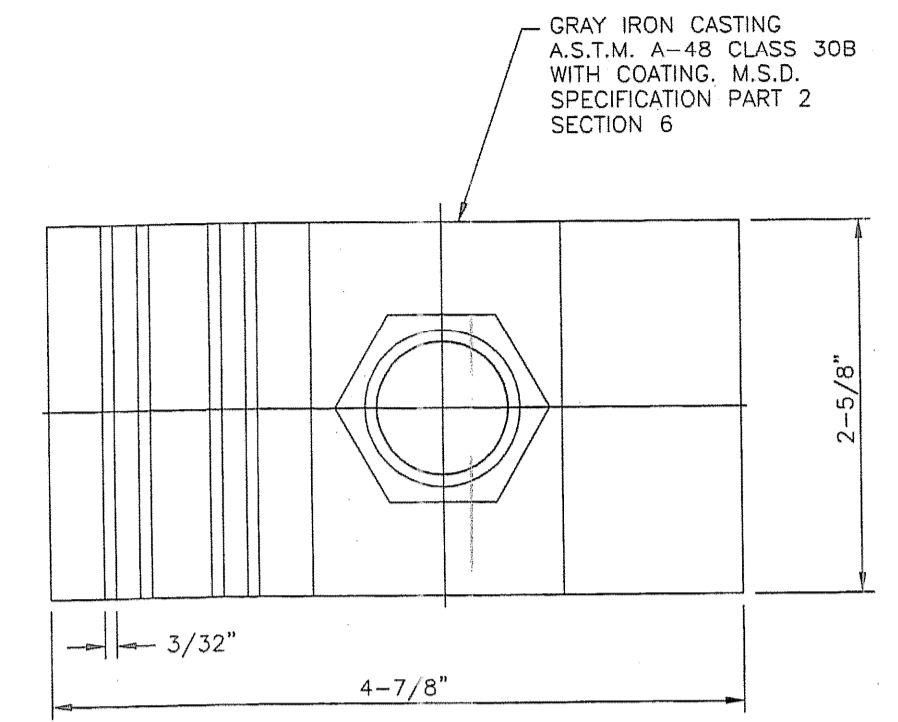
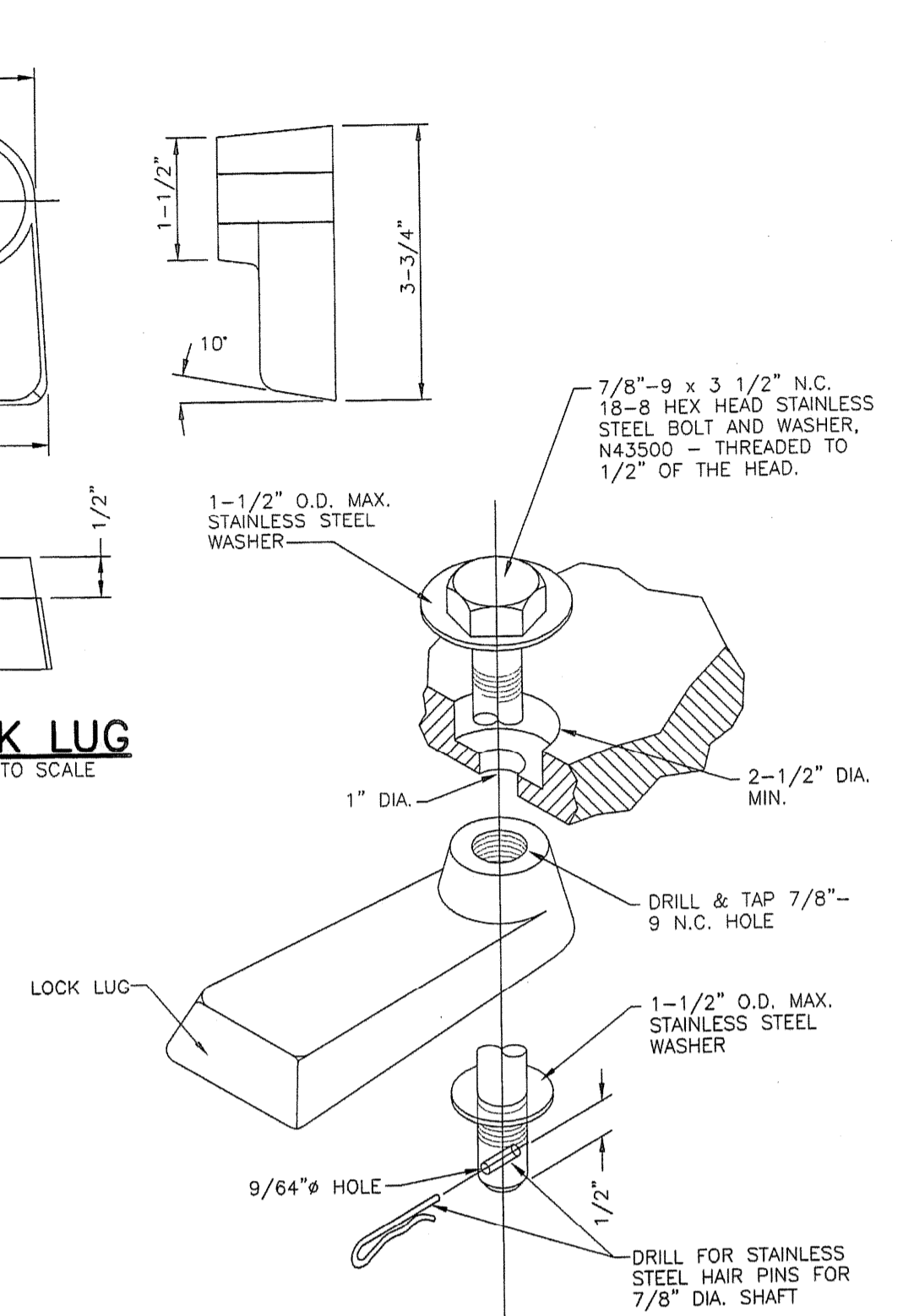
COPOLYMER POLYPROPYLENE PLASTIC MANHOLE STEP FOR PRECAST MANHOLE
 NOT TO SCALE



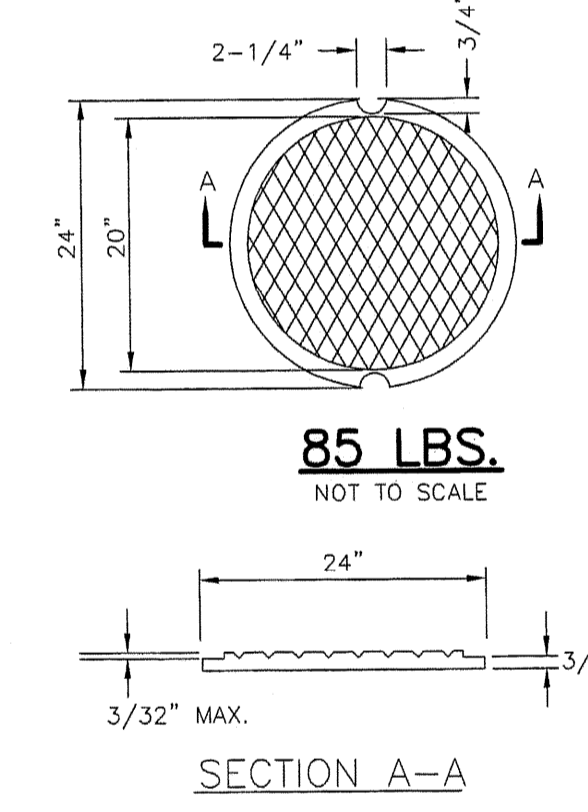
CAST IRON MANHOLE COVERS (LOCK TYPE)
 NOT TO SCALE



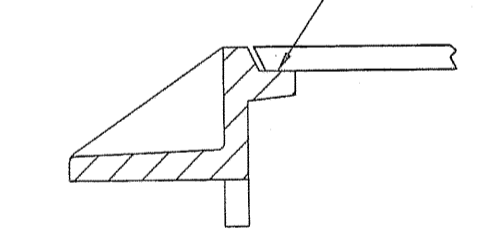
LOCKING DEVICE FOR TYPE 'N' LOCK TYPE MANHOLE COVER
 NOT TO SCALE



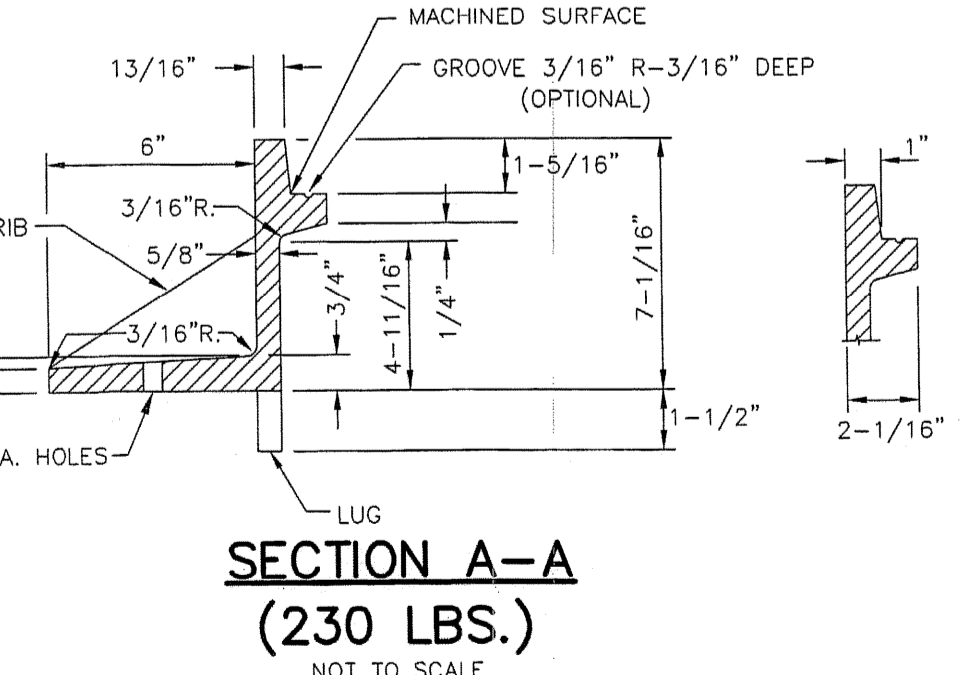
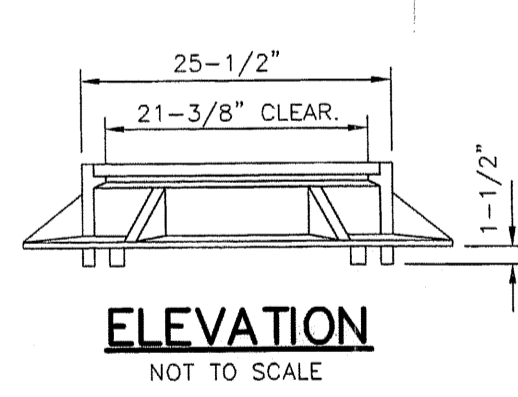
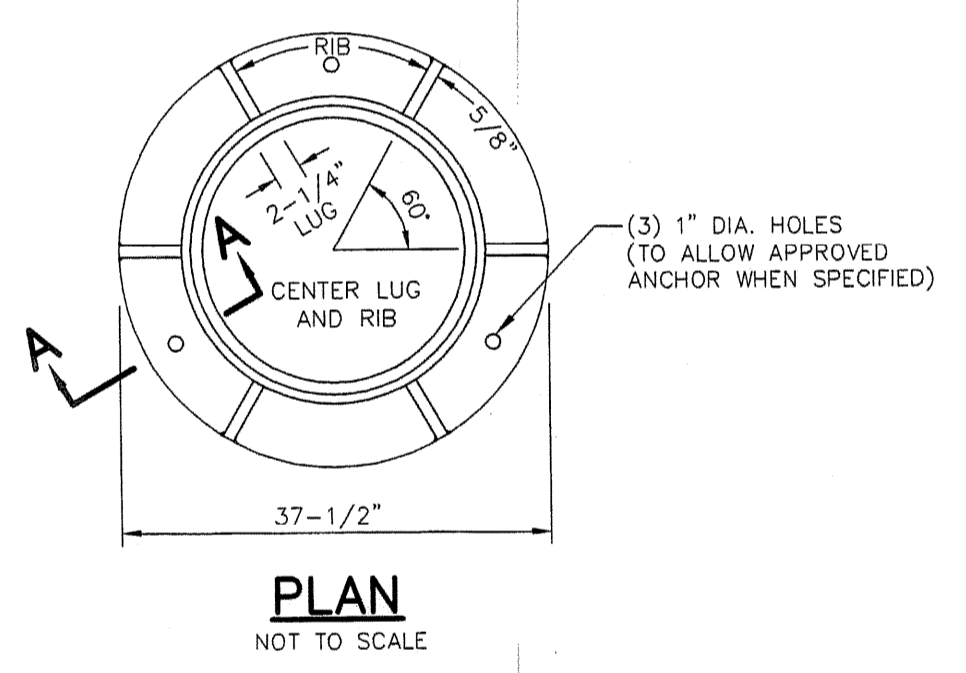
LOCKING DEVICE FOR TYPE 'T' LOCK TYPE MANHOLE COVER
 NOT TO SCALE



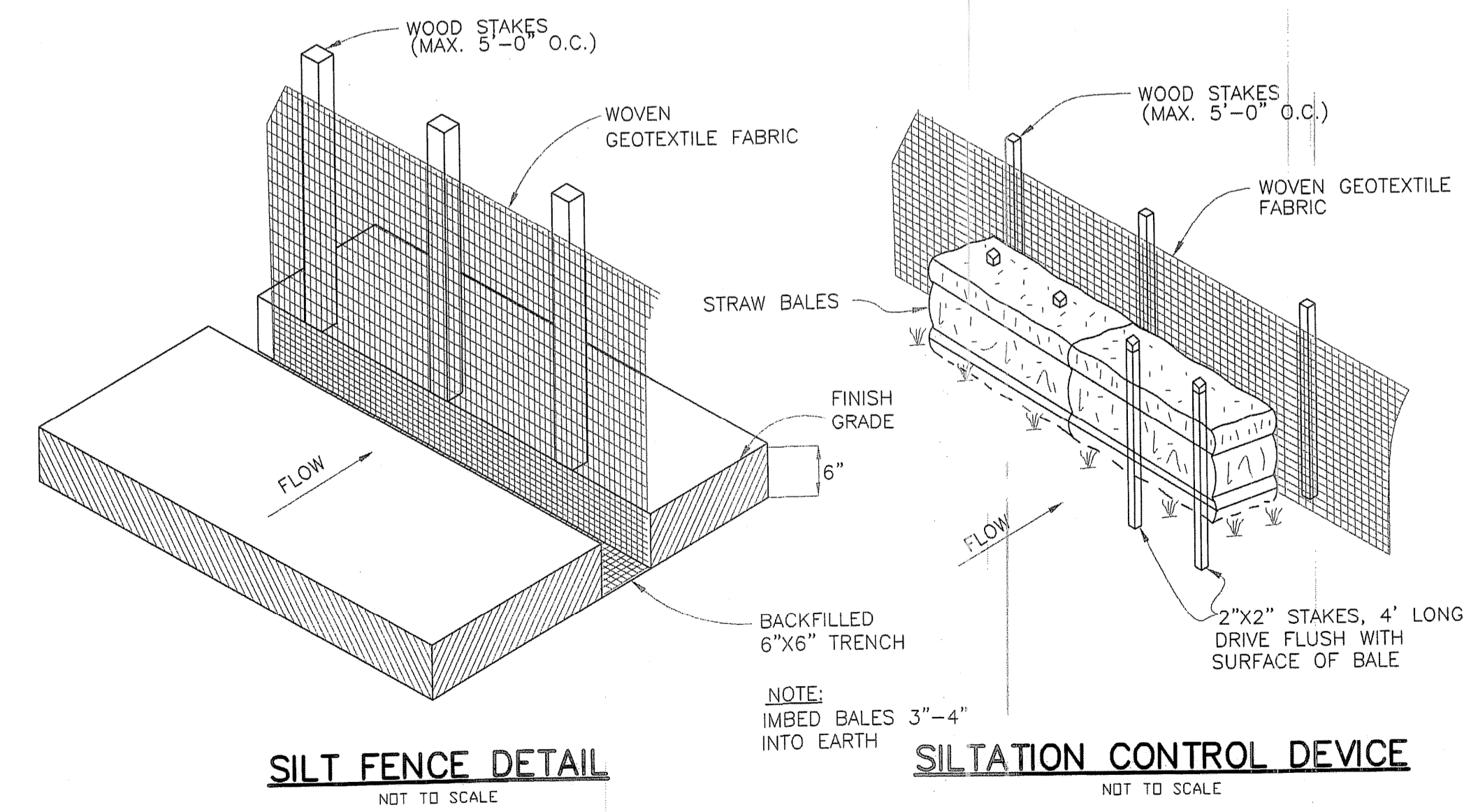
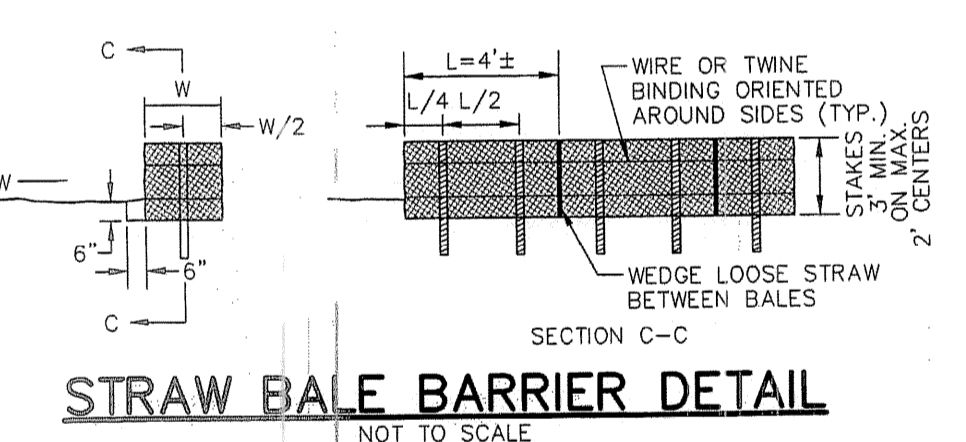
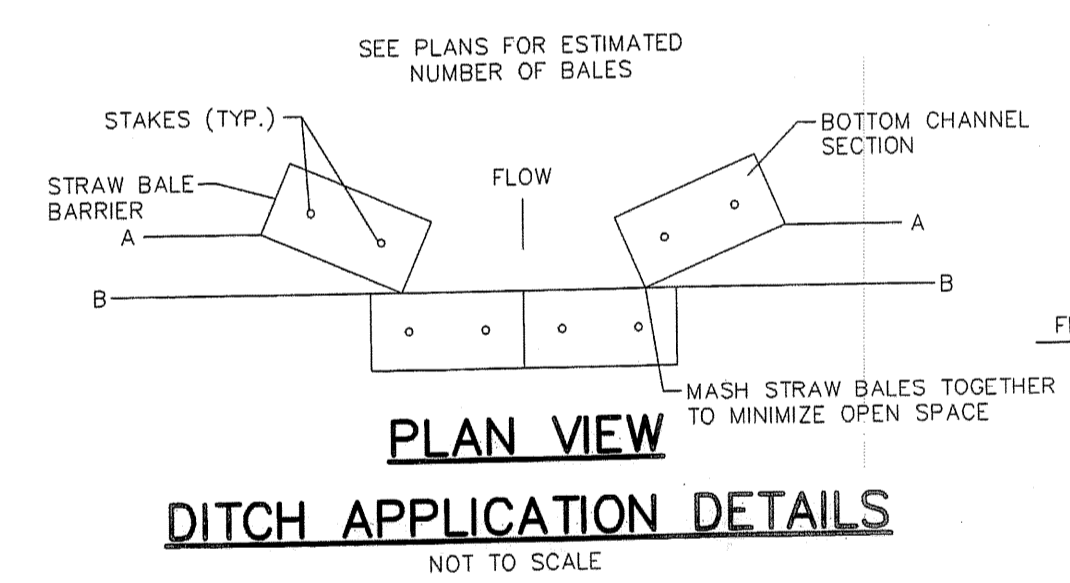
NOTE A: MACHINE CONTACTING SURFACES FOR SEAT OF STANDARD MANHOLE FRAME AND BEARING SURFACE OF COVERS.



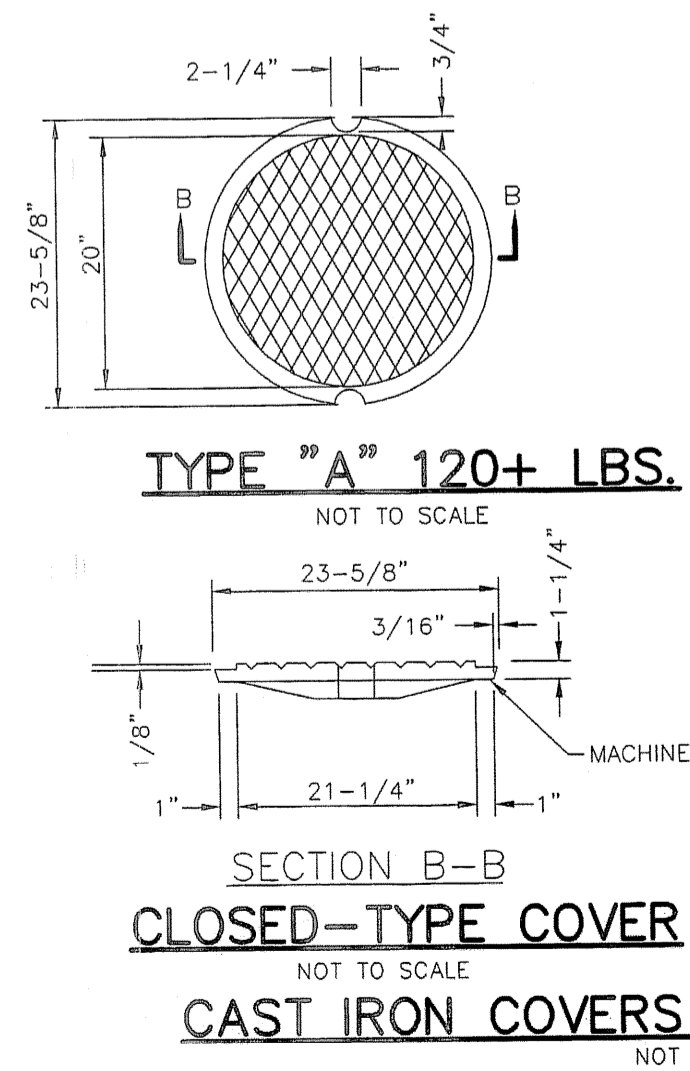
STANDARD CAST IRON INLET COVER
 NOT TO SCALE



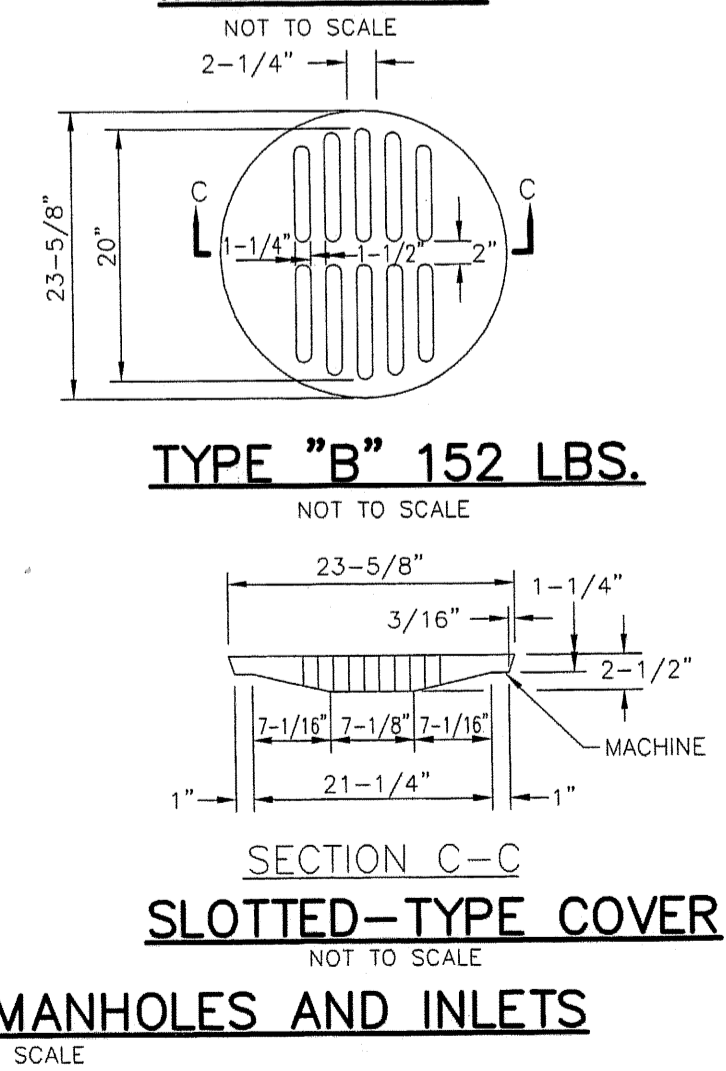
CAST IRON MANHOLE FRAME
 NOT TO SCALE



SILTATION CONTROL DEVICE
 NOT TO SCALE

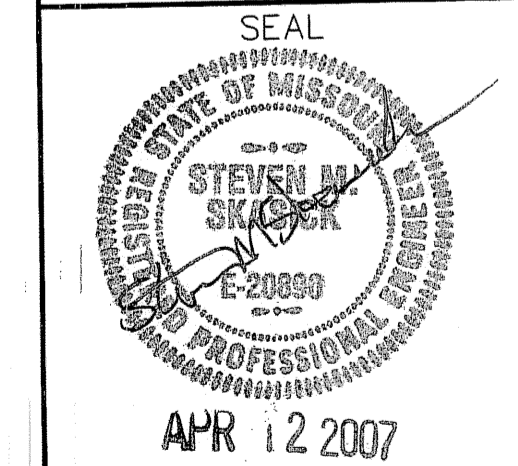


CLOSED-TYPE COVER
 NOT TO SCALE



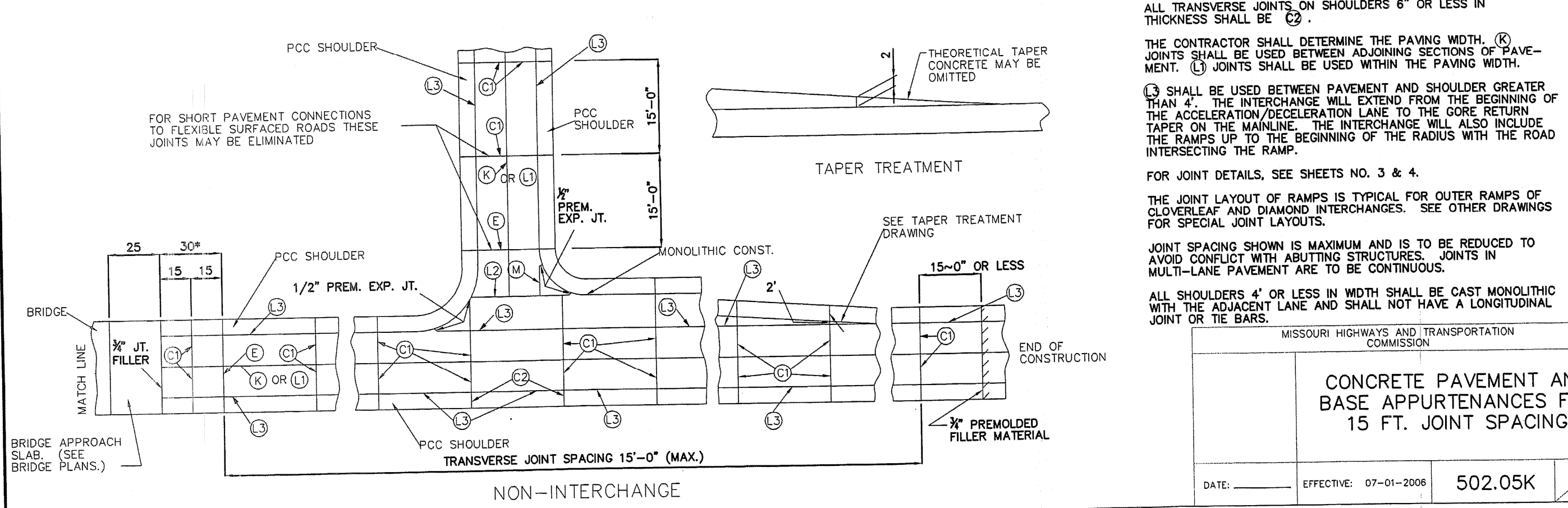
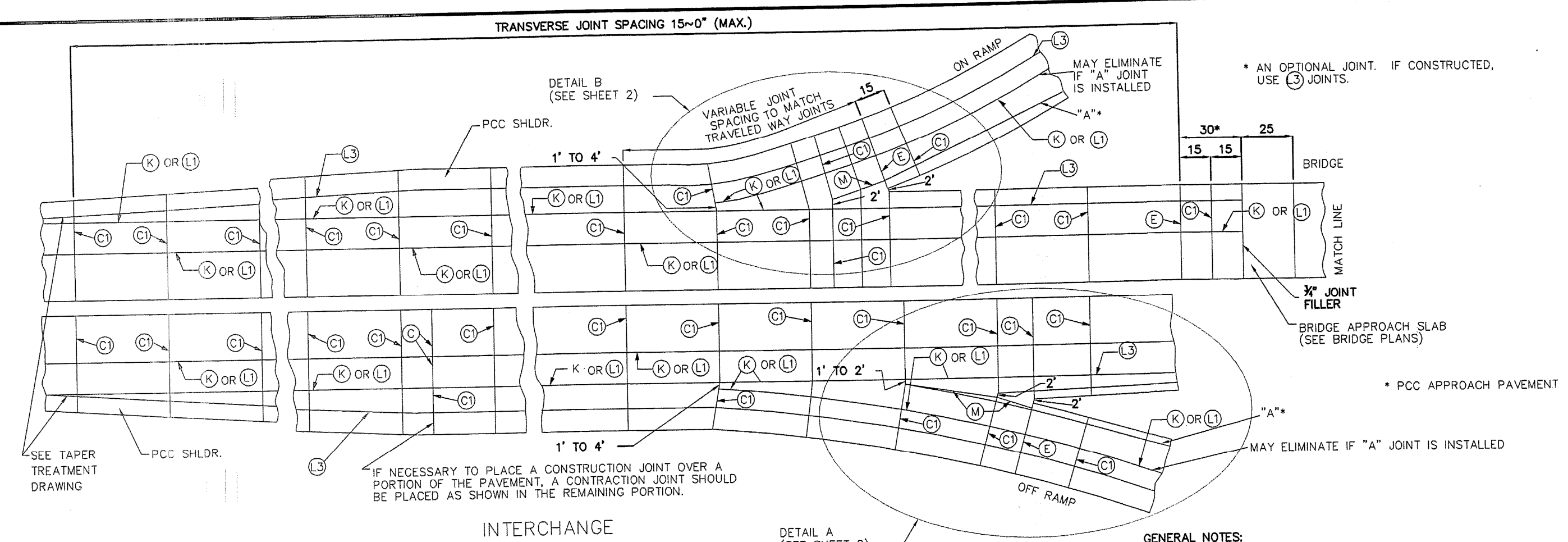
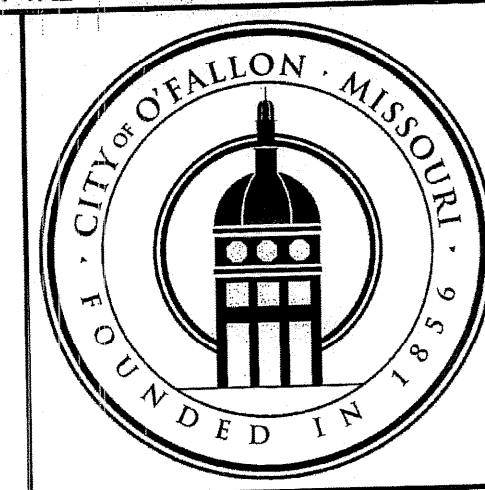
SLOTTED-TYPE COVER
 NOT TO SCALE

DISCLAIMER OF RESPONSIBILITY
 I HEREBY SPECIFY THAT THE DOCUMENTS INTENDED TO BE AUTHENTICATED BY MY SEAL ARE LIMITED TO THIS SHEET, AND I HEREBY DISCLAIM ANY RESPONSIBILITY FOR ALL OTHER DRAWINGS, SPECIFICATIONS, ESTIMATES, REPORTS OR OTHER DOCUMENTS OR INSTRUMENTS RELATING TO OR INTENDED TO BE USED FOR ANY PART OR PARTS OF THE ARCHITECTURAL OR ENGINEERING PROJECT OR SURVEY.



Designed	CMJ/CMB	EDM Incorporated 220 Mansion House, 3rd Floor St. Louis, Missouri 63102 (314) 231-5485 Fax: (314) 231-8167
Drawn	EBS	
Checked	SMS	
Date	4-12-07	

DETAIL SHEET

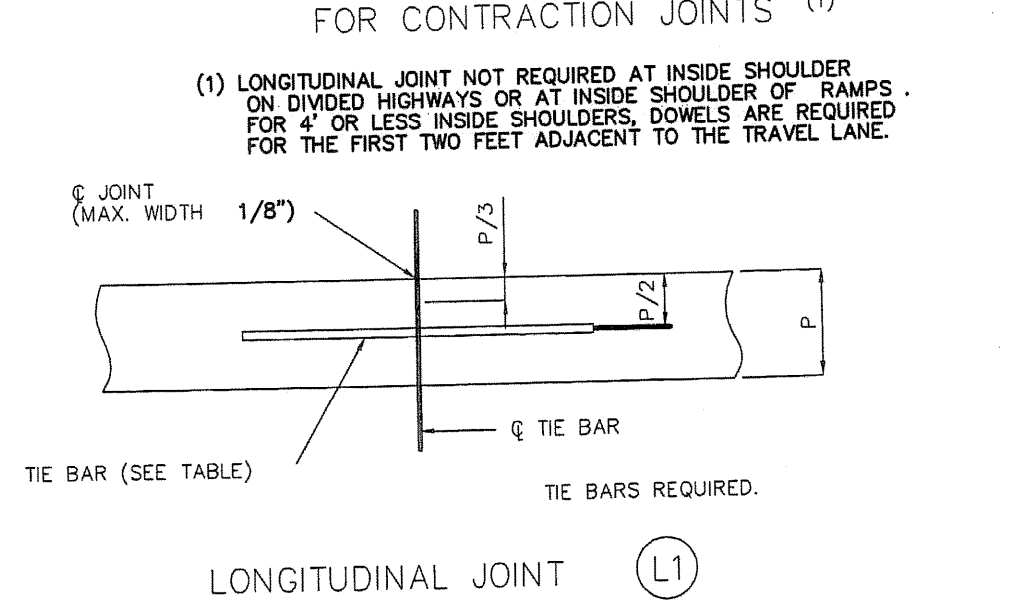
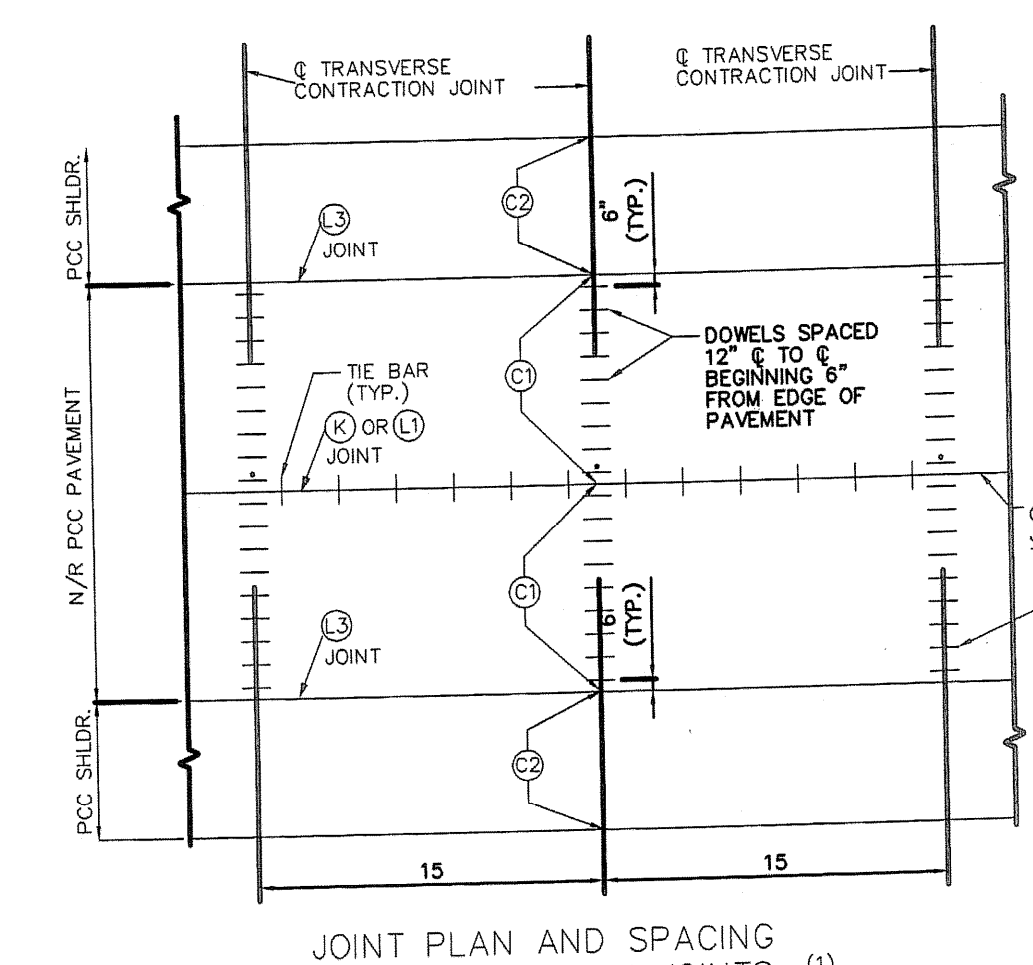


GENERAL NOTES:
 ALL TRANSVERSE JOINTS ON SHOULDERS 6" OR LESS IN THICKNESS SHALL BE C2.
 THE CONTRACTOR SHALL DETERMINE THE PAVING WIDTH. (K) JOINTS SHALL BE USED BETWEEN ADJOINING SECTIONS OF PAVEMENT. (L) JOINTS SHALL BE USED WITHIN THE PAVING WIDTH.
 (L) SHALL BE USED BETWEEN PAVEMENT AND SHOULDER GREATER THAN 4". THE INTERCHANGE WILL EXTEND FROM THE BEGINNING OF THE ACCELERATION/DECELERATION LANE TO THE GORE RETURN TAPER ON THE MAINLINE. THE INTERCHANGE WILL ALSO INCLUDE THE RAMP UP TO THE BEGINNING OF THE RADIUS WITH THE ROAD INTERSECTING THE RAMP.
 FOR JOINT DETAILS, SEE SHEETS NO. 3 & 4.
 THE JOINT LAYOUT OF RAMPS IS TYPICAL FOR OUTER RAMPS OF CLOVERLEAF AND DIAMOND INTERCHANGES. SEE OTHER DRAWINGS FOR SPECIAL JOINT LAYOUTS.
 JOINT SPACING SHOWN IS MAXIMUM AND IS TO BE REDUCED TO AVOID CONFLICT WITH ABUTTING STRUCTURES. JOINTS IN MULTI-LANE PAVEMENT ARE TO BE CONTINUOUS.
 ALL SHOULDERS 4" OR LESS IN WIDTH SHALL BE CAST MONOLITHIC WITH THE ADJACENT LANE AND SHALL NOT HAVE A LONGITUDINAL JOINT OR TIE BARS.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

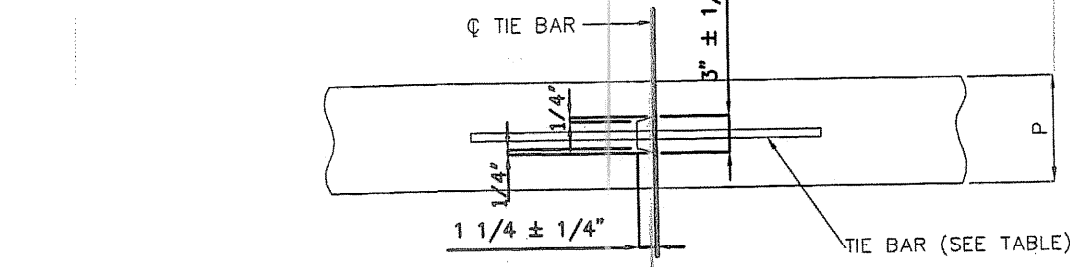
CONCRETE PAVEMENT AND BASE APPURTENANCES FOR 15 FT. JOINT SPACING

DATE: _____ EFFECTIVE: 07-01-2006 502.05K 1/4

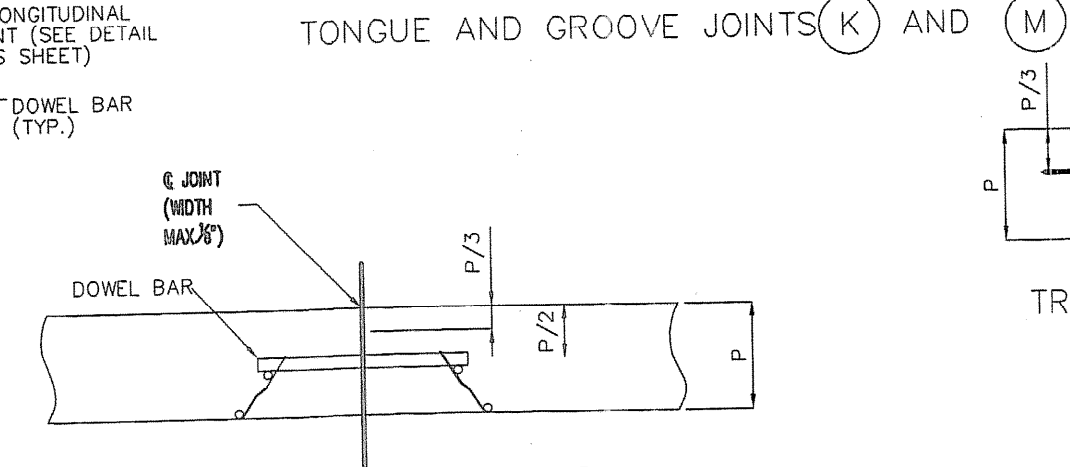


TIE BAR AND DOWEL TABLE

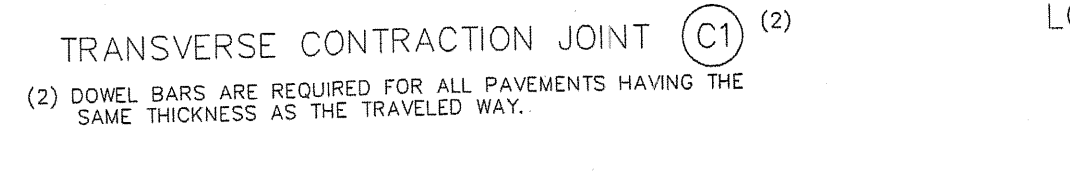
PCCP THICKNESS (P)	DOWEL SIZE	TIE BAR SIZE	DOWEL SPACING	TIE BAR SPACING
LESS THAN 7"	NONE	#5X30"	NONE	30" CTR.-CTR.
7" TO 10"	1 1/4"X18"	#5X30"	12" CTR.-CTR.	30" CTR.-CTR.
GREATER THAN 10"	1 1/2"X18"	#5X40"	12" CTR.-CTR.	30" CTR.-CTR.



IF METAL IS USED TO FORM KEY DISCONTINUE STRIP FOR DISTANCE OF APPROXIMATELY 3" EACH SIDE OF TRANSVERSE JOINT.
 TYPE (K) REQUIRES TIE BAR.
 TYPE (L) CONSTRUCTED WITHOUT TIE BARS.
 (K) AND (L) JOINTS SHALL NOT BE SAWS.



DOWELS REQUIRED FOR PERMISSIBLE TYPES OF DOWELS SUPPORTING UNITS, SEE OTHER DRAWINGS.
 TRANSVERSE CONTRACTION JOINTS FOR CONCRETE PAVEMENT OR BASE WIDENING SHALL MATCH EXISTING JOINTS.

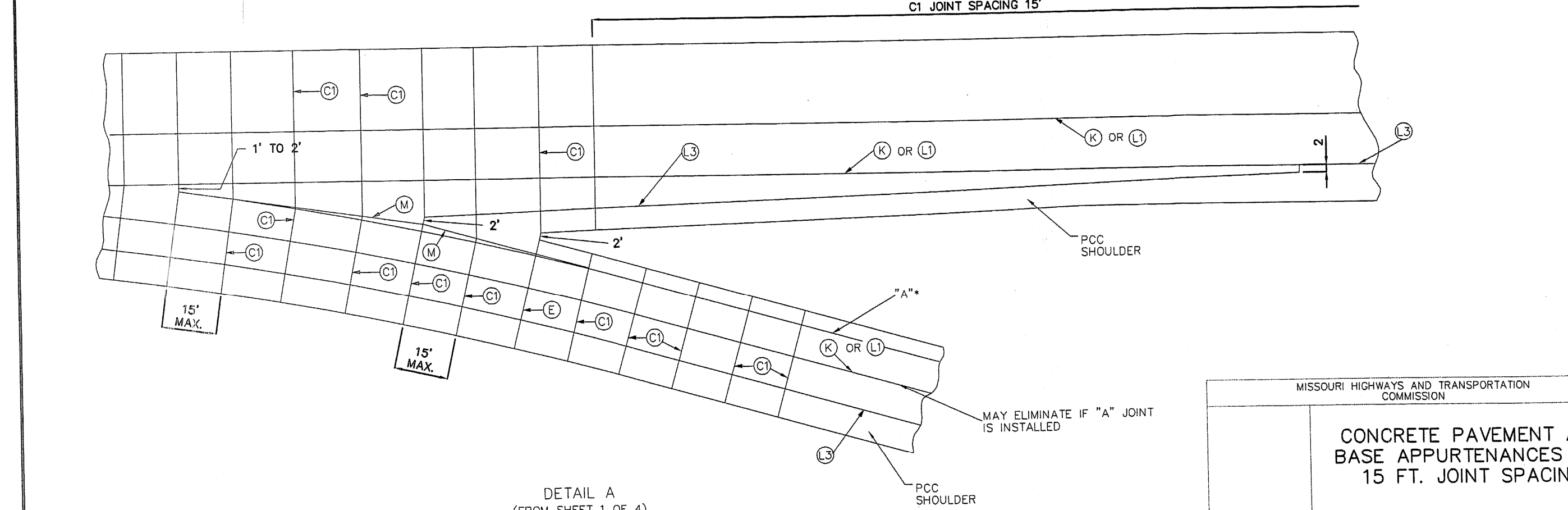
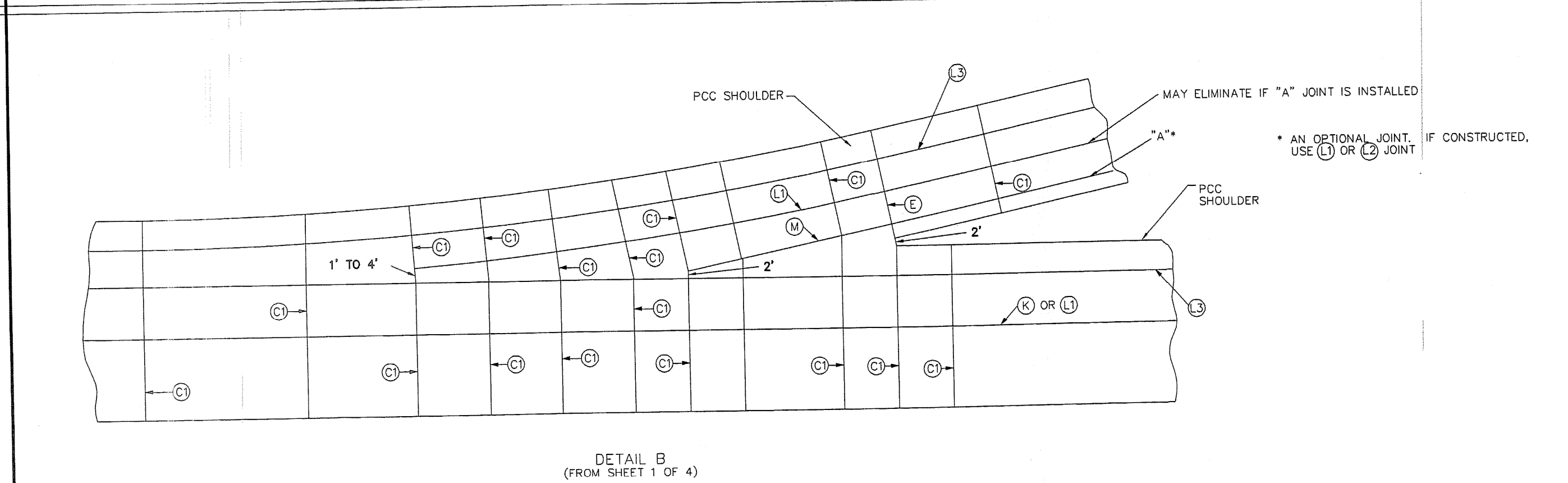


LONGITUDINAL CONSTRUCTION JOINT FOR NEW CONSTRUCTION WITH NO TIE BAR (L3)
 LONGITUDINAL CONSTRUCTION JOINT FOR NEW CONSTRUCTION WITH FULL DEPTH SHOULDERS (L2)

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

CONCRETE PAVEMENT AND BASE APPURTENANCES FOR 15' JOINT SPACING

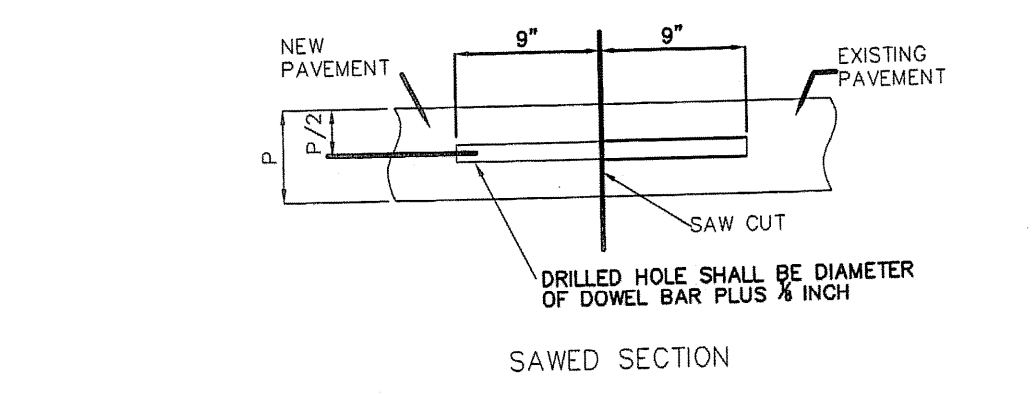
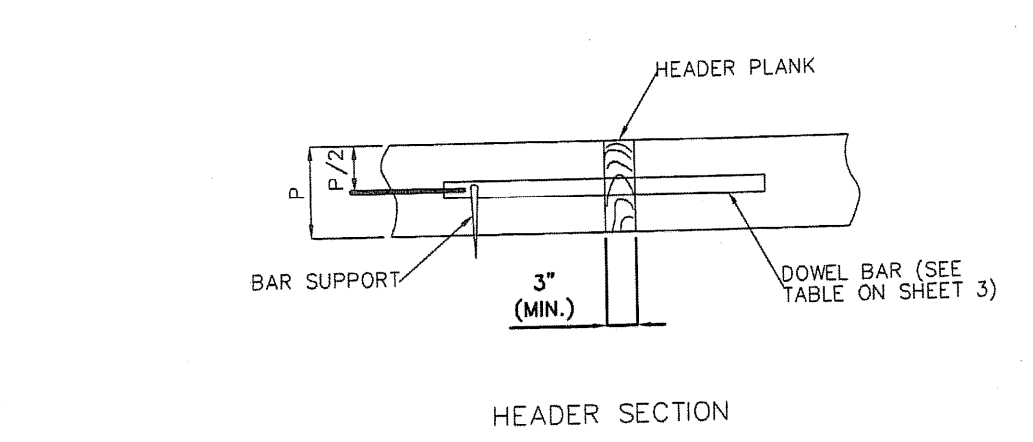
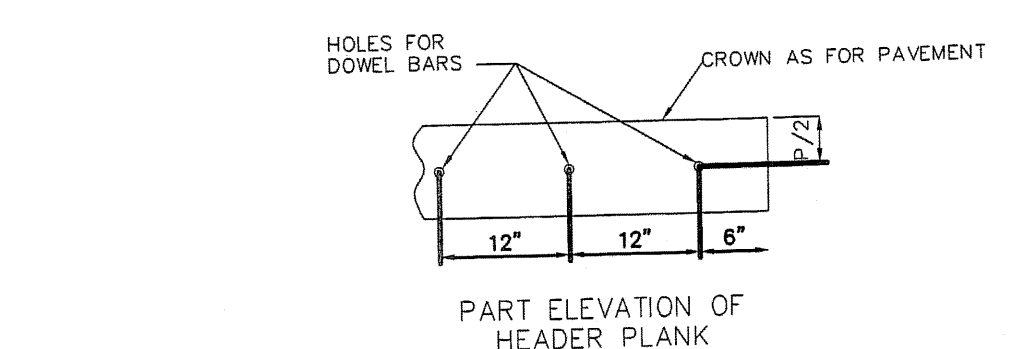
DATE: _____ EFFECTIVE: 07-01-2006 502.05K 3/4



MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

CONCRETE PAVEMENT AND BASE APPURTENANCES FOR 15 FT. JOINT SPACING

DATE: _____ EFFECTIVE: 07-01-2006 502.05K 2/4

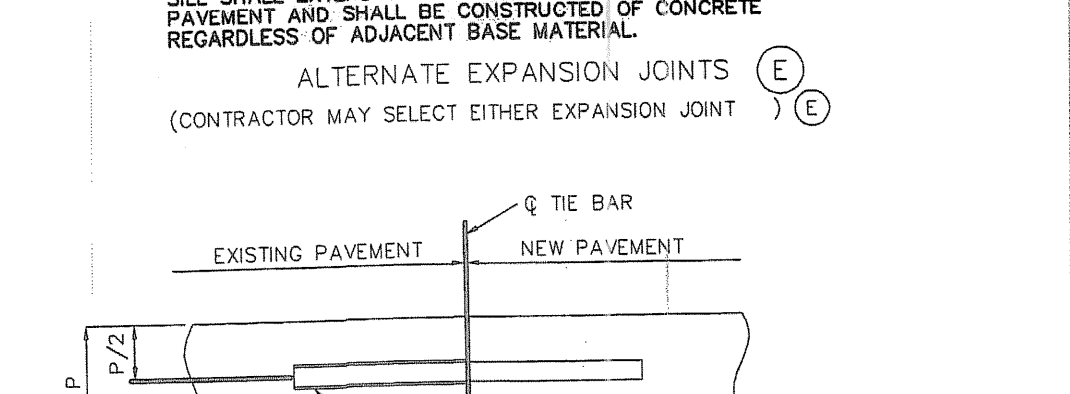
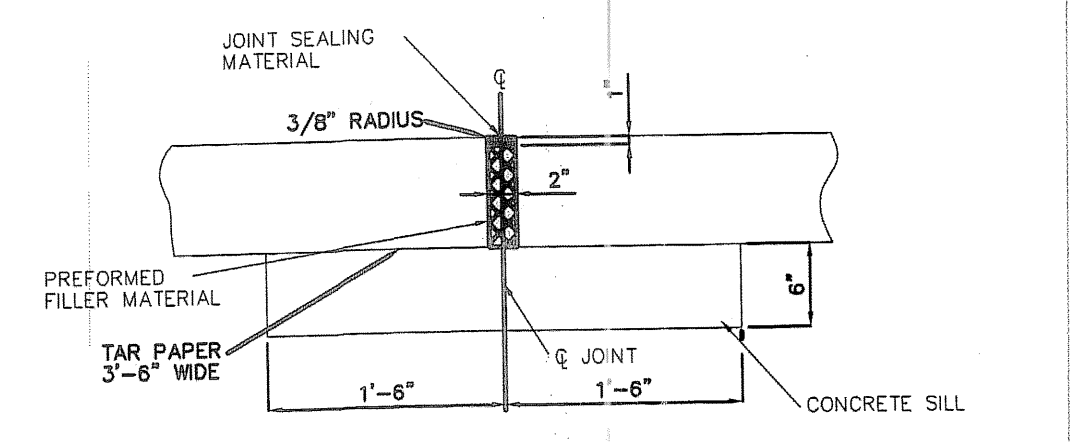
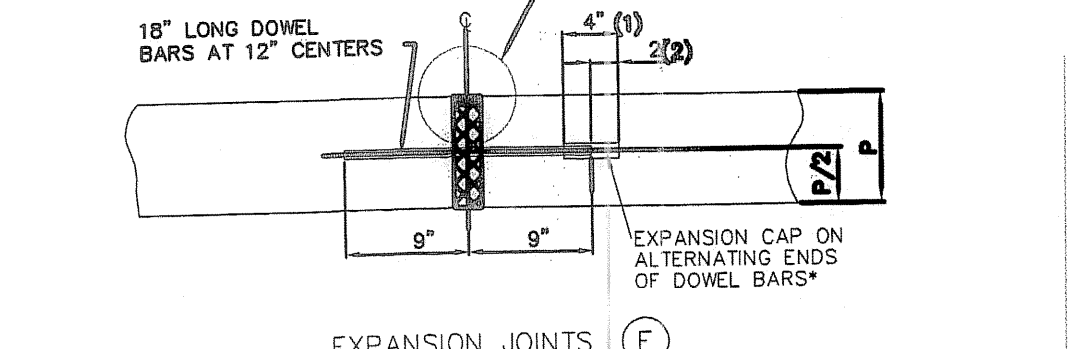


THE HEADER BOARD SHALL BE SUFFICIENTLY RIGID TO PREVENT DISTORTION FROM THE TYPICAL SECTION AND MAINTAIN A STRAIGHT LINE FROM PAVEMENT EDGE TO PAVEMENT EDGE.
 THE CONSTRUCTION JOINT MAY BE SAWS FULL DEPTH. HOLES FOR DOWEL BARS SHALL BE DRILLED AFTER THE CONCRETE HAS SUFFICIENT SET TO PREVENT DAMAGE. DOWEL BARS SHALL BE BONDED INTO THE HOLES.
 BONDING FOR DOWEL BARS SHALL BE EPOXY OR POLYESTER BONDING AGENTS AS SPECIFIED IN SECTION 1039.
 THE PORTION OF THE DOWEL OUTSIDE THE HOLE SHALL BE COATED WITH AN APPROVED LUBRICANT.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

CONSTRUCTION JOINT (C)

DATE: _____ EFFECTIVE: 07-01-2006 502.05K 4/4



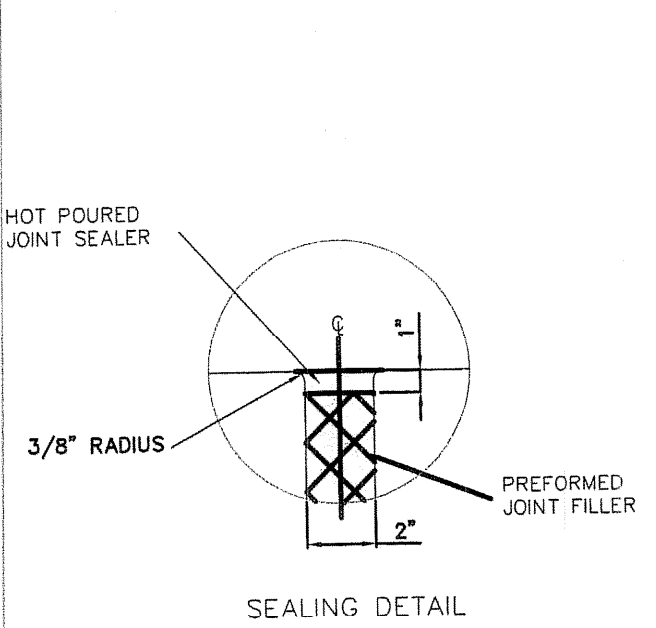
THE BARS SHALL BE EPOXY COATED, DEFORMED REINFORCING BARS MEETING THE REQUIREMENTS OF SECTIONS 710 AND 1057.
 BONDING FOR TIE BARS SHALL BE EPOXY OR POLYESTER BONDING AGENTS AS SPECIFIED IN SECTION 1039.
 THE BAR SIZE AND LENGTH SHALL BE BASED ON THE THICKNESS OF THE THINNER PAVEMENT OR SHOULDER TO BE TIED TOGETHER.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

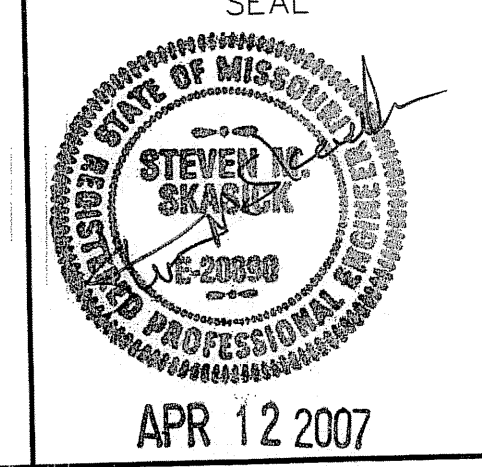
LONGITUDINAL CONSTRUCTION JOINT (EXISTING PAVEMENT) (L)

DATE: _____ EFFECTIVE: 07-01-2006 502.05K 4/4

(1) LENGTH OF CAP
 (2) GAP BETWEEN END OF CAP AND DOWEL
 FOR EXPANSION JOINTS FORMED USING A CONSTRUCTION HEADER, THE EXPANSION CAPS SHALL BE INSTALLED ON THE EXPOSED END OF EACH BAR ONCE THE HEADER HAS BEEN REMOVED AND THE JOINT FILLER MATERIAL HAS BEEN INSTALLED.

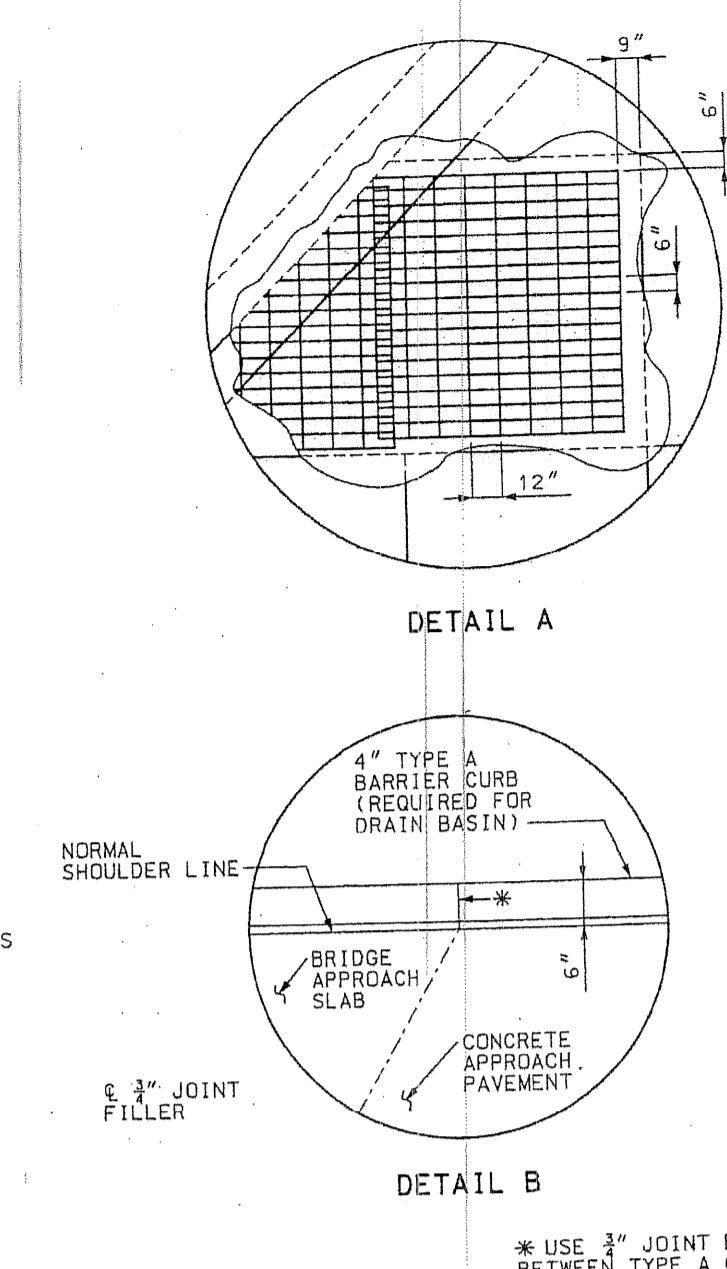
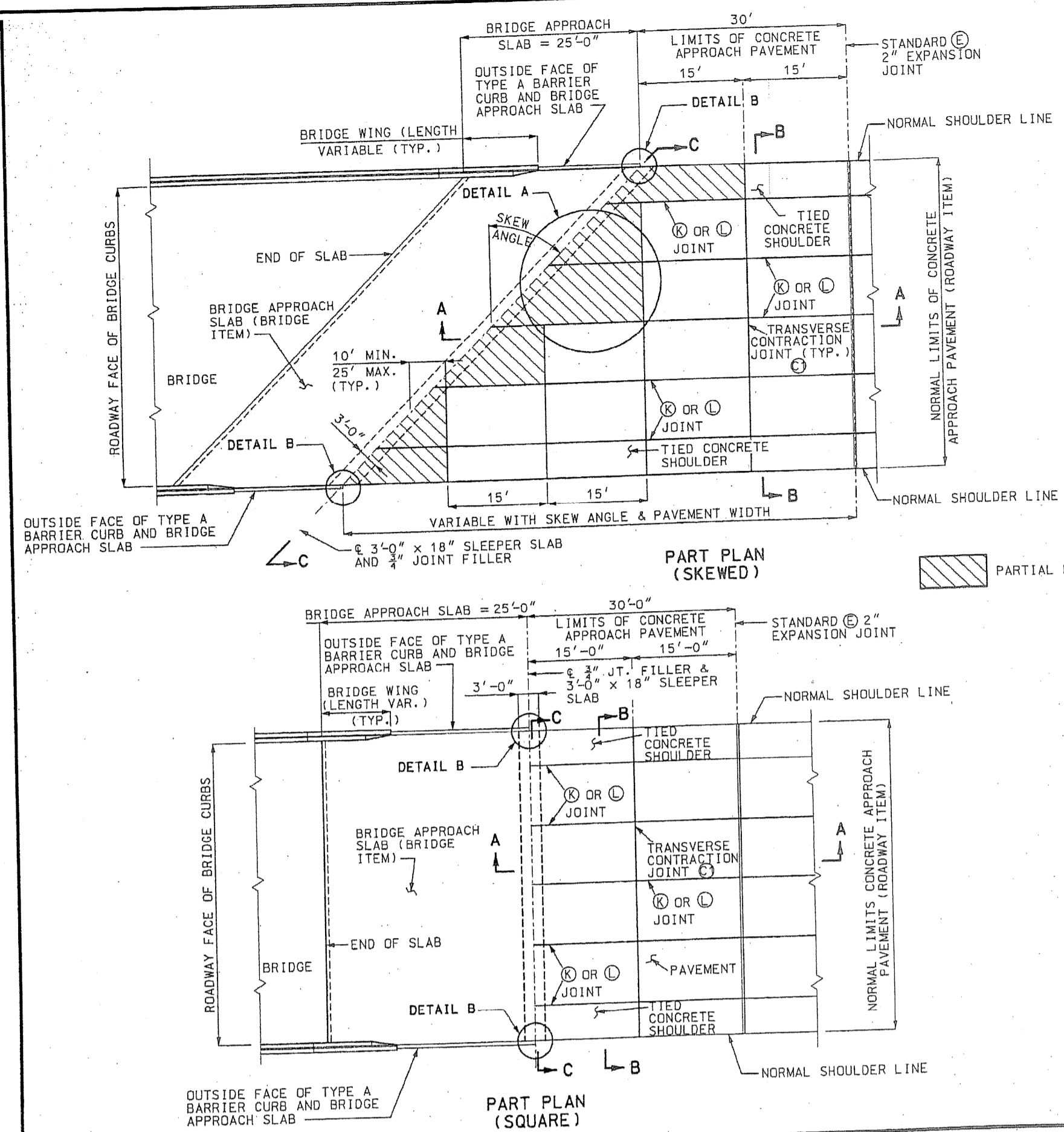
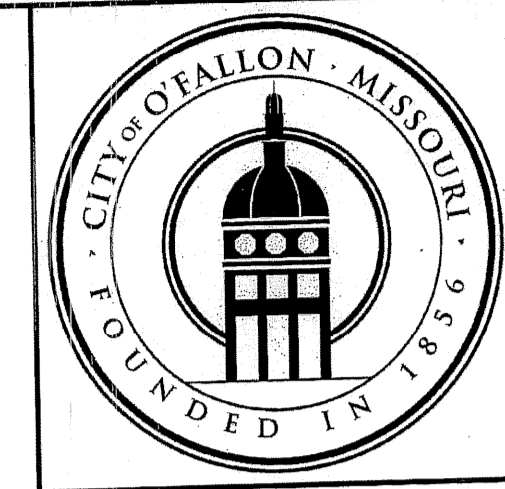


DISCLAIMER OF RESPONSIBILITY
 I HEREBY SPECIFY THAT THE DOCUMENTS REFERRED TO IN THIS SHEET AND I HEREBY DISCLAIM ANY RESPONSIBILITY FOR ALL OTHER DRAWINGS, SPECIFICATIONS, ESTIMATES, REPORTS OR OTHER DOCUMENTS OR INSTRUMENTS RELATING TO OR INTENDED TO BE USED FOR ANY PART OR PARTS OF THE ARCHITECTURAL OR ENGINEERING PROJECT OR SURVEY.

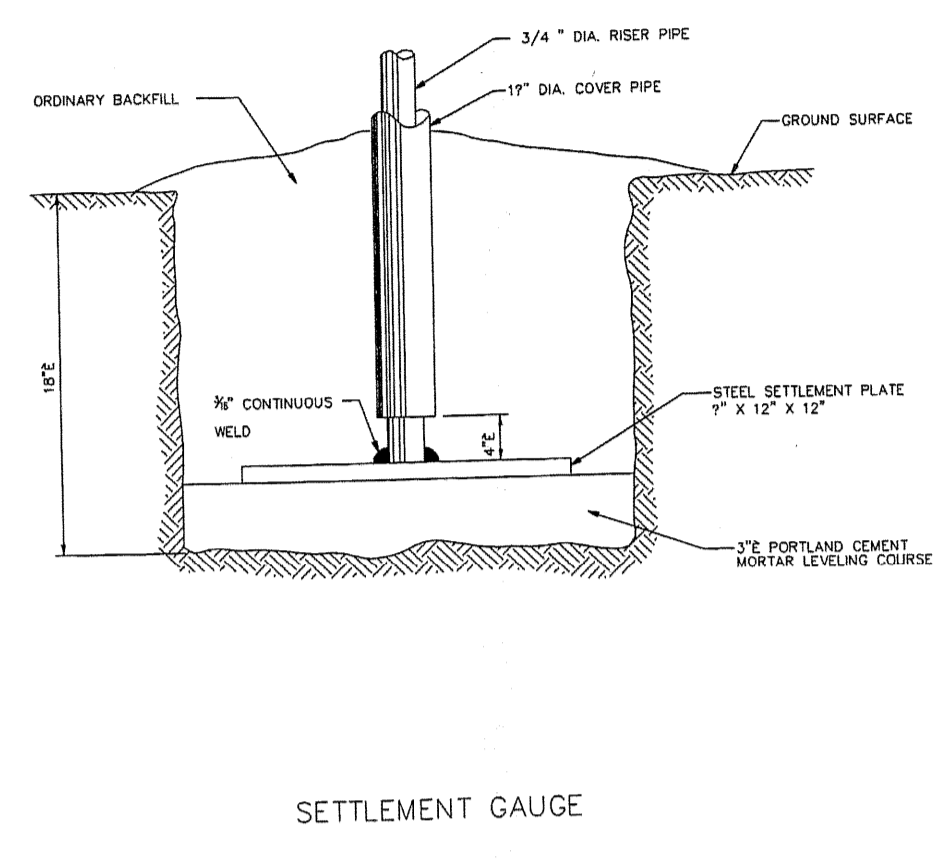
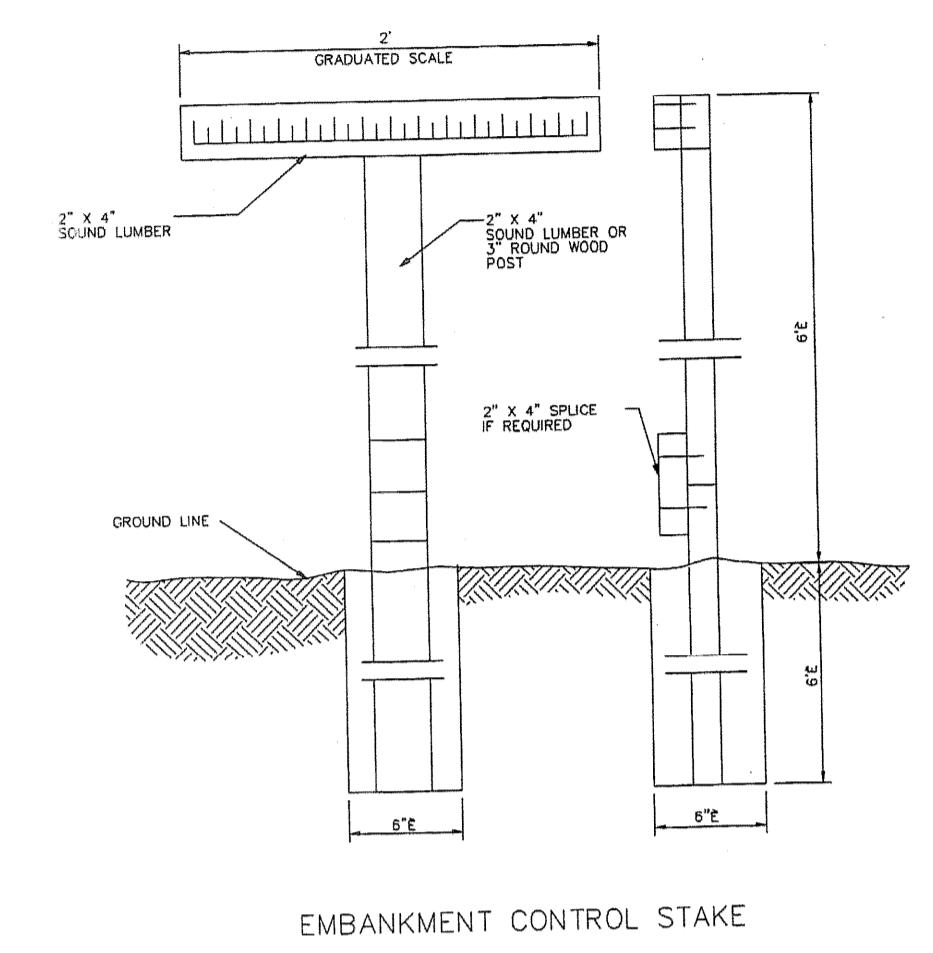


APR 12 2007
 EDM Incorporated
 220 Mansion House, 3rd Floor
 St. Louis, Missouri 63102
 (314) 231-5485 Fax: (314) 231-8167

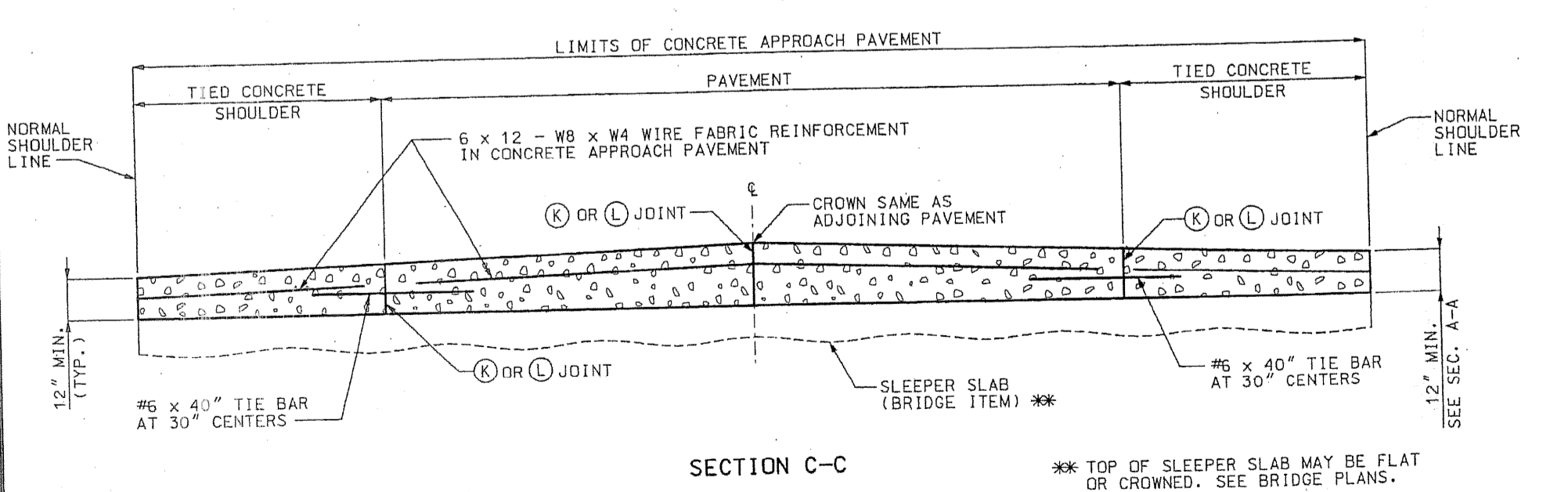
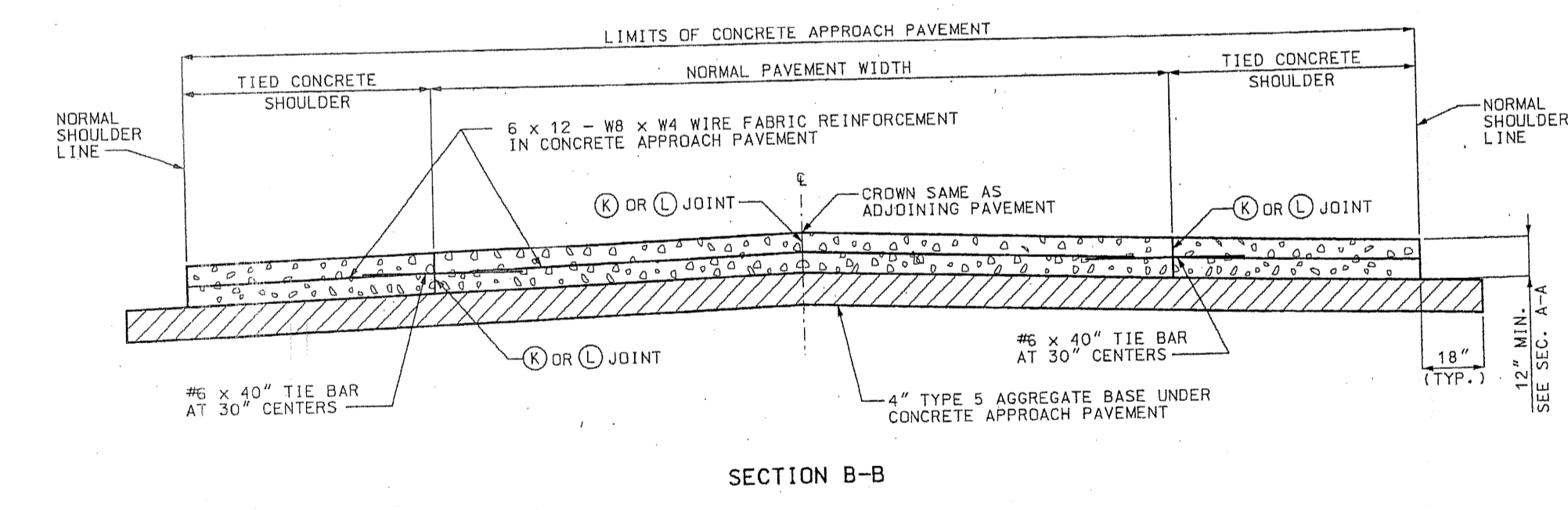
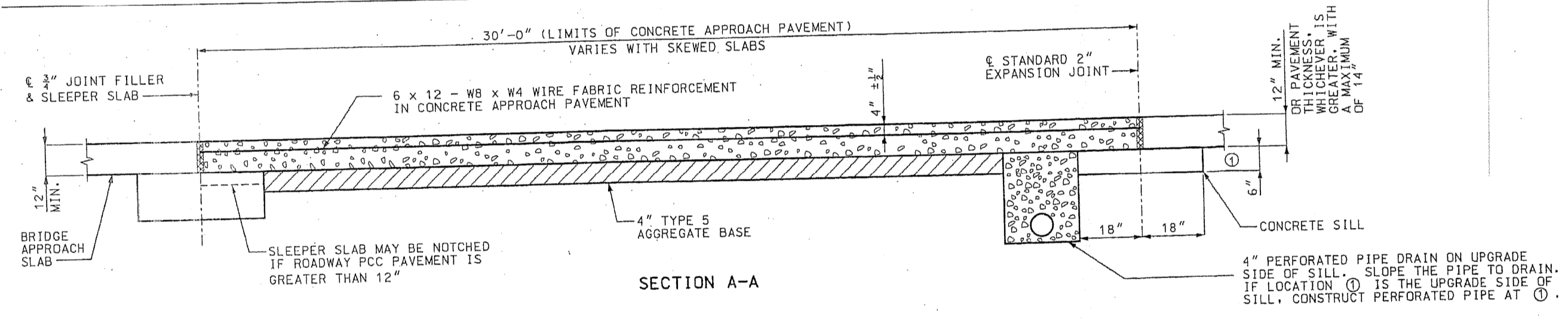
DESIGNED: CMJ/CMB
 DRAWN: EBS
 CHECKED: SMS
 DATE: 4-12-07



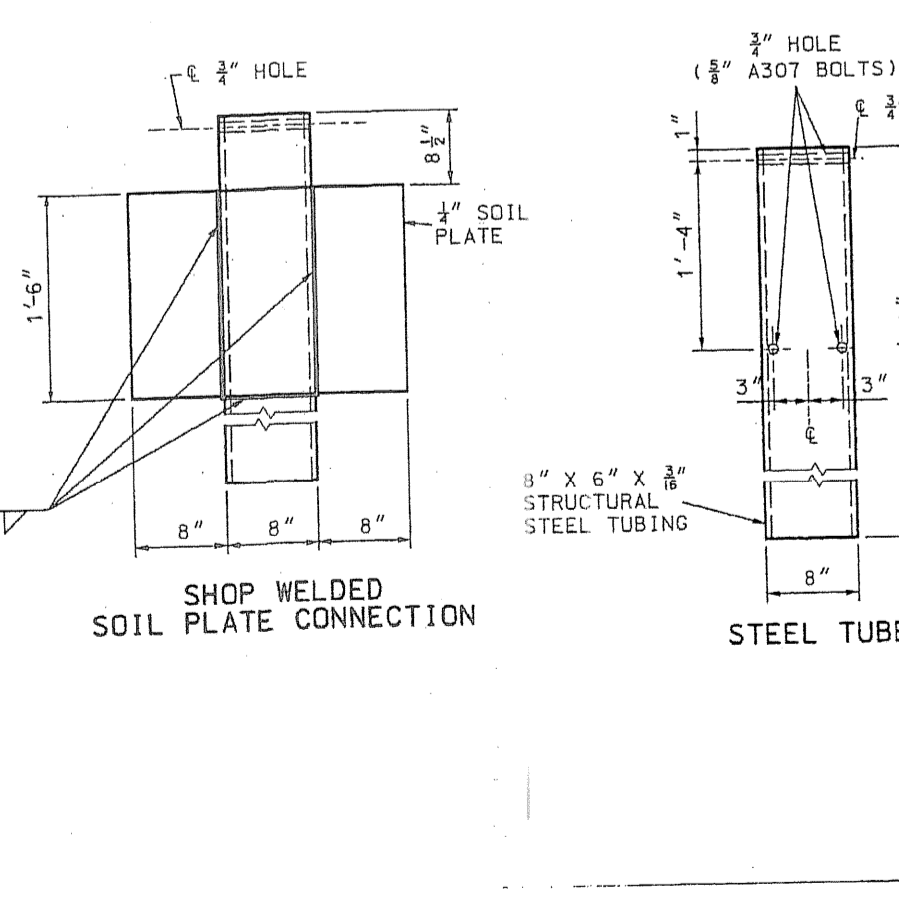
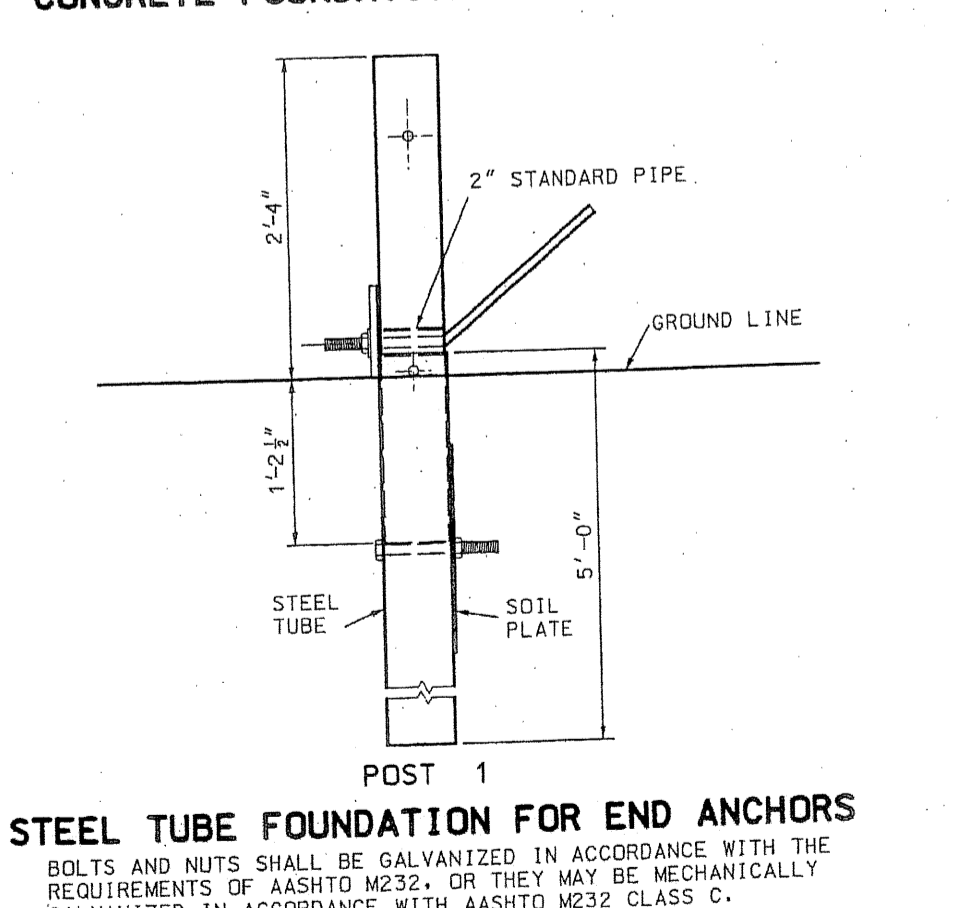
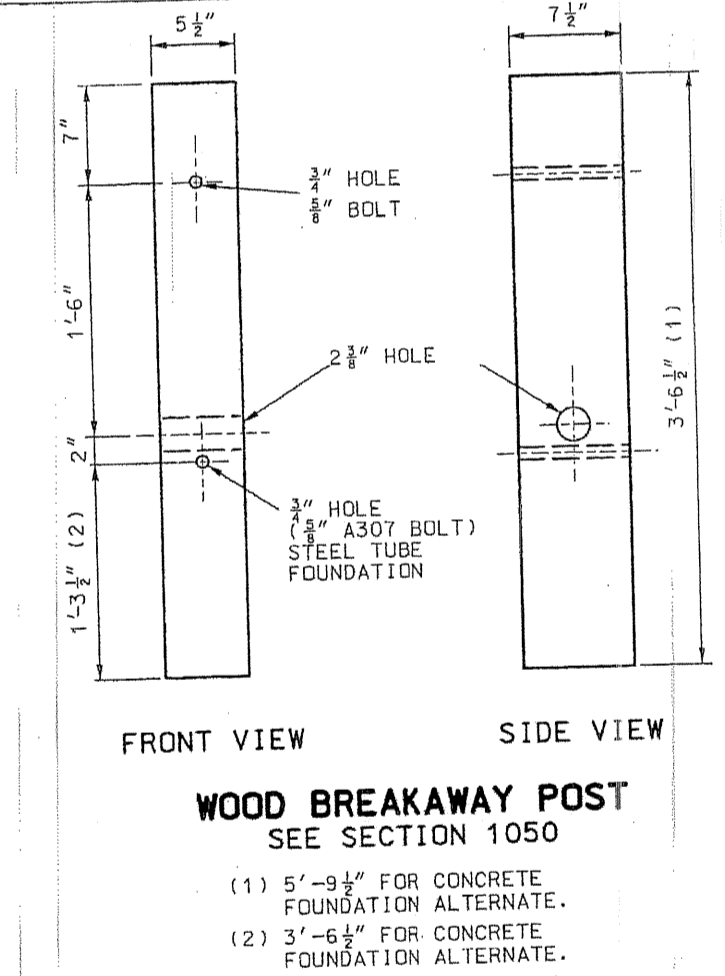
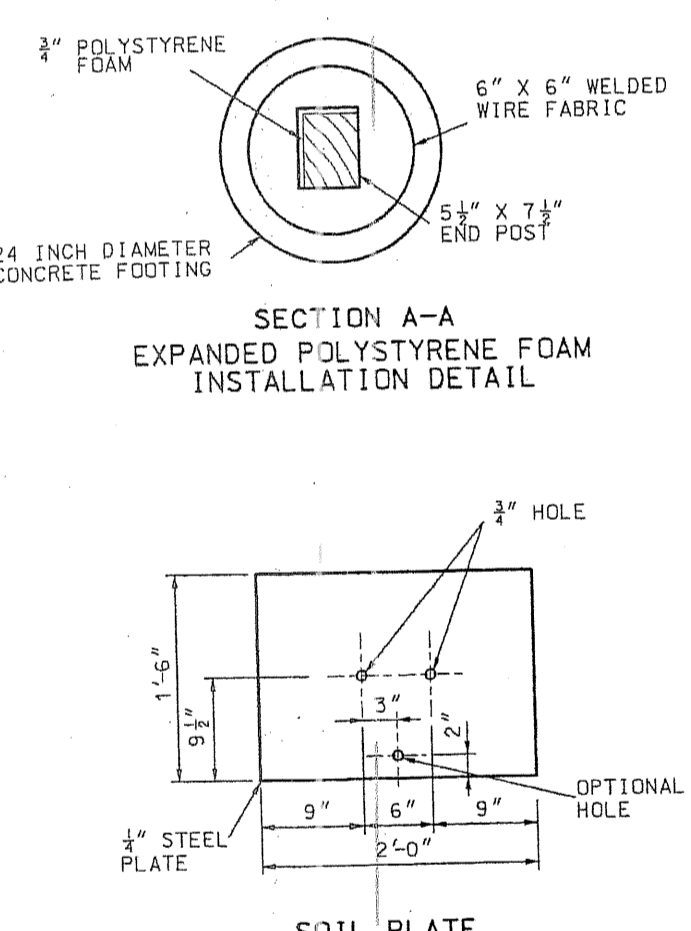
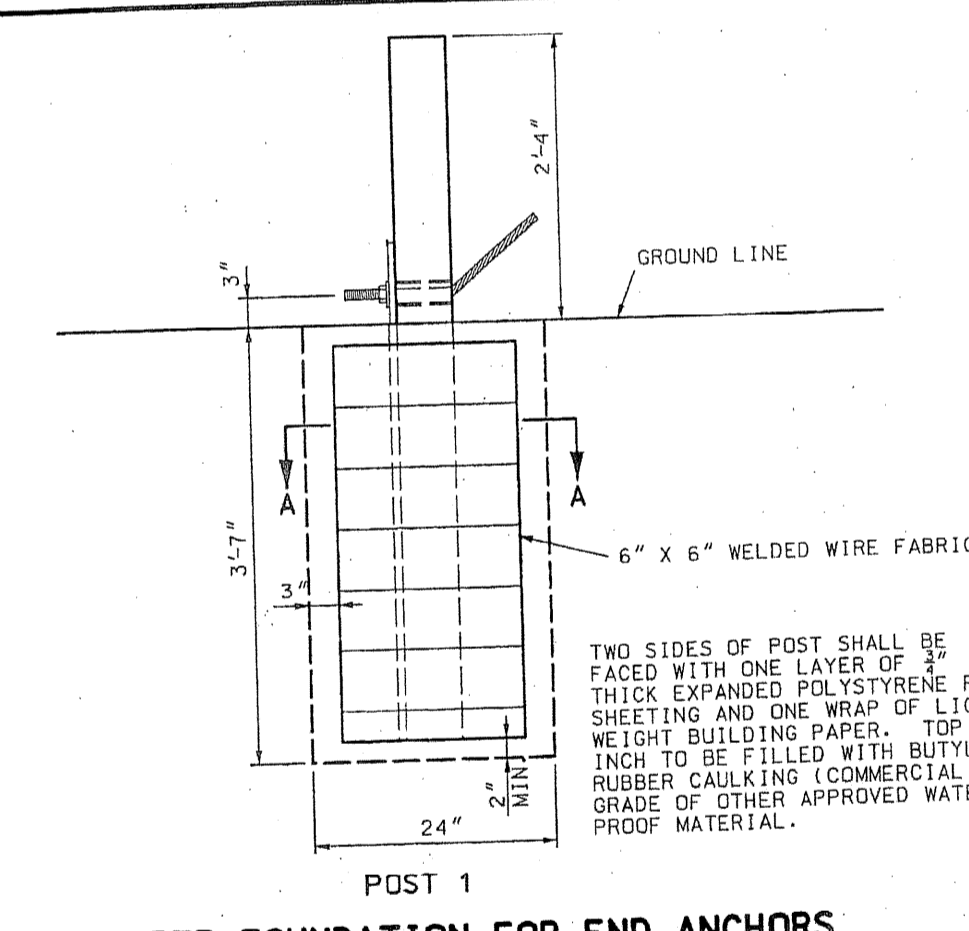
GENERAL NOTES:
 FOR SECTIONS A-A, B-B AND C-C. SEE SHEET 3 OF 3.
 MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
CONCRETE APPROACH PAVEMENT FOR MULTI-LANE PAVEMENTS
 DATE: 3/4/04 EFFECTIVE: 01-01-2004 **504.OOF** 2/3



MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION			
EMBANKMENT CONTROL MEASURING DEVICES			
DATE:	EFFECTIVE:	204.OOD	1/1



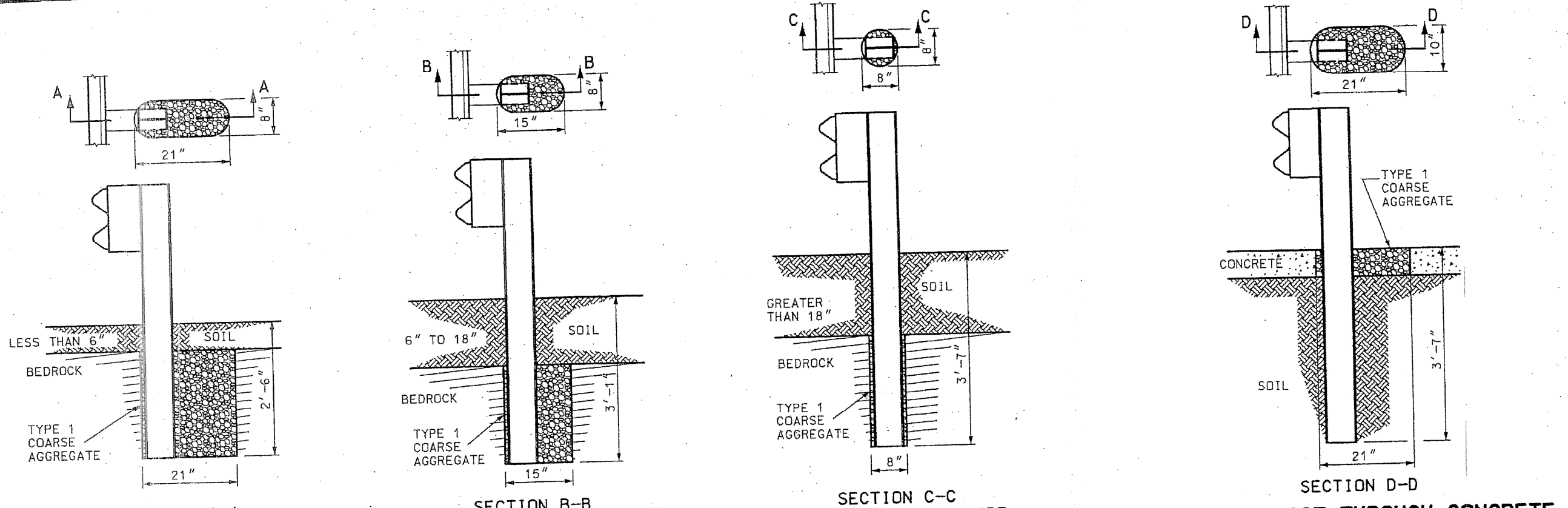
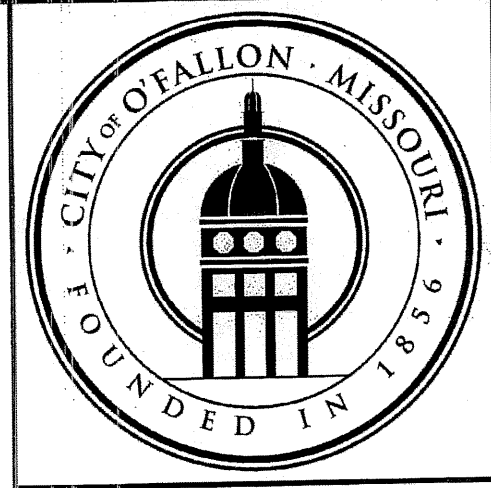
GENERAL NOTES:
 FOR LOCATIONS OF SECTIONS A-A, B-B AND C-C. SEE SHEETS 1 AND 2.
 SEE STANDARD DRAWING 605.10 FOR PIPE OUTLET DETAIL FROM SHOULDER POINT TO INSLOPE.
 MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
CONCRETE APPROACH PAVEMENT
 DATE: 3/4/04 EFFECTIVE: 01-01-2004 **504.OOF** 3/3



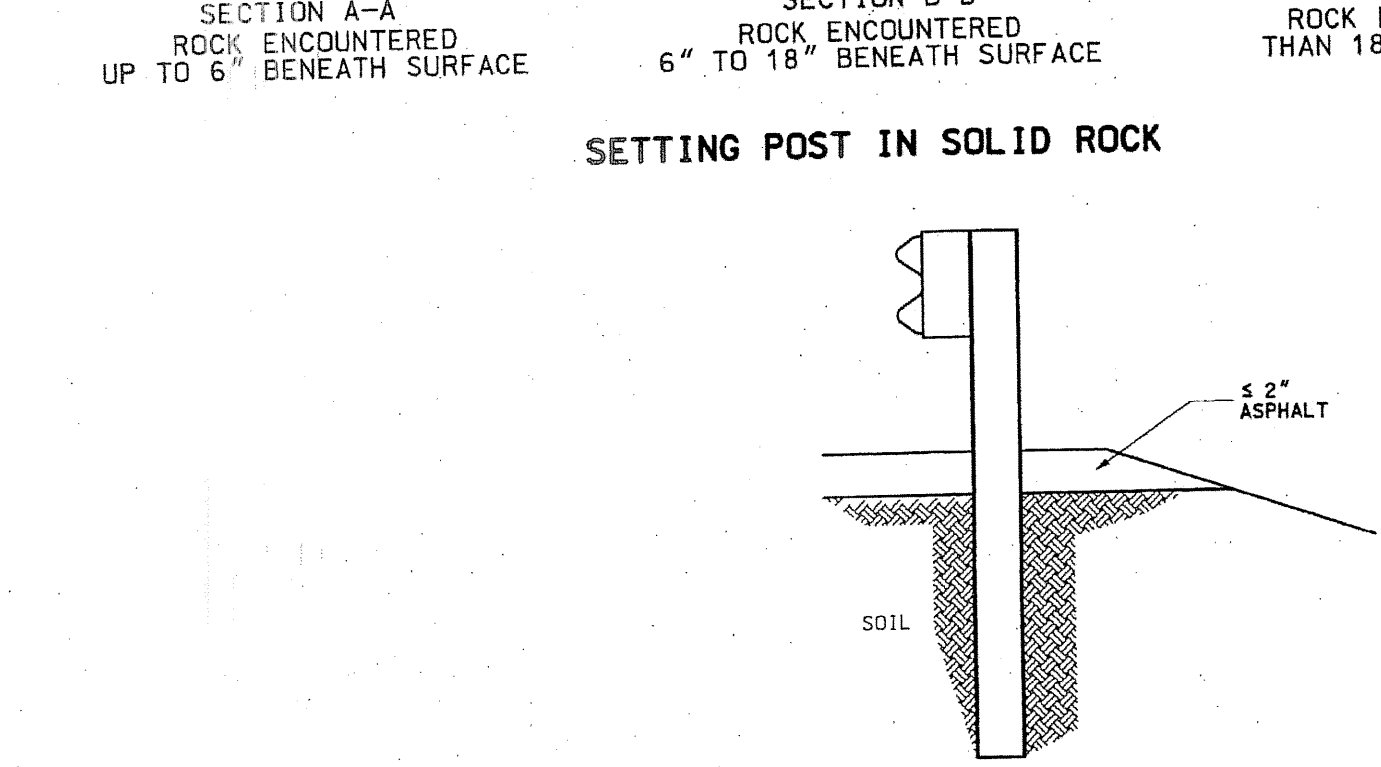
GENERAL NOTES:
 THE CONTRACTOR HAS THE OPTION TO INSTALL WOOD POST 1 AND 2 IN STEEL TUBE OR CONCRETE FOUNDATION.
 TRIMMING OF WOOD POST MAY BE NECESSARY FOR STEEL TUBE FOUNDATION.
 STEEL TUBE FOUNDATIONS SHALL BE DRILLED AND BACK-FILLED WITH A SUITABLE MATERIAL WHEN THE SOIL PLATE IS BOLTED, AS SHOWN. TO THE STEEL TUBE. STEEL TUBE FOUNDATION MAY BE DRIVEN WHEN THE SOIL PLATE IS WELDED, AS SHOWN, TO THE STEEL TUBE.
 MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
GUARDRAIL
 DATE: 3/4/04 EFFECTIVE: 01-01-2004 **606.OOAO** 11/16

DISCLAIMER OF RESPONSIBILITY
 I HEREBY SPECIFY THAT THE DOCUMENTS INTENDED TO BE AUTHENTICATED BY MY SEAL ARE LIMITED TO THIS SHEET AND I HEREBY DISCLAIM ANY RESPONSIBILITY FOR ALL OTHER DRAWINGS, SPECIFICATIONS, ESTIMATES, REPORTS OR OTHER DOCUMENTS OR INSTRUMENTS RELATING TO OR INTENDED TO BE USED FOR ANY PART OR PARTS OF THE ARCHITECTURAL OR ENGINEERING PROJECT OR SURVEY.
 SEAL
 STATE OF MISSOURI
 STEVEN M. STICK
 J.E. 20880
 PROFESSIONAL ENGINEER
 APR 12 2007

Designed CMJ/CMB
 Drawn EBS
 Checked SMS
 Date 4-12-07
 EDM No. 03804
EDM EDM Incorporated
 220 Mansion House, 3rd Floor
 St. Louis, Missouri 63102
 (314) 231-5485 Fax: (314) 231-8167



SETTING POST IN SOLID ROCK



SETTING POST THROUGH ASPHALT

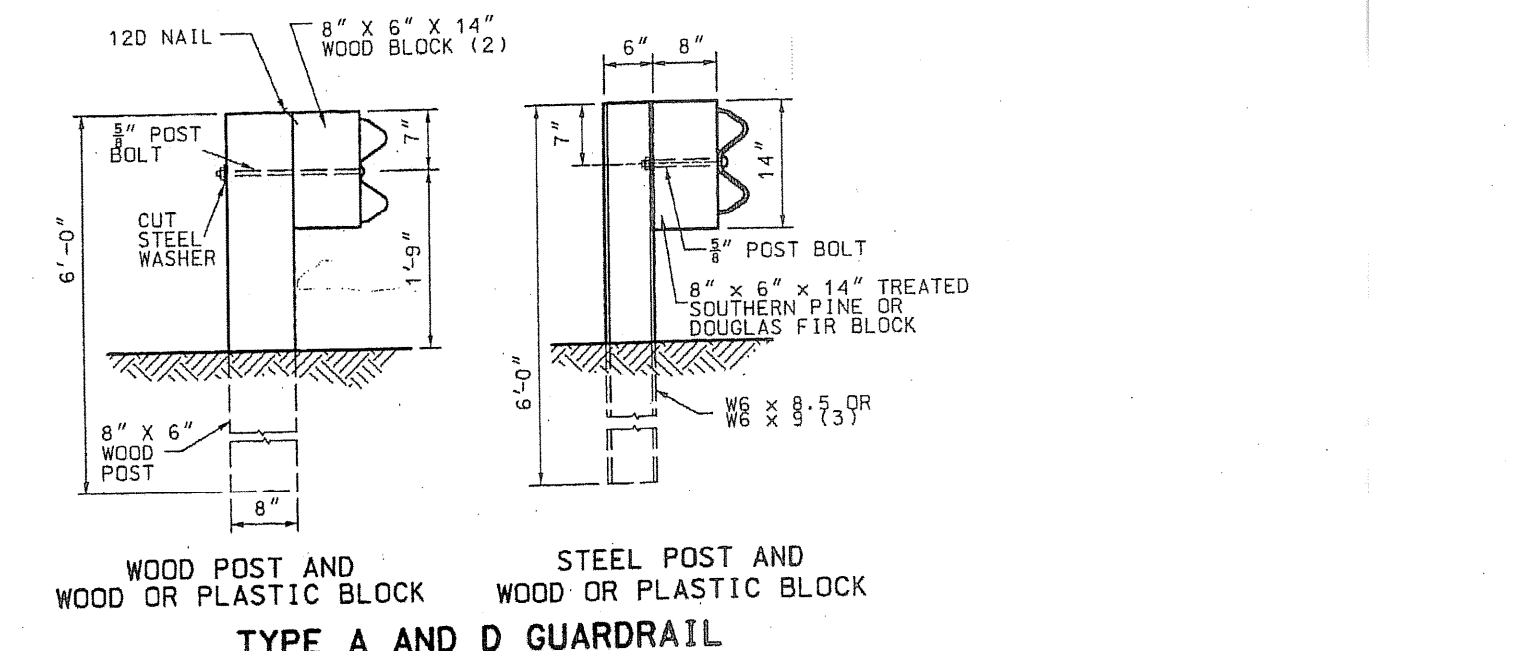
SETTING POST THROUGH CONCRETE

GENERAL NOTES:
 CONCRETE WHERE REQUIRED SHALL BE CLASS B OR OF A COMMERCIAL MIXTURE MEETING THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS. NO DIRECT PAYMENT WILL BE MADE FOR THIS CONCRETE OR ANY ADDITIONAL WORK INVOLVED.
 HOLES IN SOLID ROCK SHALL PROVIDE A DIAMETER OF NOT LESS THAN 4 INCHES GREATER THAN THE MAXIMUM TRANSVERSE DIMENSION OF THE POST SECTION.
 POST MAY BE SHORTER WHERE PLACED IN 2 FEET OF SOLID ROCK. STEEL POSTS MAY BE FLAME OR SAW CUT. REPAIR OF CUT SHALL BE IN ACCORDANCE WITH SECTION 712 OF THE STANDARD SPECIFICATIONS.

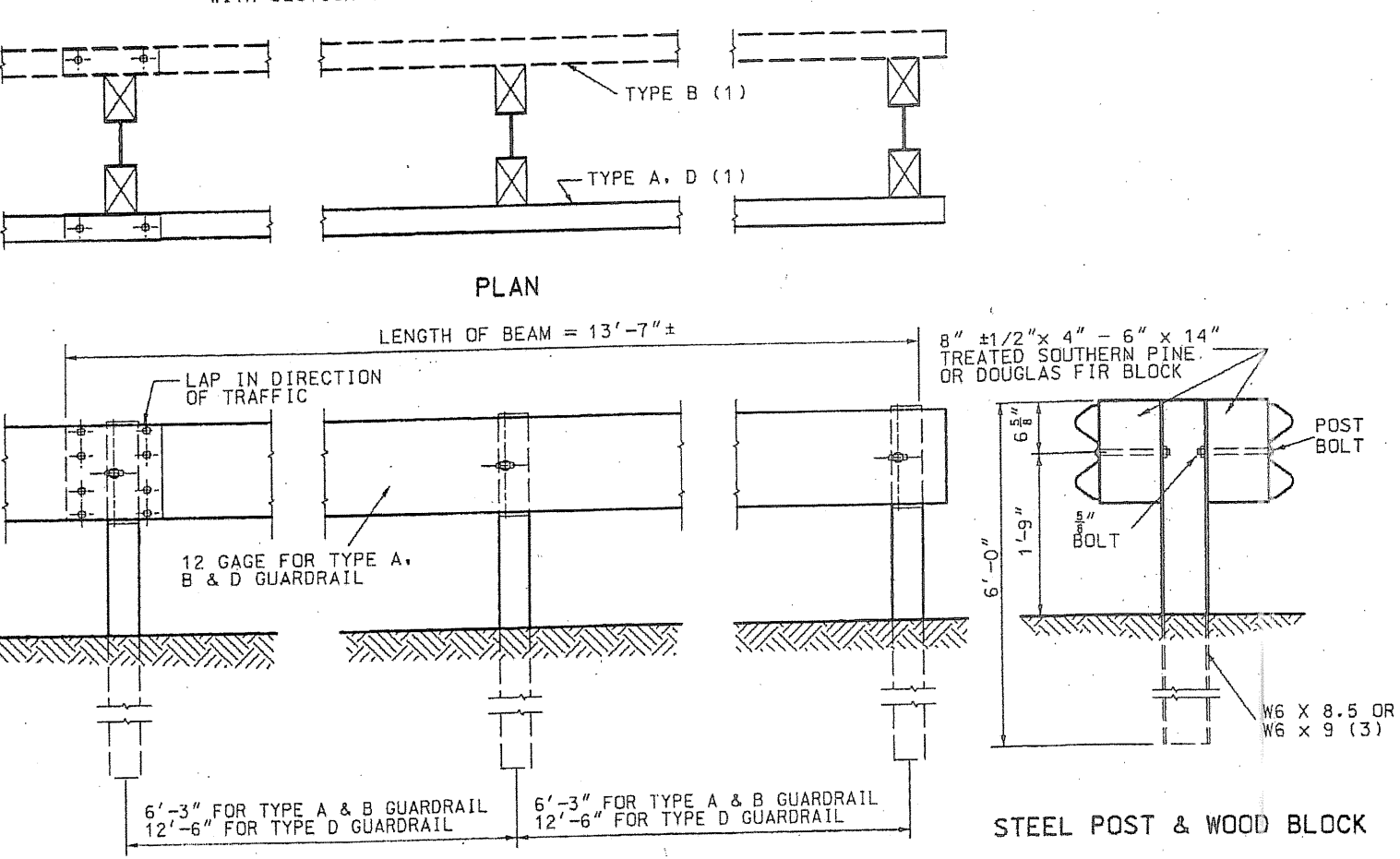
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

GUARDRAIL
SETTING POST IN SOLID ROCK AND THROUGH CONCRETE OR ASPHALT

DATE: 3/14/04 EFFECTIVE: 07-01-2004 **606.00AQ** 3/16



WOOD POST AND WOOD OR PLASTIC BLOCK
STEEL POST AND WOOD OR PLASTIC BLOCK
TYPE A AND D GUARDRAIL



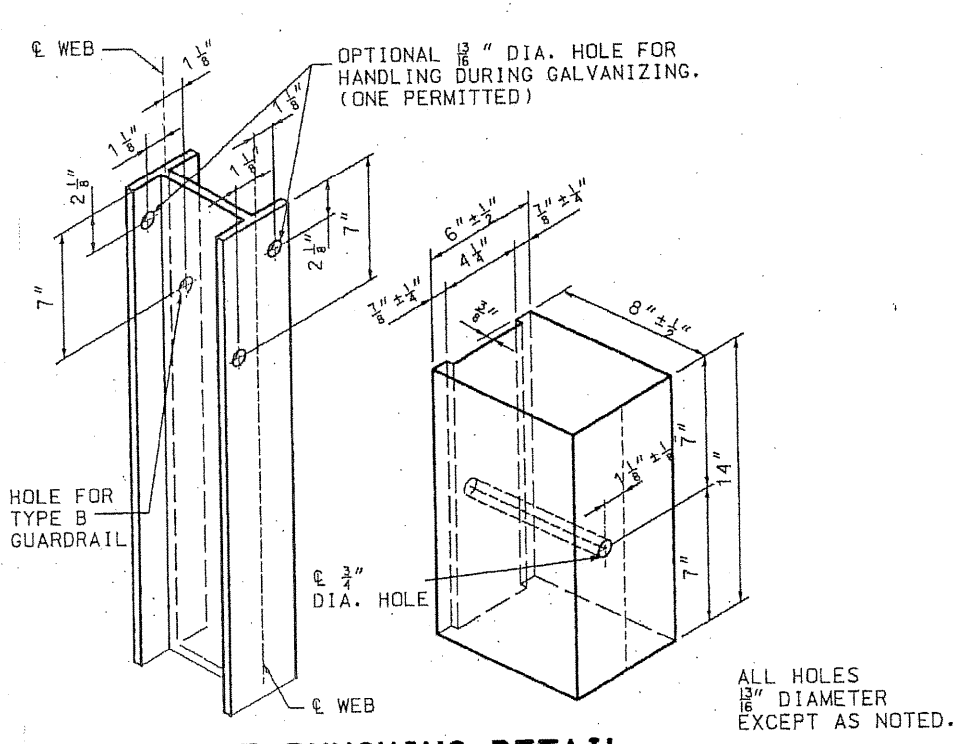
TYPE B GUARDRAIL

GENERAL NOTES:
 WASHERS SHALL BE OMITTED ON ALL CONNECTIONS ON TYPE A, B AND D GUARDRAIL.
 ALL DIMENSIONS ARE SUBJECT TO MANUFACTURING TOLERANCES EXCEPT WHERE ALLOWABLE TOLERANCES ARE SHOWN.

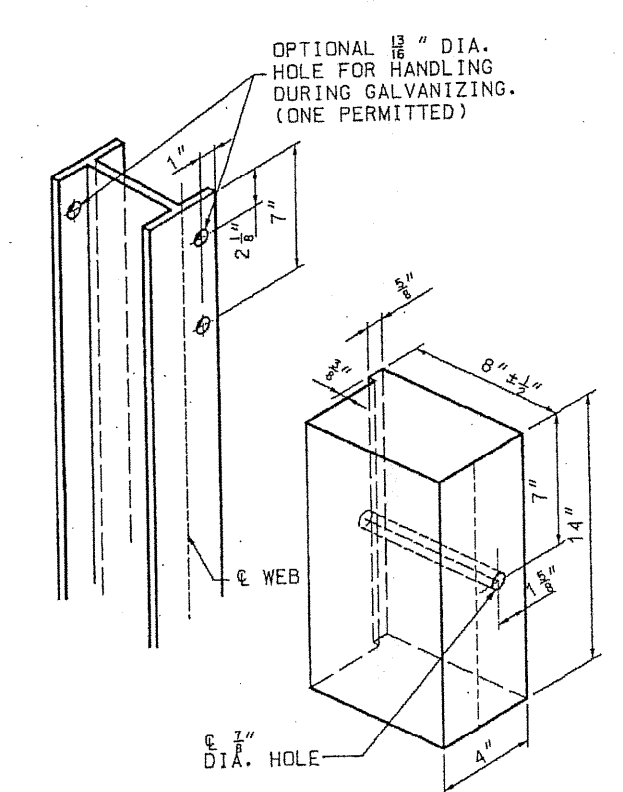
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

GUARDRAIL
TYPES A, B & D

DATE: 3/14/04 EFFECTIVE: 07-01-2004 **606.00AQ** 4/16



HOLE PUNCHING DETAIL FOR STEEL POST & WOOD OR PLASTIC BLOCKS (1)



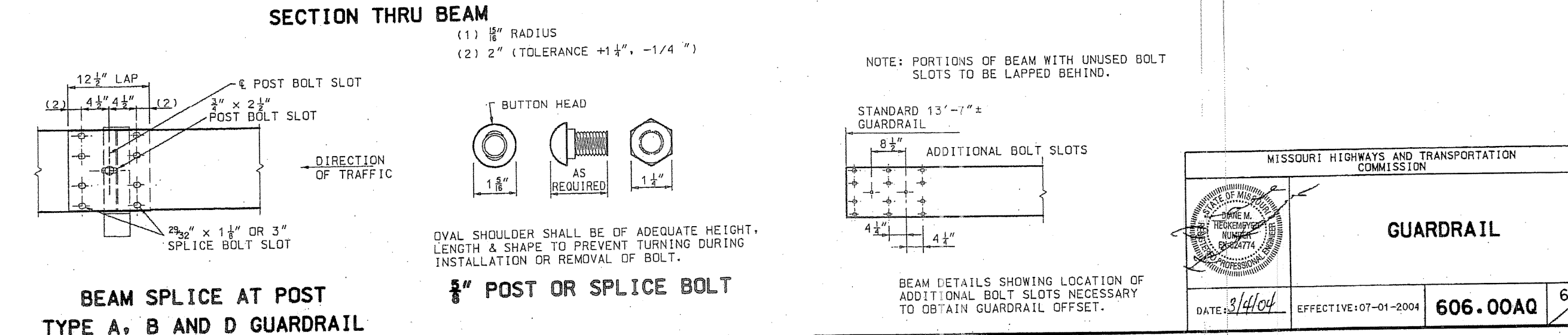
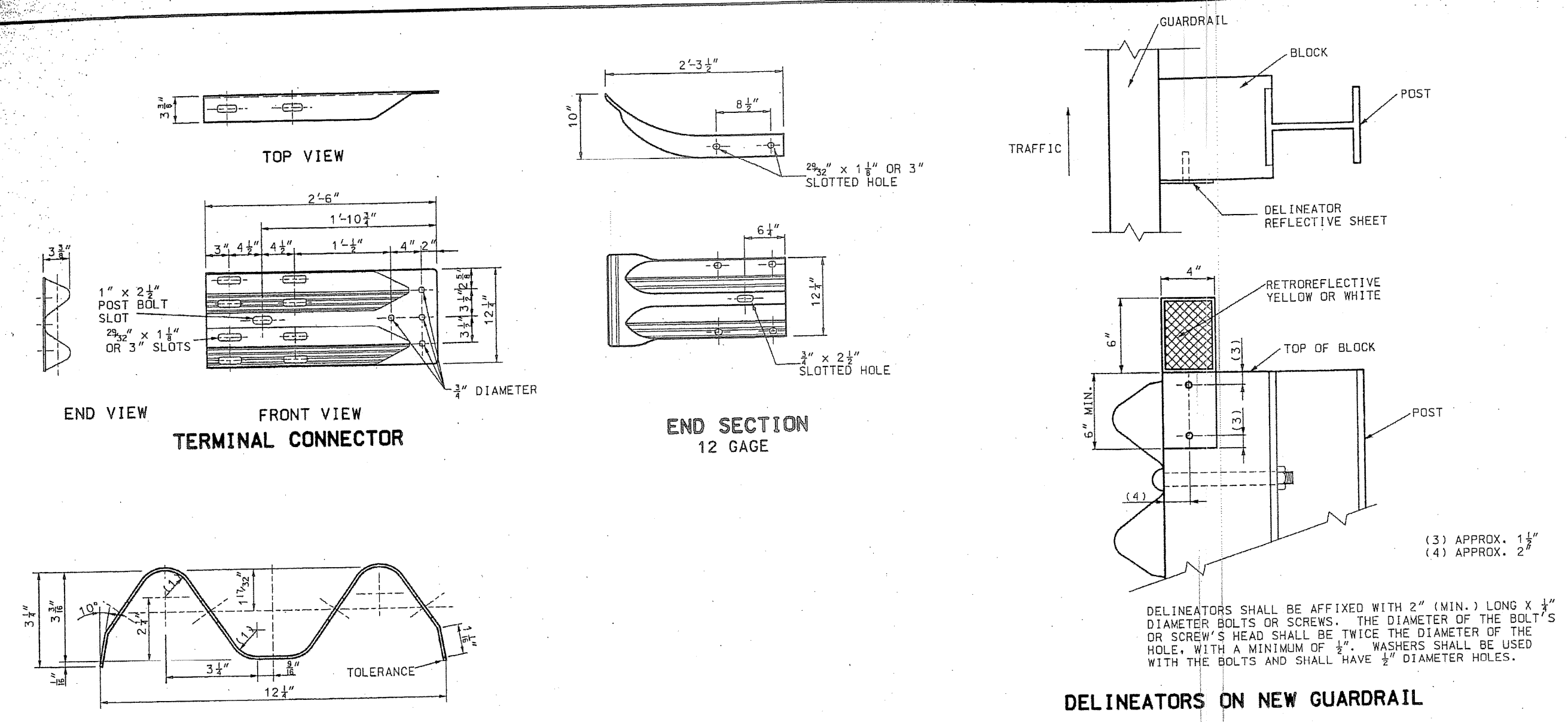
ALTERNATE DESIGN FOR WOOD BLOCK

(1) THE OVERALL NOMINAL DIMENSIONS SHOWN SHALL BE MET. ALTHOUGH THE SHAPE OF THE PLASTIC BLOCKS MAY VARY FROM THE SHAPE SHOWN EXCEPT THE 3/4" DIA. FLANGE AND THE OVERALL WIDTH DIMENSIONS MAY BE WAIVED IF APPROVED BY PROJECT OPERATIONS.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

GUARDRAIL

DATE: 3/14/04 EFFECTIVE: 07-01-2004 **606.00AQ** 5/16



BEAM SPLICE AT POST
TYPE A, B AND D GUARDRAIL

DELINEATORS SHALL BE AFFIXED WITH 2" (MIN.) LONG X 3/4" DIAMETER BOLTS OR SCREWS. THE DIAMETER OF THE BOLT'S OR SCREWS HEAD SHALL BE TWICE THE DIAMETER OF THE HOLE. WITH A MINIMUM OF 1" WASHERS SHALL BE USED WITH THE BOLTS AND SHALL HAVE 3/4" DIAMETER HOLES.

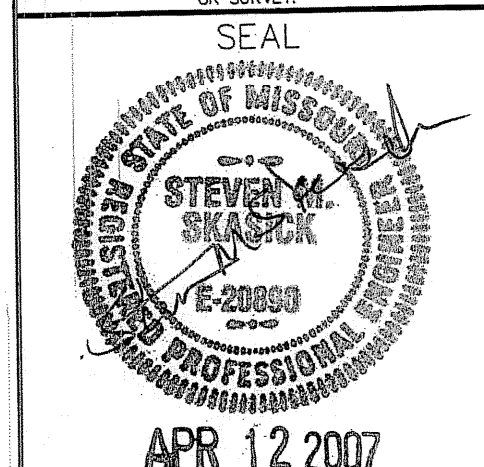
DELINEATORS ON NEW GUARDRAIL

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

GUARDRAIL

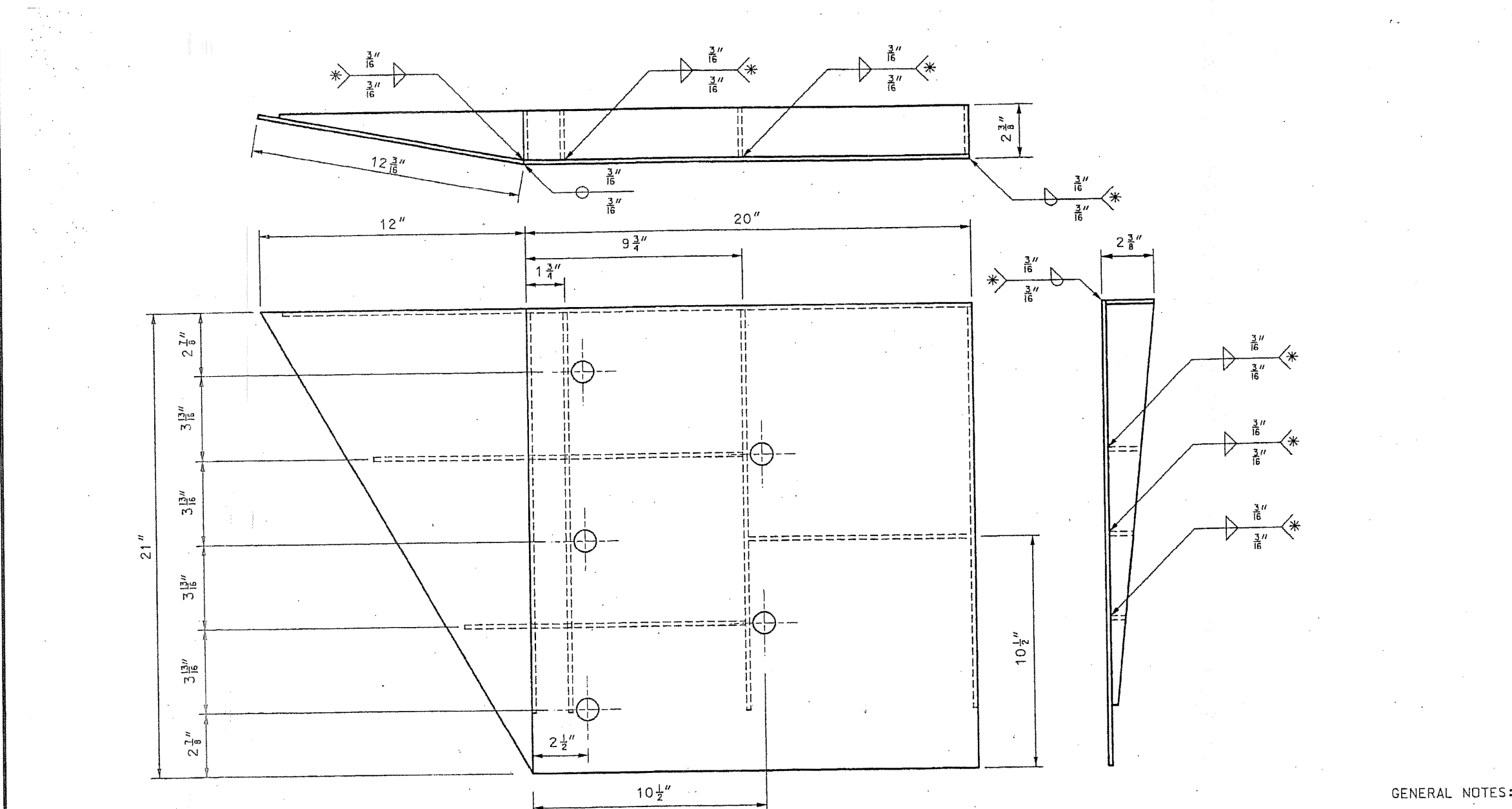
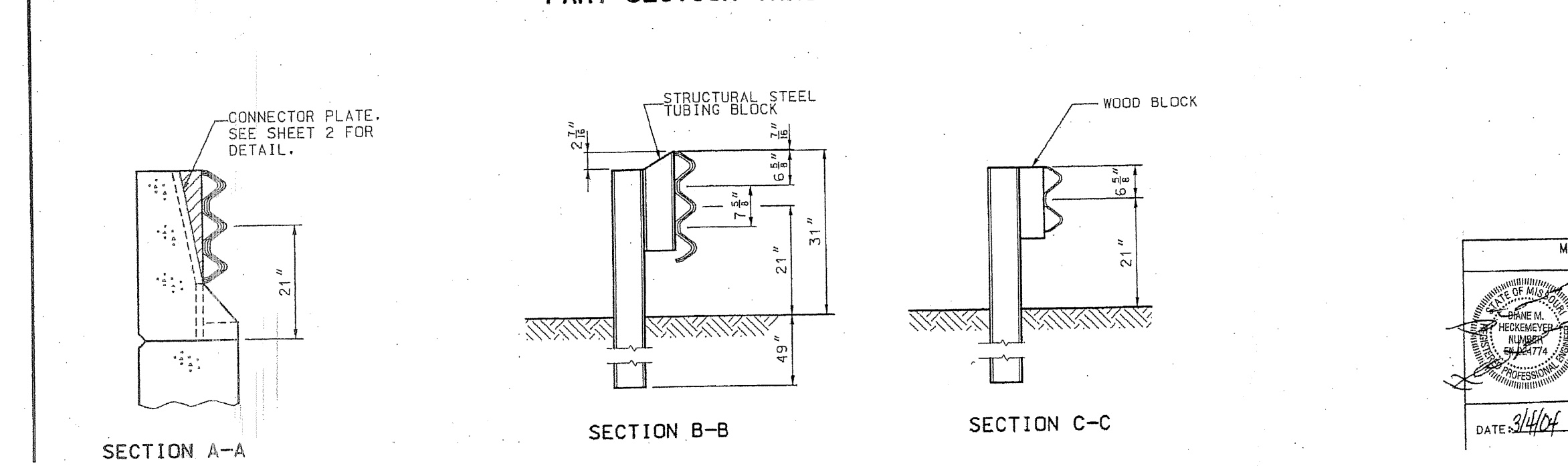
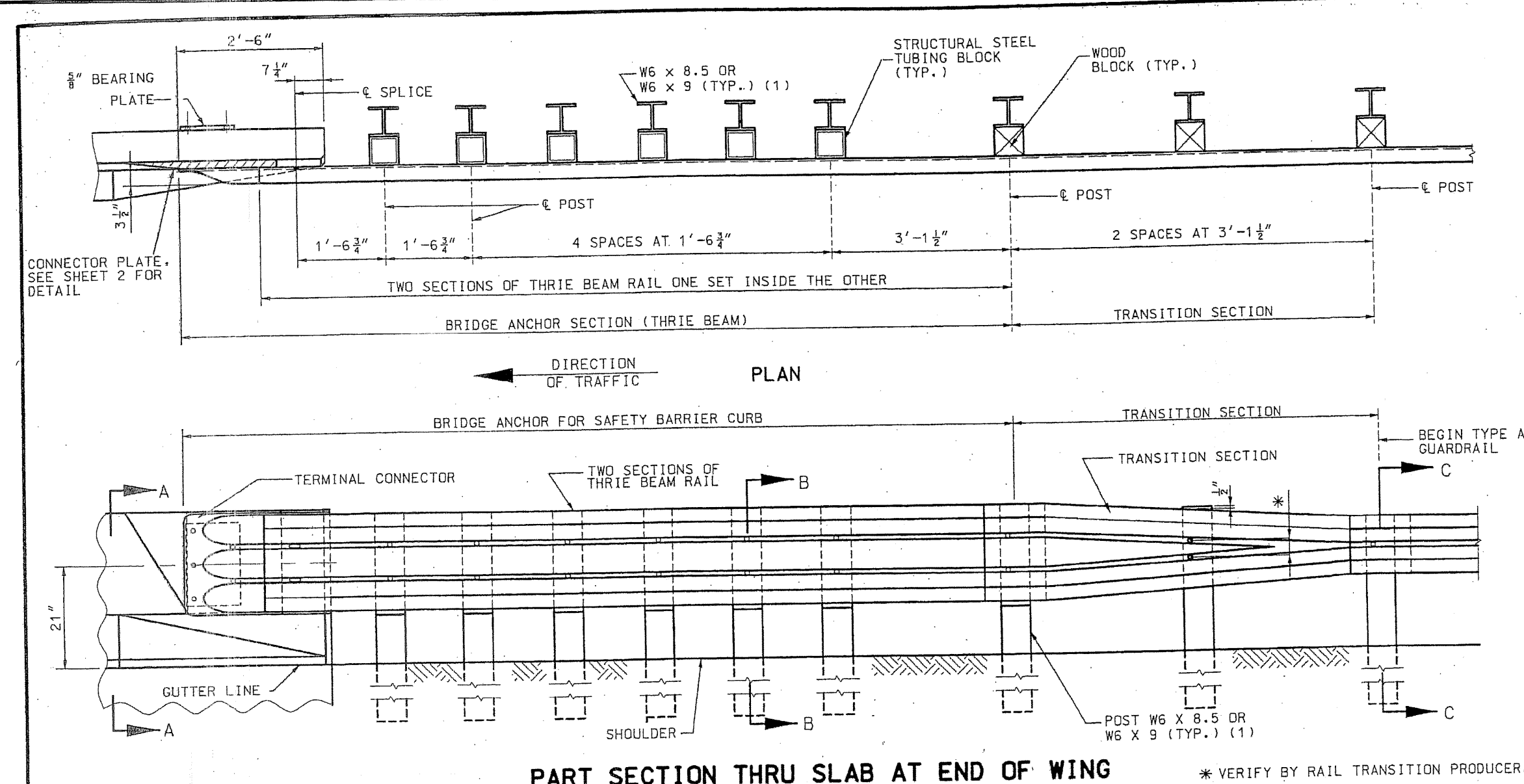
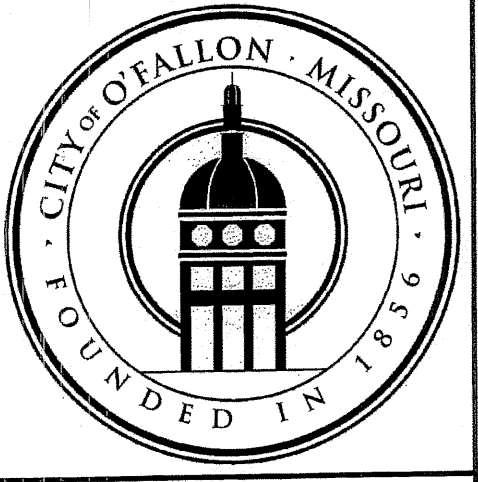
DATE: 3/14/04 EFFECTIVE: 07-01-2004 **606.00AQ** 6/16

DISCLAIMER OF RESPONSIBILITY
 I HEREBY SPECIFY THAT THE DOCUMENTS INTENDED TO BE AUTHENTICATED BY MY SEAL ARE LIMITED TO THIS SHEET, AND I HEREBY DISCLAIM ANY RESPONSIBILITY FOR ALL OTHER DRAWINGS, SPECIFICATIONS, ESTIMATES, REPORTS OR OTHER DOCUMENTS OR INSTRUMENTS RELATING TO OR INTENDED TO BE USED FOR ANY PART OR PARTS OF THE ARCHITECTURAL OR ENGINEERING PROJECT OF SURVEY.



Designed CMJ/CMB
 Drawn EBS
 Checked SMS
 Date 4-12-07

EDM No. 03804
EDM EDM Incorporated
 220 Mansion House, 3rd Floor
 St. Louis, Missouri 63102
 (314) 231-5485 Fax: (314) 231-8167



MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

BRIDGE ANCHOR SECTION
 SAFETY BARRIER CURB ON BRIDGE

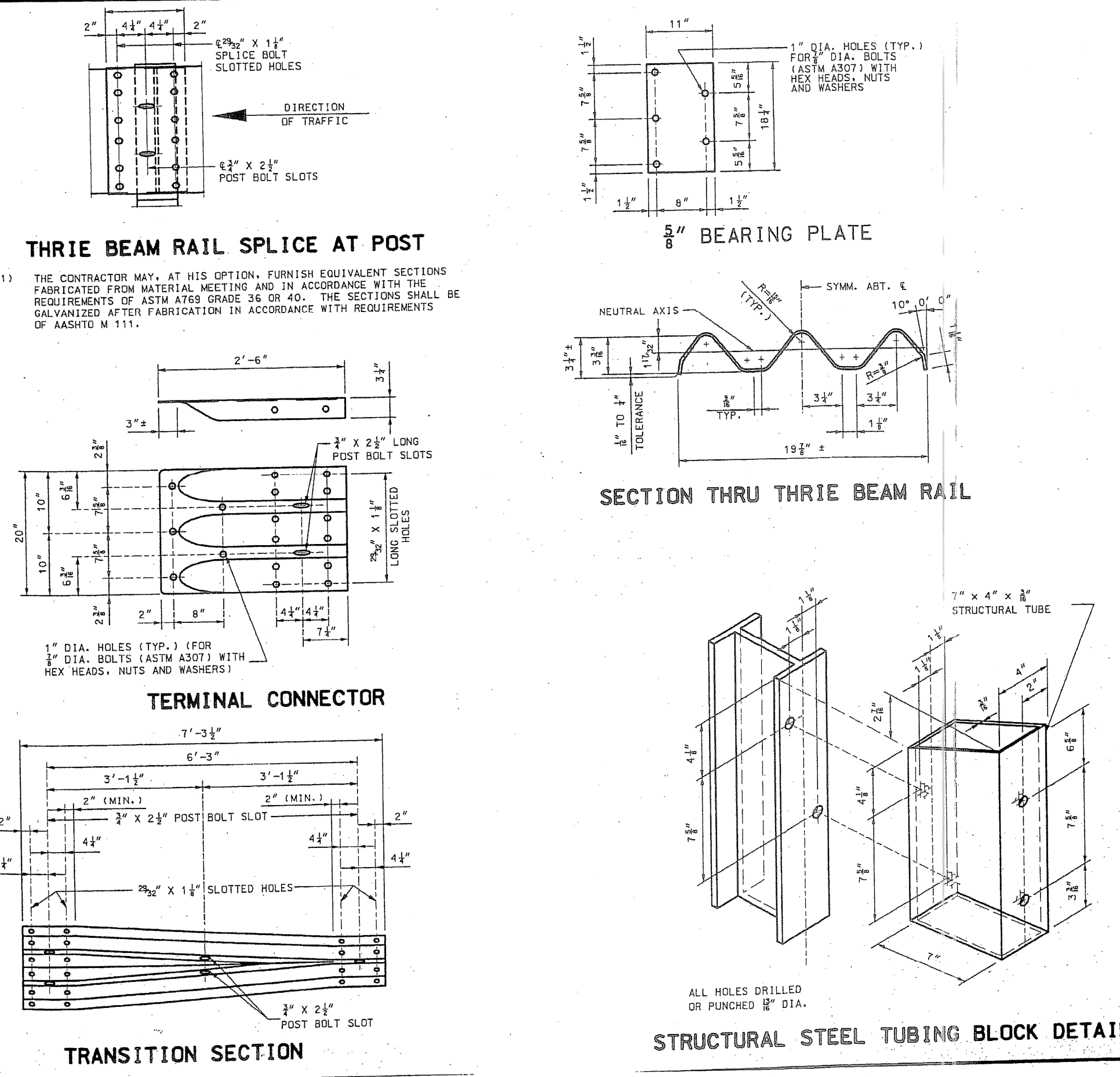
DATE: 3/4/04 EFFECTIVE: 07-01-2004 **606.220** 1/4

GENERAL NOTES:
 COVER PLATE PANELS ARE 4-³/₈" THICK.
 ALL STIFFENERS ARE ¹/₂" THICK.
 CONNECTOR PLATE SHALL BE FABRICATED FROM ASTM GRADE A36 STEEL AND GALVANIZED.
 FOR GALVANIZED REQUIREMENTS, SEE SECTION 1040 OF THE STANDARD SPECIFICATIONS.
 ALL HOLE DIAMETERS SHALL BE 1".

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

BRIDGE ANCHOR SECTION
 SAFETY BARRIER CURB ON BRIDGE
 (CONNECTOR PLATE DETAIL)

DATE: 3/4/04 EFFECTIVE: 07-01-2004 **606.220** 3/4

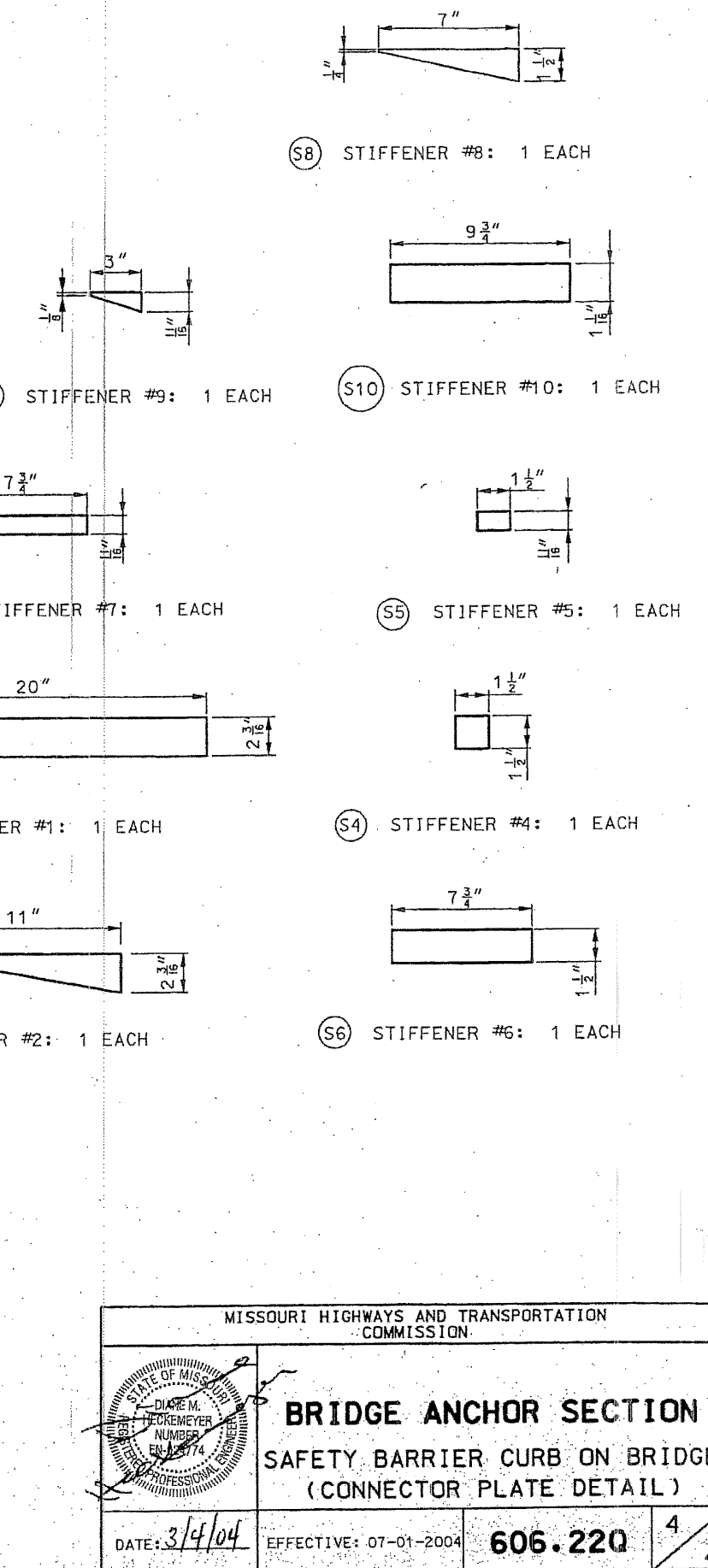
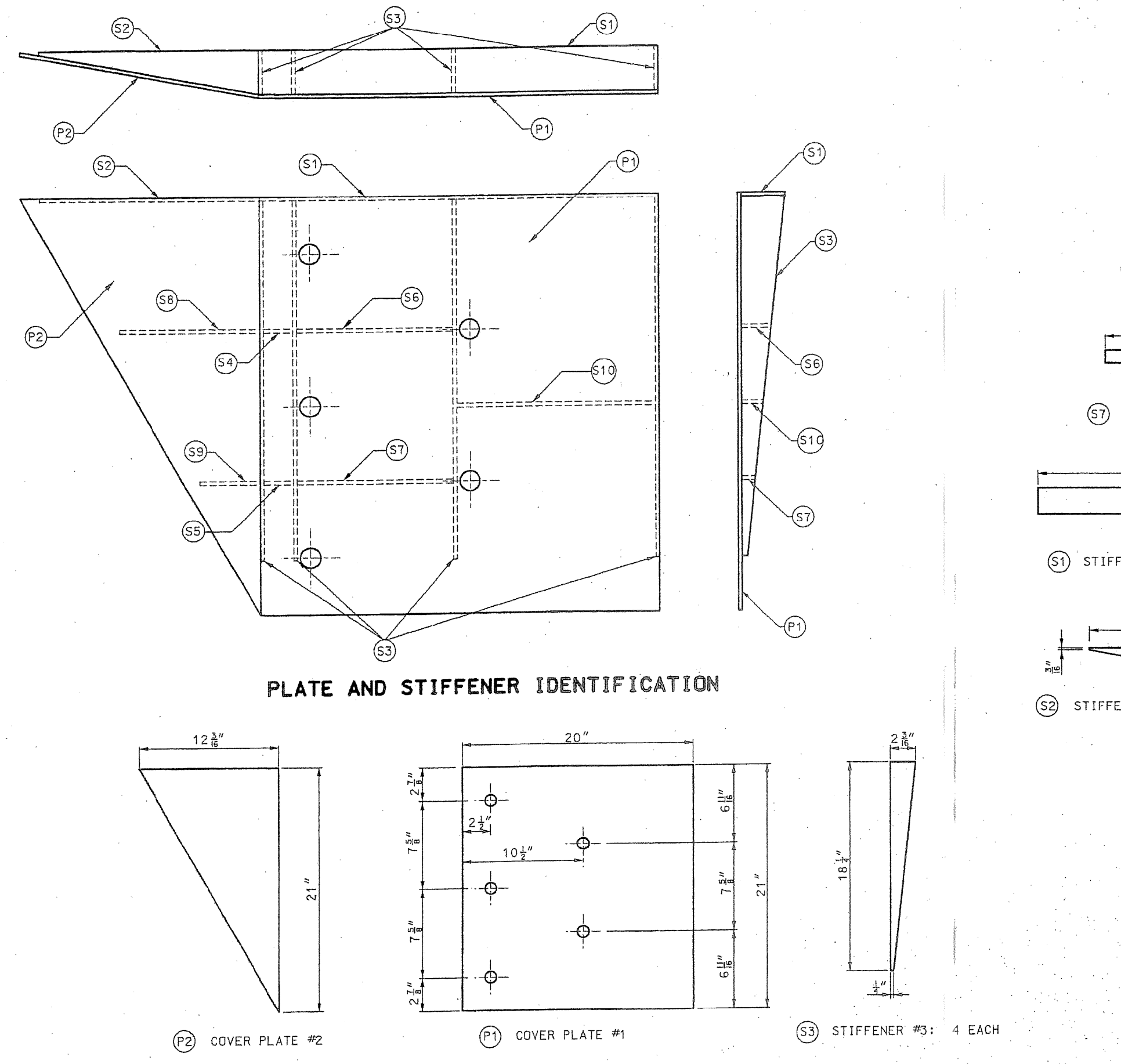


GENERAL NOTES:
 DESIGN BASED ON NCHRP REPORT 350 TEST LEVEL 3.
 THE THREE BEAM RAIL, TERMINAL CONNECTOR AND THE TRANSITION SECTION FOR THE BRIDGE ANCHOR SECTION SHALL BE MADE OF STEEL AND SHALL BE 12 GAGE.
 FOR PROTECTIVE COATING AND MATERIAL REQUIREMENTS, SEE SECTION 1040 OF THE STANDARD SPECIFICATIONS.
 RAIL POSTS SHALL BE SET PERPENDICULAR TO THE ROADWAY PROFILE GRADE AND VERTICALLY IN CROSS SECTION.
 WASHERS SHALL BE USED AT ALL POST BOLTS (BETWEEN BOLT HEAD AND BEAM). THEY SHALL BE RECTANGULAR IN SHAPE (3" X 1 1/2" X 3/8" MIN.) AND FLAT, OR WHEN NECESSARY OF SUCH DESIGN AS TO FIT THE COUNTER OF THE BEAM. WASHERS SHALL HAVE A 1/4" X 1" SLOTTED HOLE.
 STRUCTURAL TUBING BLOCK SHALL BE FABRICATED FROM ASTM A500 GRADE B STEEL AND GALVANIZED.
 USE 3" BUTT-HEAD OVAL SHOULDER BOLTS WITH HEX NUTS AT ALL SLOTS (THICKNESS OF HEX NUTS = 3/8" MIN.).
 THE BEARING PLATE SHALL BE FABRICATED FROM GRADE A36 STEEL AND GALVANIZED.
 ALL LAP SPLICES, INCLUDING END SHOES, SHALL BE MADE IN THE DIRECTION OF TRAFFIC.
 SEE STANDARD PLAN 606.00 FOR DETAILS NOT SHOWN.
 THE COST OF FURNISHING, FABRICATING AND INSTALLING TRANSITION SECTION, COMPLETE IN PLACE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER EACH.
 THE COST OF FURNISHING FABRICATING AND INSTALLING BRIDGE ANCHOR SECTION (SAFETY BARRIER CURB), COMPLETE IN PLACE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER EACH.
 LOCK SHALL BE OF THE SAME TYPE THROUGHOUT THE PROJECT LIMITS.
 FOR DETAILS OF BLOCKS ON STEEL POSTS, SEE STANDARD PLAN 606.00.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

BRIDGE ANCHOR SECTION
 SAFETY BARRIER CURB ON BRIDGE

DATE: 3/4/04 EFFECTIVE: 07-01-2004 **606.220** 2/4



MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

BRIDGE ANCHOR SECTION
 SAFETY BARRIER CURB ON BRIDGE
 (CONNECTOR PLATE DETAIL)

DATE: 3/4/04 EFFECTIVE: 07-01-2004 **606.220** 4/4

DISCLAIMER OF RESPONSIBILITY
 I HEREBY SPECIFY THAT THE DOCUMENTS INTENDED TO BE AUTHENTICATED BY MY SEAL ARE LIMITED TO THIS SHEET, AND I HEREBY DISCLAIM ANY RESPONSIBILITY FOR ALL OTHER DRAWINGS, SPECIFICATIONS, ESTIMATES, REPORTS OR OTHER DOCUMENTS OR INSTRUMENTS RELATING TO OR INTENDED TO BE USED FOR ANY PART OR PARTS OF THE ARCHITECTURAL OR ENGINEERING PROJECT OR SURVEY.

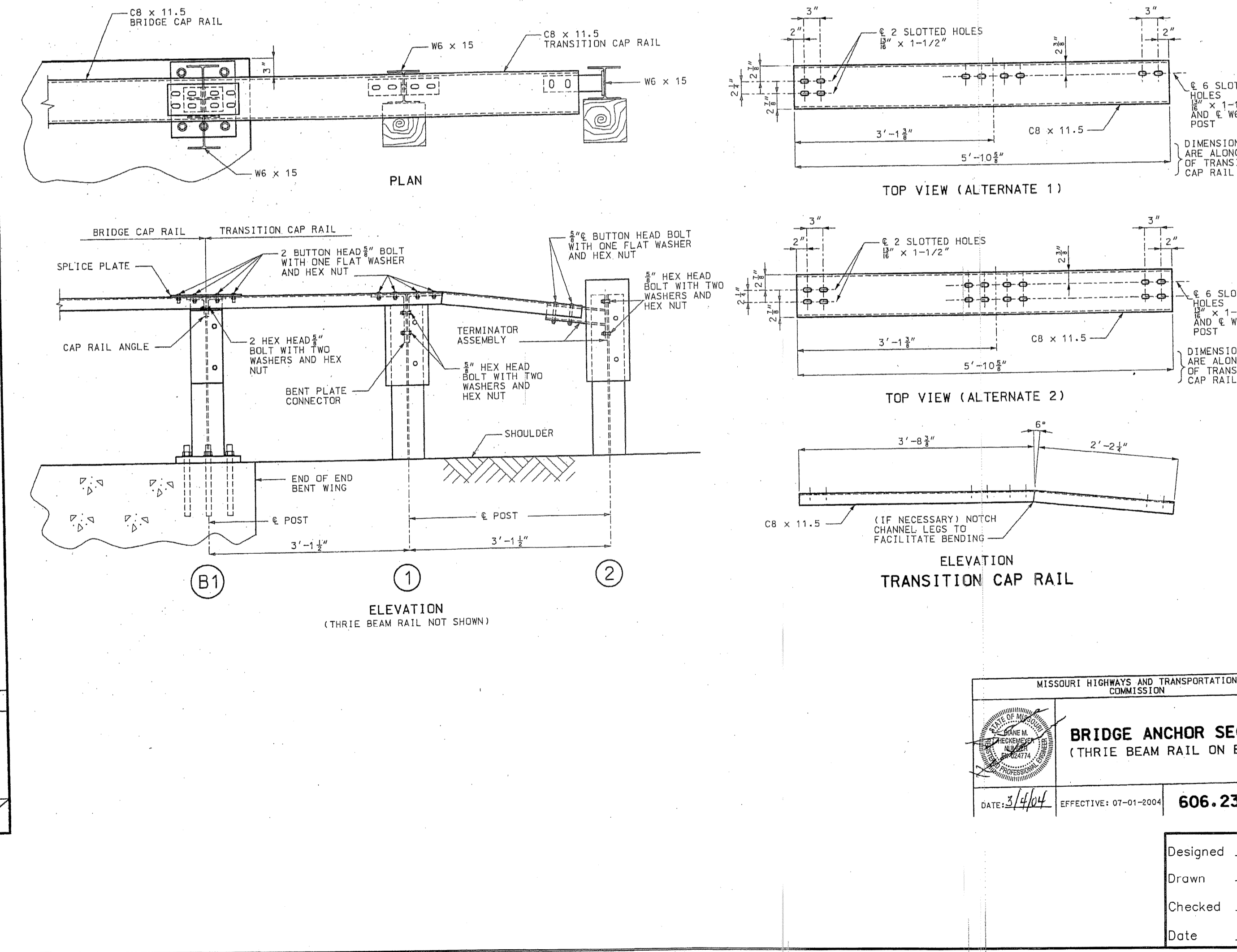
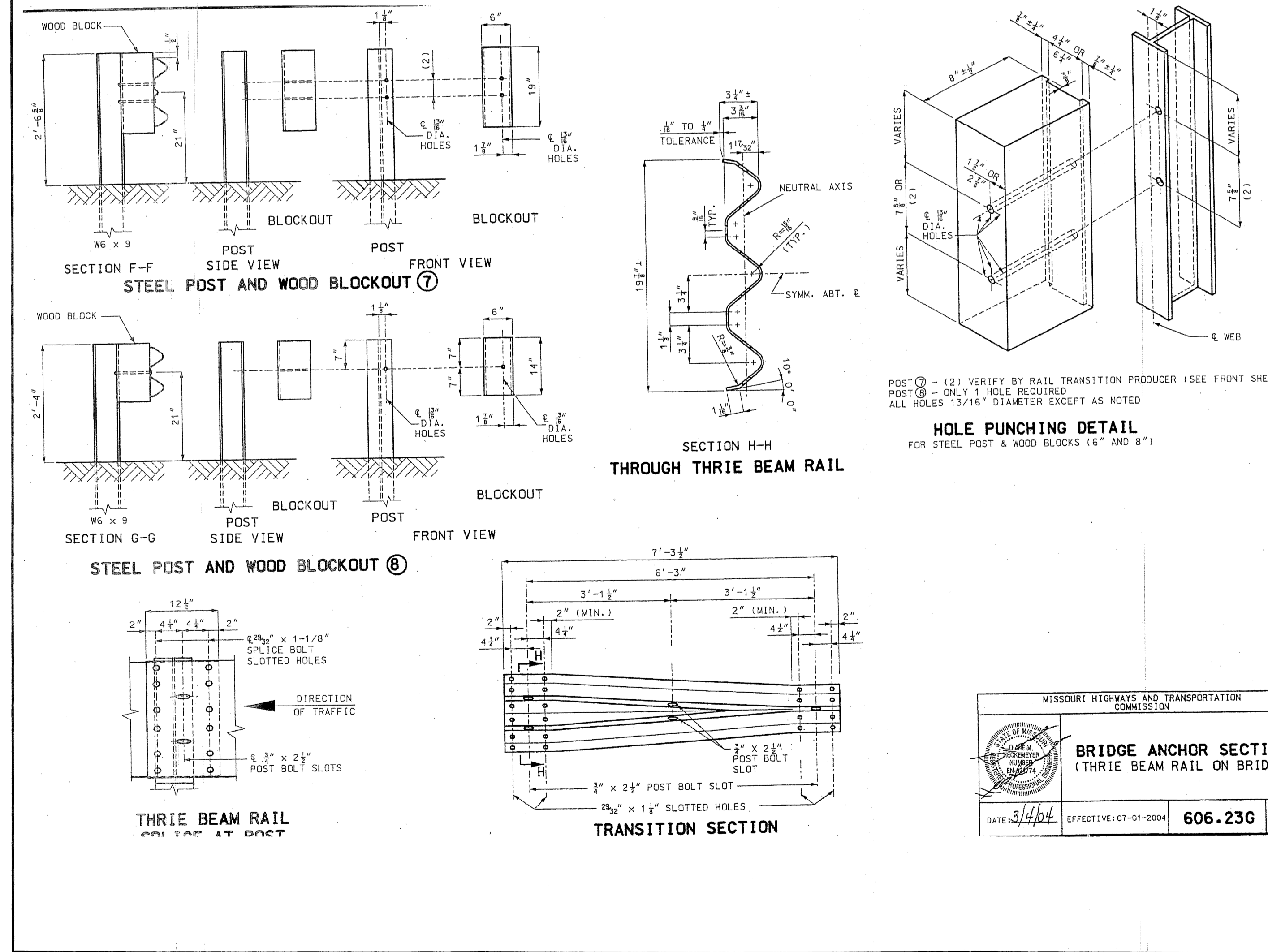
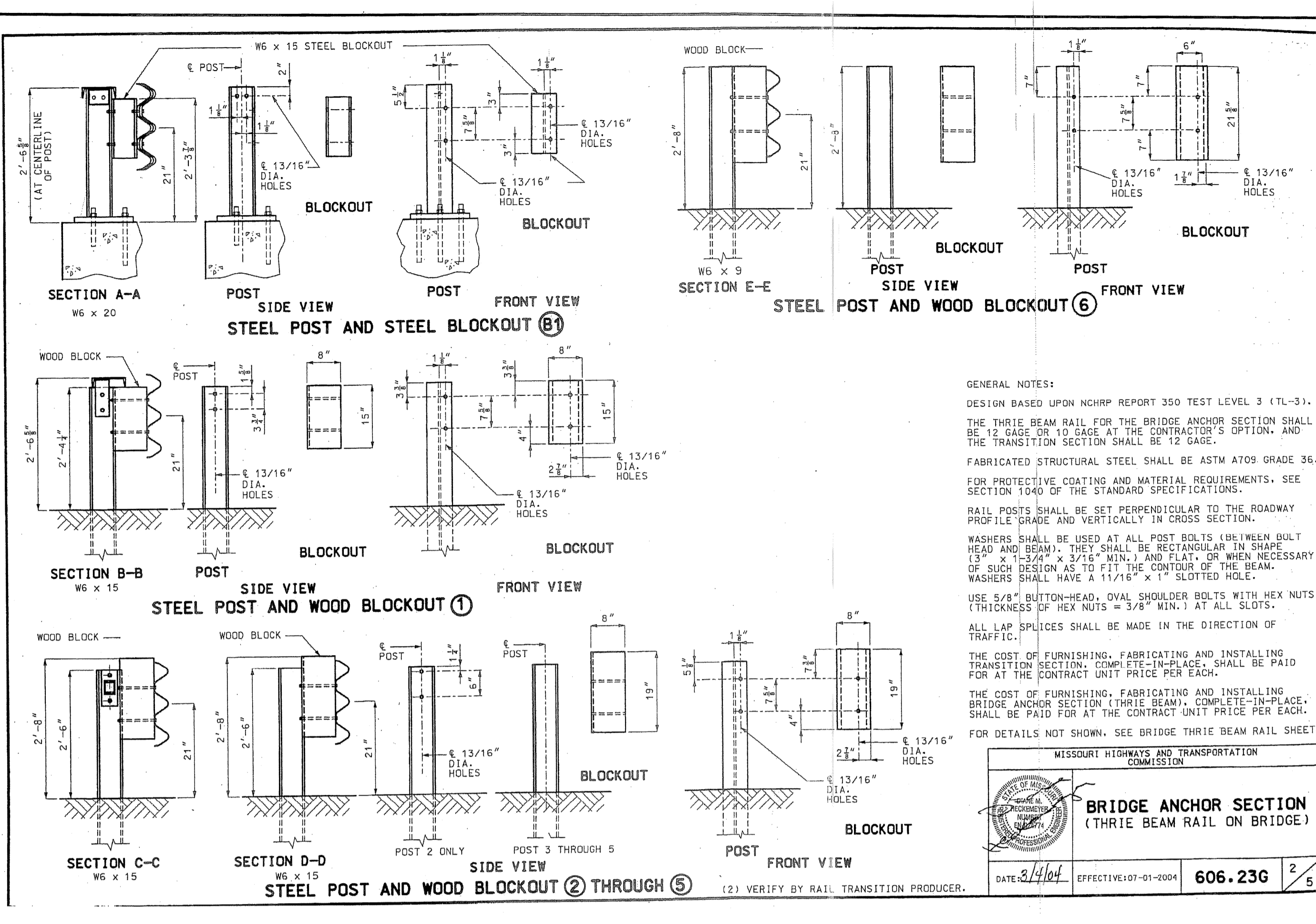
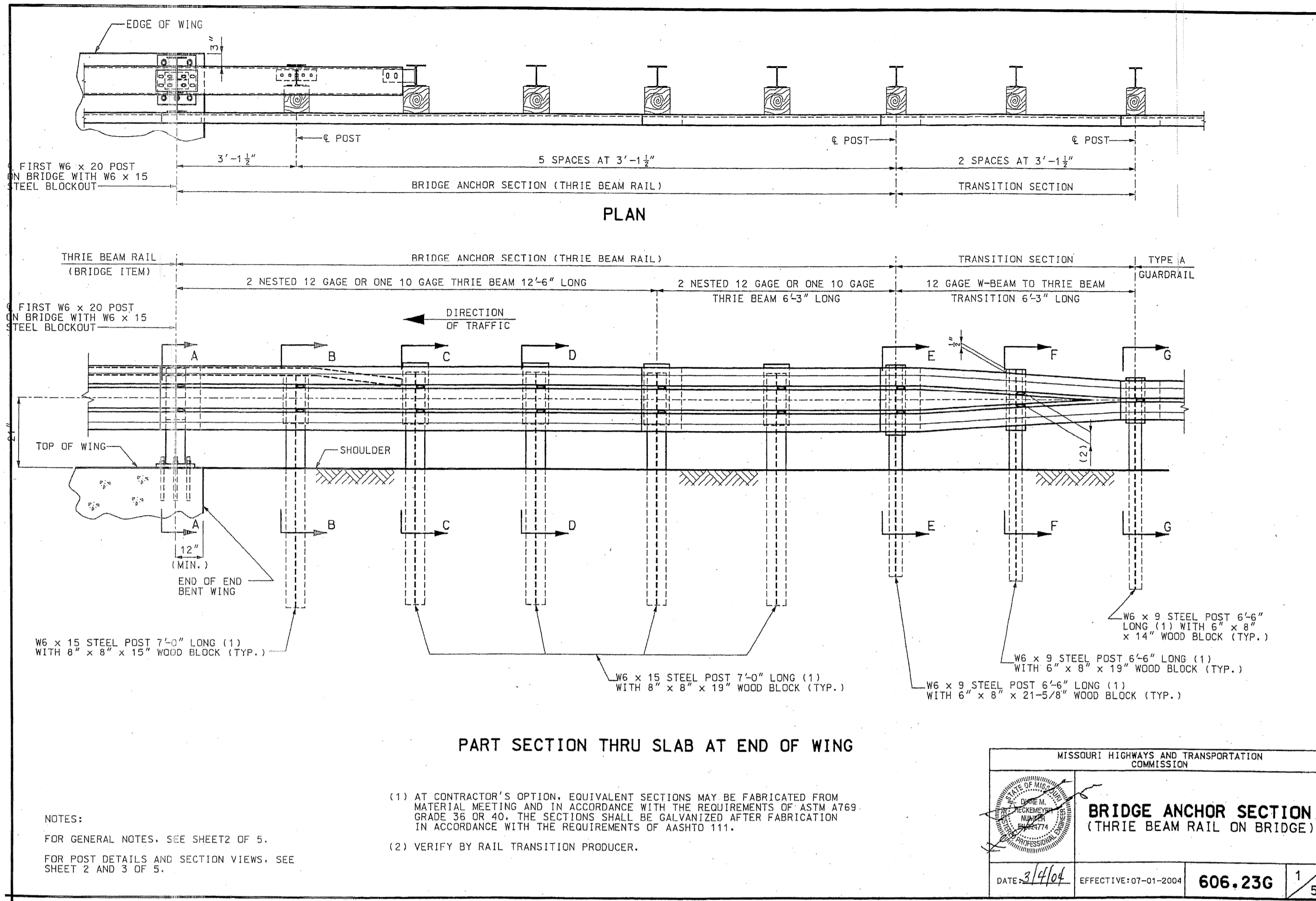
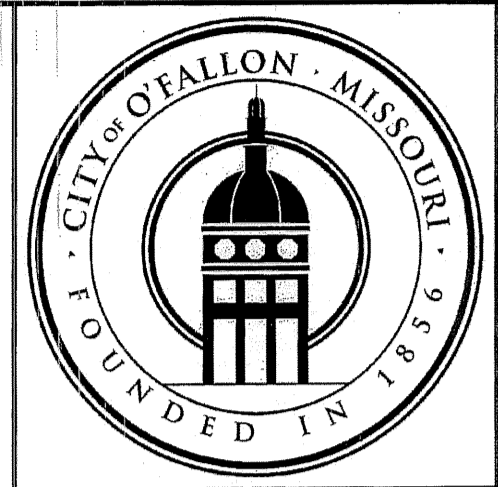
SEAL
 STATE OF MISSOURI
STEVEN J. SWANICK
 LICENSE NO. E-20890
 PROFESSIONAL ENGINEER

APR 12 2007

Designed CMJ/CMB
 Drawn EBS
 Checked SMS
 Date 4-12-07

EDM No. 03604

EDM EDM Incorporated
 220 Mansion House, 3rd Floor
 St. Louis, Missouri 63102
 (314) 231-5485 Fax: (314) 231-8167



DISCLAIMER OF RESPONSIBILITY
 I HEREBY SPECIFY THAT THE DOCUMENTS INTENDED TO BE AUTHENTICATED BY MY SEAL ARE LIMITED TO THIS SHEET, AND I HEREBY DISCLAIM ANY RESPONSIBILITY FOR ALL OTHER DRAWINGS, SPECIFICATIONS, ESTIMATES, REPORTS OR OTHER DOCUMENTS OR INSTRUMENTS RELATING TO OR INTENDED TO BE USED FOR ANY PART OR PARTS OF THE ARCHITECTURAL OR ENGINEERING PROJECT OR SURVEY.

SEAL

STEVEN M. CRASICK
 MISSOURI PROFESSIONAL ENGINEER
 No. 20389
 APR 12 2007

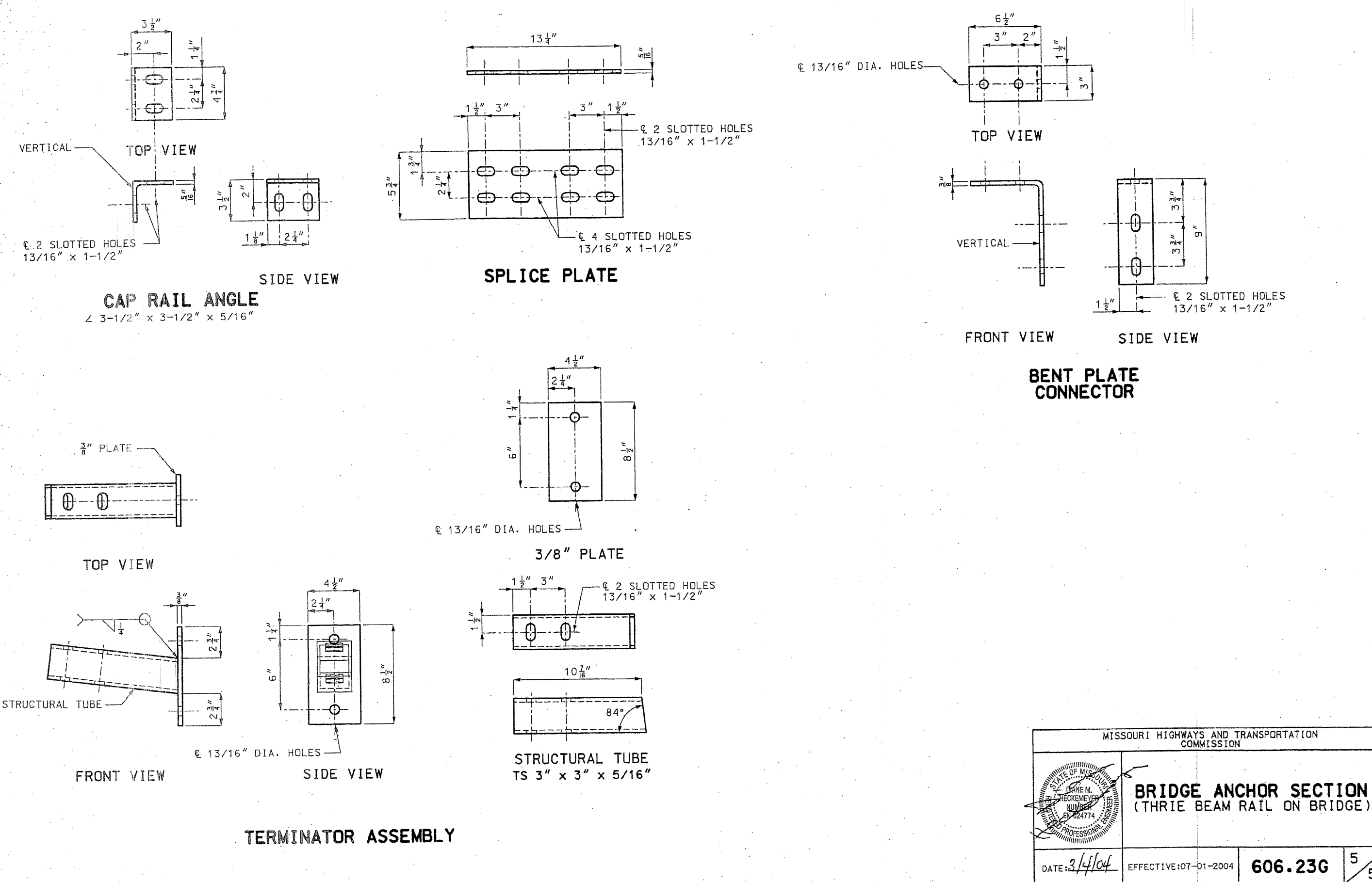
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

BRIDGE ANCHOR SECTION (THRIE BEAM RAIL ON BRIDGE)

DATE: 3/14/04 EFFECTIVE: 01-01-2004 606.23G 5/5

Designed	CMJ/CMB	EDM No.	03804
Drawn	EBS		
Checked	SMS		
Date	4-12-07		

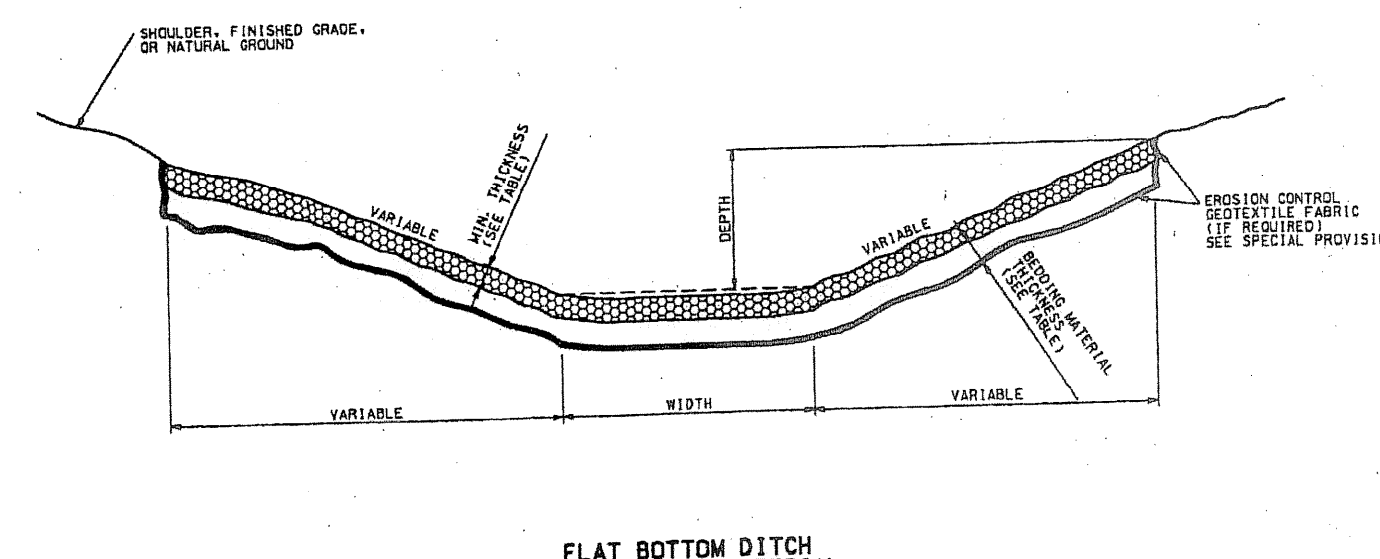
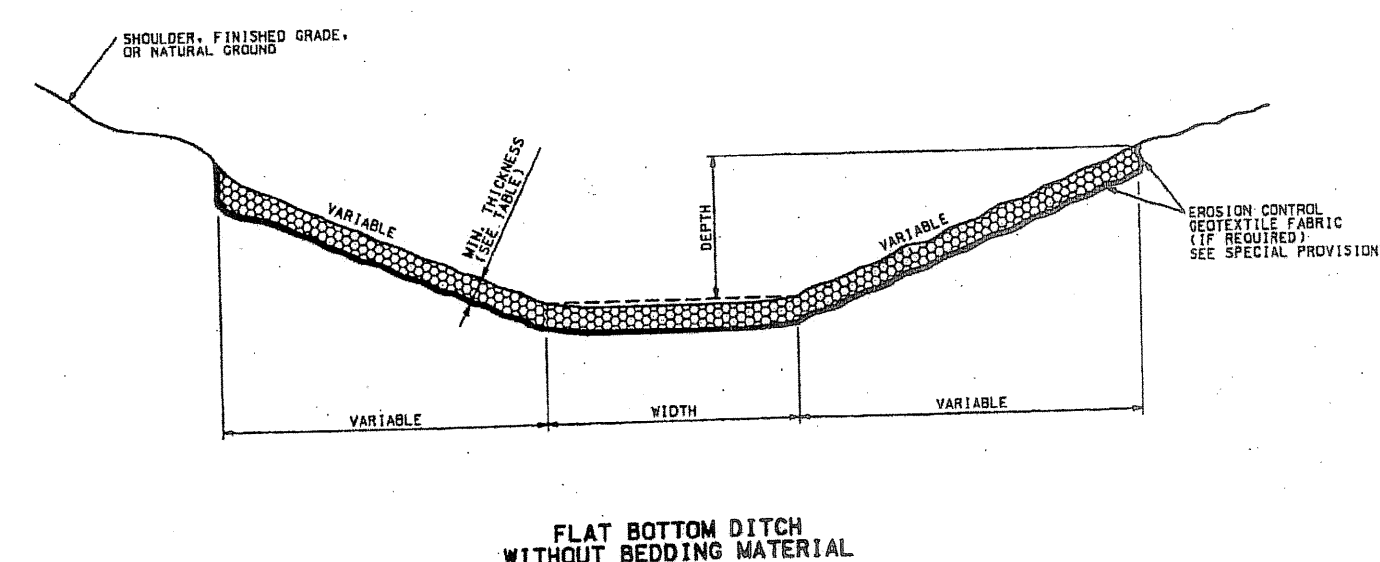
EDM Incorporated
 220 Mansion House, 3rd Floor
 St. Louis, Missouri 63102
 (314) 231-5485 Fax: (314) 231-8167



MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

BRIDGE ANCHOR SECTION (THREE BEAM RAIL ON BRIDGE)

DATE: 3/1/04 EFFECTIVE: 07-01-2004 **606.23G** 5/5

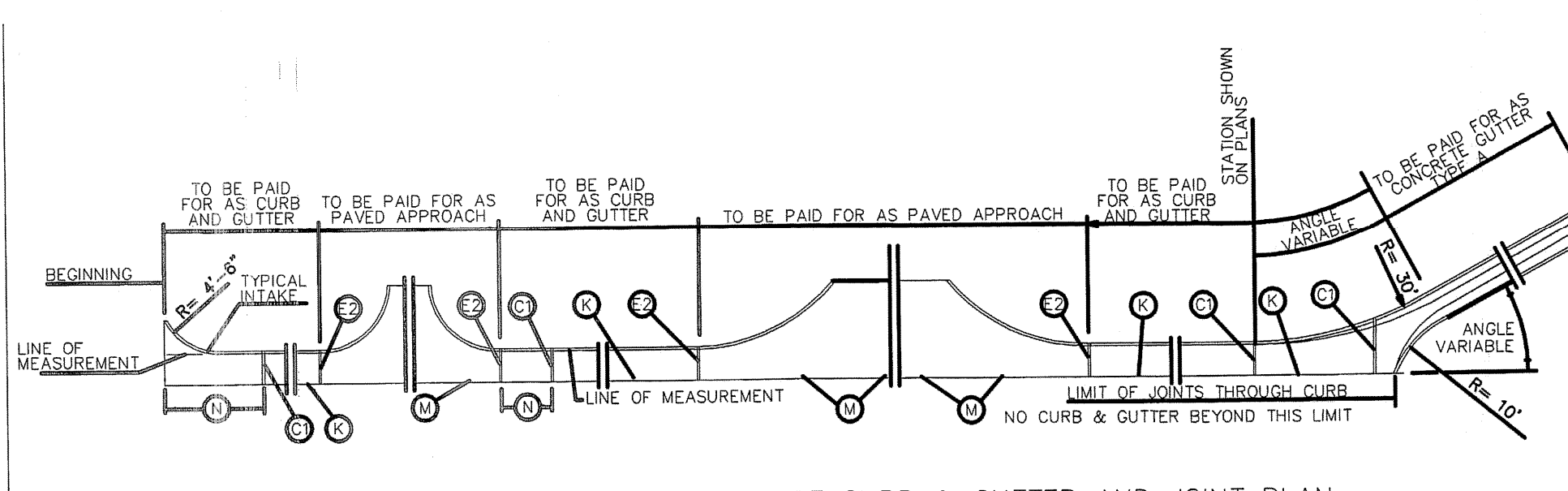


TYPE	ROCK DITCH MIN. THICKNESS	BEDDING MATERIAL MIN. THICKNESS
1	8"	---
2	12"	---
3	12"	8"
4	20"	12"

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

ROCK DITCH LINER

DATE: 8-11-20 EFFECTIVE: 09-01-1993 **609.60C** 1/1



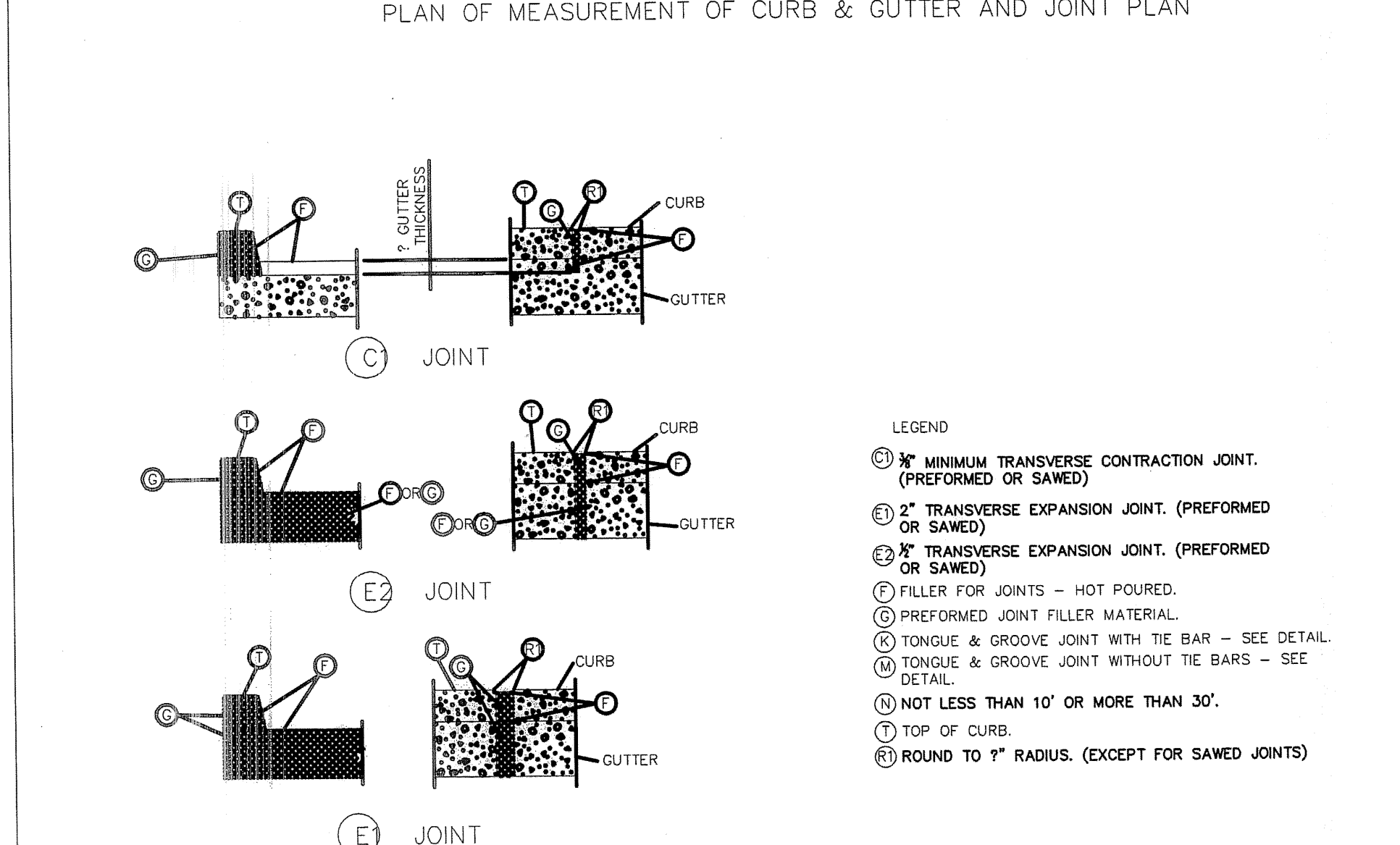
GENERAL NOTES:

A MINIMUM 4" TYPE 5 AGGREGATE BASE SHALL BE PLACED BENEATH ALL CURB AND GUTTER SECTIONS.

WHEN CURBS ARE CONSTRUCTED DIRECTLY BENEATH QUORAIL, CURB HEIGHT SHALL BE 4 INCH BARRIER CURB, AS SHOWN ON STANDARD PLAN 606.00.

CURB, GUTTER AND CURB AND GUTTER CONSTRUCTED ALONG AND ATTACHED TO CONCRETE PAVEMENT OR BASE SHALL HAVE:

- JOINT (C) THROUGH CURB AND ONE-QUARTER GUTTER THICKNESS AS A CONTINUATION OF EACH CONTRACTION JOINT IN THE BASE OR PAVEMENT.
- JOINT (E) AS CONTINUATION OF 2" EXPANSION JOINT (E) IN THE CONCRETE BASE OR PAVEMENT SHALL EXTEND AND CONTINUE THROUGH THE CURB, GUTTER AND CURB AND GUTTER.
- JOINT (E) THROUGH CURB AND CURB AND GUTTER AT THE BEGINNING AND END OF EACH PAVED APPROACH.



CURB, CURB AND GUTTER AND GUTTER CONSTRUCTED APART OR SEPARATED FROM CONCRETE BASE OR PAVEMENT OR AS A FORM FOR ASPHALTIC CONCRETE PAVEMENT SHALL HAVE A JOINT (E) ENTIRELY THROUGH THE CURB, CURB AND GUTTER AND GUTTER, AT THE BEGINNING AND END OF EACH "PAVED APPROACH" AND A JOINT (C) ENTIRELY THROUGH THE CURB AND TO A DEPTH OF 1/4 GUTTER THICKNESS AT INTERVALS OF 30 FEET BETWEEN APPROACHES.

JOINTS (E), (E) AND (E) THROUGH CURB SHALL BE FILLED WITH PREFORMED FILLER MATERIAL AND SEALED WITH HOT POURED FILLER FOR JOINTS.

JOINT (C) IN GUTTER SHALL BE FILLED AND SEALED WITH HOT POURED FILLER FOR JOINTS.

JOINT (E) IN GUTTER SHALL BE FILLED WITH PREFORMED FILLER AND SEALED WITH HOT FILLER MATERIAL.

JOINT (E) IN GUTTER SHALL BE FILLED WITH PREFORMED FILLER AND SEALED WITH FILLER OR FILLED WITH HOT POURED FILLER.

JOINT (E) IN GUTTER SHALL BE PLACED TO PROVIDE 1" HOT POURED FILLER FOR JOINTS.

THE BARRIER CLASS CURBS MAY BE CONSTRUCTED WITHOUT BATTER WHEN CONSTRUCTED ON A RADIUS OF 6 FEET OR LESS. THE R2 WILL BE REQUIRED.

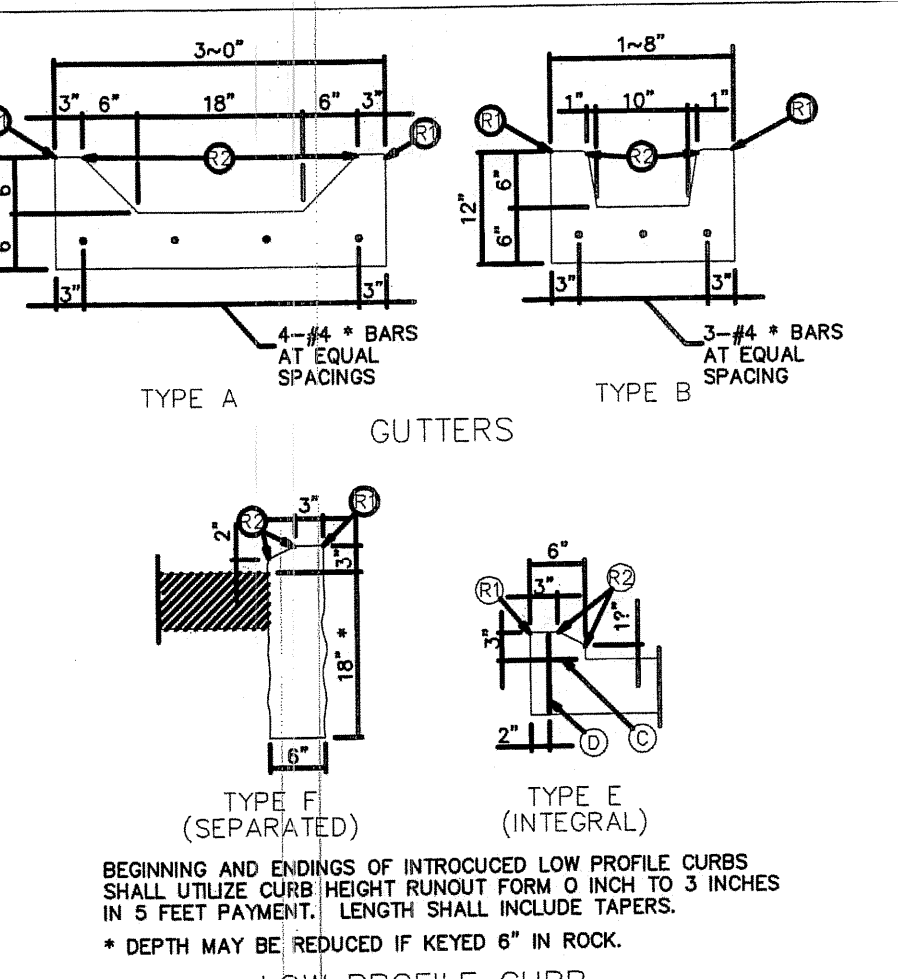
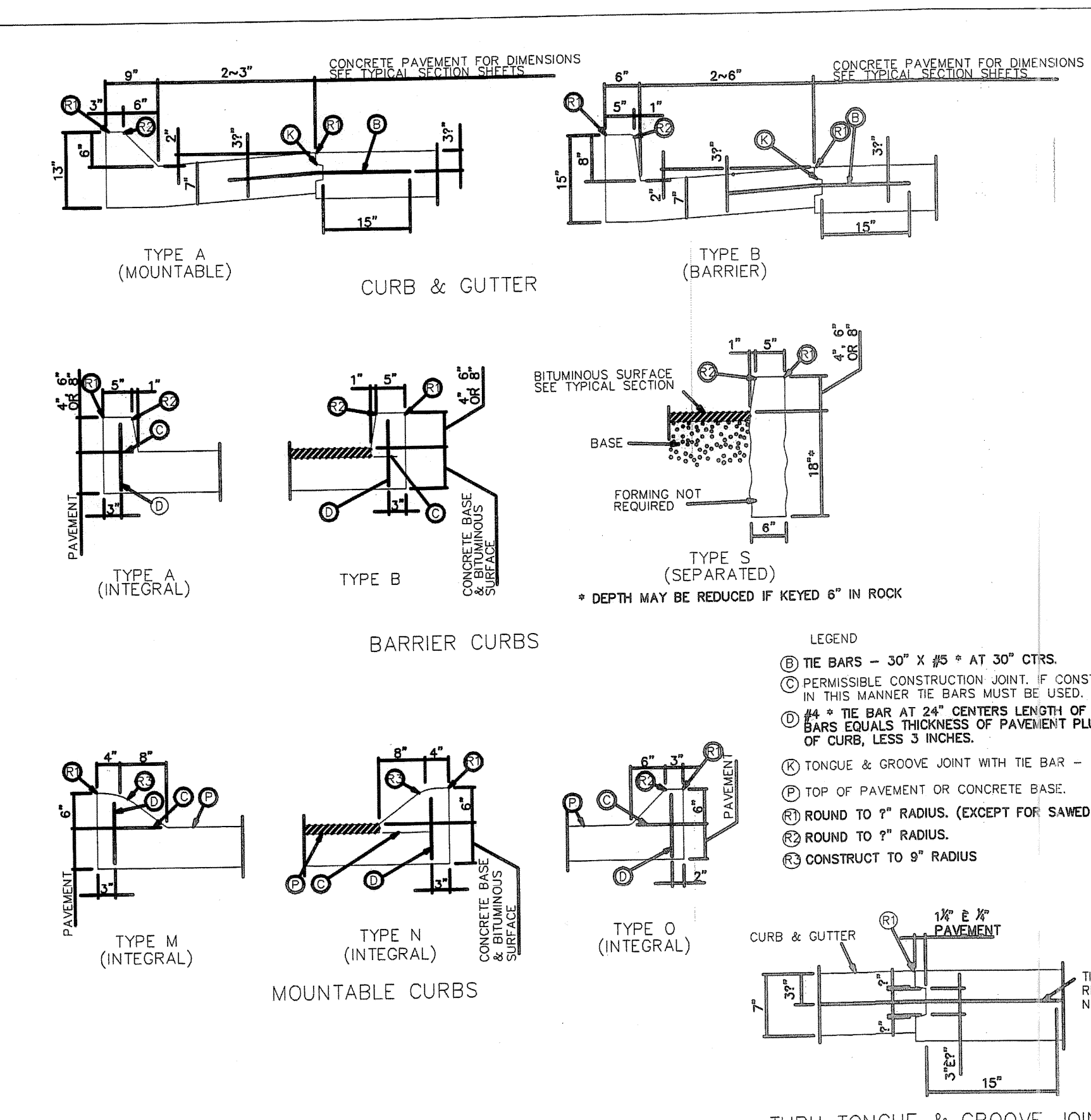
WHERE A SIDEWALK INTERSECTS A CURB, THE SIDEWALK SHALL BE RAMPED NO STEEPER THAN 12:1 SLOPE TO PROVIDE ACCESS FOR WHEELCHAIR ACROSS APPROACHES.

WHEN ALLOWED BY THE ENGINEER, TYPES A AND B GUTTER MAY BE PRECAST TO CONFORM TO THE DIMENSIONS SHOWN. THE PRECASTER SHALL SUBMIT SHOP DRAWINGS INDICATING THE SECTION LENGTH, SECTION CONNECTION, AND PROPOSED JOINT SEALING SYSTEM. WHEN PRECAST SECTIONS CANNOT CONFORM TO ANY VERTICAL OR HORIZONTAL CURVE DESIGNATED ON THE PLANS, THE GUTTER SHALL BE CAST-IN-PLACE. A COMBINATION OF CAST-IN-PLACE AND PRECAST GUTTER MAY BE PERMITTED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

CONCRETE CURB, CURB & GUTTER, GUTTER

DATE: _____ EFFECTIVE: 04-01-2005 **609.00N** 1/2



MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

CONCRETE CURB, CURB & GUTTER, GUTTER

DATE: _____ EFFECTIVE: 04-01-2005 **609.00N** 2/2

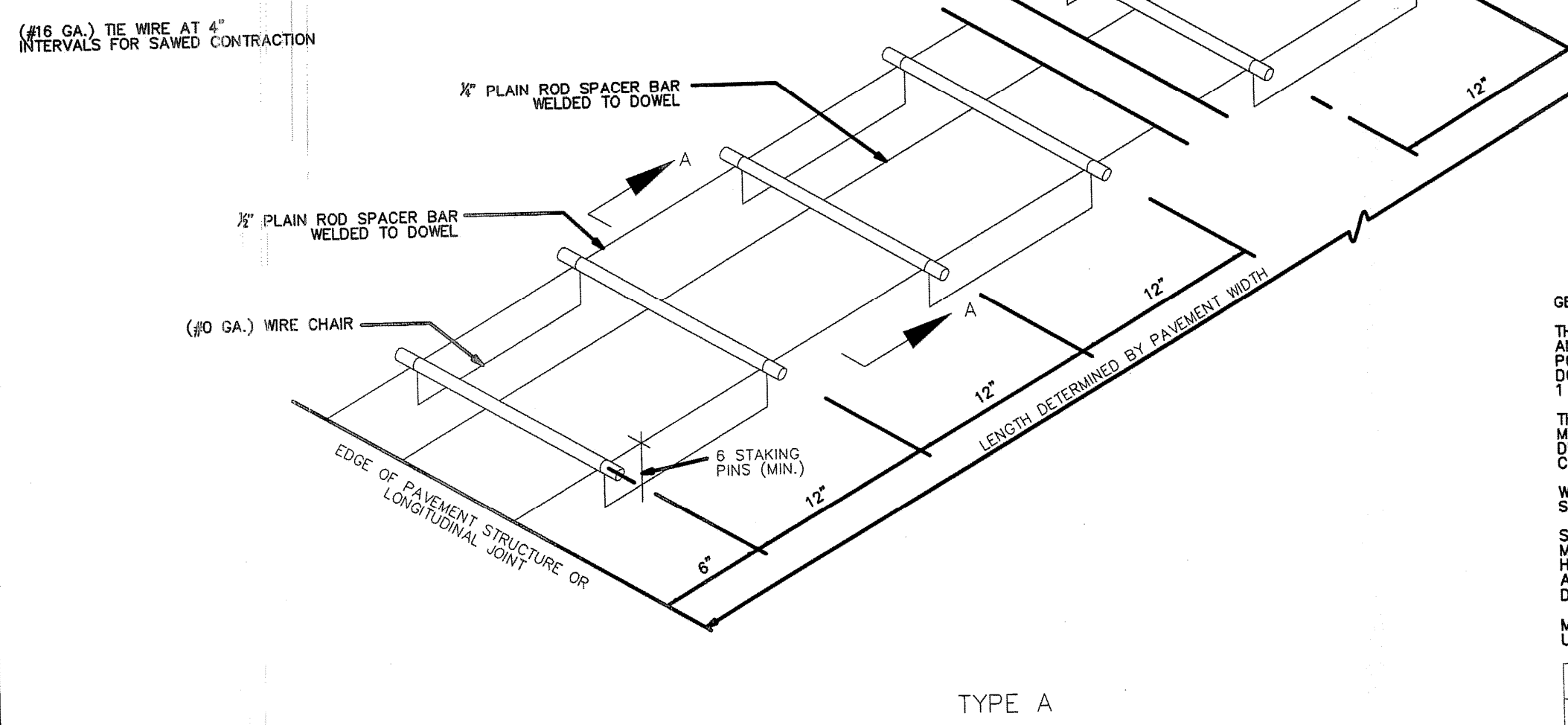
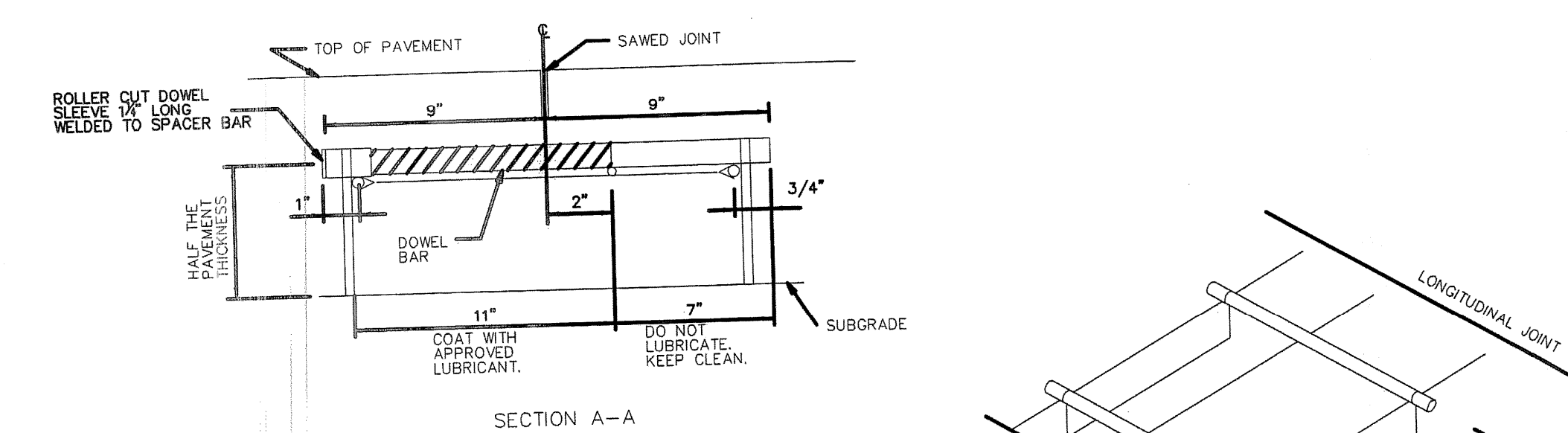
DISCLAIMER OF RESPONSIBILITY
 I HEREBY SPECIFY THAT THE DOCUMENTS INTENDED TO BE AUTHENTICATED BY MY SEAL ARE LIMITED TO THIS SHEET, AND I HEREBY DISCLAIM ANY RESPONSIBILITY FOR ALL OTHER DRAWINGS, SPECIFICATIONS, ESTIMATES, REPORTS OR OTHER DOCUMENTS OR INSTRUMENTS RELATING TO OR INTERFERED TO BE USED FOR ANY PART OR PARTS OF THE ARCHITECTURAL OR ENGINEERING PROJECT OR SURVEY.

SEAL
 STEVEN M. STASICK
 LICENSE NO. 20930
 PROFESSIONAL ENGINEER
 APR 12 2007

Designed CMJ/CMB
 Drawn EBS
 Checked SMS
 Date 4-12-07

EDM Incorporated
 220 Mansion House, 3rd Floor
 St. Louis, Missouri 63102
 (314) 231-5485 Fax: (314) 231-8167

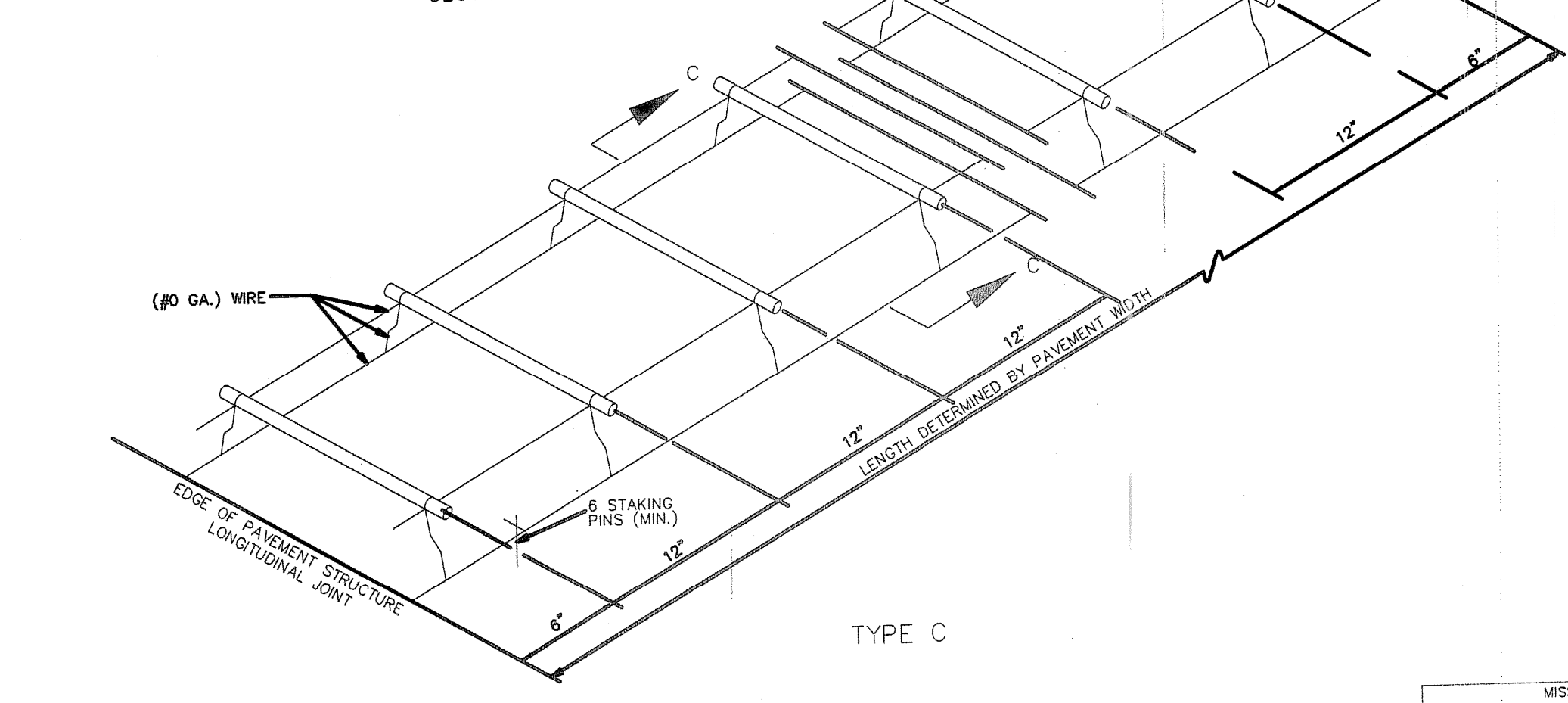
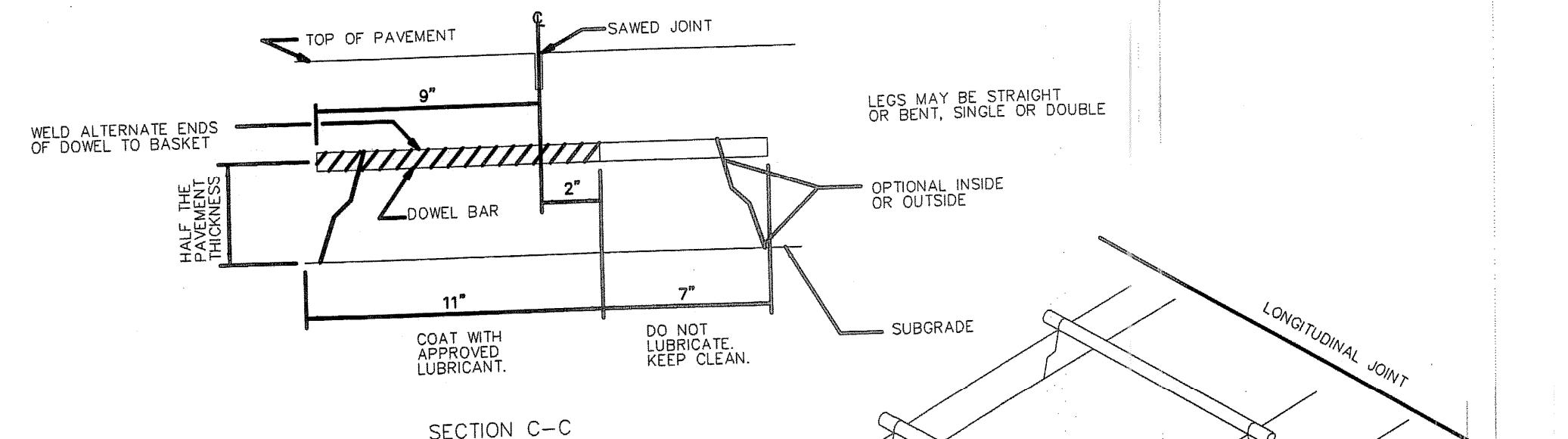
DETAIL SHEET



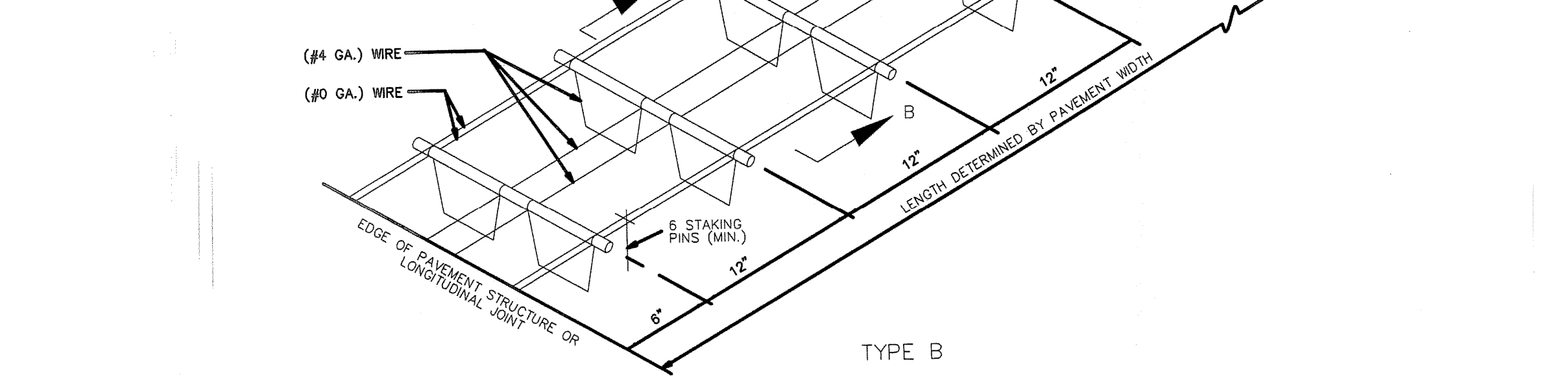
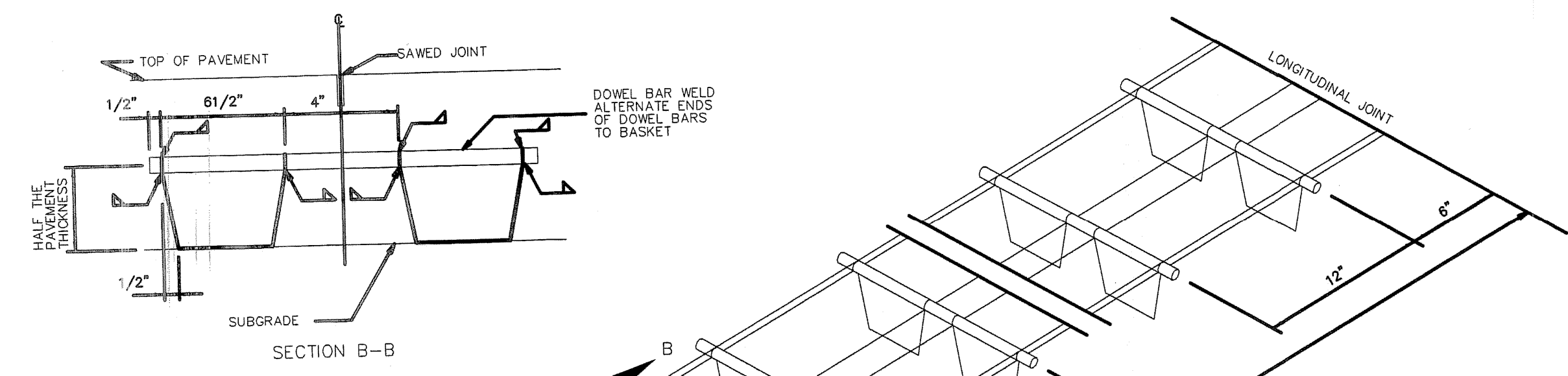
PAVEMENT THICKNESS	BAR SIZE	
	DIAMETER	LENGTH
10" AND LESS	1 1/4"	18"
GREATER THAN 10"	1 1/2"	18"

GENERAL NOTES:
 THE DOWEL SUPPORTING UNITS SHALL BE FACTORY ASSEMBLED AND CAPABLE OF HOLDING THE DOWELS IN THEIR REQUIRED POSITIONS. IN THE COMPLETED JOINT INSTALLATION, NO DOWEL SHALL VARY FROM ITS REQUIRED POSITION MORE THAN 1 IN. 36.
 THE FREE END OF EACH EPOXY COATED DOWEL SHALL BE MARKED WITH A SPOT OF PAINT AT LEAST ONE INCH IN DIAMETER AND CONTRASTING IN COLOR WITH THE EPOXY COATING.
 WIRES, BARS OR CLIPS SHALL BE USED AS NECESSARY TO STRENGTHEN THE ASSEMBLIES.
 STAKING PINS SHALL BE FABRICATED FROM 0 GA. WIRE MINIMUM WITH A SUITABLE HOOK. STAKING PINS SHALL HAVE A LENGTH OF 18" TYPE A AND TYPE B ASSEMBLIES AND 12" FOR TYPE C ASSEMBLIES UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
 MINOR VARIATIONS IN THE CONFIGURATION OF THE SUPPORT UNITS WILL BE ALLOWED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION			
DOWEL SUPPORTING UNITS APPROVED FOR USE WITH TRANSVERSE JOINTS			
DATE:	EFFECTIVE: 06-01-2006	502.10H	1/3

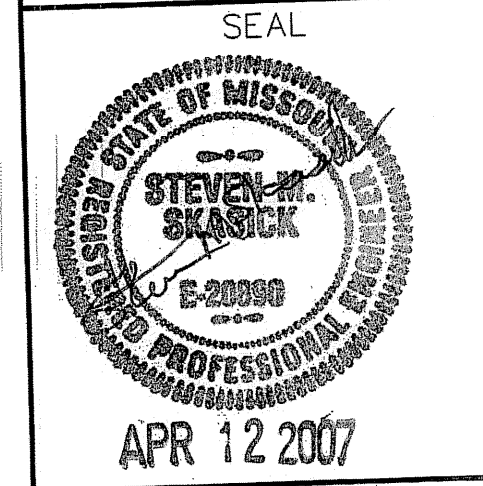


MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION			
DOWEL SUPPORTING UNITS APPROVED FOR USE WITH TRANSVERSE JOINTS			
DATE:	EFFECTIVE: 06-01-2006	502.10H	3/3

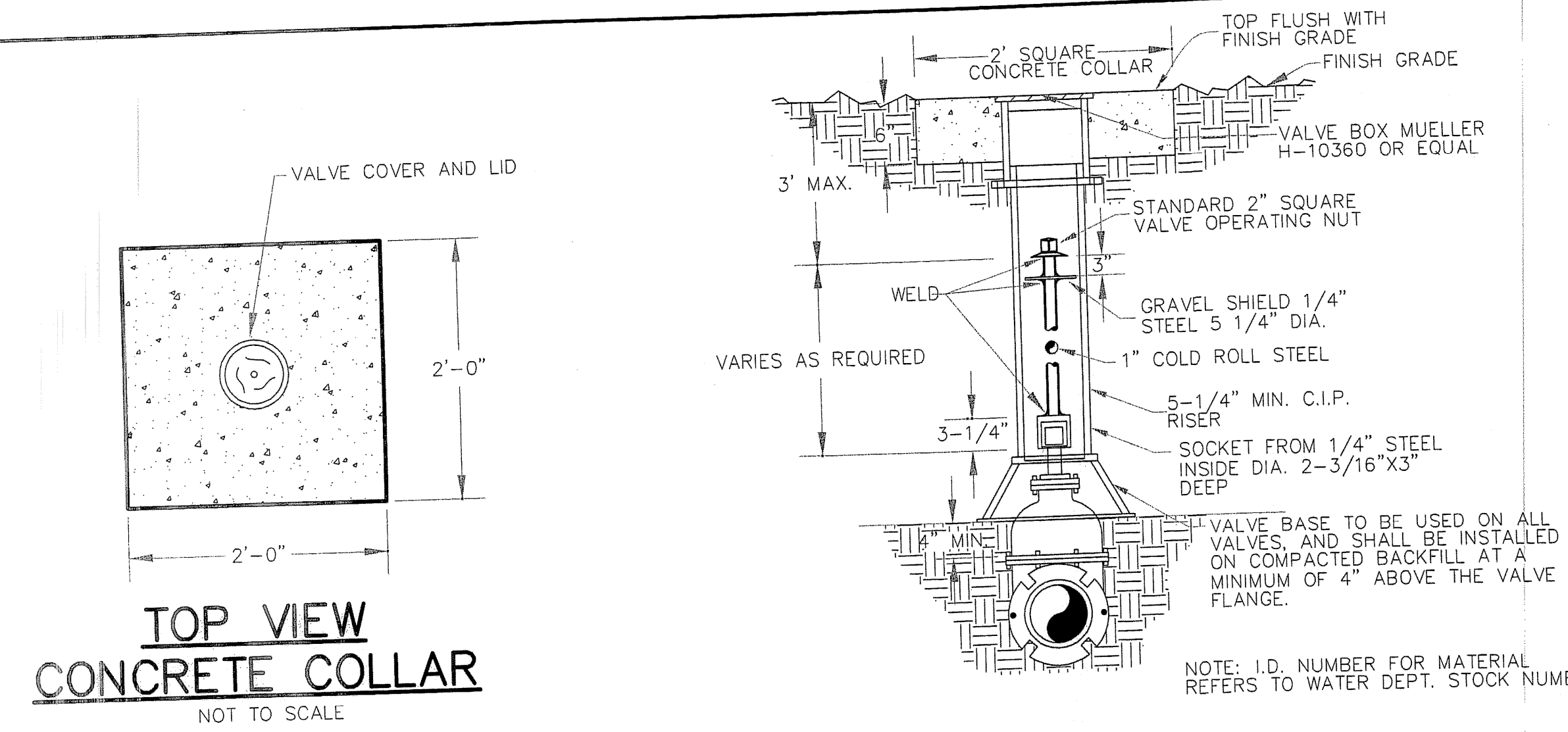


MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION			
DOWEL SUPPORTING UNITS APPROVED FOR USE WITH TRANSVERSE JOINTS			
DATE:	EFFECTIVE: 06-01-2006	502.10H	2/3

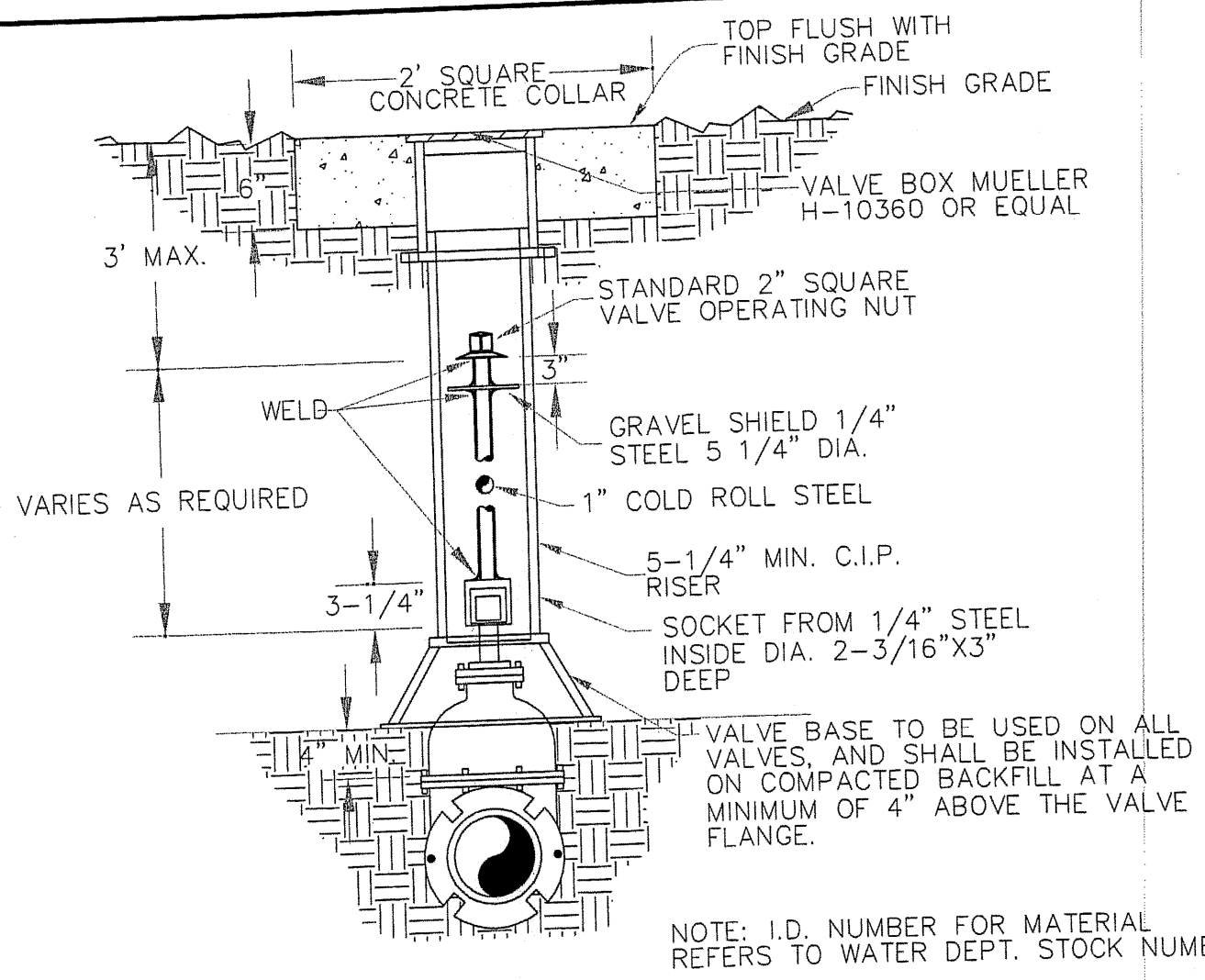
DISCLAIMER OF RESPONSIBILITY
 I HEREBY SPECIFY THAT THE DOCUMENTS INTENDED TO BE AUTHENTICATED BY MY SEAL ARE LIMITED TO THIS SHEET, AND I HEREBY DISCLAIM ANY RESPONSIBILITY FOR ALL OTHER DRAWINGS, SPECIFICATIONS, ESTIMATES, REPORTS OR OTHER DOCUMENTS OR INSTRUMENTS RELATING TO JOBS INTENDED TO BE USED FOR ANY PART OR PARTS OF THE ARCHITECTURAL OR ENGINEERING PROJECT OR SURVEY.



Designed	CMJ/CMB	EDM No. 03804
Drawn	EBS	
Checked	SMS	
Date	4-12-07	
EDM Incorporated 220 Mansion House, 3rd Floor St. Louis, Missouri 63102 (314) 231-5485 Fax: (314) 231-8167		

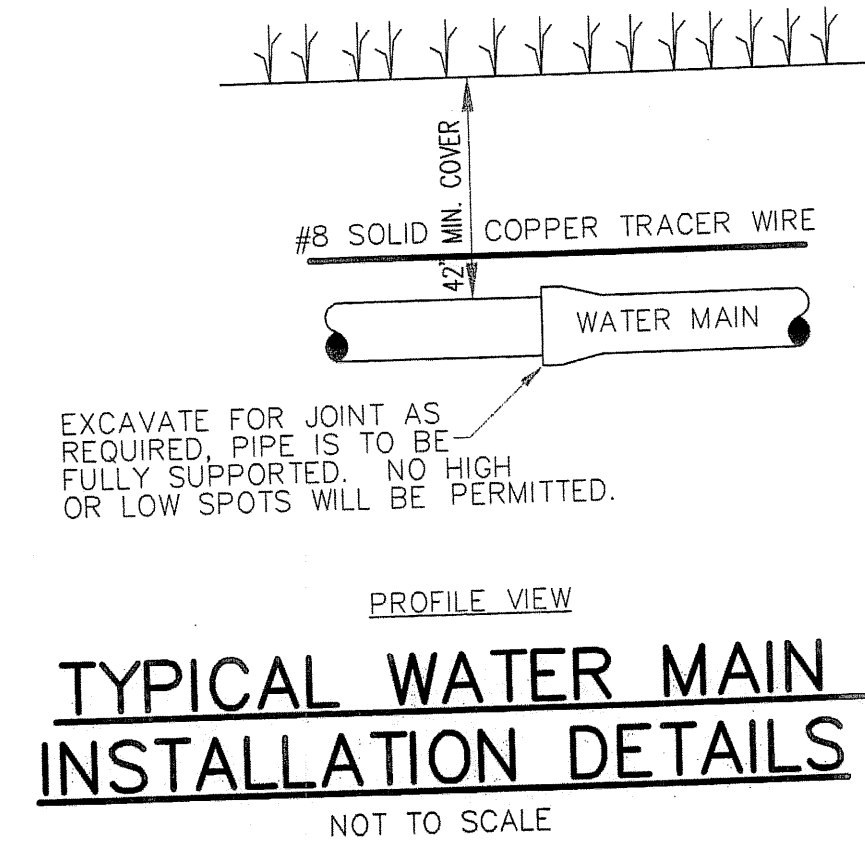


**TOP VIEW
 CONCRETE COLLAR**
 NOT TO SCALE

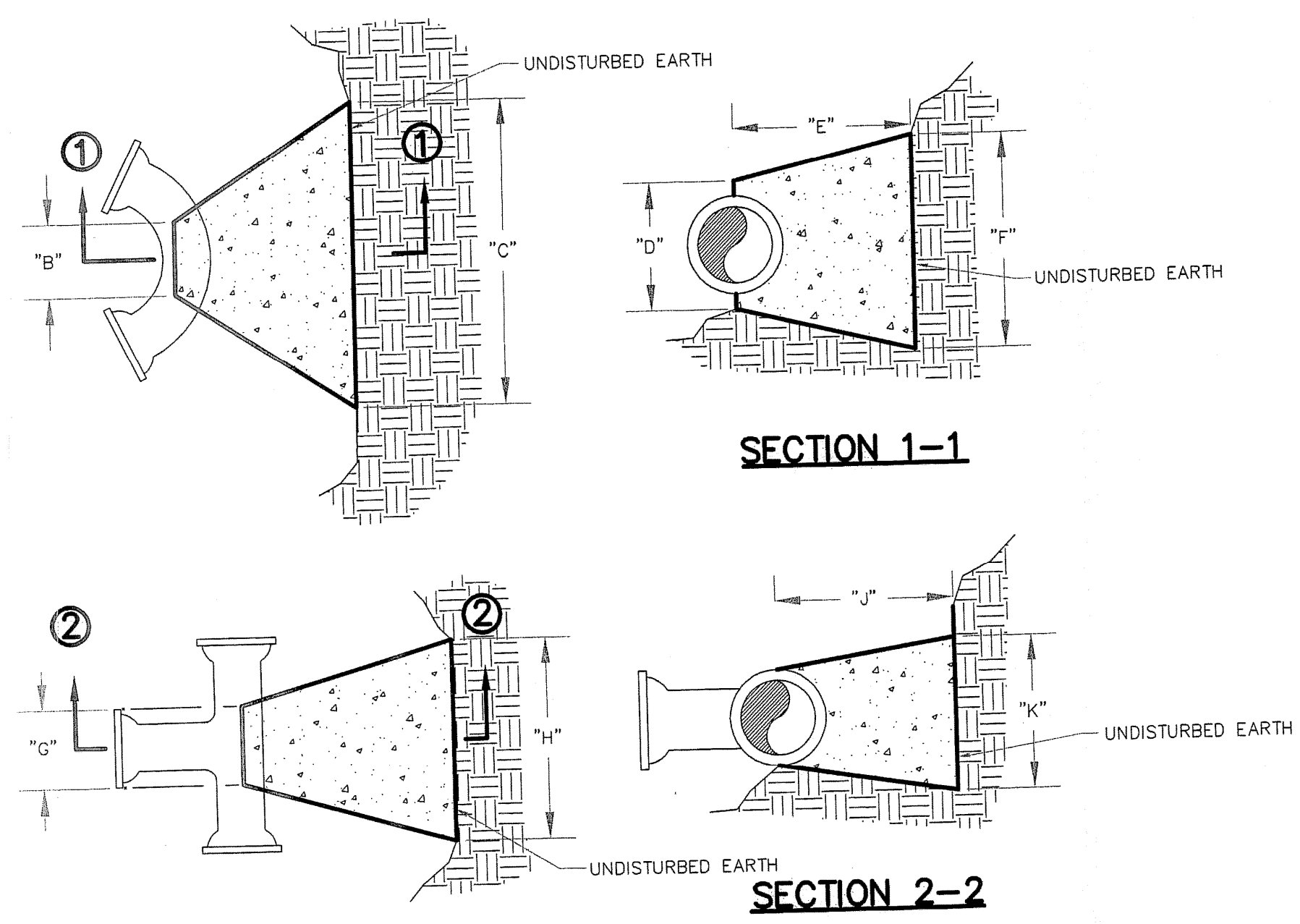


NOTE: EMBEDMENT NOT SHOWN. INSTALL PER GENERAL NOTES OR PLAN SHEETS.

WATER VALVE DETAIL
 (12" PIPE OR SMALLER)
 NOT TO SCALE

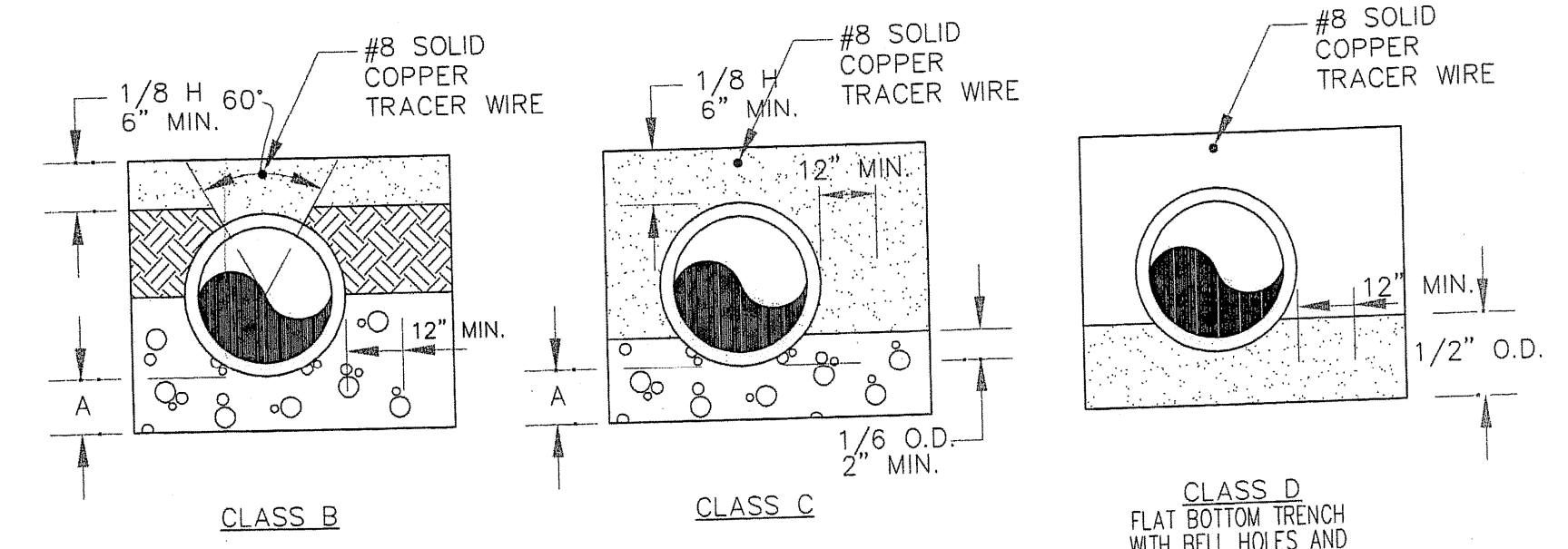


**TYPICAL WATER MAIN
 INSTALLATION DETAILS**
 NOT TO SCALE



SECTION 1-1

SECTION 2-2



CLASS B

CLASS C

CLASS D

- LEGEND**
- I.D. - NOMINAL PIPE SIZE
 - O.D. - OUTSIDE DIAMETER OF PIPE
 - H - COVER ABOVE TOP OF PIPE
 - A - EMBEDMENT BELOW PIPE (SEE TABLE)
- TAMPED BACKFILL
 - COMPACTED BACKFILL
 - GRANULAR BEDDING
 - FLOWABLE FILL

TABLE OF EMBEDMENT DEPTHS BELOW PIPE

I.D.	A MIN. SOIL	A MIN. ROCK
27" & SMALLER	3"	6"

GRANULAR BEDDING SHALL BE CRUSHED ROCK OR PEA GRAVEL WITH NOT LESS THAN 95% PASSING 1/2" (95% PASSING 3/4" FOR 30" AND LARGER PIPE) AND NOT LESS THAN 95% RETAINED ON A #4; TO BE PLACED IN NOT MORE THAN 8" LAYERS AND COMPACTED BY MECHANICAL VIBRATING.

COMPACTED BACKFILL JOB EXCAVATED MATERIAL SHALL BE FREE FROM DEBRIS, ORGANIC MATERIAL AND STONES, PLACED IN UNIFORM LAYERS NOT MORE THAN 8" THICK, COMPACTED TO 95% MAXIMUM DENSITY AS DETERMINED BY A.S.T. D698, OR GRADED AGGREGATE. GRANULAR BACKFILL MATERIAL MAY BE SUBSTITUTED FOR ALL OR PART OF COMPACTED BACKFILL, EXCEPT WHERE FLOWABLE FILL IS IDENTIFIED.

TAMPED BACKFILL JOB EXCAVATED MATERIAL SHALL BE FREE FROM DEBRIS, ORGANIC MATERIAL AND STONES, HAND PLACED IN UNIFORM LAYERS NOT MORE THAN 8" THICK AND TAMPED AROUND CONDUIT PIPE. GRANULAR BACKFILL MATERIAL MAY BE SUBSTITUTED FOR ALL OR PART OF TAMPED BACKFILL.

TRENCH BACKFILL SHALL BE AS REQUIRED IN THE "LAYING AND BACKFILL" SECTION OF THE DETAILED SPECIFICATIONS.

EMBEDMENT THE TYPE OF EMBEDMENT TO BE USED SHALL BE AS SPECIFIED IN THE PLANS AND SPECIFICATIONS.

FLOWABLE FILL THE TYPE OF FLOWABLE FILL TO BE USED SHALL BE AS SPECIFIED IN THE PLANS AND SPECIFICATIONS.

TRACER WIRE REQUIRED ON ALL WATER MAINS

WATER MAIN EMBEDMENT
 NOT TO SCALE

BACKING BLOCKS
 NOT TO SCALE

BENDS	"B"	"C"	"D"	"E"	"F"
6"-11 1/4"	8"	15"	12"	24"	10"
6"-22 1/2"	8"	19"	12"	24"	13"
6"-45"	8"	30"	12"	24"	15"
6"-90"	8"	30"	12"	24"	28"
8"-11 1/4"	8"	20"	12"	24"	10"
8"-22 1/2"	8"	22"	12"	24"	18"
8"-45"	8"	31"	12"	24"	24"
8"-90"	8"	38"	12"	24"	36"
12"-11 1/4"	8"	30"	12"	24"	15"
12"-22 1/2"	8"	35"	12"	24"	25"
12"-45"	8"	40"	12"	24"	40"
12"-90"	8"	60"	12"	24"	52"
16"-11 1/4"	TL	28"	20"	24"	28"
16"-22 1/2"	TL	39"	20"	24"	39"
16"-45"	TL	55"	20"	24"	55"
16"-90"	TL	91"	20"	24"	60"
20"-11 1/4"	TL	34"	24"	26"	34"
20"-22 1/2"	TL	48"	24"	26"	48"
20"-45"	TL	74"	24"	26"	60"
20"-90"	TL	136"	24"	26"	60"
24"-11 1/4"	TL	40"	28"	28"	40"
24"-22 1/2"	TL	56"	28"	28"	56"
24"-45"	TL	101"	28"	28"	60"
24"-90"	TL	186"	28"	28"	60"
30"-11 1/4"	TL	49"	34"	30"	49"
30"-22 1/2"	TL	79"	34"	30"	60"
30"-45"	TL	154"	34"	30"	60"
30"-90"	TL	285"	34"	30"	60"

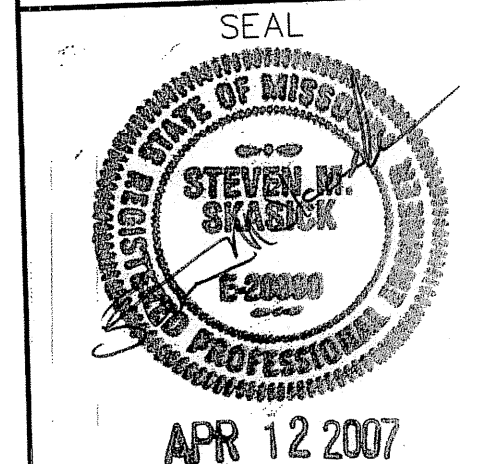
BACKING BLOCKS
 NOT TO SCALE

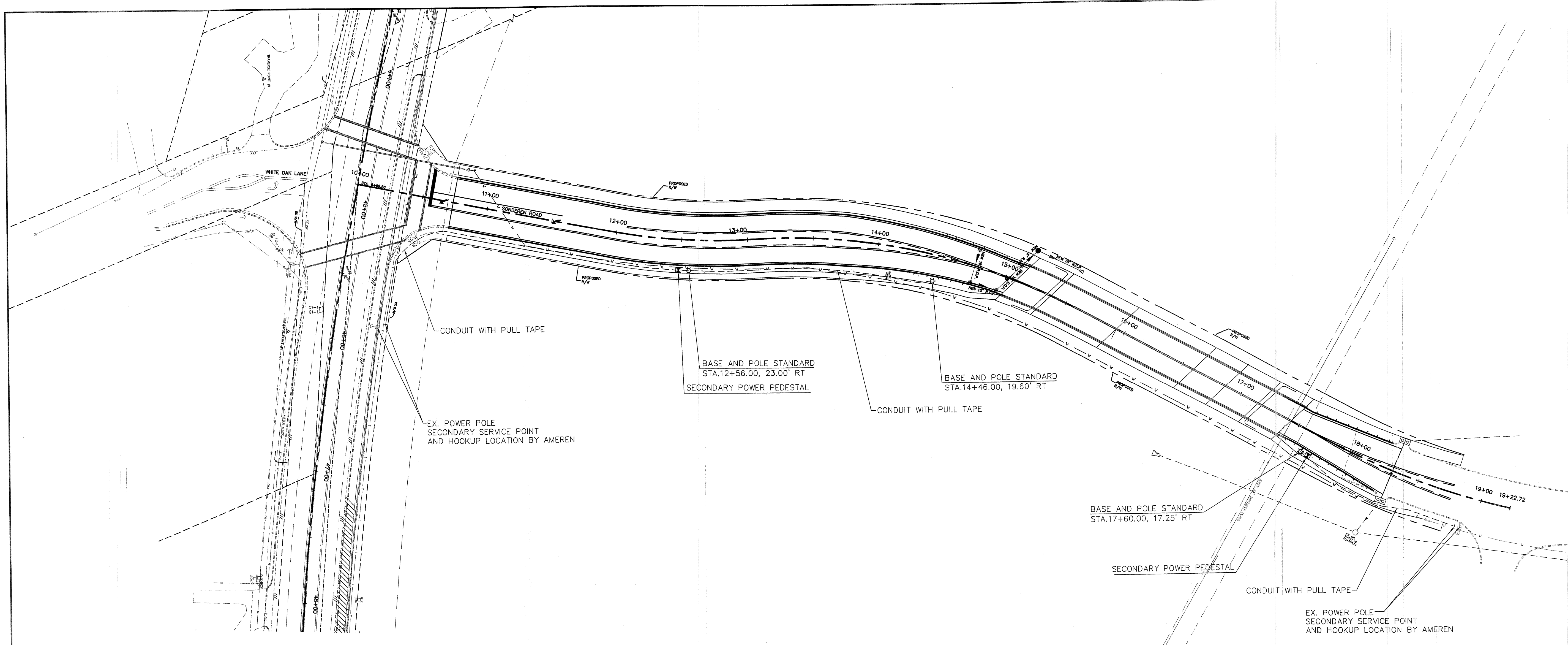
INTERNAL WATER PRESSURE 6" THRU 12"=200 psi
 INTERNAL WATER PRESSURE 16" THRU 30"=210 psi
 BEARING PRESSURE OF SOIL=2000 psi

Designed	CMJ/CMB	EDM No. 03804
Drawn	EBS	
Checked	SMS	
Date	4-12-07	

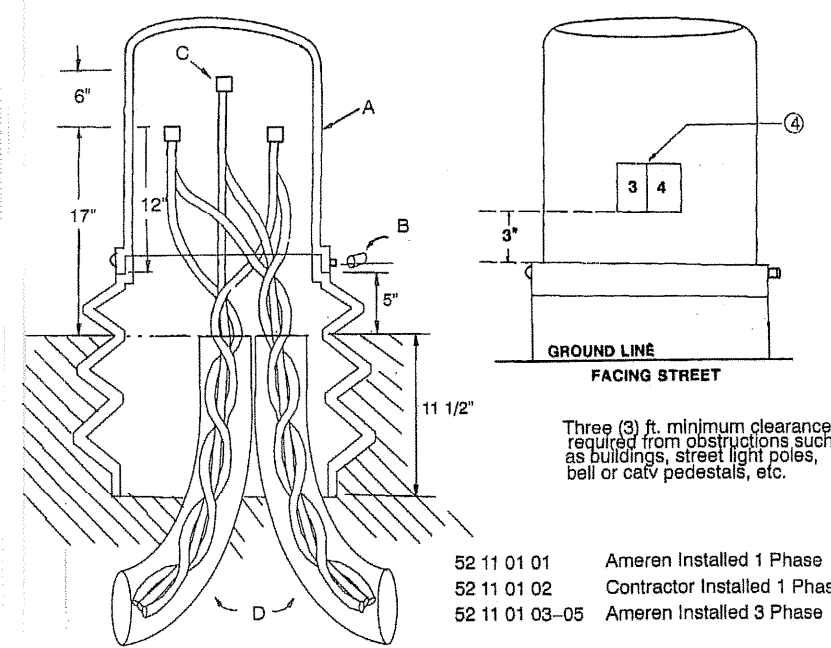
EDM Incorporated
 220 Mansion House, 3rd Floor
 St. Louis, Missouri 63102
 (314) 231-5485 Fax: (314) 231-8167

DISCLAIMER OF RESPONSIBILITY
 I HEREBY SPECIFY THAT THE DOCUMENTS INTENDED TO BE AUTHENTICATED BY MY SEAL ARE LIMITED TO THIS SHEET, AND I HEREBY DISCLAIM ANY RESPONSIBILITY FOR ALL OTHER DRAWINGS, SPECIFICATIONS, ESTIMATES, REPORTS OR OTHER DOCUMENTS OR INSTRUMENTS RELATING TO OR INTENDED TO BE USED FOR ANY PART OR PARTS OF THE ARCHITECTURAL OR ENGINEERING PROJECT OR SURVEY.





EQUIPMENT - CONNECTIONS
 Secondary Power Pedestal
 Above Grade - Polyethylene
 52 11 01 **
 Sheet 1 of 1



52 11 01 01 Ameren Installed 1 Phase
 52 11 01 02 Contractor Installed 1 Phase
 52 11 01 03-05 Ameren Installed 3 Phase

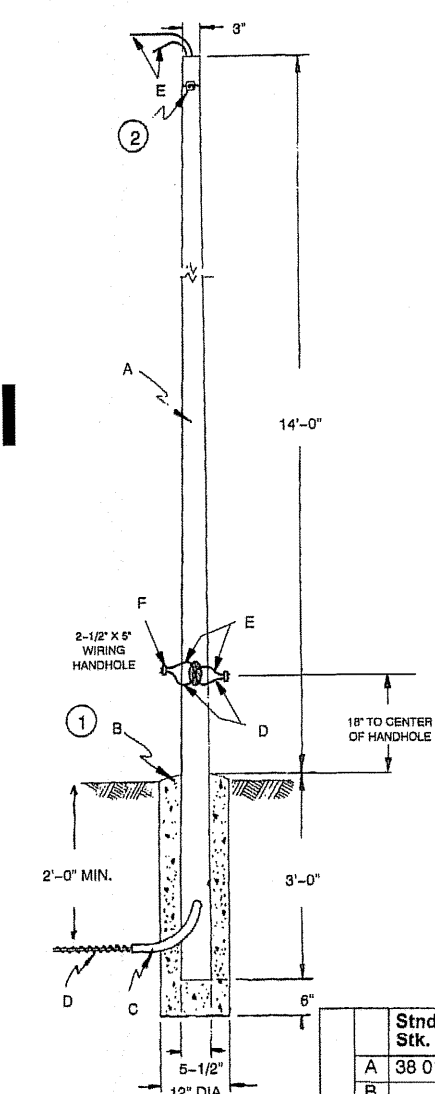
Notes:

- For Missouri residential developments the contractor will install the pedestal, pedestal caps, and bends. See Std. 52 11 01 02.
- When used for 3 phase applications, the dome should be marked "3 PH" using reflective numbers and letters.
- See Dist. Std. 59 81 49 41 for installations requiring service conduit.
- Use reflective numbers (Stock Numbers 16 04 108 thru 16 04 116) to show the LAST 2 DIGITS of the source pad transformer.
- See Dist. Std. 59 40 00 10 for conduit/cable burial depths.

Std. No.	Description	01	02	03	04	05
A 12 05 049	Pedestal - Above Ground, Polyethylene	1	1	1	1	1
B 12 05 004	Cap, Pedestal Latch, 1.5" Dark Green	2	2	2	2	2
C 17 64 218	Connector - Ped, 6 Pos., 6-500 kcmil, Insulated	3	3	4	4	
D 17 64 219	Connector - 4 Pos., 1/0-750 kcmil, w/cover					4
E 17 64 220	Connector - 6 Pos., 1/0-750 kcmil, w/cover					4
F 12 51 252	Bend-Plastic, 2" 24" Rad. (Streetlight)	As Req'd				
G 12 51 173	Bend-Plastic, 3" 36" Rad. (Secondary & 400 A Service)	As Req'd				
H 12 51 284	Bend-Plastic, 2 1/2" 24" Rad. (200 A Service)	As Req'd				

OUTDOOR LIGHTING
 Post Top Installation Fiberglass Pole
 14 Foot Mounting Height
 15 75 05 **
 Sheet 1 of 1

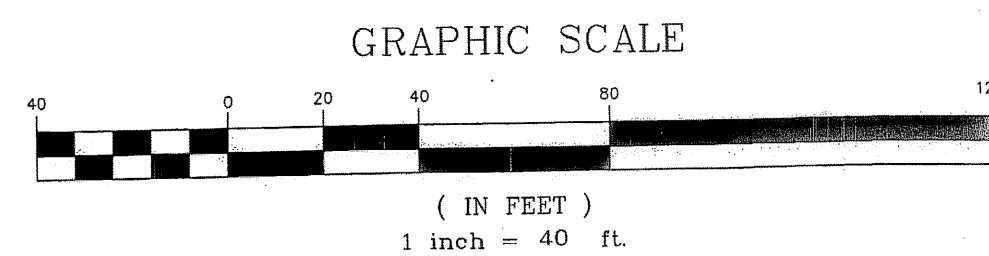
FOR 100W 9500L HPS LUMINAIRE



NOTES:

- Limestone screenings to be wetted and thoroughly tamped to provide solid compaction around the pole.
- Streetlight tag to be installed on street side of pole and one foot from bottom of luminaire as possible. Tag to be installed with nylon tie wire (40-59-197).
- In Missouri residential developments, the contractor will install 2 inch conduit to the pole site. Ameren will install the pole and the cable.
- For fuse underground streetlight cable at pad mount transformer or pedestal. See Dist. Std. 52 00 01 **.

Std. / S/N No.	Description	15 75 05** 01
A 38 01 528	Pole - FG, Black, w/hand hole	1
B	Rock, Crushed Limestone Screening	200
C 12 51 148	Conduit Poly 1"	2
D 18 07 252	Cable - Duplex #6 AL	
E 18 57 104	Cable, St. L., #10-2 conductor-Fl.	17
F 17 01 116	Connector, Bolt/Set Screw, #4-20, 3Pos.	2



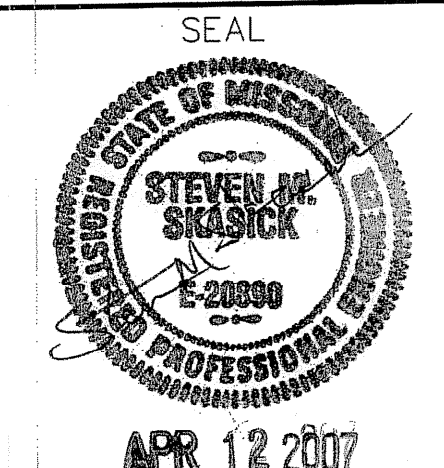
GENERAL NOTES

- EXISTING UNDERGROUND, OVERHEAD UTILITIES, AND DRAINAGE STRUCTURES HAVE BEEN PLOTTED FROM AVAILABLE INFORMATION AND THEREFORE, THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. IT IS THE RESPONSIBILITY OF THE INDIVIDUAL CONTRACTOR(S) TO EXACTLY LOCATE EACH UTILITY, PUBLIC AND/OR PRIVATE BEFORE ACTUAL CONSTRUCTION.
- MINOR ADJUSTMENTS TO PROPOSED STREET LIGHT EQUIPMENT MAY BE MADE TO AVOID POSSIBLE CONFLICTS WITH UTILITIES WITH APPROVAL OF ENGINEER.
- CONTRACTOR SHALL SEED ALL PROJECT AREAS DISTURBED BY EXCAVATION, GRADING, AND OTHER CONSTRUCTION PROCEDURES REQUIRED FOR THIS CONTRACT. THIS WORK SHALL BE CONSIDERED SUBSIDIARY TO OTHER BID ITEMS.

LEGEND

- ☉ POLE AND BASE
- ⊗ SECONDARY POWER PEDESTAL
- ⊙ SECONDARY SERVICE POINT
- CONDUIT WITH PULL TAPE

DISCLAIMER OF RESPONSIBILITY
 I HEREBY CERTIFY THAT THE DOCUMENTS INTENDED TO BE AUTHENTICATED BY MY SEAL ARE LIMITED TO THIS SHEET, AND I HEREBY DISCLAIM ANY RESPONSIBILITY FOR ALL OTHER DRAWINGS, SPECIFICATIONS, ESTIMATES, REPORTS OR OTHER DOCUMENTS OR INSTRUMENTS RELATING TO OR INTENDED TO BE USED FOR ANY PART OR PARTS OF THE ARCHITECTURAL OR ENGINEERING PROJECT OR SURVEY.



APR 12 2007

Designed CMJ/CMB
 Drawn EBS
 Checked SMS
 Date 4-12-07

EDM Incorporated
 220 Mansion House, 3rd Floor
 St. Louis, Missouri 63102
 (314) 231-5485 Fax: (314) 231-8167

GENERAL NOTES:

- DESIGN SPECIFICATIONS: A.A.S.H.T.O. - 1996 AND INTERIMS THROUGH 2002 LOAD FACTOR DESIGN SEISMIC DESIGN ACCORDING TO A.A.S.H.T.O. - 1996 AND INTERIMS THROUGH 1999 LOAD FACTOR DESIGN SEISMIC PERFORMANCE CATEGORY - "A". A = 0.1
- DESIGN LOADING: HS20-MODIFIED - TOTAL LOAD = 90,000 LBS. 35 LBS./SQ. FT. FUTURE WEARING SURFACE EARTH _____ 120 LBS./CU. FT. EQUIVALENT FLUID PRESSURE _____ 45 LBS./CU. FT. SUPERSTRUCTURE: SIMPLY SUPPORTED, NON-COMPOSITE FOR DEAD LOAD, CONTINUOUS COMPOSITE FOR LIVE LOAD.
- DESIGN UNIT STRESSES: CLASS B CONCRETE (SUBSTRUCTURE) _____ F_c = 3000 P.S.I. CLASS B1 CONCRETE (SAFETY BARRIER) _____ F_c = 4000 P.S.I. CLASS B2 CONCRETE (SUPERSTRUCTURE EXCEPT PRESTRESSED GIRDERS, AND SAFETY BARRIER) _____ F_c = 4000 P.S.I. REINFORCING STEEL _____ (GRADE 60) F_y = 60,000 P.S.I. DRILLED PIER _____ F_c = 3000 P.S.I. FOR PRESTRESSED GIRDER STRESSES SEE SHEETS B12 & B13 FOR PRECAST PRESTRESSED PANEL STRESSES SEE SHEET B16
- NEOPRENE PADS: BEARINGS SHALL BE 60 DUROMETER NEOPRENE PADS. THE NEOPRENE PAD SHALL BE BONDED TO THE BEARING SEAT WITH AN EPOXY ADHESIVE AS APPROVED BY THE BEARING MANUFACTURER FOR BONDING NEOPRENE TO CONCRETE.
- JOINT FILLER: ALL JOINT FILLER SHALL MEET THE REQUIREMENTS OF SECTION 1057.2.4, OF MISSOURI STANDARD SPECIFICATION, EXCEPT AS NOTED.
- REINFORCING STEEL: MINIMUM CLEARANCE TO REINFORCING STEEL SHALL BE 2" UNLESS NOTED OTHERWISE.
- EPOXY COATED REINFORCING: USE EPOXY COATED STEEL FOR ALL REINFORCING IN THE ENTIRE CONCRETE DECK AND BARRIER UNITS. ALL BAR SUPPORTS MUST BE EPOXY COATED.
- CONSTRUCTION AND MATERIALS SPECIFICATIONS: THE LATEST EDITION OF THE MISSOURI HIGHWAY AND TRANSPORTATION COMMISSIONS "MISSOURI STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION 1999 AND SUPPLEMENTAL SPECIFICATION REVISIONS" AND THE JOB SPECIFICATION SHALL GOVERN.

PROPOSED STRUCTURE:

BEGINNING @ STATION 15+33.84, ELEVATION 508.25', 3 CONTINUOUS SPANS (59'-0", 66'-0", 59'-0") x 41'-8" WIDE, PRESTRESSED CONCRETE I-GIRDER BRIDGE, 20' SKEW RIGHT AHEAD.

BENT NO.	1	2	3	4
BEARING MATERIAL	LIMESTONE	LIMESTONE	LIMESTONE	LIMESTONE
APPROXIMATE LENGTH *	FT. 95	40	25	50
DESIGN BEARING	TONS/SQ. FT. 40	40	40	40
LENGTH OF SOIL DRILLING	FT. 87	28	18	44
LENGTH OF ROCK DRILLING	FT. 8	12	7	6

* IN NO CASE SHALL THE BOTTOM OF THE DRILLED PIERS BE PLACED HIGHER THAN ELEVATIONS SHOWN.

DRAINAGE AREA	3.36 SQUARE MILES
DESIGN FREQUENCY	100 YEAR
DESIGN DISCHARGE	5850 CFS
MAXIMUM BACKWATER FOR DESIGN FREQUENCY	0 FEET
DESIGN HIGH WATER ELEVATION AT THE STRUCTURE	492.52 FEET
LOW ELEVATION OF SUPERSTRUCTURE	498.58 FEET
100-YEAR DISCHARGE	5850 CFS
100-YEAR HIGH WATER ELEVATION AT THE STRUCTURE	492.52 FEET
APPROACH ROADWAY OVERTOPPING FREQUENCY	ABOVE 100 YEAR EVENT

ITEM NUMBER	ITEM DESCRIPTION	UNITS	QUANTITY
206-10.00	CLASS 1 EXCAVATION	CU. YD.	77
503-10.10	BRIDGE APPROACH SLAB	SQ. YD.	228
607-10.66	PEDESTRIAN FENCE (54 IN.)	LIN. FT.	468
701-11.03	30 IN. DRILLED PIERS IN SOIL	LIN. FT.	529
701-11.03	30 IN. DRILLED PIERS IN ROCK	LIN. FT.	56
701-11.04	36 IN. DRILLED PIERS SOIL	LIN. FT.	138
701-11.04	36 IN. DRILLED PIERS ROCK	LIN. FT.	57
703-20.03	CLASS B CONCRETE (SUBSTRUCTURE)	CU. YD.	162
703-42.13	SLAB ON CONCRETE I-GIRDER WITH PRECAST PANEL FORMS	SQ. YD.	853
703-42.15	SAFETY BARRIER CURB *	LIN. FT.	468
703-71.50	LAMINATED NEOPRENE BEARING PADS (TAPERED)	EACH	30
705-11.58	PRESTRESSED CONCRETE I-GIRDER (58 FT. SPAN)	EACH	10
705-11.65	PRESTRESSED CONCRETE I-GIRDER (65 FT. SPAN)	EACH	5
706-10.60	REINFORCING STEEL (BRIDGES)	LBS.	18684
712-23.00	BRIDGE BARRIER CURB RAIL (22 IN.)	LIN. FT.	466
712-36.10	SLAB DRAINS	EACH	8
715-10.01	VERTICAL DRAIN AT END BENTS	EACH	2

NOTES FOR ESTIMATED QUANTITIES:

- ALL CONCRETE ABOVE THE CONSTRUCTION JOINT IN END BENTS IS INCLUDED IN THE ESTIMATED QUANTITIES FOR SLAB ON CONCRETE I-GIRDER.
- ALL REINFORCEMENT IN THE END BENTS IS INCLUDED WITH THE ESTIMATED QUANTITIES FOR SLAB ON CONCRETE I-GIRDER.
- THE COST OF FURNISHING, FABRICATING, AND INSTALLING NEOPRENE BEARING PADS, COMPLETE-IN-PLACE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR LAMINATED NEOPRENE BEARING PADS (TAPERED), PER EACH.
- * SAFETY BARRIER CURB SHALL BE CAST-IN-PLACE OPTION OR SLIP-FORM OPTION.
- ALL REINFORCEMENT IN THE INTERMEDIATE BENT CONCRETE DIAPHRAGMS EXCEPT REINFORCEMENT EMBEDDED IN THE BEAM CAP IS INCLUDED IN THE ESTIMATED QUANTITIES FOR SLAB ON CONCRETE I-GIRDER.
- ALL CONCRETE ABOVE THE INTERMEDIATE BENT CAP IS INCLUDED IN THE ESTIMATED QUANTITIES FOR SLAB ON CONCRETE I-GIRDER.
- SEE "JOB SPECIAL PROVISIONS" FOR METHOD OF FORMING SLAB.
- COST OF EXCAVATION, CONCRETE AND REINFORCING STEEL FOR DRILLED PIERS IS INCLUDED IN THE UNIT PRICE BID PER LINEAL FOOT OF DRILLED PIER.

ITEM	TOTAL
REINFORCING STEEL (PLAIN)	LBS. 10921
REINFORCING STEEL (EPOXY COATED) *	LBS. 70476
CLASS B2 CONCRETE **	CU. YD. 257

NOTES:

- THE PRESTRESSED PANEL QUANTITIES ARE NOT INCLUDED IN THE TABLE OF ESTIMATED QUANTITIES FOR SLAB ON CONCRETE I-GIRDER.
 * - THIS INCLUDES THE EPOXY COATED REBARS OF DIAPHRAGMS AND 2 ADDITIONAL BARS FOR TESTING.
 ** - BASED ON MINIMUM TOP FLANGE THICKNESS AND MINIMUM JOINT FILLER THICKNESS.
- THE TABLE OF ESTIMATED QUANTITIES FOR SLAB ON CONCRETE I-GIRDER REPRESENTS THE QUANTITIES USED IN PREPARING THE COST ESTIMATE FOR CONCRETE SLAB. VARIATIONS MAY BE ENCOUNTERED IN THESE ESTIMATED QUANTITIES BUT THESE VARIATIONS CAN NOT BE USED FOR AN ADJUSTMENT IN THE CONTRACT UNIT PRICE PER SQUARE YARD OF SLAB ON CONCRETE I-GIRDER.
- CONCRETE IN THE SLAB HAUNCHES IS INCLUDED IN THE ESTIMATED QUANTITIES FOR SLAB ON CONCRETE I-GIRDER.
- THE ESTIMATED QUANTITIES FOR SLAB ON CONCRETE I-GIRDER ARE BASED ON SKEWED PRECAST PRESTRESSED END PANELS.

YEAR FREQUENCY	100
DISCHARGE	5850
DESIGN HIGH WATER ELEVATION AT THE STRUCTURE (HWE)	493.00
DISCHARGE THROUGH STRUCTURE	5850
VELOCITY THROUGH STRUCTURE (FPS)	5.60
DISCHARGE OVER LEFT APPROACH ROADWAY	0
VELOCITY OVER LEFT APPROACH ROADWAY	0
DISCHARGE OVER RIGHT APPROACH ROADWAY	0
VELOCITY OVER RIGHT APPROACH ROADWAY	0
MAXIMUM BACKWATER	0
FREEBOARD ABOVE (HWE)	4.42

STANDARD PENETRATION TEST

DEPTH BLOWS/6"	EL.	DESCRIPTION
2.5 2/2/1	EL. 489.0±	BROWN LEAN CLAY, TRACE SAND, MOIST
5.0 2/2/5		
7.5 0/0/3	EL. 480.5	
10.0 2/5/13		BROWN TO REDDISH BROWN FAT CLAY W/ ROCK FRAGMENTS, MOIST TO WET
15.0 3/7/6		
20.0 3/8/9		
25.0 5/4/5		
30.0 3/12/7		MOIST TO VERY MOIST
35.0 8/3/3		
40.0 3/3/8		
45.0 7/7/7	EL. 441.5	
50.0 4/5/8		GROUND WATER ENCOUNTERED
55.0 3/3/5		BROWN SILTY SAND AND GRAVEL, WET
60.0 3/2/8		
65.0 2/4/3		
70.0 3/4/6		
	EL. 411.5	GRAY LIMESTONE W/ SOME CHERT LAYERS
		VOID FROM 410.0 TO 408.8
		VOID FROM 407.0 TO 406.2
	EL. 399.0	
		BORING TERMINATED

B-10

STANDARD PENETRATION TEST

DEPTH BLOWS/6"	EL.	DESCRIPTION
5.0 3/3/3	EL. 488.0±	BROWN LEAN CLAY, TRACE SAND, MOIST
	EL. 478.0	GROUND WATER ENCOUNTERED
15.0 2/11/9		BROWN FAT CLAY W/ ROCK FRAGMENTS, MOIST TO VERY MOIST
		TRACE OF SAND, WET
25.0 7/9/8	EL. 460.5	ROCK
	EL. 459.5	CLAY
	EL. 459.0	ROCK
	EL. 457.0	CLAY
	EL. 452.5	GRAY LIMESTONE W/ SOME CHERT LAYERS
	EL. 452.0	CLAY SEAM
	EL. 450.5	GRAY LIMESTONE W/ SOME CHERT LAYERS
	EL. 441.5	
		BORING TERMINATED

B-9

STANDARD PENETRATION TEST

DEPTH BLOWS/6"	EL.	DESCRIPTION
2.5 2/1/0	EL. 482.0±	BROWN TO GRAY LEAN CLAY, TRACE SAND, MOIST
		SOME ROCK FRAGMENTS
10.0 2/11/23		BROWN SILTY SAND AND GRAVEL, MOIST TO WET
		EL. 476.5
15.0 2/1/0		GROUND WATER ENCOUNTERED
	EL. 464.0	GRAY LIMESTONE W/ SOME CHERT LAYERS
		VOIDS ENCOUNTERED
	EL. 454.0	BORING TERMINATED

B-8

STANDARD PENETRATION TEST

DEPTH BLOWS/6"	EL.	DESCRIPTION
2.5 4	EL. 489.0±	BROWN SILTY CLAY, MOIST
	EL. 485.5	
5.0 6		BROWN CLAY W/ GRAVEL AND ROCK FRAGMENTS
	EL. 483.5	
7.5 3		BROWN CLAY W/ ROCK FRAGMENTS, MOIST TO WET
		ROCK FRAGMENTS INCREASE
10.0 28		
15.0 49		
20.0 50/3"	EL. 466.5	GRAY LIMESTONE W/ SOME CHERT LAYERS
	EL. 461.5	BORING TERMINATED

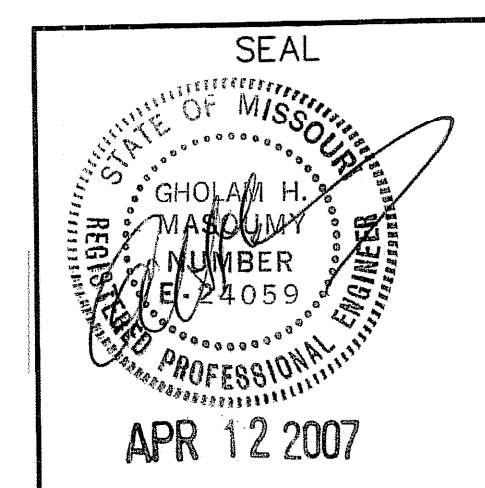
B-7

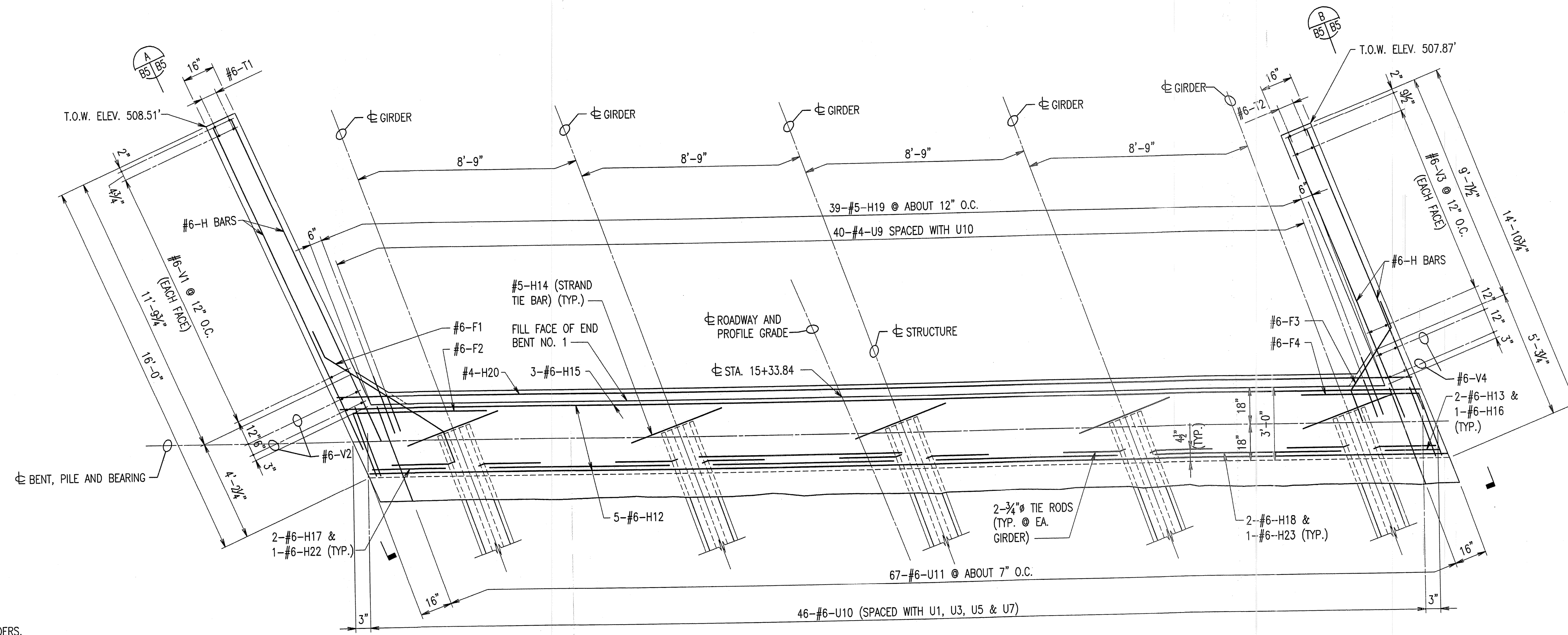
BORING DATA

- Bx ⊕ INDICATES LOCATION OF BORINGS.
- NOTICE AND DISCLAIMER REGARDING BORING LOG DATA. THE LOCATIONS OF ALL SUBSURFACE BORINGS FOR THIS STRUCTURE ARE SHOWN ON THE BRIDGE PLAN SHEET B2 FOR THIS STRUCTURE. BORING DATA FOR THE NUMBER LOCATIONS IS SHOWN ON SHEET B1. THE BORING DATA FOR ALL LOCATIONS INDICATED, AS WELL AS ANY OTHER BORING LOGS OR OTHER FACTUAL RECORDS OF SUBSURFACE DATA AND INVESTIGATIONS PERFORMED BY THE CITY OF O'FALLON FOR THE DESIGN OF THE PROJECT, IS AVAILABLE FROM THE PROJECT CONTACT UPON WRITTEN REQUEST AS OUTLINED IN THE PROJECT SPECIAL PROVISIONS. NO GREATER SIGNIFICANCE OR WEIGHT SHOULD BE GIVEN TO THE BORING DATA DEPICTED ON THE PLAN SHEETS THAN IS SUBSURFACE DATA AVAILABLE ELSEWHERE.
- THE CITY OF O'FALLON DOES NOT REPRESENT OR WARRANT THAT ANY SUCH BORING DATA ACCURATELY DEPICTS THE CONDITIONS TO BE ENCOUNTERED IN CONSTRUCTING THIS PROJECT. A CONTRACTOR ASSUMES ALL RISKS IT MAY ENCOUNTER IN BASING ITS BID PRICES TIME OR SCHEDULE OF PERFORMANCE ON THE BORING DATA DEPICTED HERE OR ON ANY OTHER DOCUMENTATION NOT EXPRESSLY WARRANTED, WHICH THE CONTRACTOR MAY OBTAIN FROM THE CITY OF O'FALLON.

Designed	HAS/HCG
Drawn	JJJ
Checked	GHM
Date	4-12-07

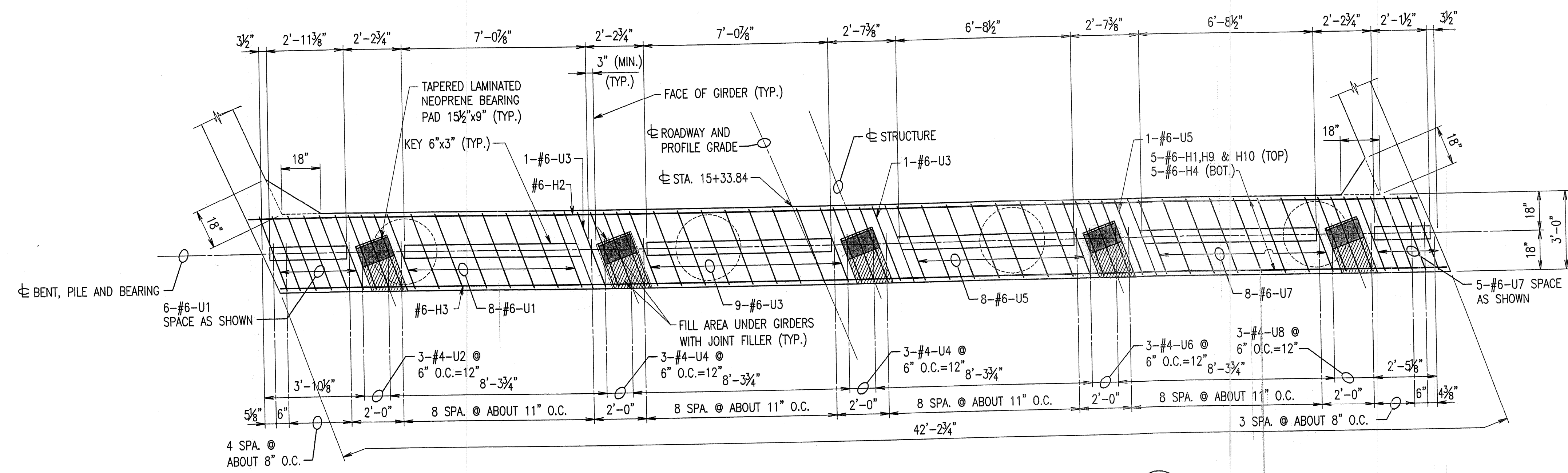
EDM No. 03804
 EDM Incorporated
 220 Mansion House, 3rd Floor
 St. Louis, Missouri 63102
 (314) 231-5485 Fax: (314) 231-8167



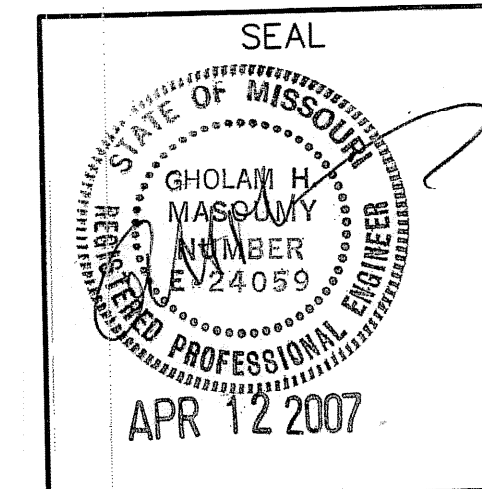


- NOTES:**
- BEND F1 AND F3 BARS IN FIELD TO CLEAR GIRDERS.
 - ALL U-BARS IN END BENT ARE TO BE PLACED PARALLEL TO \perp ROADWAY.
 - FOR DETAILS AND REINFORCEMENT OF SAFETY BARRIER CURB, SEE SHEETS NO. B15 AND B18.
 - ALL CONCRETE IN THE END BENT ABOVE TOP OF BEAM AND BELOW TOP OF SLAB SHALL BE CLASS B2.
 - ALL VERTICAL REINFORCING BARS IN THE SUBSTRUCTURE BEAMS OR CAPS SHALL BE FIELD ADJUSTED TO CLEAR PILES BY AT LEAST 1 1/2\".
 - STRANDS AT END OF GIRDER SHALL BE FIELD BENT OR IF NECESSARY, CUT IN FIELD TO MAINTAIN 2\" MINIMUM CLEARANCE TO FILL FACE OF END BENT.
 - FOR ELEVATION A & B SEE SHEET B5.

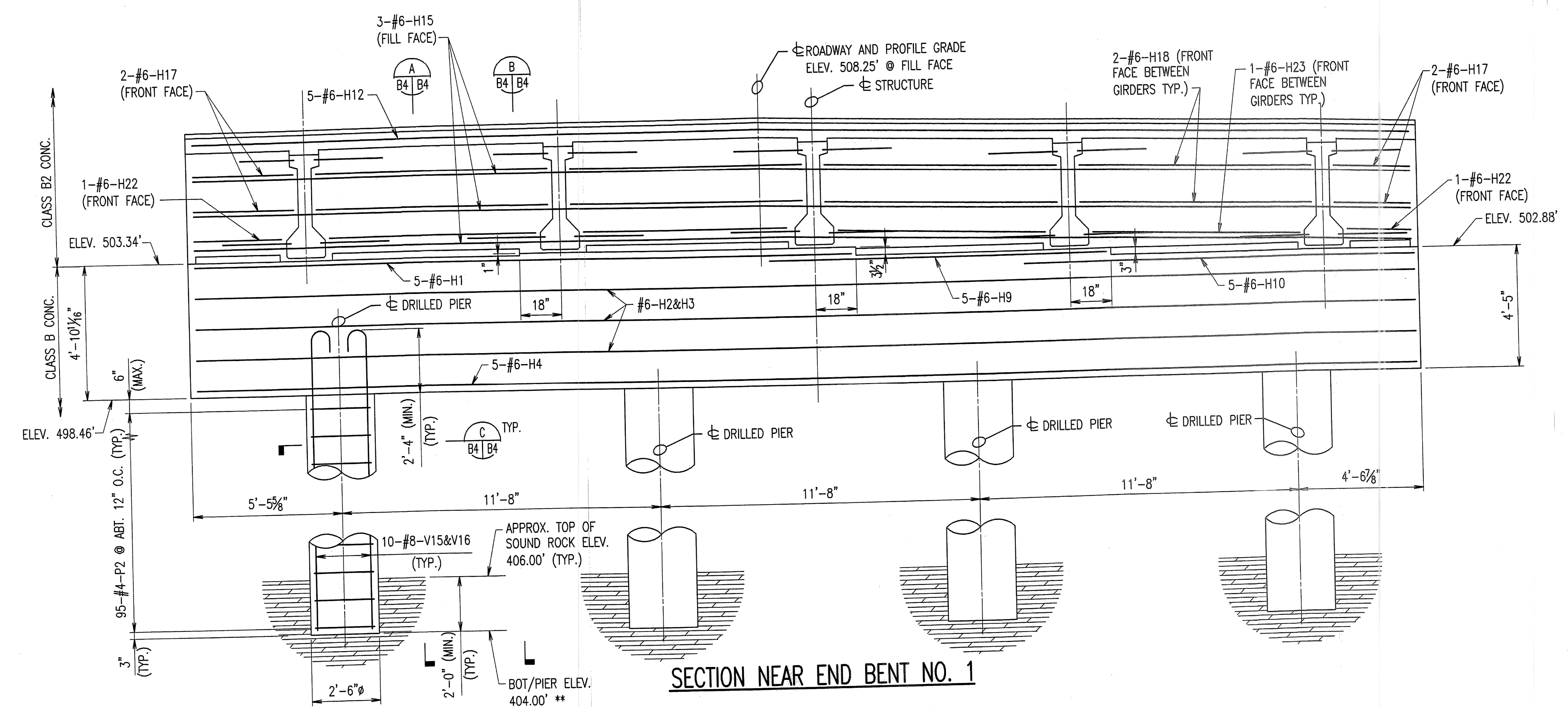
PLAN OF END BENT NO. 1 (ABOVE THE CONSTRUCTION JOINT)



PLAN OF END BENT NO. 1 (BELOW PRECAST BEARING)

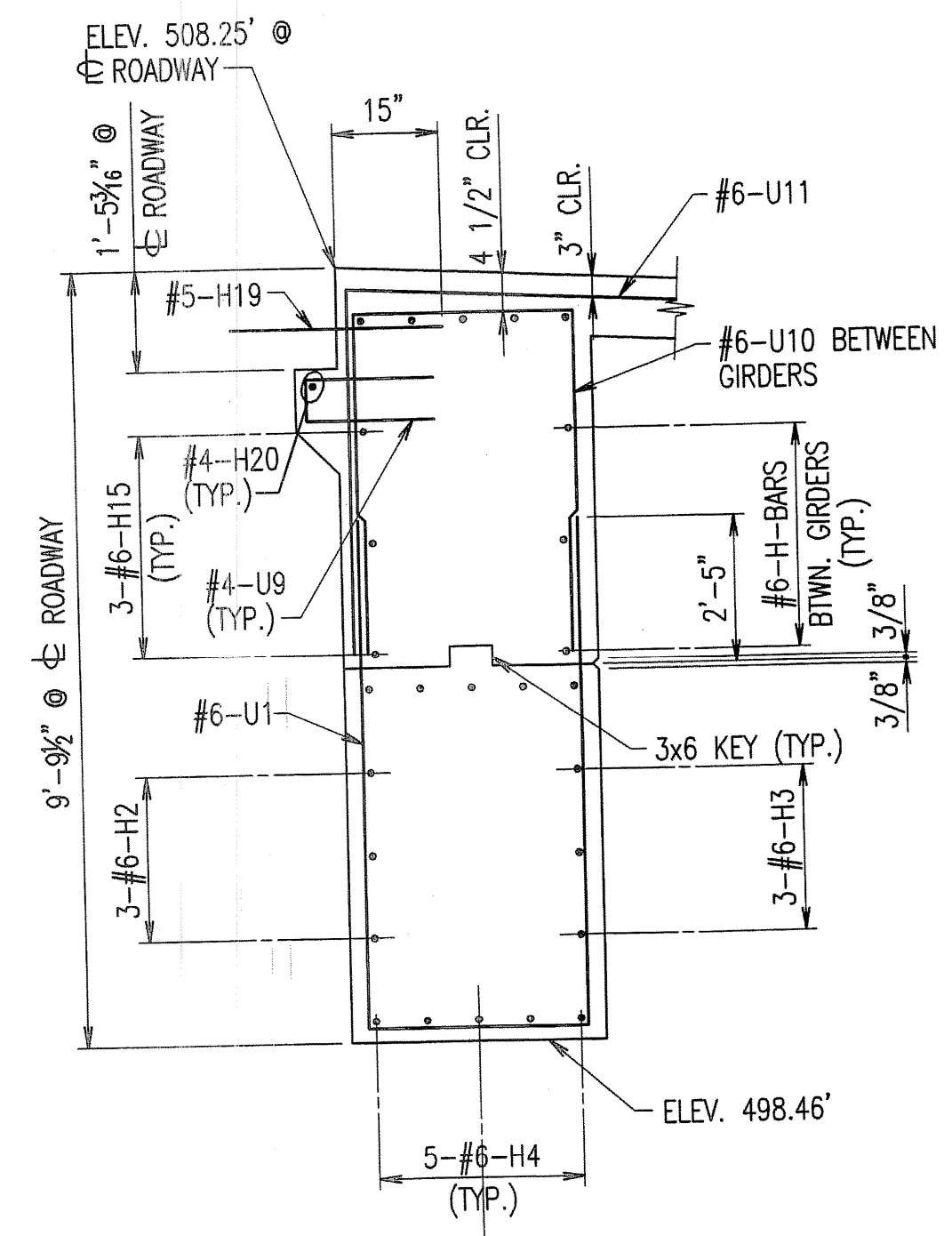


Designed	HAS/HCG	EDM No. 03804	EDM Incorporated 220 Mansion House, 3rd Floor St. Louis, Missouri 63102 (314) 231-5485 Fax: (314) 231-8167
Drawn	JJJ		
Checked	GHM		
Date	4-12-07		

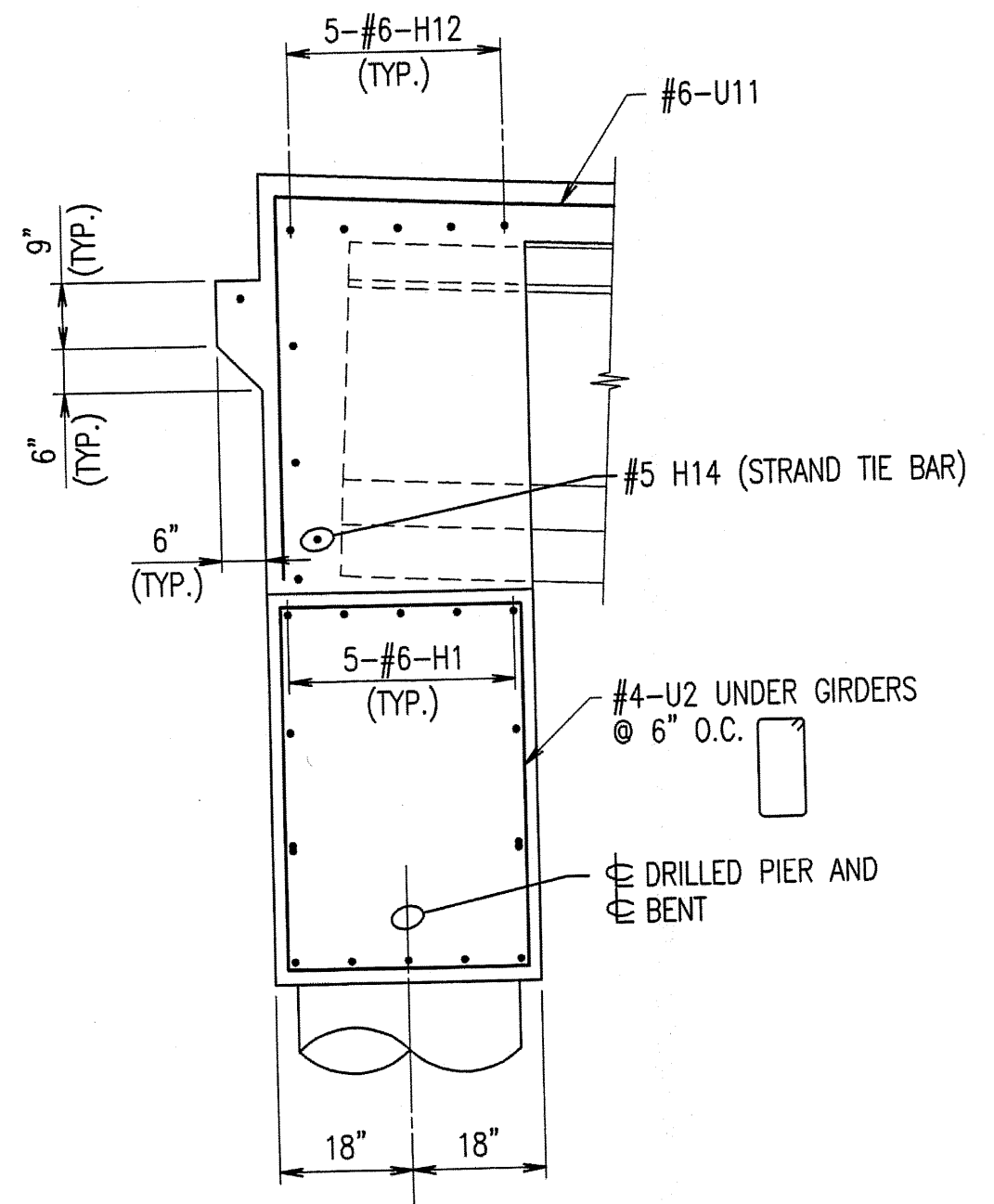


SECTION NEAR END BENT NO. 1

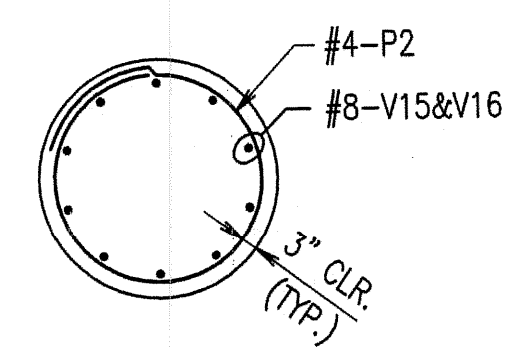
** - IN NO CASE SHALL THE BOTTOM OF DRILLED PIER BE PLACED HIGHER THAN ELEVATIONS SHOWN.



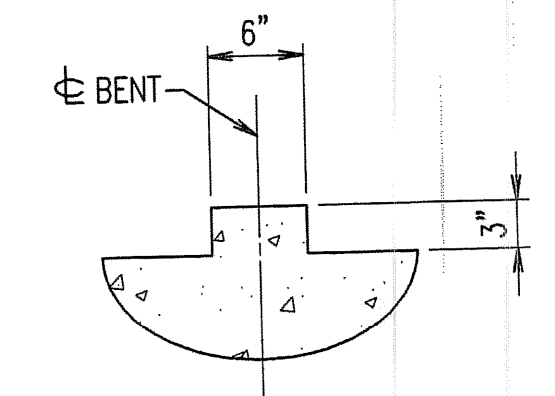
SECTION A
B4 | B4
1/2"=1'-0"



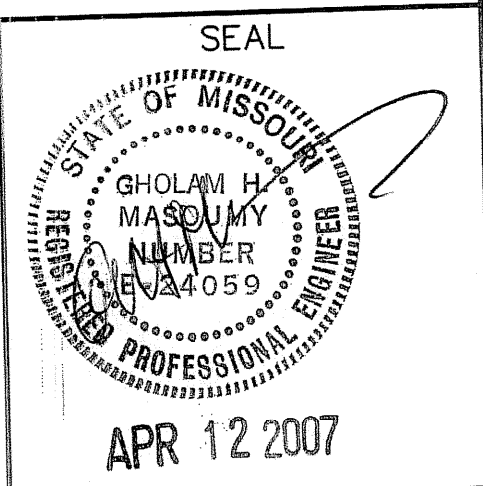
SECTION B
B4 | B4
1/2"=1'-0"



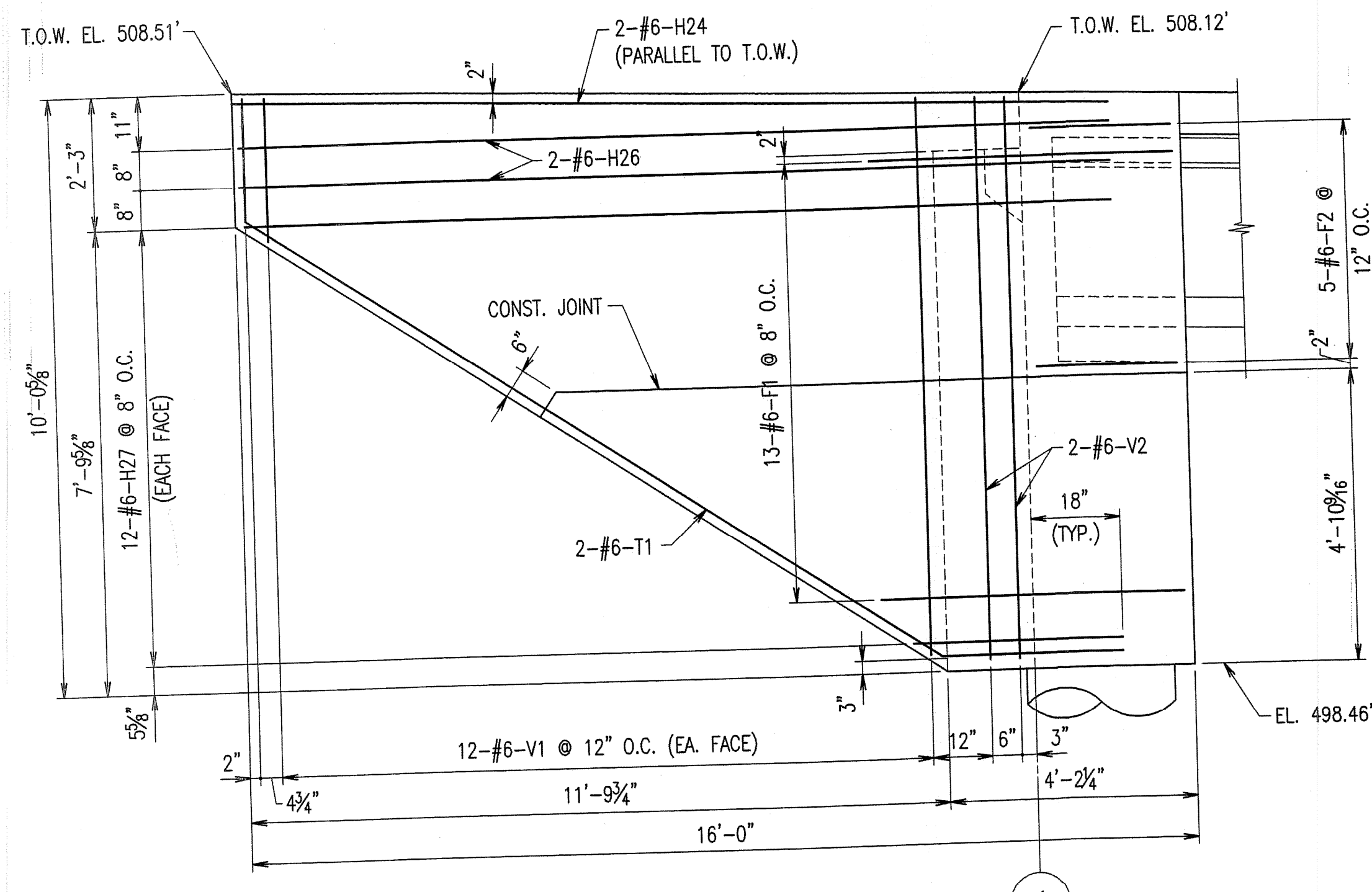
SECTION C
B4 | B4
1/2"=1'-0"



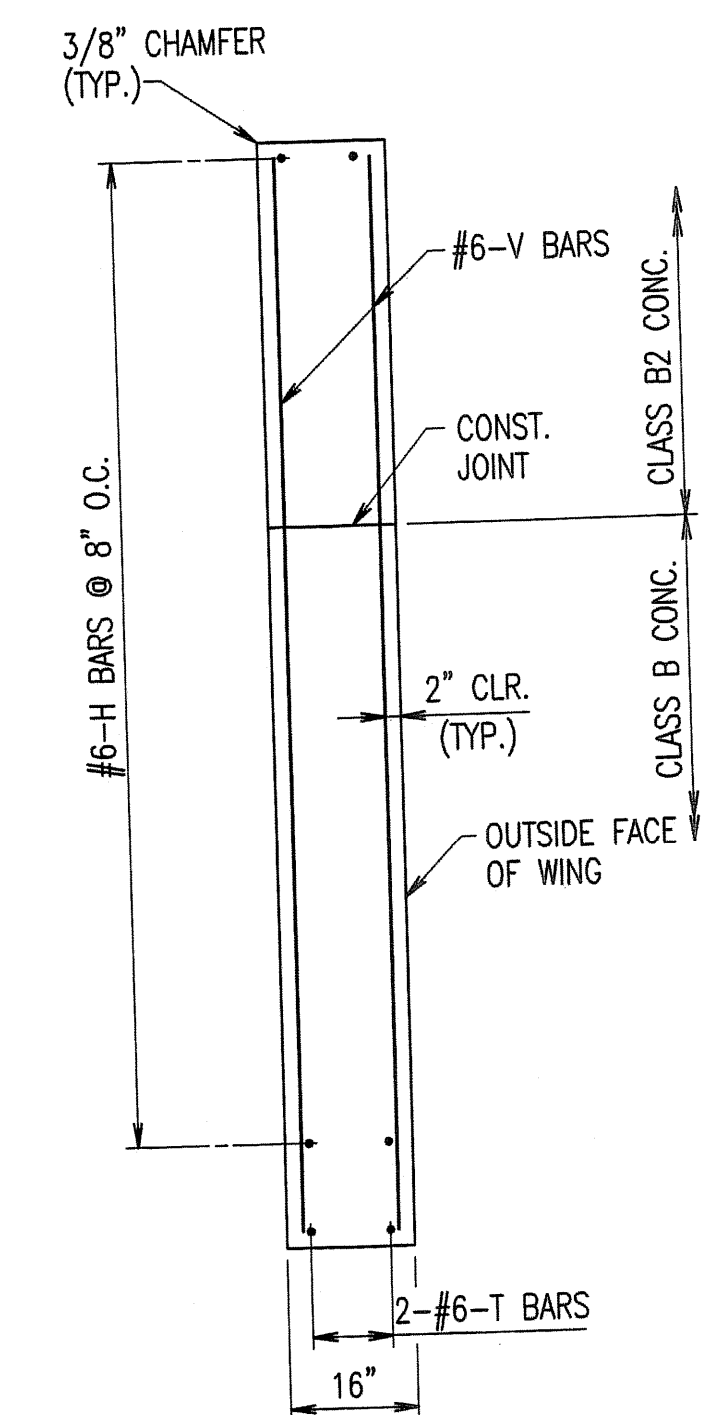
DETAIL OF KEYED CONSTRUCTION JOINT



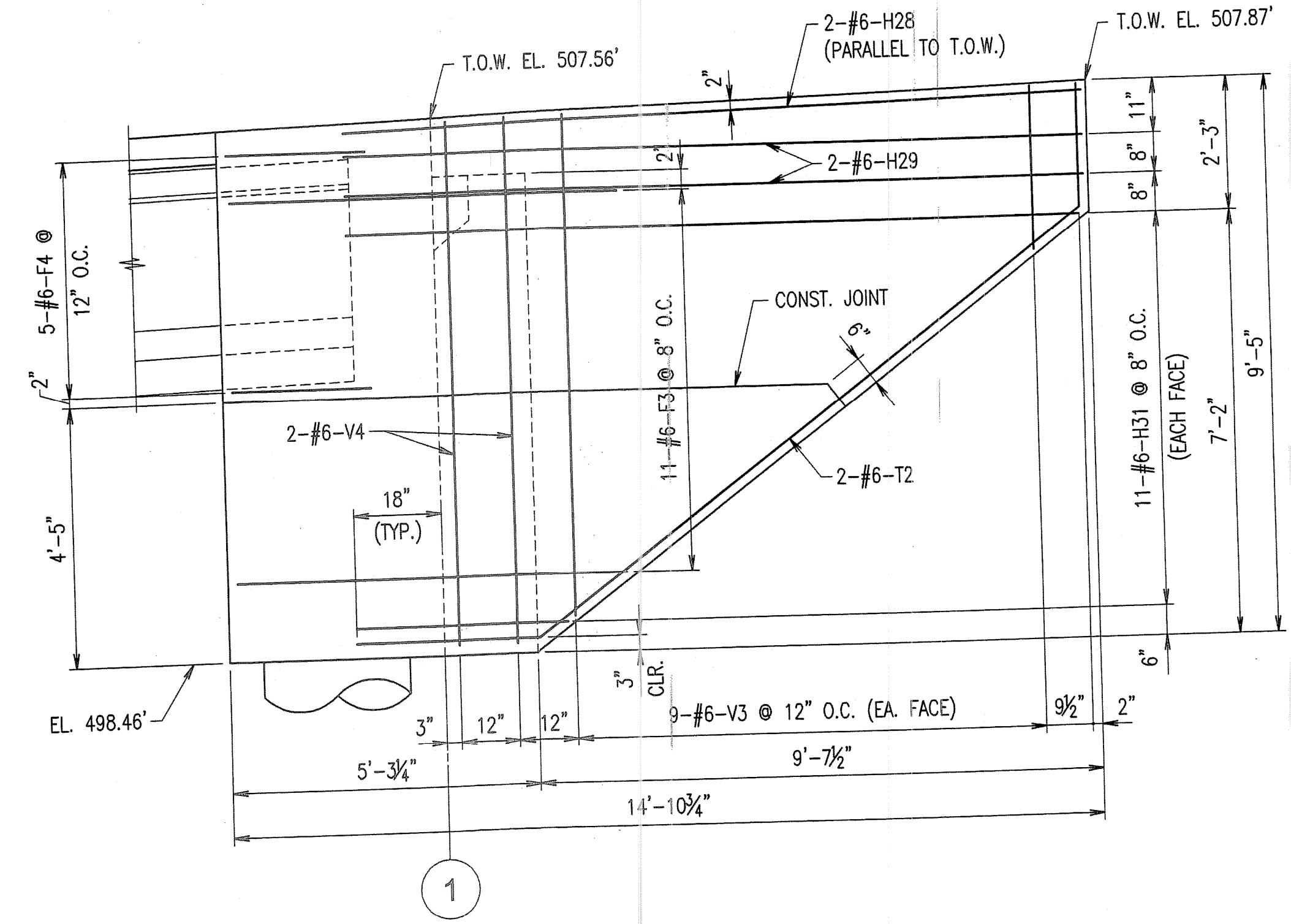
Designed	HAS/HCG	EDM No. 03804	EDM EDM Incorporated 220 Mansion House, 3rd Floor St. Louis, Missouri 63102 (314) 231-5485 Fax: (314) 231-8167
Drawn	JJJ		
Checked	GHM		
Date	4-12-07		



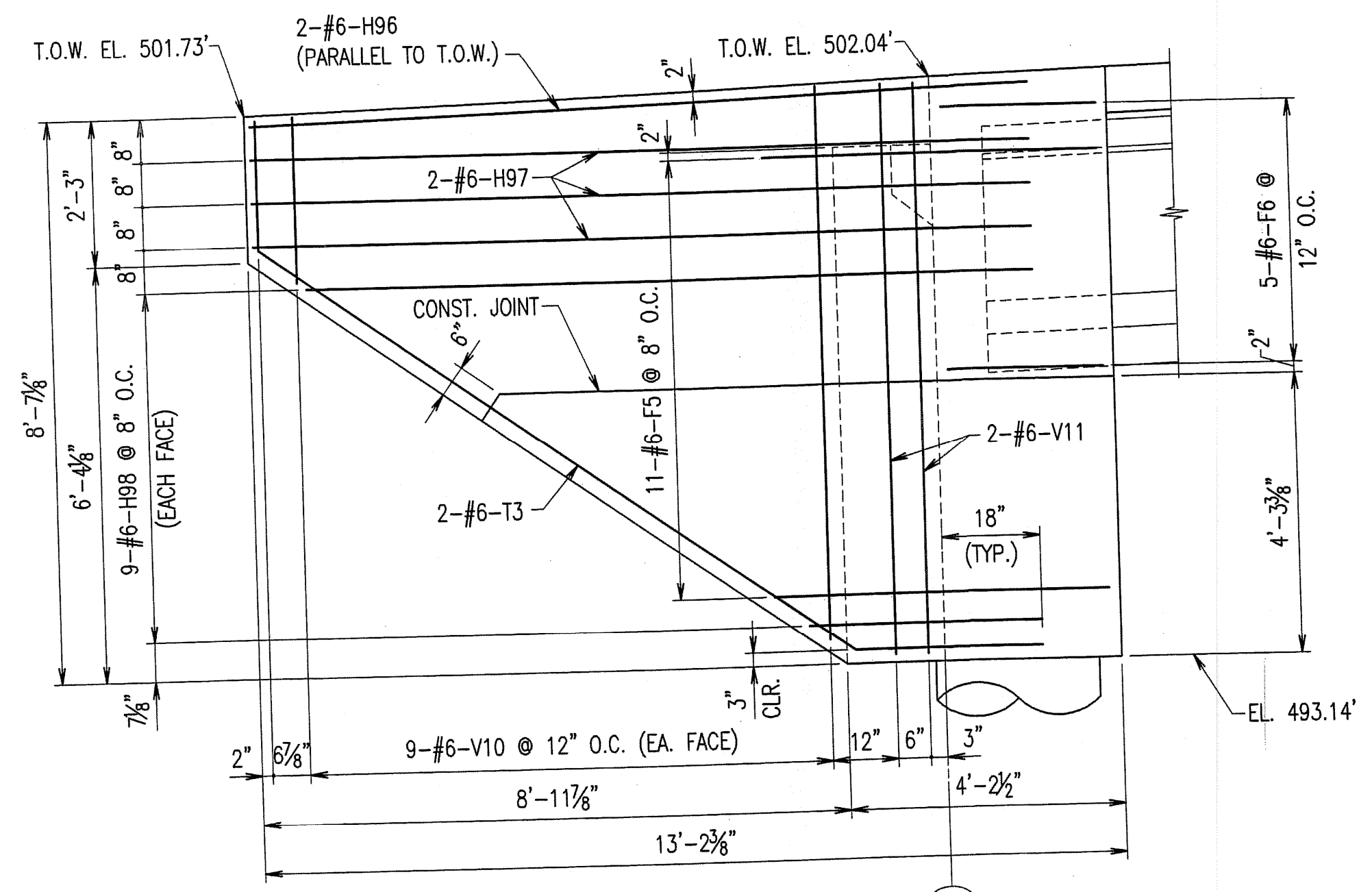
A SECTION
 B3 | B5
 1/2"=1'-0"



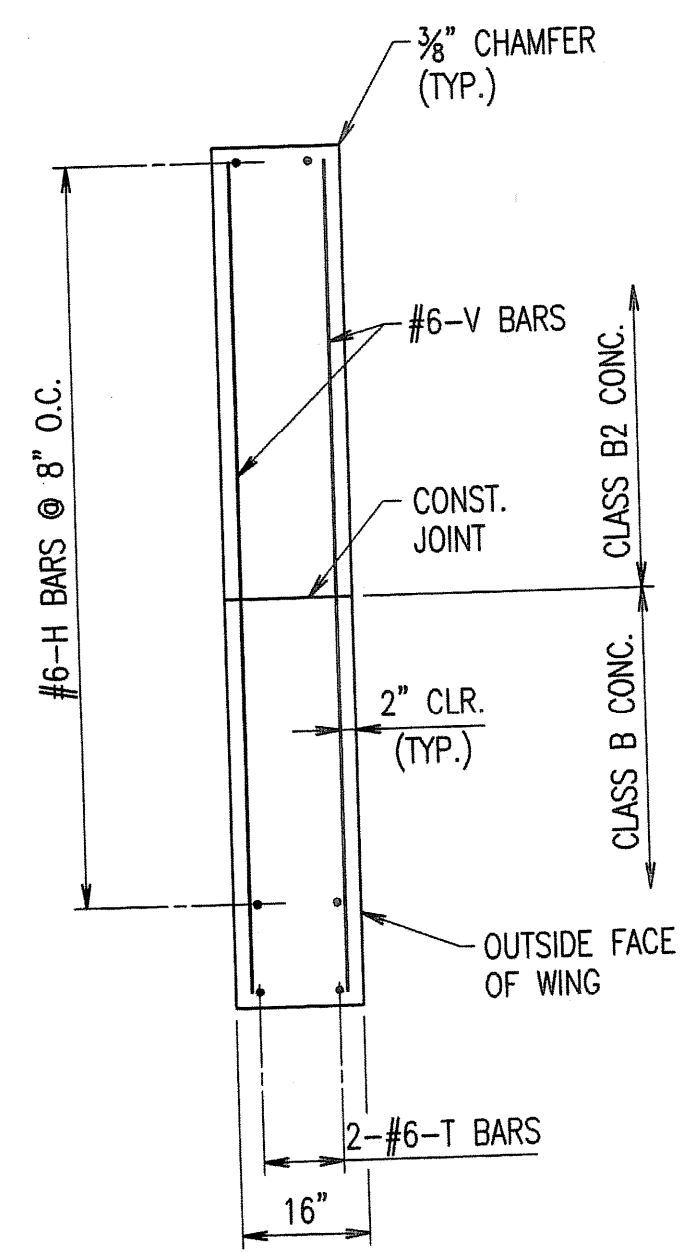
TYPICAL SECTION THRU WING
DETAILS OF END BENT NO. 1



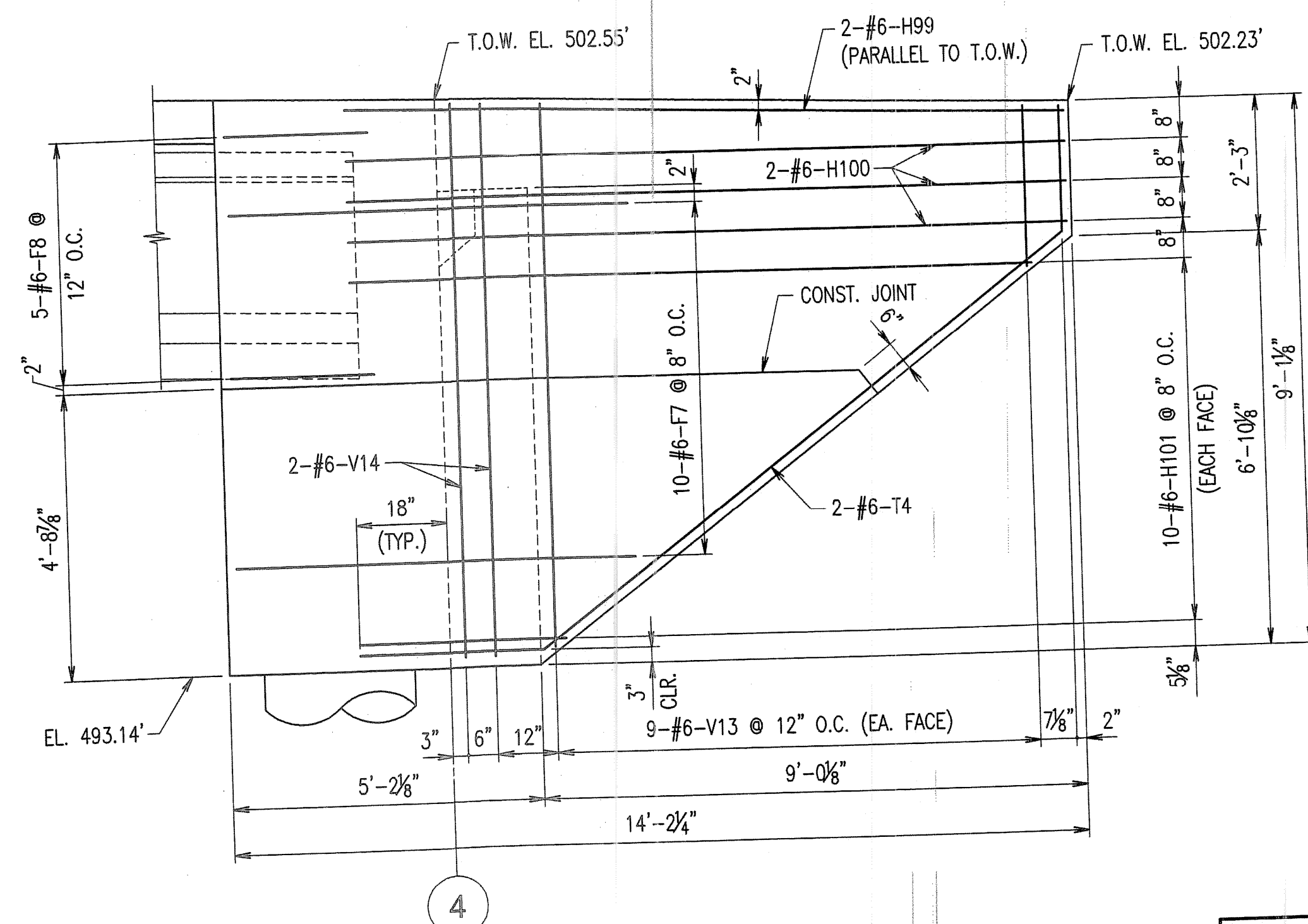
B SECTION
 B3 | B5
 1/2"=1'-0"



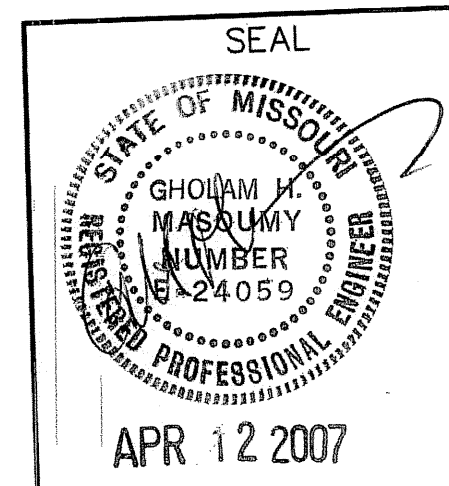
C SECTION
 B10 | B5
 1/2"=1'-0"



TYPICAL SECTION THRU WING
DETAILS OF END BENT NO. 4



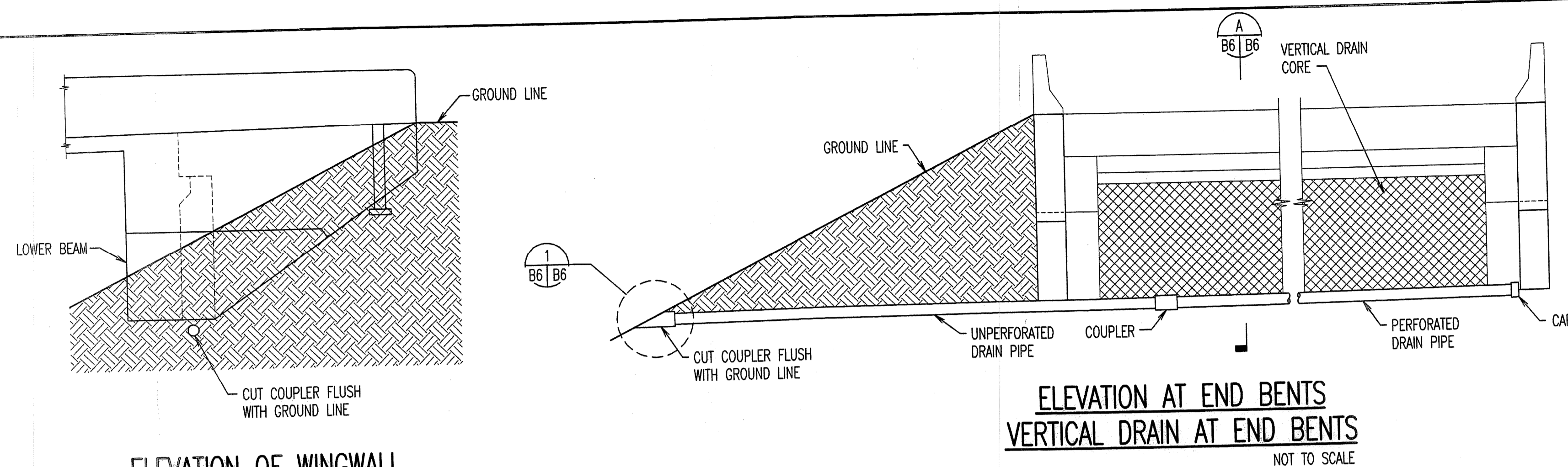
D SECTION
 B10 | B5
 1/2"=1'-0"



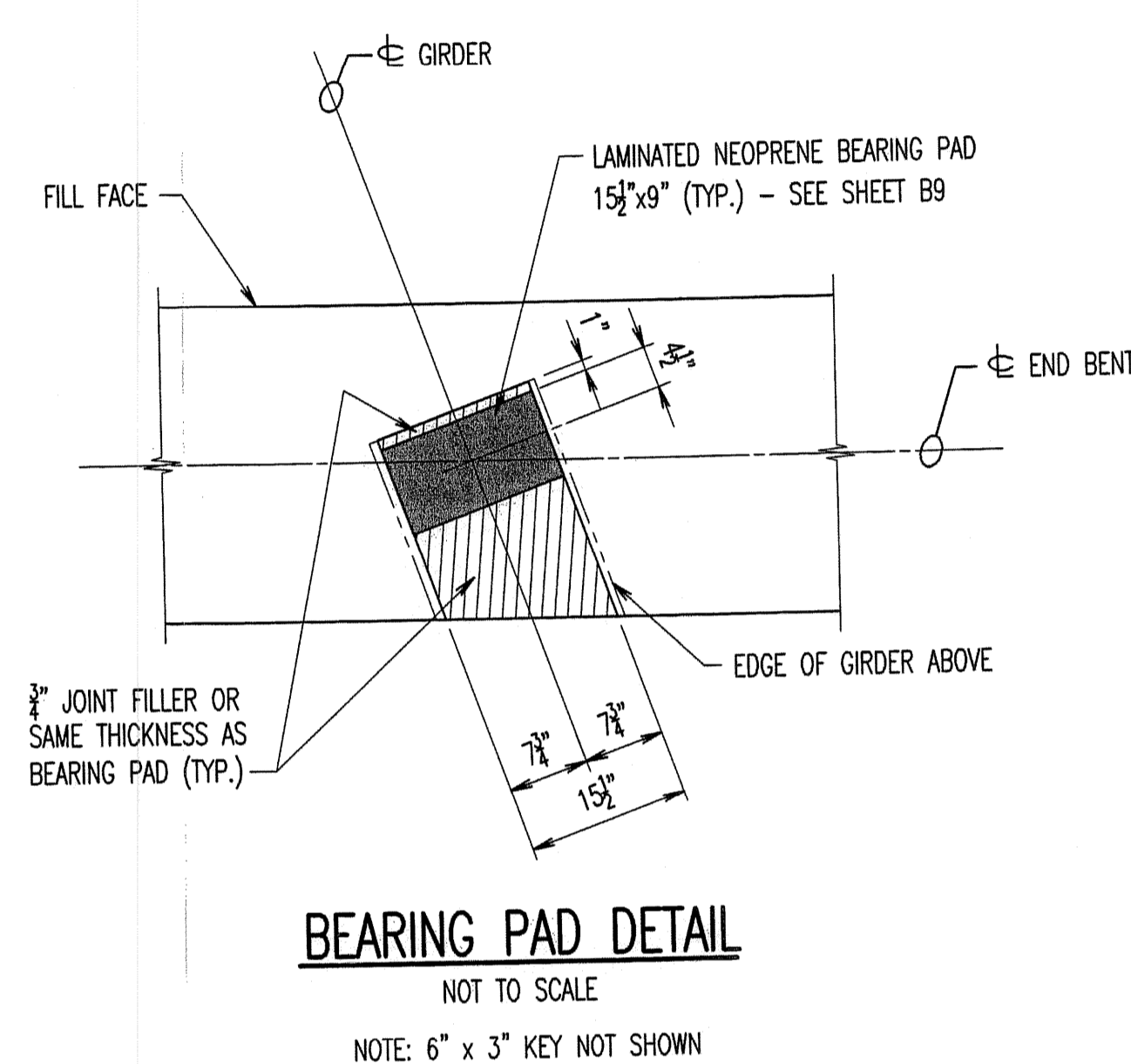
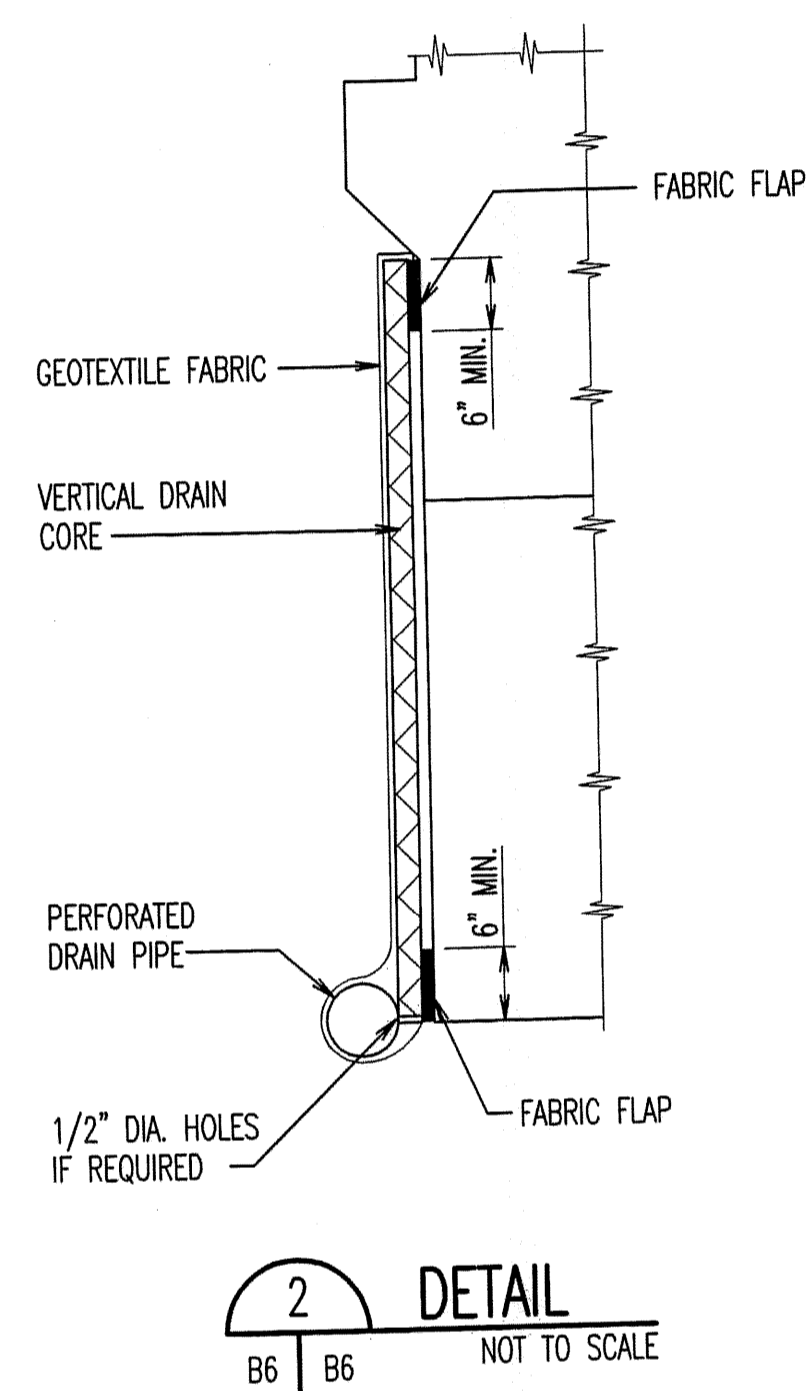
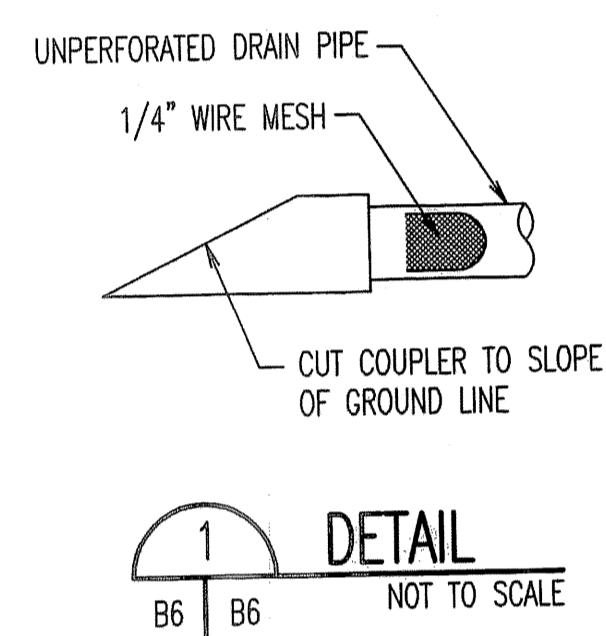
Designed	HAS/HCG	EDM No. 03804	EDM EDM Incorporated 220 Mansion House, 3rd Floor St. Louis, Missouri 63102 (314) 231-5485 Fax: (314) 231-8167
Drawn	JJJ		
Checked	GHM		
Date	4-12-07		

GENERAL NOTES:

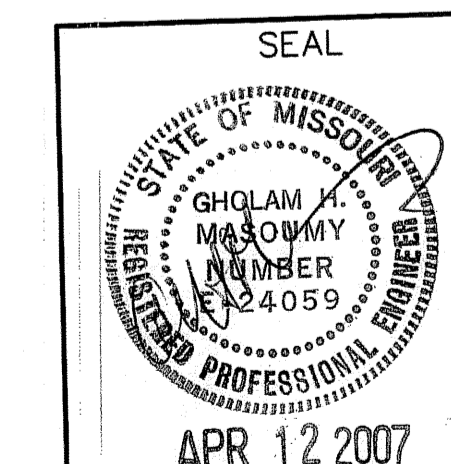
1. DRAIN PIPE MAY BE EITHER 6" DIAMETER CORRUGATED METALIC-COATED STEEL PIPE UNDERDRAIN, 4" DIAMETER CORRUGATED, SCHEDULE 40 (MIN.), POLYVINYL CHLORIDE (PVC) DRAIN PIPE, OR 4" DIAMETER CORRUGATED POLYETHYLENE (PE) DRAIN PIPE.
2. PLACE DRAIN PIPE AT FILL FACE OF END BENT AND SLOPE TO LOWEST GRADE OF GROUND LINE. ALSO MISSING THE LOWER BEAM OF END BENT BY 1 1/2". (SEE ELEVATION AT END BENT)
3. PERFORATED PIPE SHALL BE PLACED AT FILL FACE SIDE AT THE BOTTOM OF END BENT AND PLAIN PIPE SHALL BE USED WHERE THE VERTICAL DRAIN ENDS TO THE EXIT AT GROUND LINE.



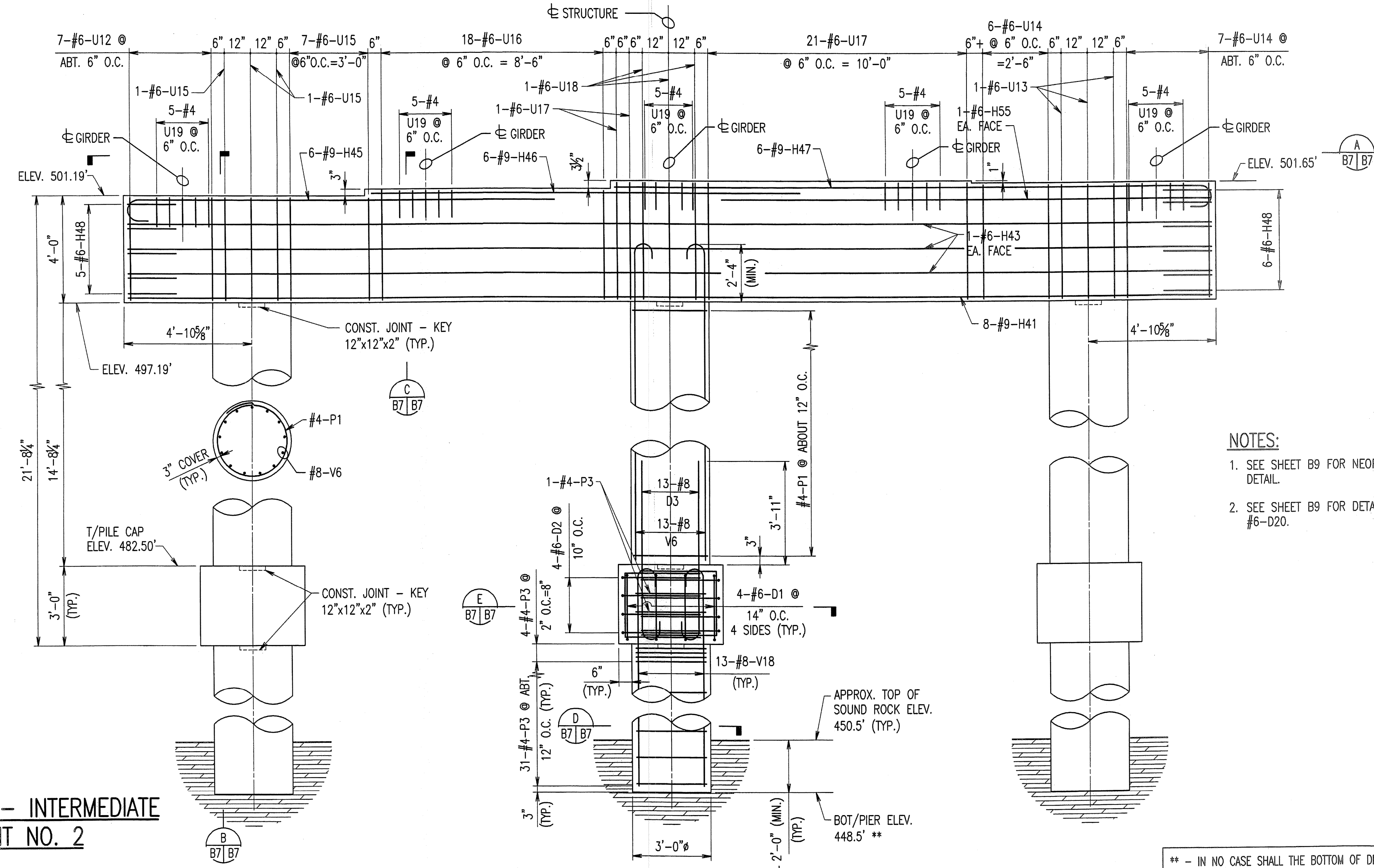
ELEVATION OF WINGWALL
NOT TO SCALE



Designed	HAS	EDM No. 03804
Drawn	JJJ	
Checked	GHM	
Date	4-12-07	

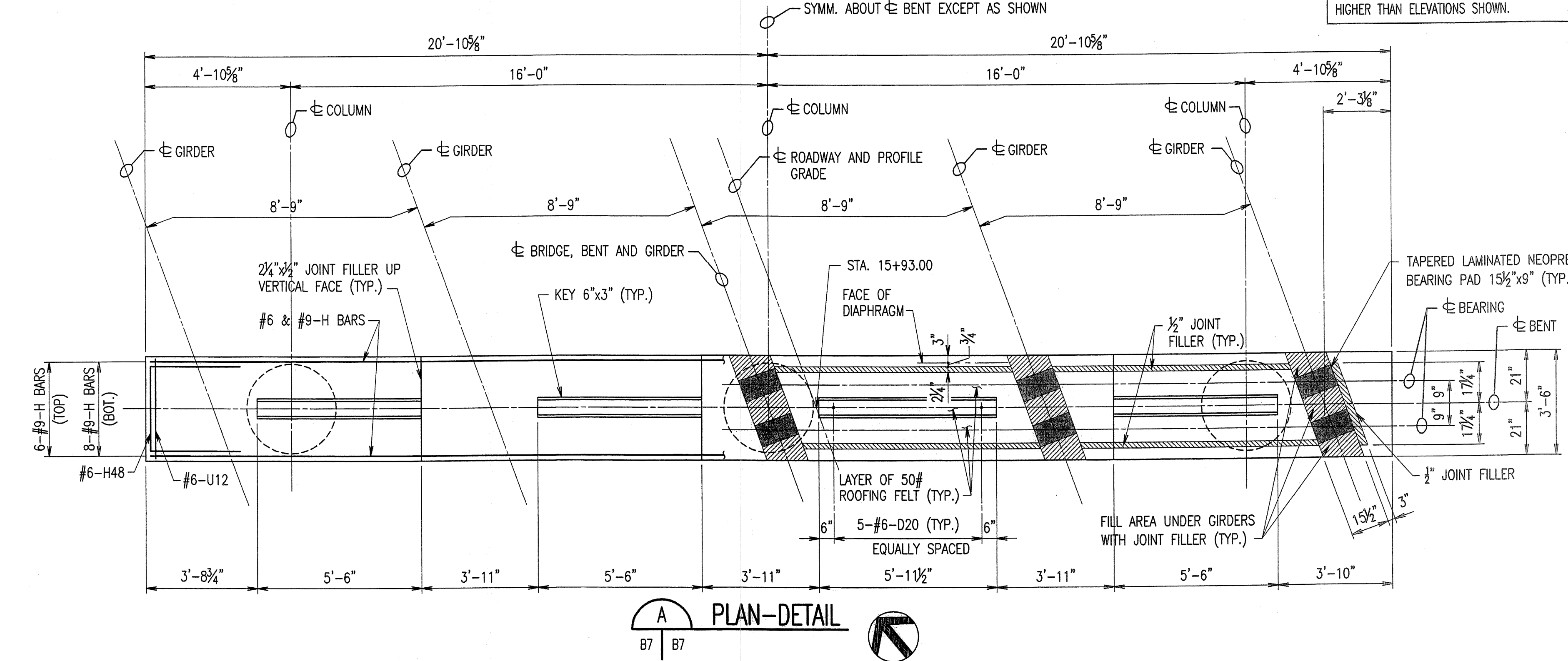


EDM EDM Incorporated
220 Mansion House, 3rd Floor
St. Louis, Missouri 63102
(314) 231-5485 Fax: (314) 231-8167

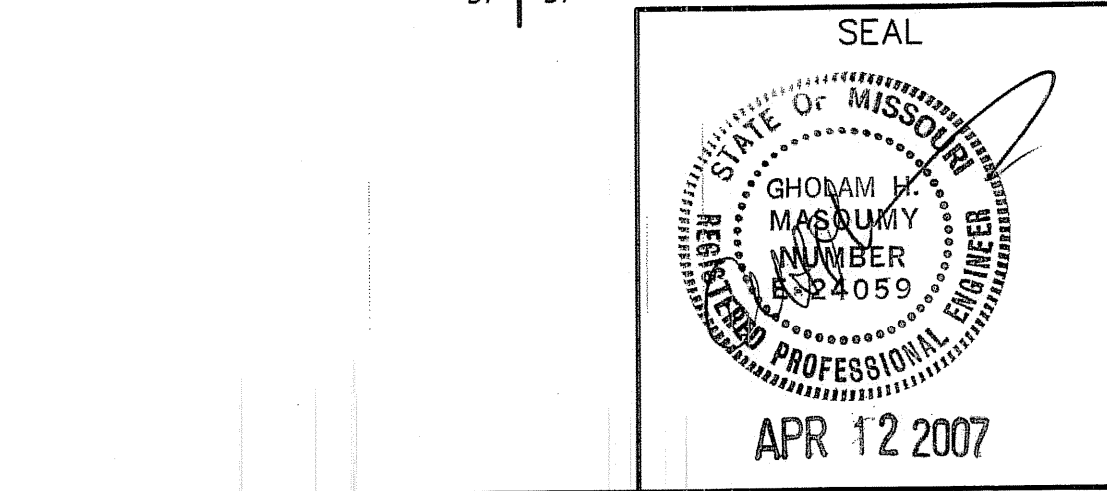
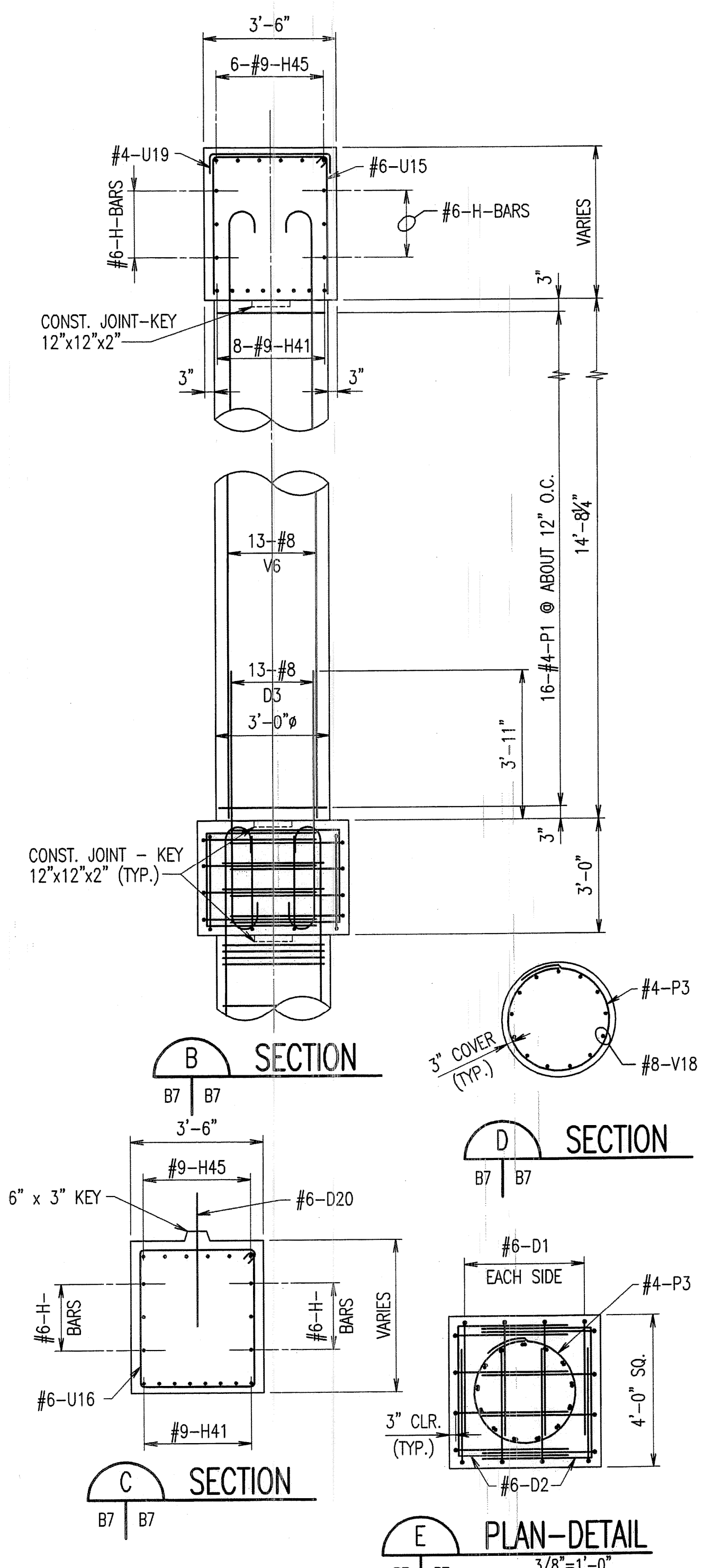


- NOTES:**
- SEE SHEET B9 FOR NEOPRENE BEARING PAD DETAIL.
 - SEE SHEET B9 FOR DETAIL OF 6"x3" KEY AND #6-D20.

ELEVATION - INTERMEDIATE BENT NO. 2

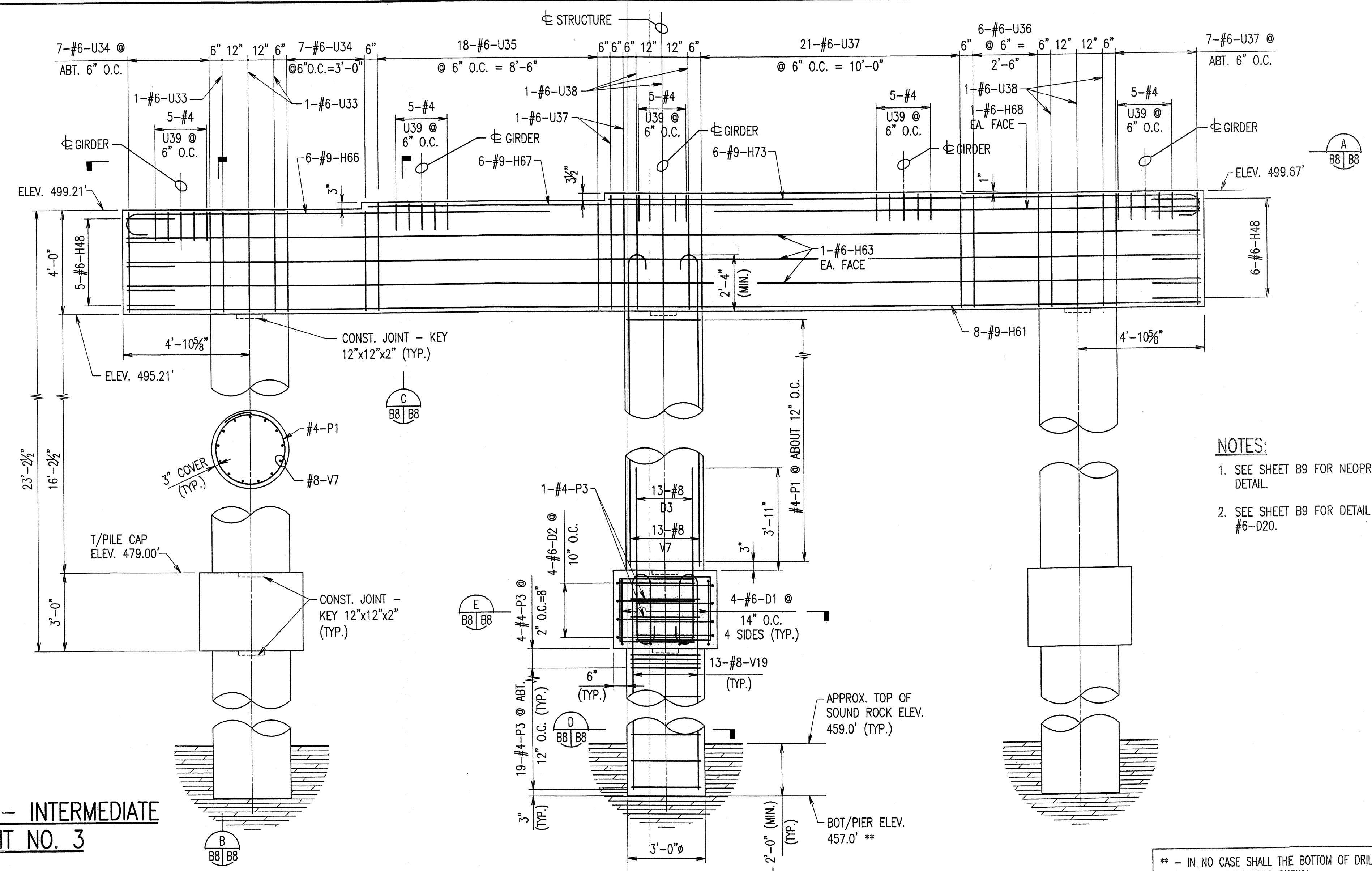


PLAN-DETAIL



Designed	HAS/HCG	EDM Incorporated 220 Mansion House, 3rd Floor St. Louis, Missouri 63102 (314) 231-5485 Fax: (314) 231-8167
Drawn	JJJ	
Checked	GHM	
Date	4-12-07	

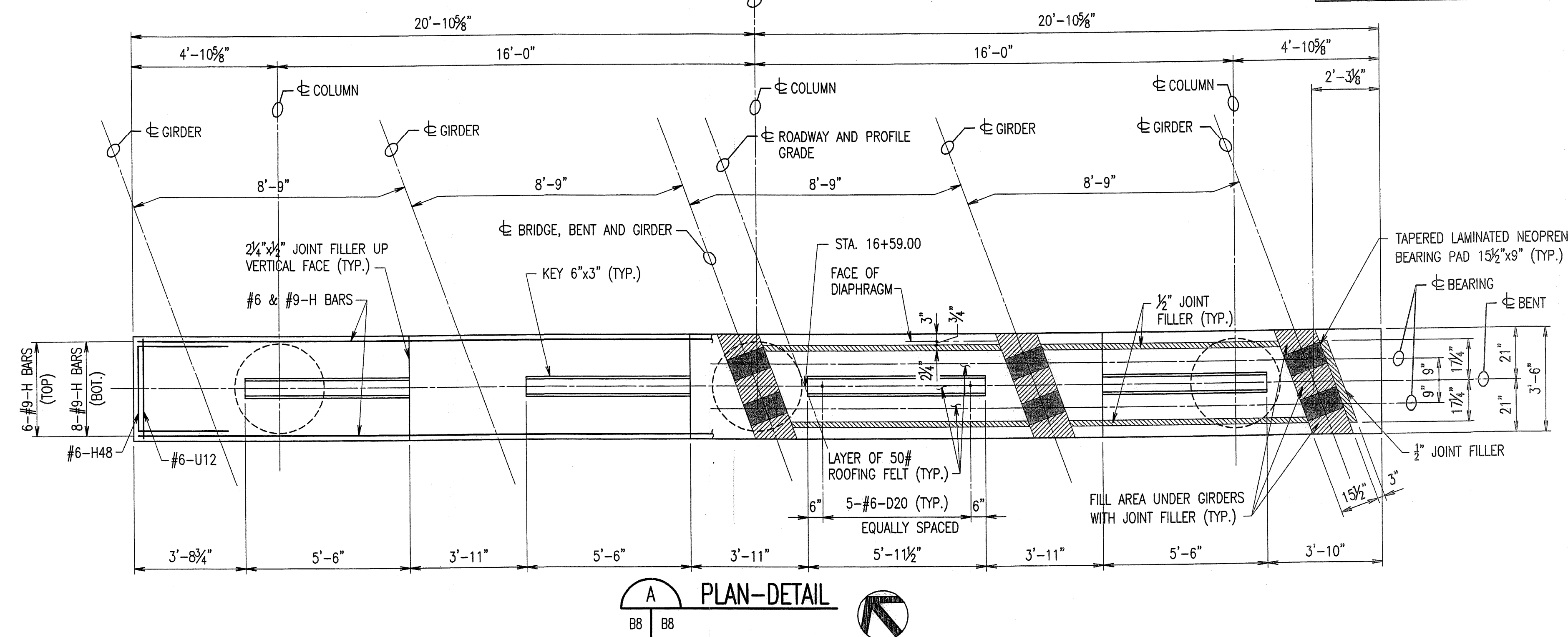
** - IN NO CASE SHALL THE BOTTOM OF DRILLED PIER BE PLACED HIGHER THAN ELEVATIONS SHOWN.



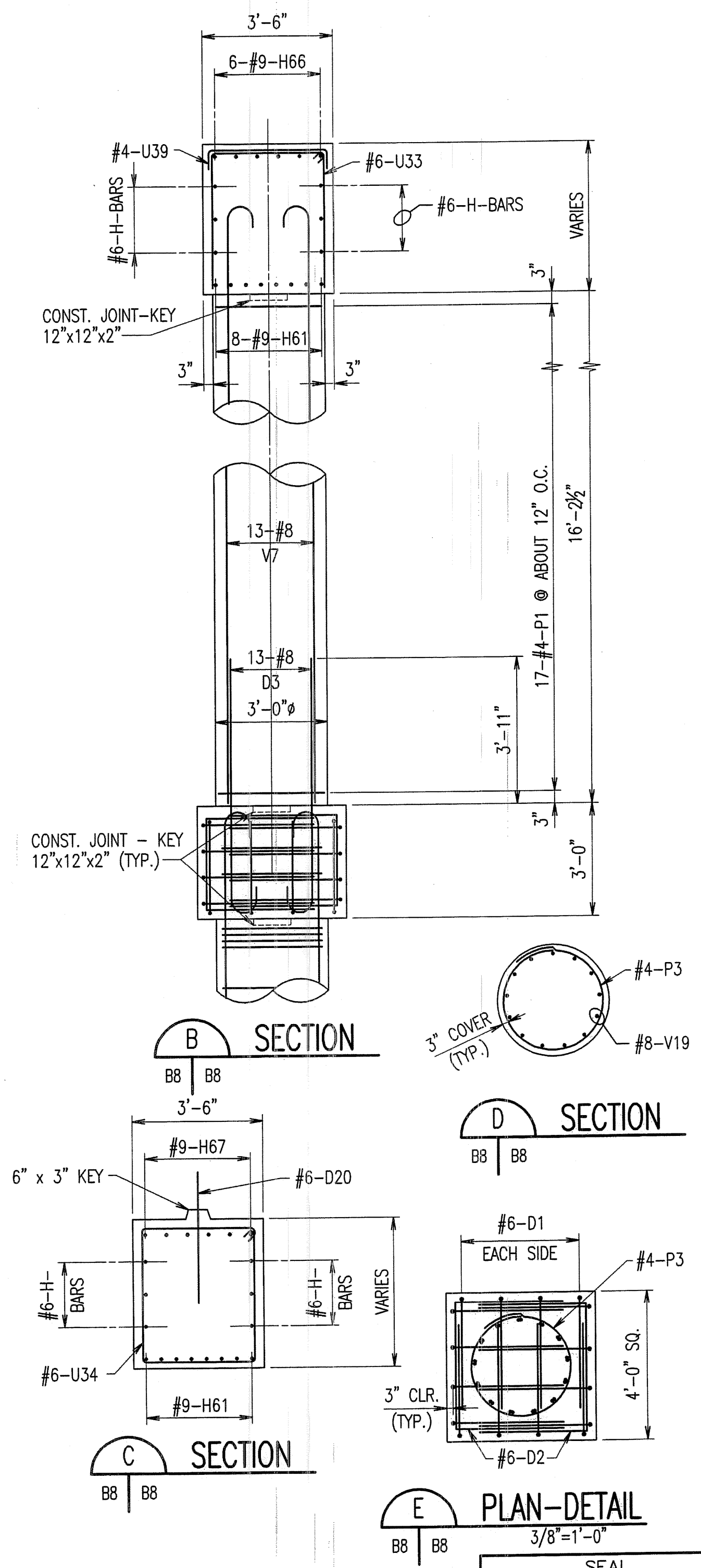
ELEVATION - INTERMEDIATE BENT NO. 3

- NOTES:**
- SEE SHEET B9 FOR NEOPRENE BEARING PAD DETAIL.
 - SEE SHEET B9 FOR DETAIL OF 6"x3" KEY AND #6-D20.

** - IN NO CASE SHALL THE BOTTOM OF DRILLED PIER BE PLACED HIGHER THAN ELEVATIONS SHOWN.

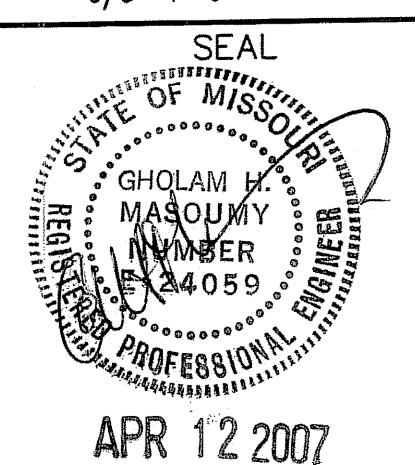


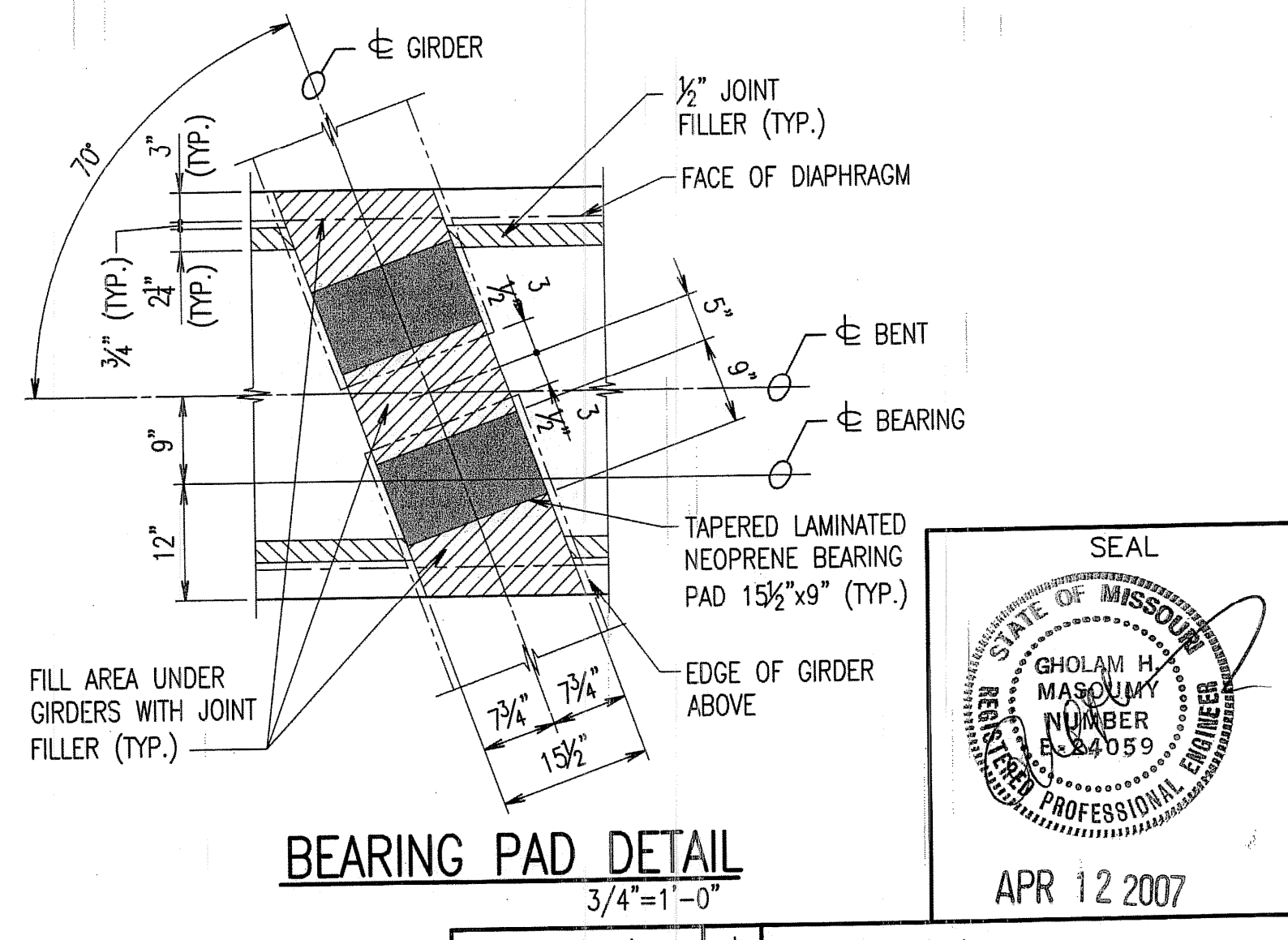
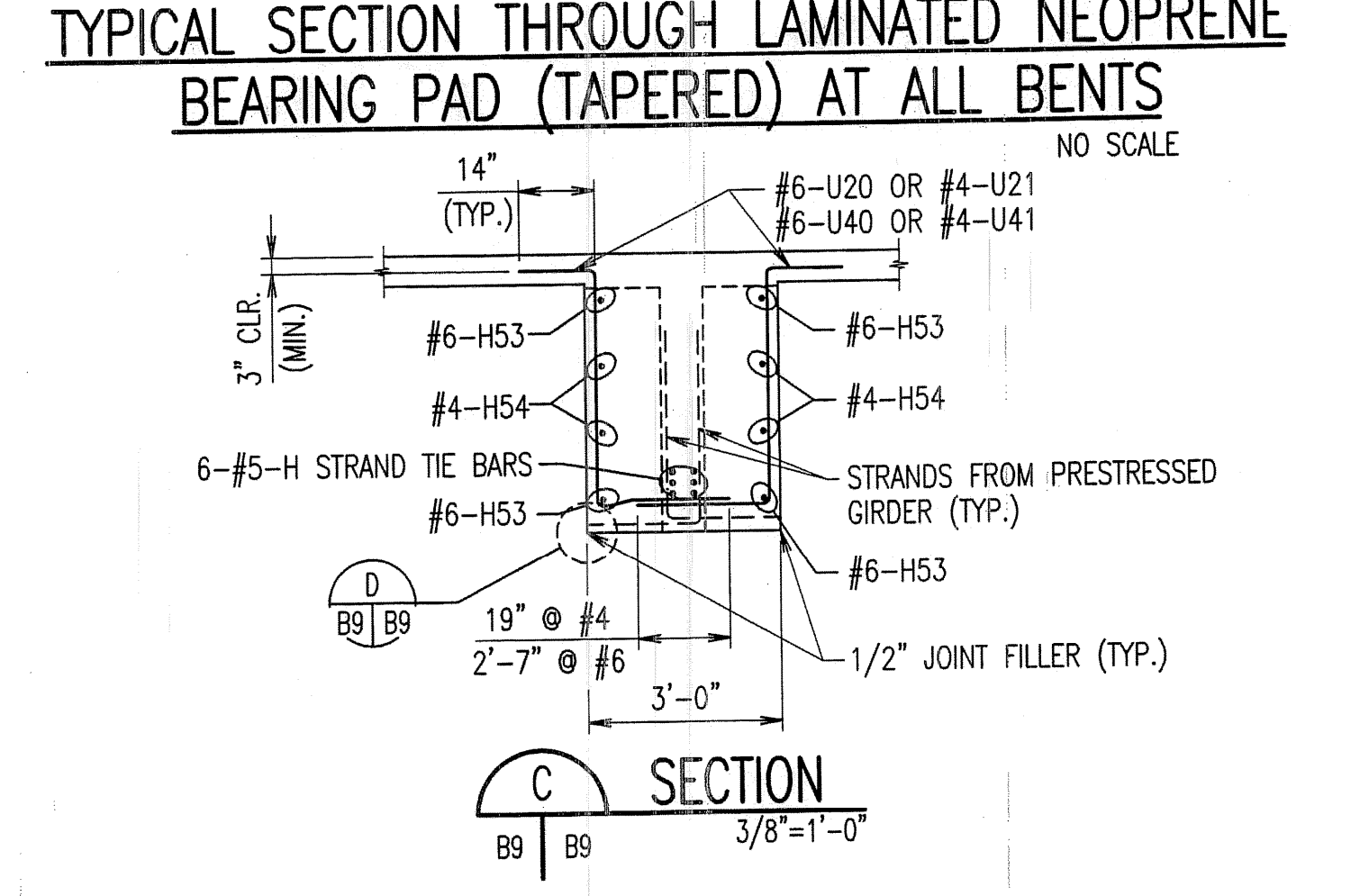
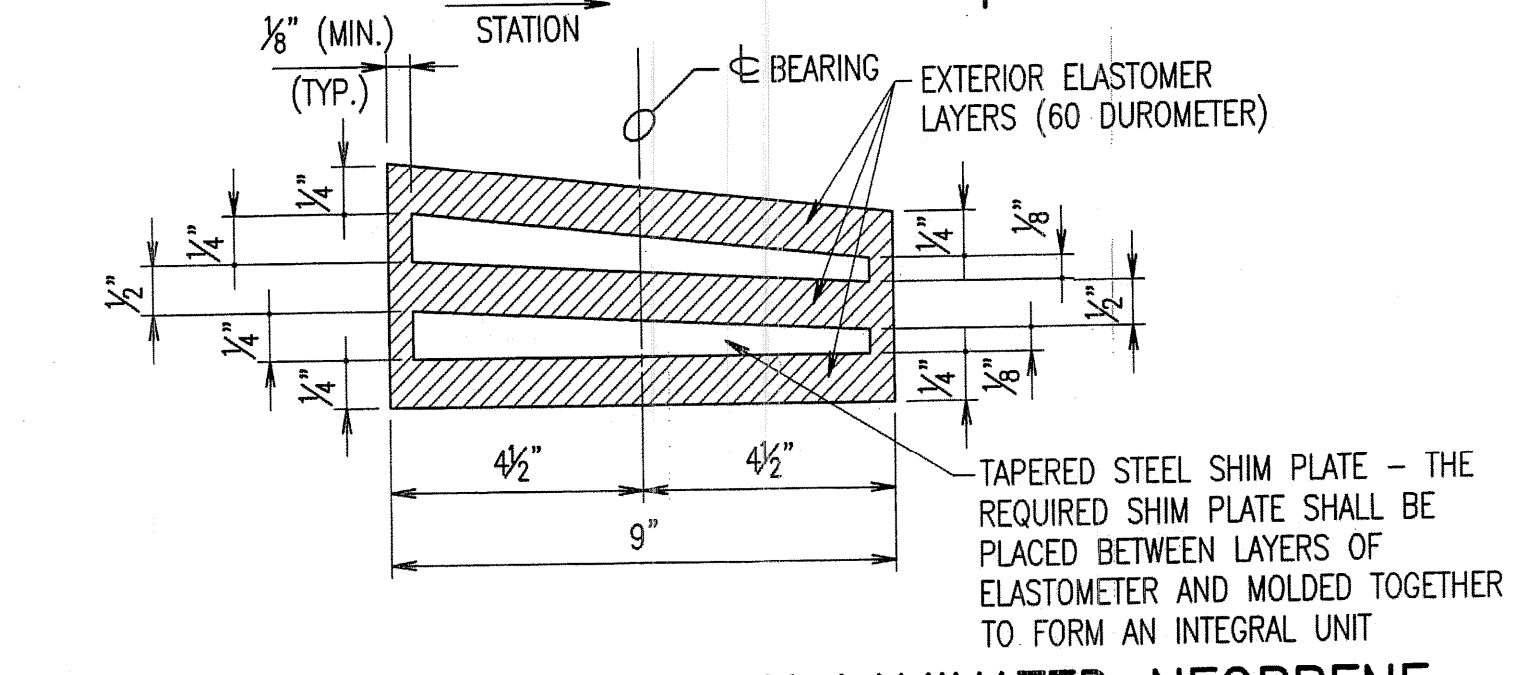
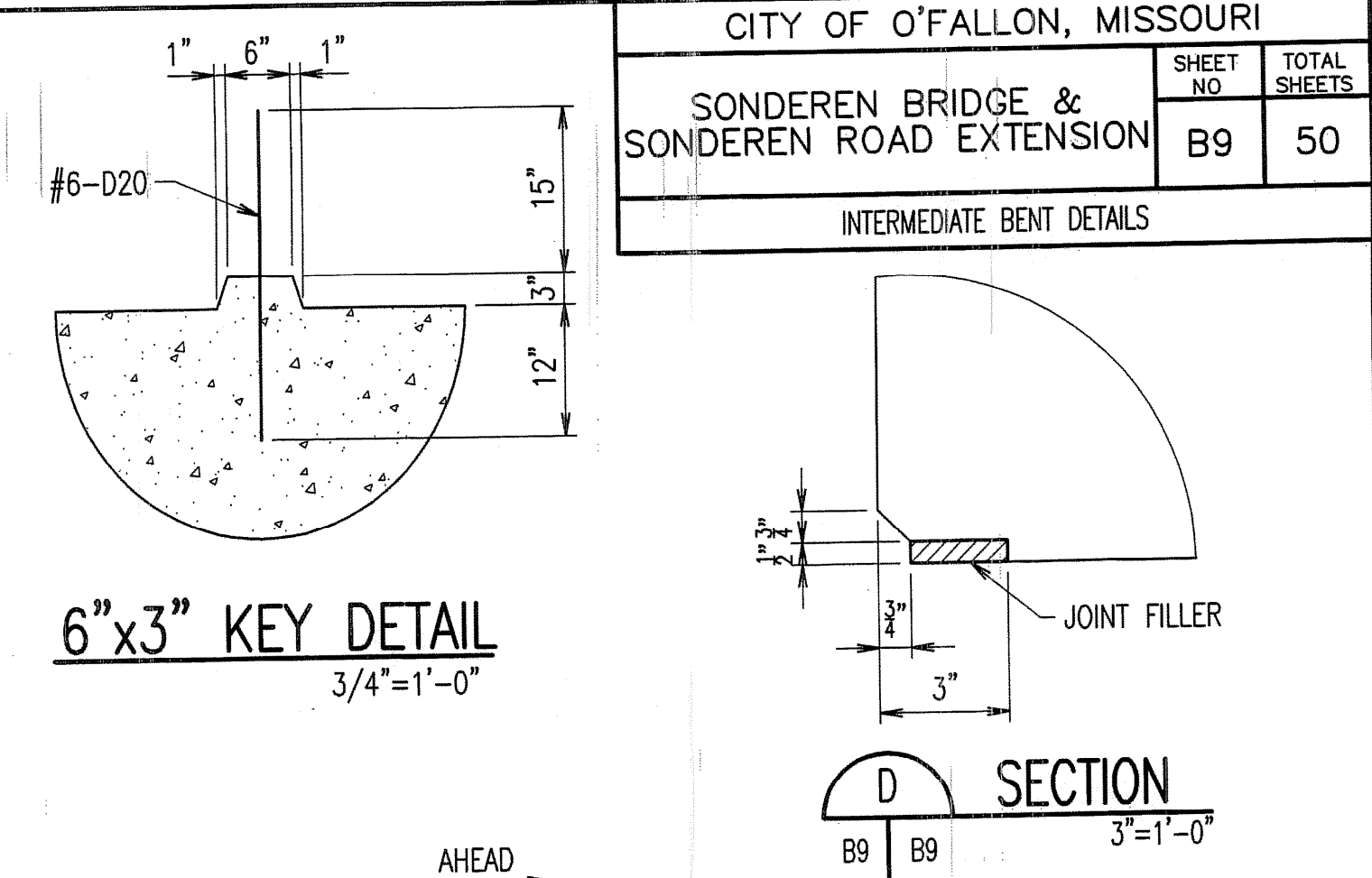
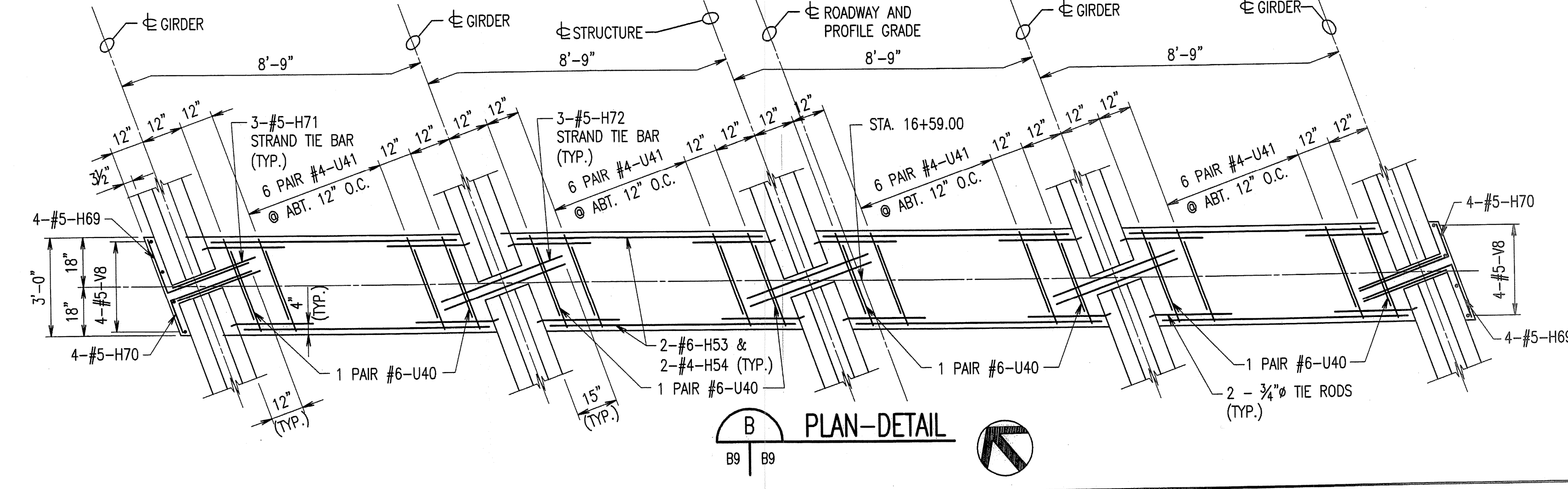
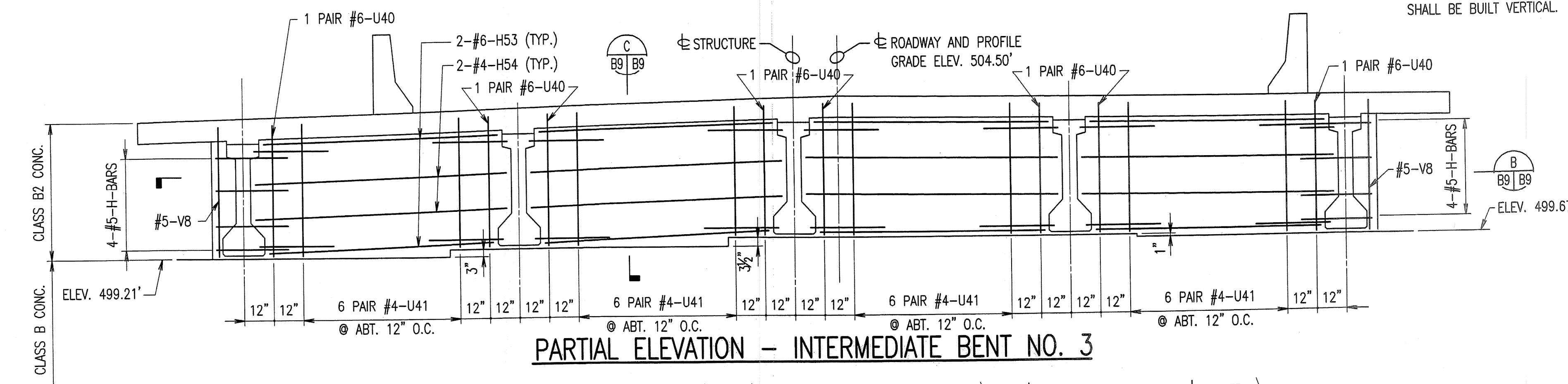
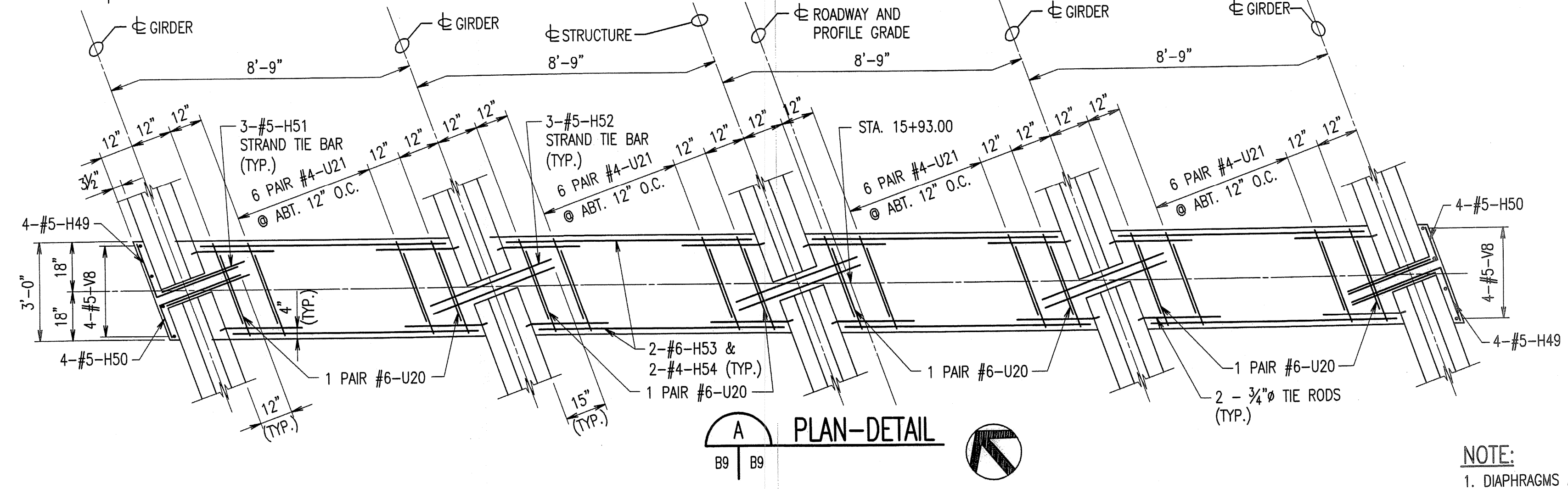
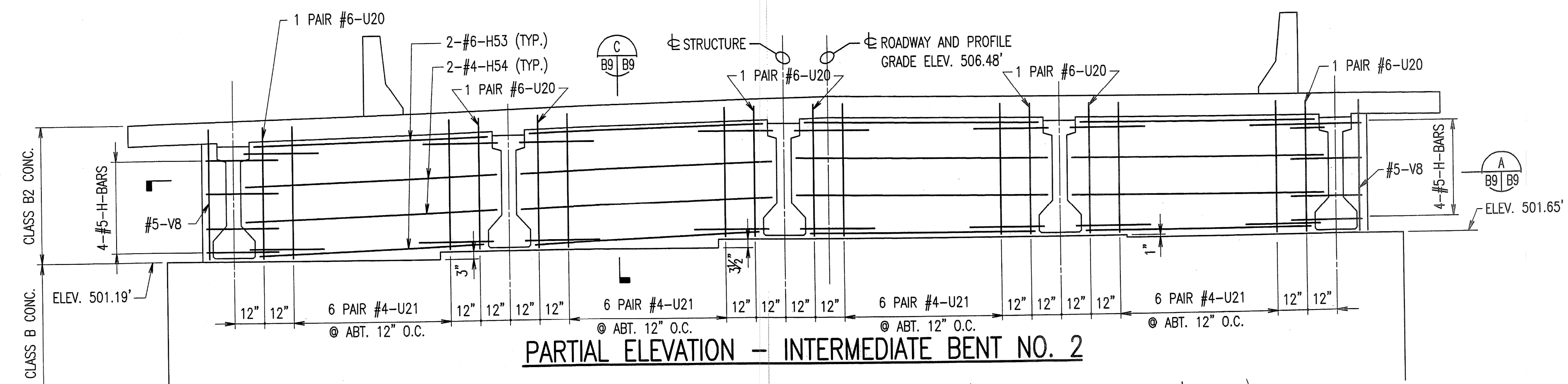
PLAN-DETAIL



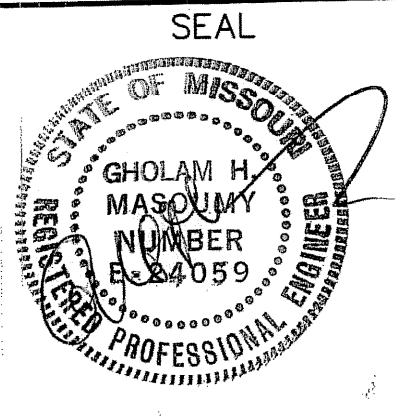
Designed HAS/HCG
 Drawn JJJ
 Checked GHM
 Date 4-12-07

EDM Incorporated
 220 Mansion House, 3rd Floor
 St. Louis, Missouri 63102
 (314) 231-5485 Fax: (314) 231-8167



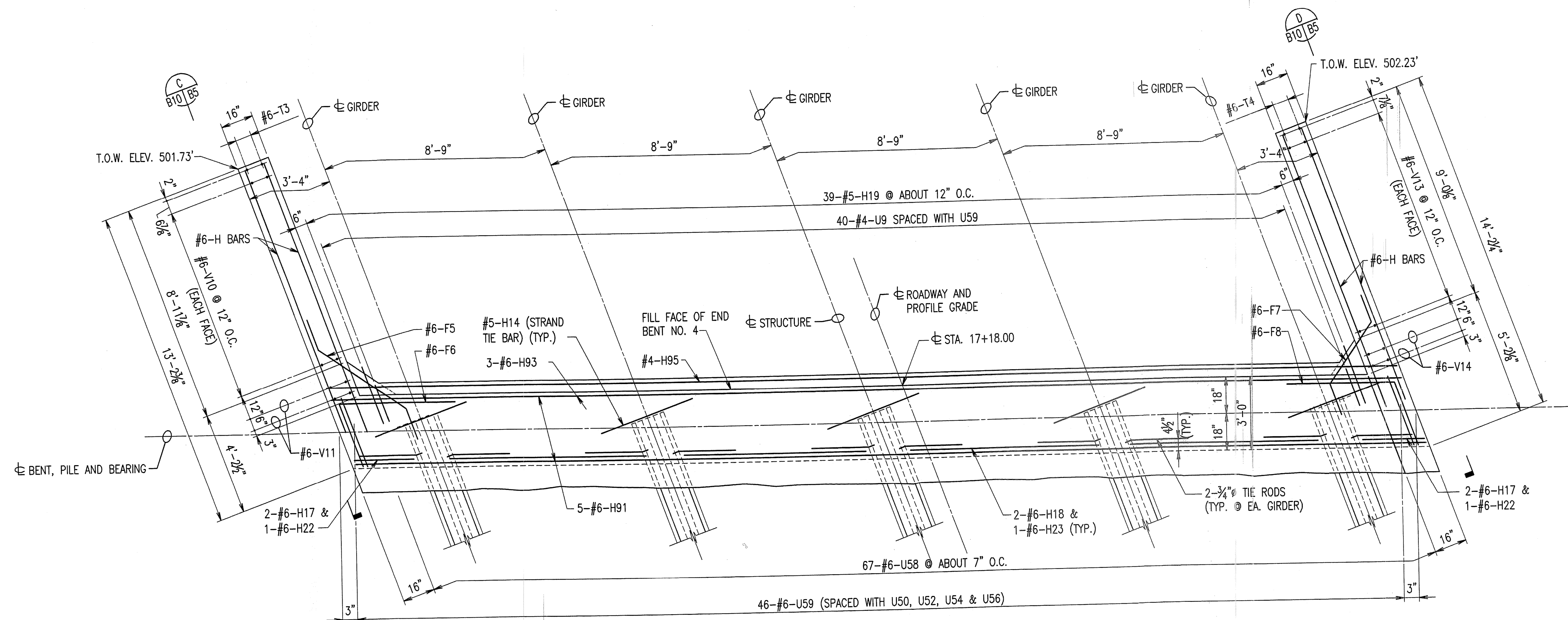


NOTE:
 1. DIAPHRAGMS AT INTERMEDIATE BENTS SHALL BE BUILT VERTICAL.



Designed: HAS/HCG
 Drawn: JJW
 Checked: GHM
 Date: 4-12-07
 No. 03904
 EDM Incorporated
 220 Mansion House, 3rd Floor
 St. Louis, Missouri 63102
 (314) 231-5485 Fax: (314) 231-8167

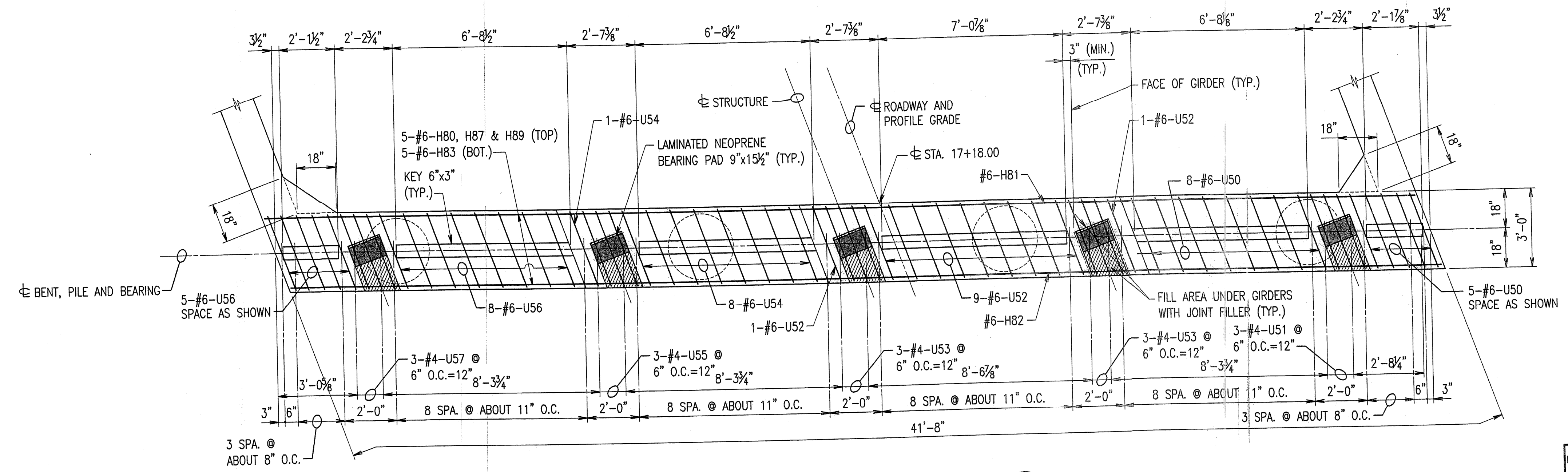
APR 12 2007



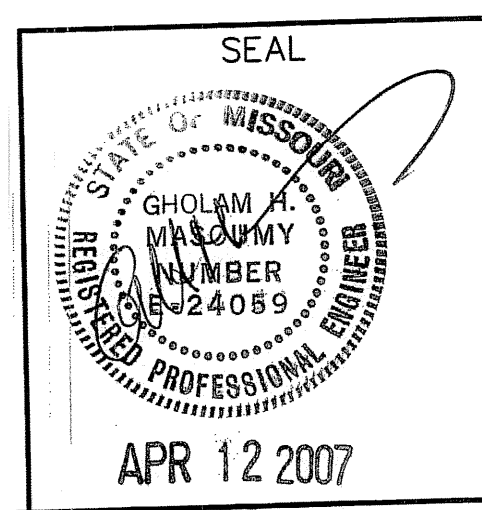
PLAN OF END BENT NO. 4 (ABOVE THE CONSTRUCTION JOINT)

NOTES:

- BEND F5 AND F7 BARS IN FIELD TO CLEAR GIRDERS.
- ALL U-BARS IN END BENT ARE TO BE PLACED PARALLEL TO ROADWAY.
- FOR DETAILS AND REINFORCEMENT OF SAFETY BARRIER CURB, SEE SHEETS NO. B15 AND B18.
- ALL CONCRETE IN THE END BENT ABOVE TOP OF BEAM AND BELOW TOP OF SLAB SHALL BE CLASS B2.
- ALL VERTICAL REINFORCING BARS IN THE SUBSTRUCTURE BEAMS OR CAPS SHALL BE FIELD ADJUSTED TO CLEAR PILES BY AT LEAST 1 1/2\".
- STRANDS AT END OF GIRDER SHALL BE FIELD BENT OR IF NECESSARY, CUT IN FIELD TO MAINTAIN 2\" MINIMUM CLEARANCE TO FILL FACE OF END BENT.
- FOR ELEVATION A & B SEE SHEET B5.

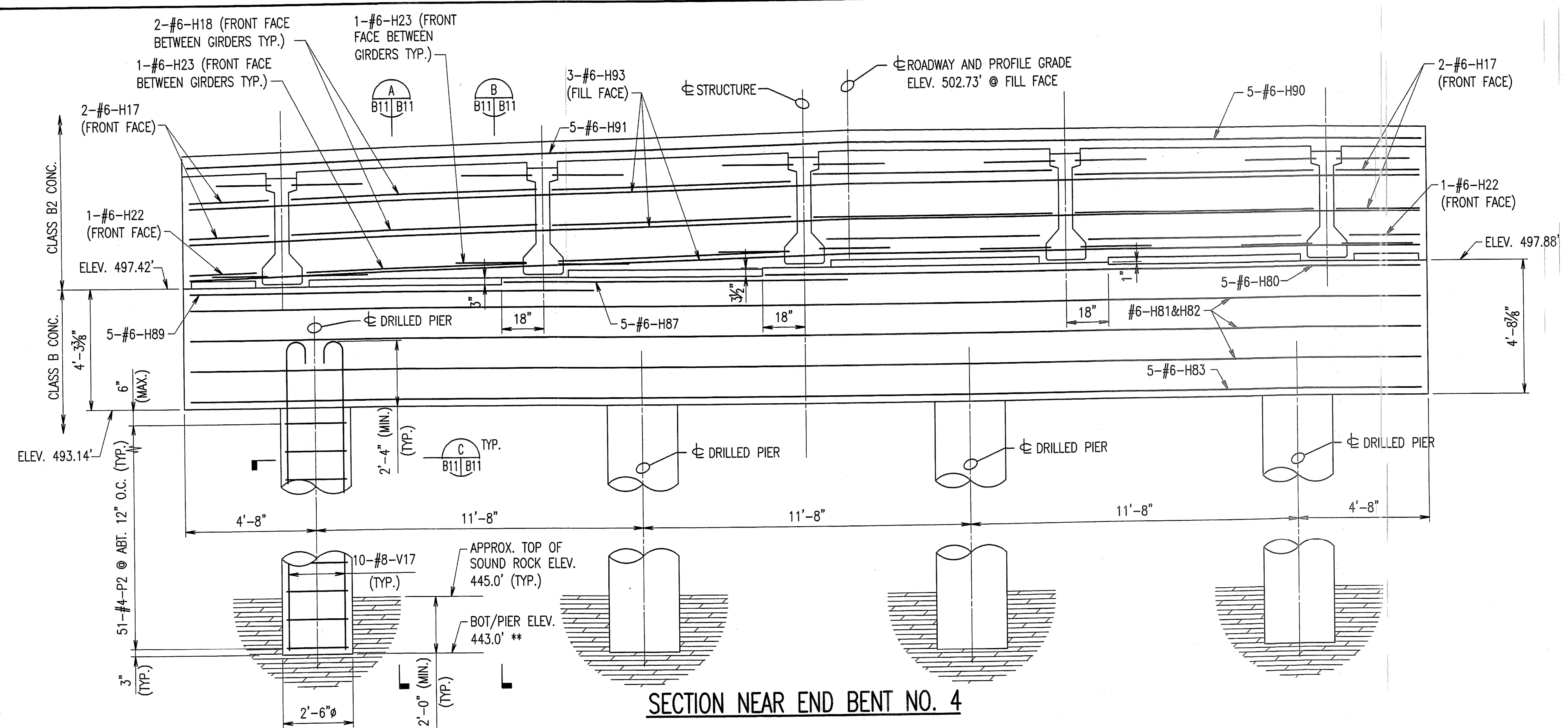


PLAN OF END BENT NO. 4 (BELOW PRECAST BEARING)

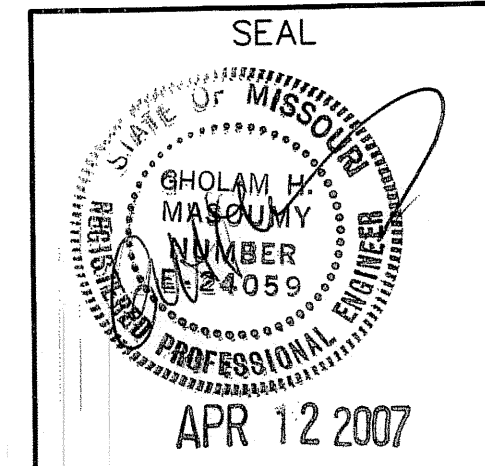
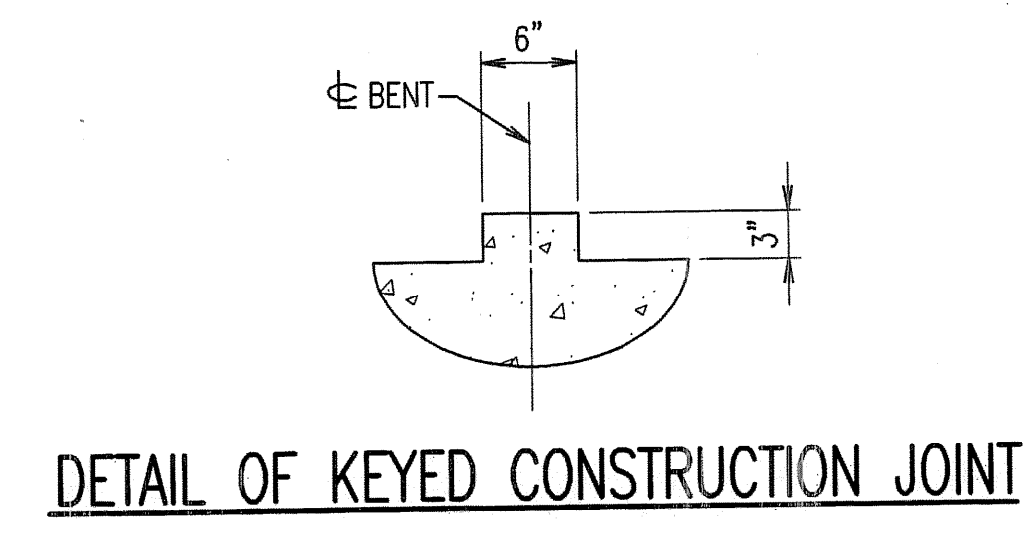
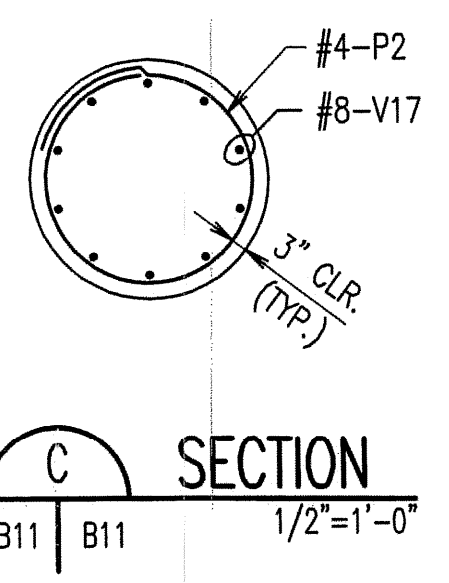
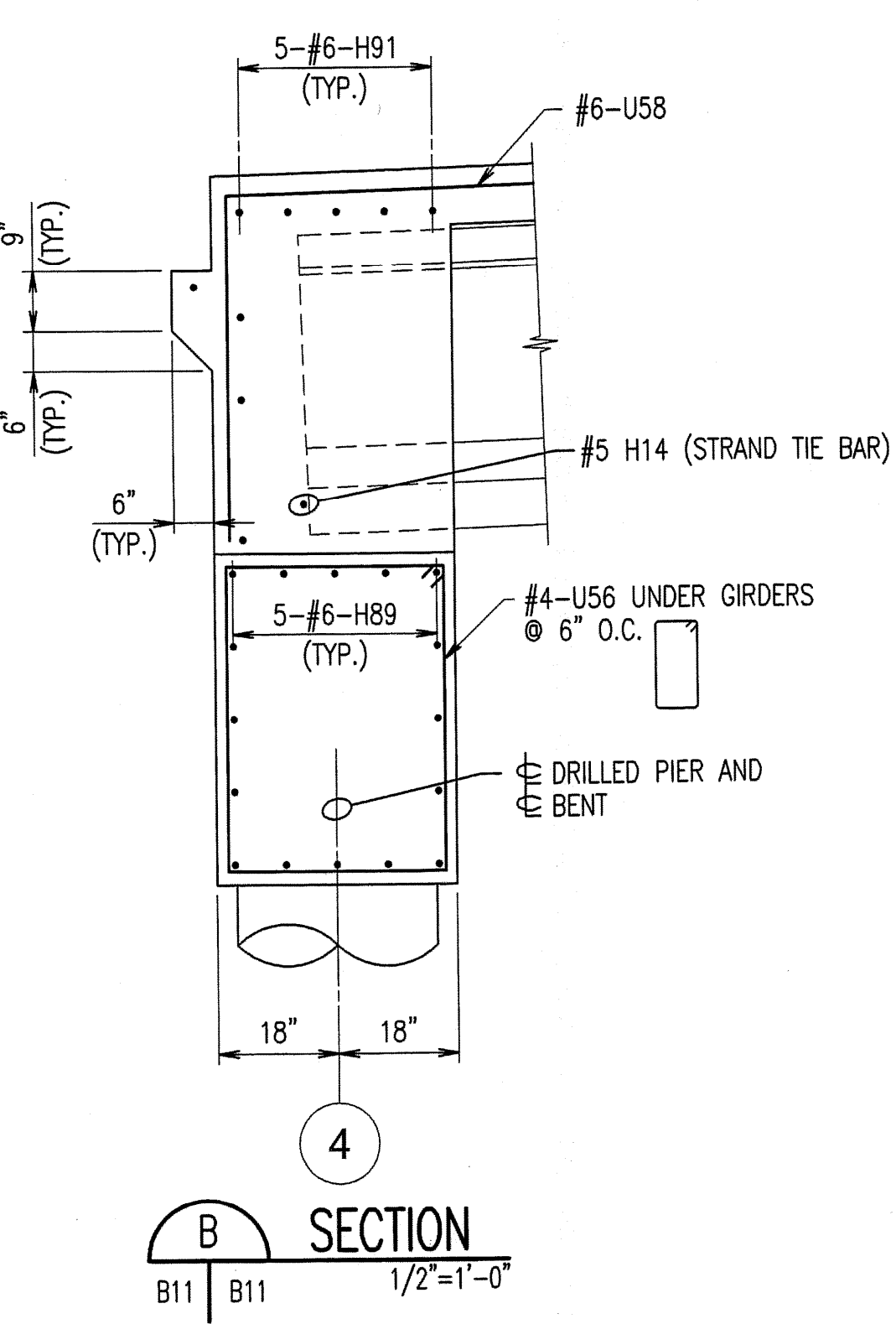
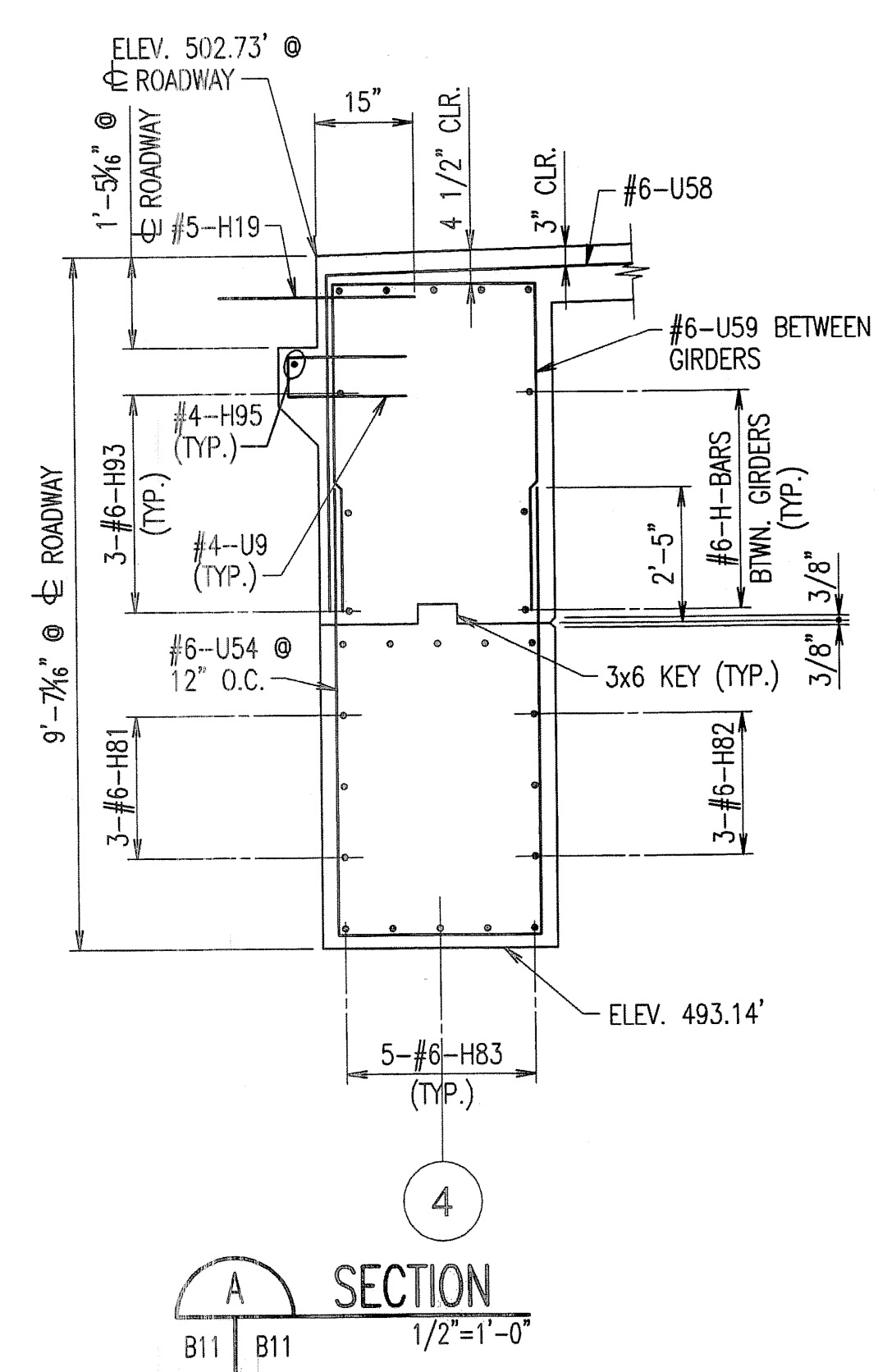


APR 12 2007

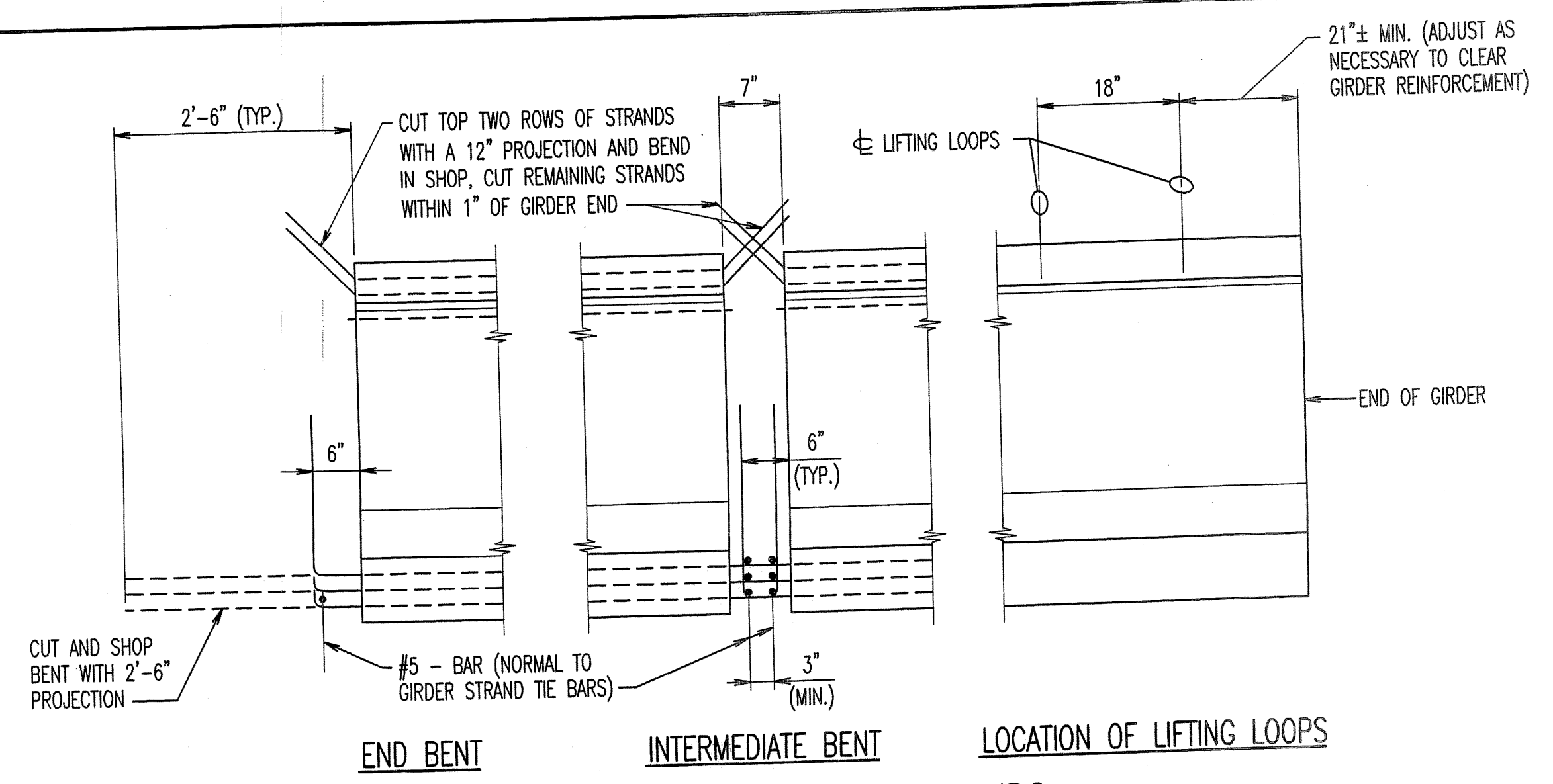
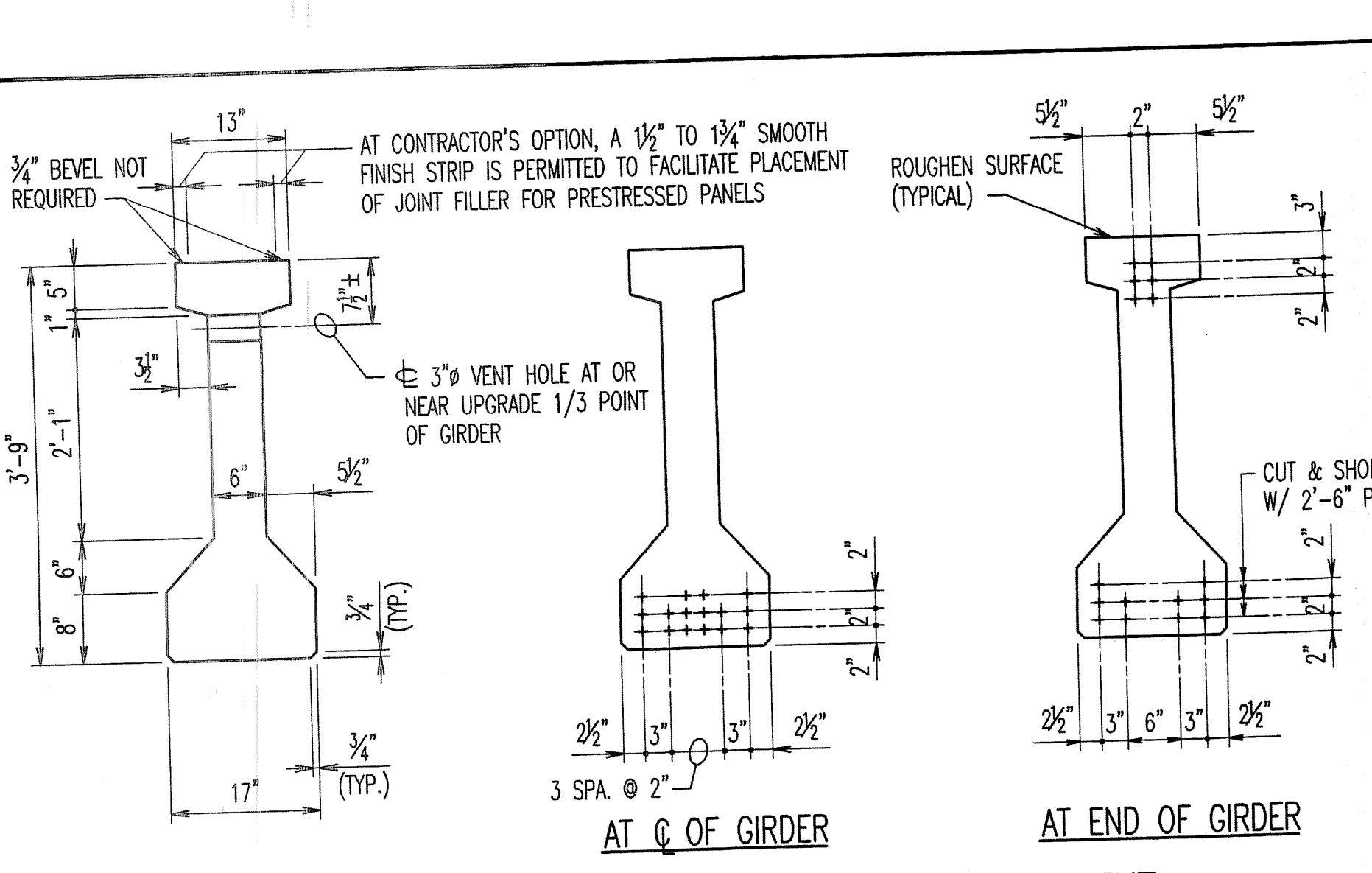
Designed	HAS/HCG	EDM No. 03804
Drawn	JJJ	
Checked	GHM	
Date	4-12-07	
EDM Incorporated 220 Mansion House, 3rd Floor St. Louis, Missouri 63102 (314) 231-5485 Fax: (314) 231-8167		



** - IN NO CASE SHALL THE BOTTOM OF DRILLED PIER BE PLACED HIGHER THAN ELEVATIONS SHOWN.



Designed	HAS/HCC	EDM No. 03804	EDM EDM Incorporated 220 Mansion House, 3rd Floor St. Louis, Missouri 63102 (314) 231-5485 Fax: (314) 231-8167
Drawn	JJJ		
Checked	GHM		
Date	4-12-07		



BILL OF REINFORCING STEEL - EACH 16 STRAND GIRDER

NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE	BENDING DIAGRAMS
2	#5 - A1	57'-5"	20	SHAPE 20 (A1)
174	#4 - B1 *	5'-2"	11	SHAPE 10 (C1) SHAPE 11 (B1)
16	#6 - B2	4'-7"	11	SHAPE 11 (B1)
95	#4 - C1	13'	10	SHAPE 11 (B2)
190	#4 - D1	2'-7"	9	SHAPE 9 (D1)

GIRDER DIMENSIONS

STRAND ARRANGEMENT

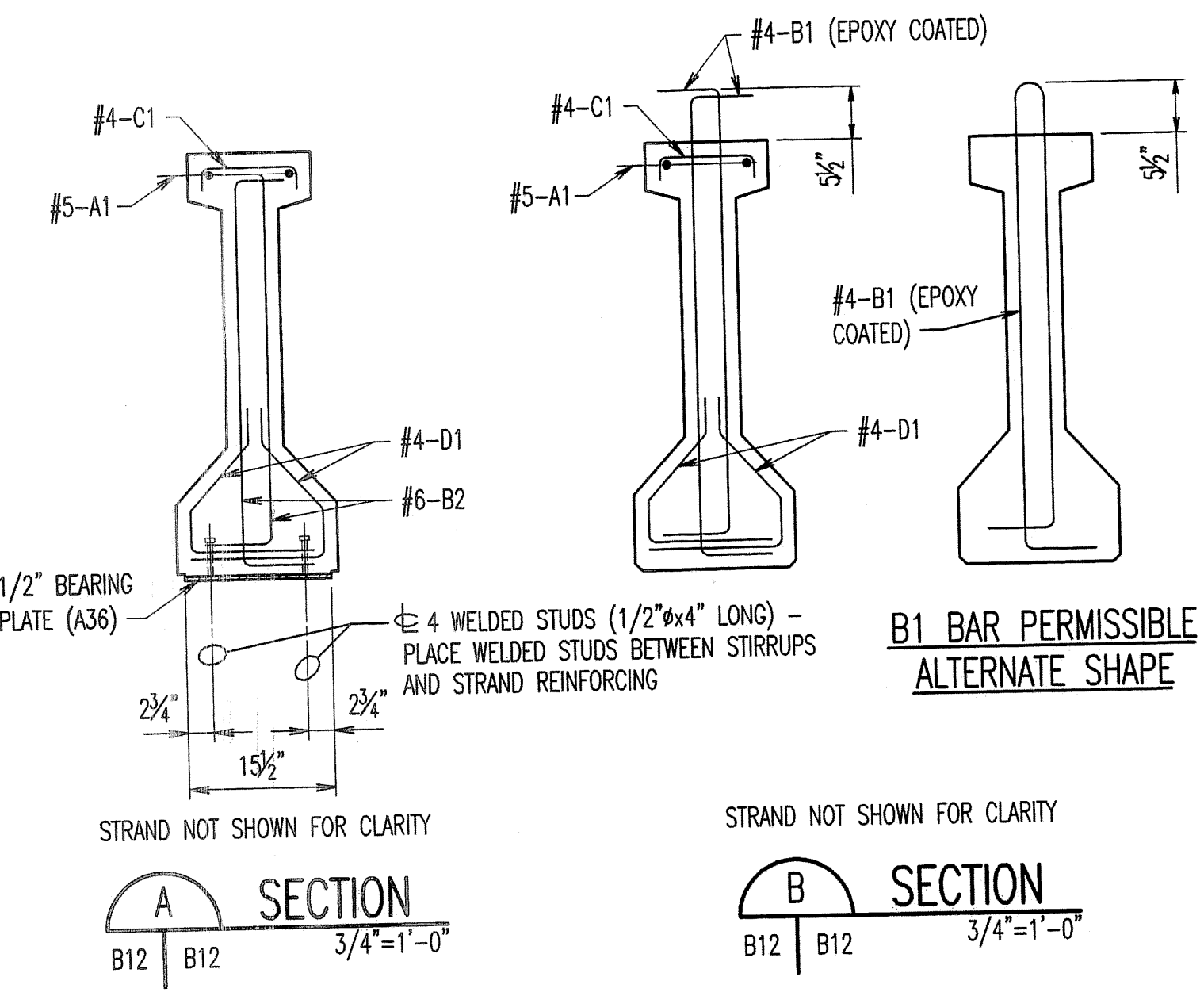
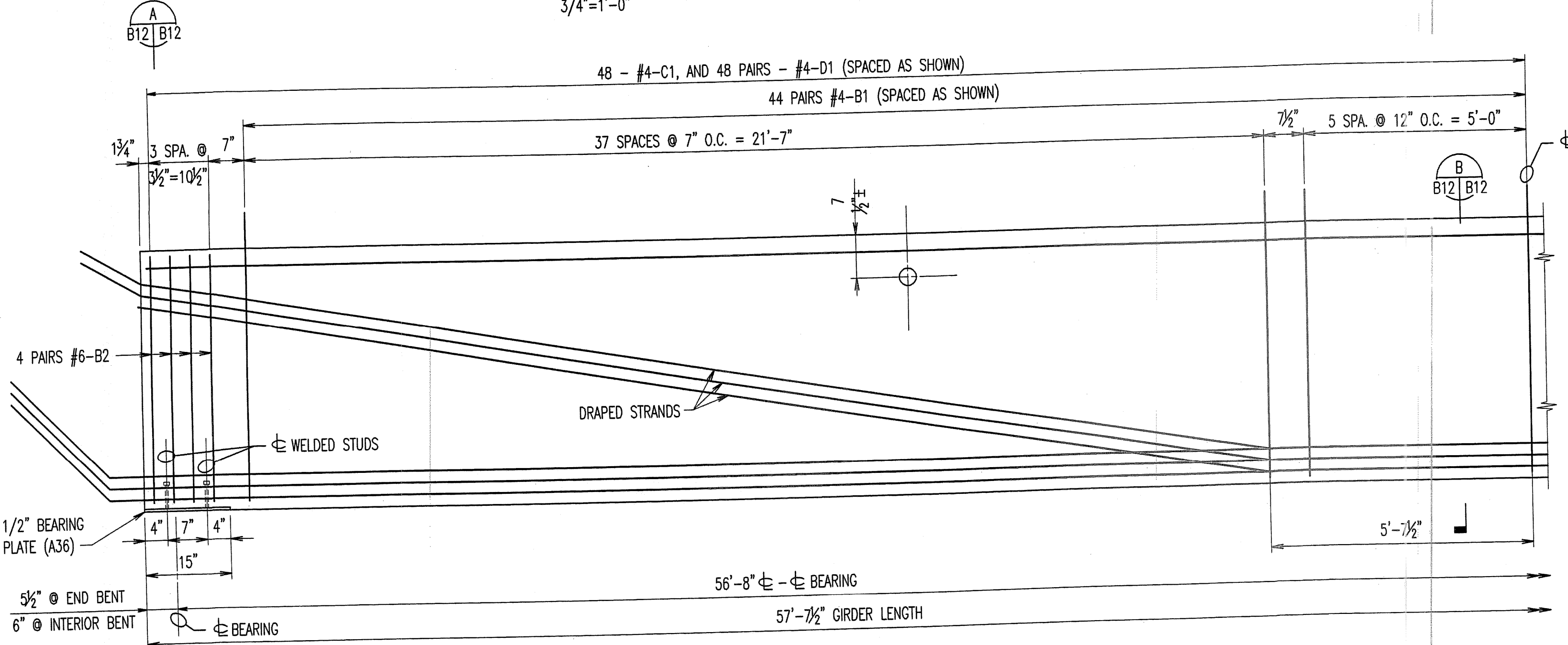
STRAND DETAILS AT GIRDER ENDS

PRECAST GIRDER NOTES:

- CONCRETE FOR PRESTRESSED GIRDER SHALL BE CLASS A1 WITH F'c = 6,000 PSI, F'ci = 4,500 PSI.
- (+) INDICATES PRESTRESSED STRANDS.
- GIRDER WEIGHT = 447 PLF.
- PRESTRESSING TENDONS SHALL BE UNCOATED, SEVEN-WIRE, LOW RELAXATION STRANDS. - 1/2 INCH DIAMETER CONFORMING TO A.A.S.H.T.O. M203, GRADE 270. (SEE SPECIFICATIONS 705.4.8) USE 16 STRANDS WITH AN INITIAL PRESTRESS FORCE OF 496 KIIPS.
- PLACE VENT HOLES AT OR NEAR UPGRADE 1/3 POINT OF GIRDERS AND CLEAR REINFORCING STEEL OR STRANDS BY 1 1/2" MINIMUM AND STEEL INTERMEDIATE DIAPHRAGM BOLT CONNECTIONS BY 6" MINIMUM. COST OF VENT HOLES IN PLACE TO BE INCLUDED IN THE CONTRACT UNIT PRICE FOR PRESTRESSED CONCRETE I-GIRDERS.
- ALL TOP FLANGE SURFACES OF THE GIRDERS SHALL BE ROUGHENED.
- GALVANIZE THE 1/2" BEARING PLATE (ASTM A709 GRADE 36) IN ACCORDANCE WITH ASTM A123.
- COST OF FURNISHING, GALVANIZING AND INSTALLING THE 1/2" BEARING PLATE (ASTM A709 GRADE 36) AND WELDED STUDS IN THE PRESTRESSED GIRDER SHALL BE INCLUDED IN THE PRICE BID FOR PRESTRESSED CONCRETE I-GIRDER PER EACH.

PRECAST GIRDER NOTES:

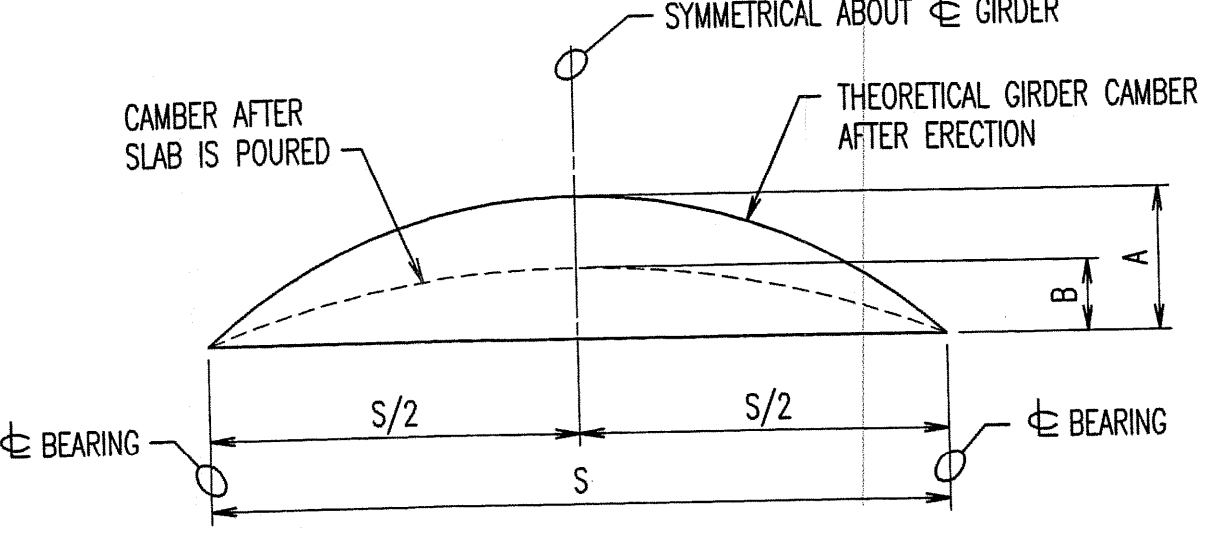
- ALL DIMENSIONS IN BENDING DIAGRAM ARE OUT TO OUT.
- HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE CRSI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES STIRRUP AND TIE DIMENSIONS.
- ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
- MINIMUM CLEARANCE TO REINFORCING SHALL BE 1" UNLESS NOTED OTHERWISE.
- ALL REINFORCING STEEL SHALL BE GRADE 60.
- ALL B1 BARS SHALL BE EPOXY COATED.
- THE TWO D1 BARS MAY BE FURNISHED AS ONE BAR AT THE FABRICATOR'S OPTION.
- COST OF FURNISHING, GALVANIZING, AND INSTALLING THE 1/2" BEARING PLATE (A36) AND WELDED STUDS IN THE PRESTRESSED GIRDER SHALL BE INCLUDED IN THE PRICE BID FOR PRESTRESSED CONCRETE I-GIRDER PER EACH.
- THE 1 1/2" HOLES SHALL BE CAST IN THE WEB FOR STEEL INTERMEDIATE DIAPHRAGMS. DRILLING IS NOT ALLOWED.



PARTIAL ELEVATION OF GIRDER - SPAN (1-2) & (3-4)

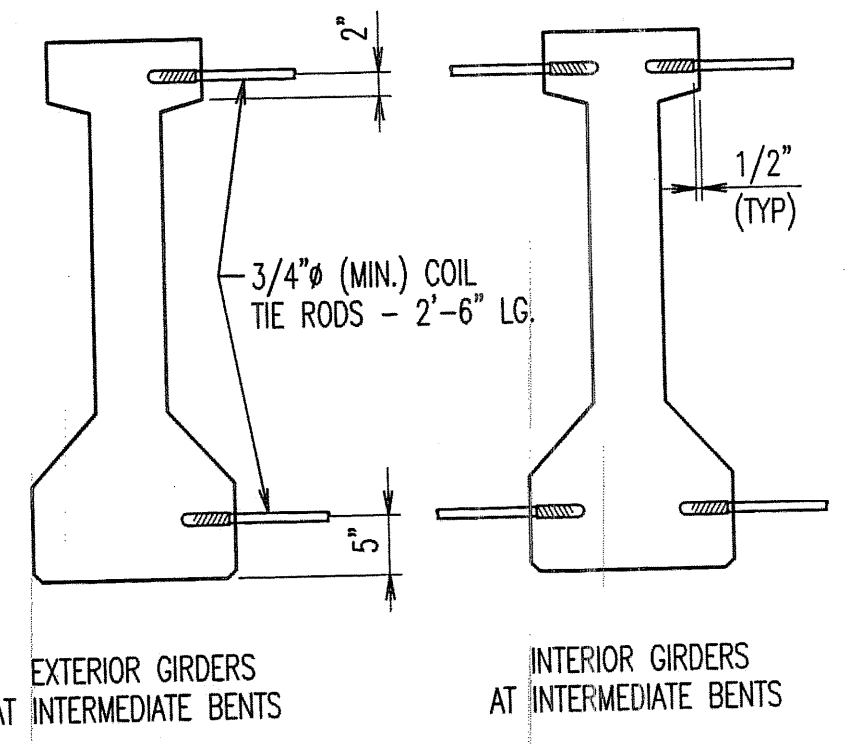
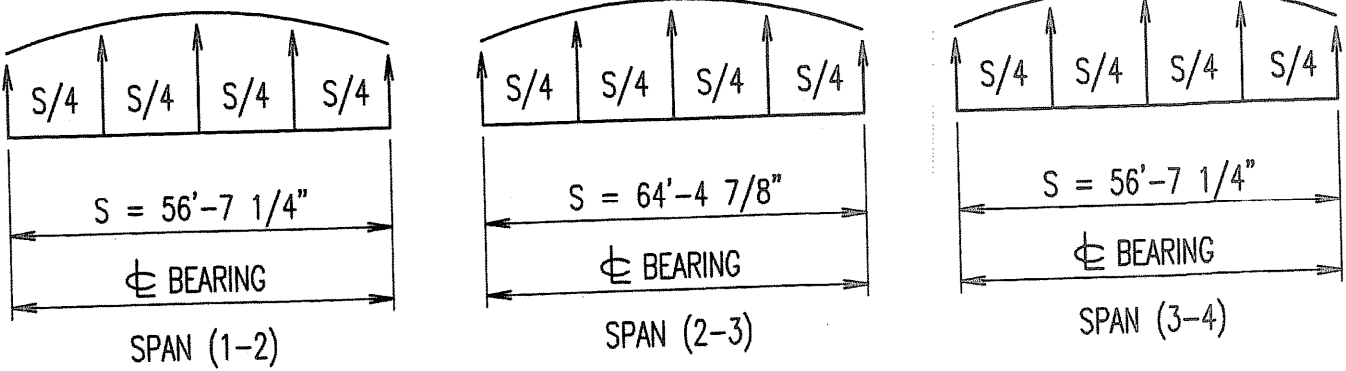
(NOTE: EXTERIOR AND INTERIOR GIRDERS ARE THE SAME EXCEPT FOR COIL TIES AND COIL INSERTS FOR SLAB DRAINS, AND HOLES FOR STEEL INTERMEDIATE DIAPHRAGMS.)

	1-5/8"	1-1/4"	1"	1-1/4"	1-9/16"	1-1/8"	1-1/16"	1"	1-5/16"	1-9/16"	1-3/8"	1-1/16"	1-1/16"	1-5/16"	2-1/8"
EXTERIOR GIRDERS	1-5/8"	1-3/16"	1"	1-3/16"	1-9/16"	1-1/16"	1"	1"	1-3/8"	1-13/16"	1-3/8"	1-1/16"	1-1/16"	1-5/16"	2-1/8"
INTERIOR GIRDERS	1-5/8"	1-1/4"	1"	1-1/4"	1-9/16"	1-1/8"	1-1/16"	1"	1-5/16"	1-9/16"	1-1/16"	15/16"	1"	1-7/16"	2-1/8"



GIRDER CAMBER DIMENSIONS

SPAN	(1-2)	(2-3)	(3-4)	REMARKS		
GIRDER	A	B	A	B	A	B
INTERIOR	1 1/8"	5/8"	1 1/4"	3/8"	1 1/8"	5/8"
EXTERIOR	1 1/8"	11/16"	1 1/4"	1/2"	1 1/8"	11/16"



NOTES:

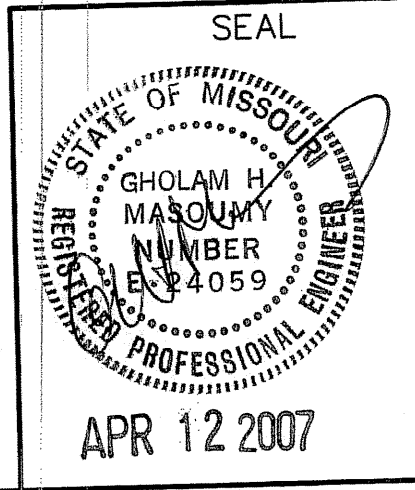
- COST OF 3/4" COIL TIE RODS PLACED IN DIAPHRAGMS IS INCLUDED IN CONTRACT UNIT PRICE FOR PRESTRESSED CONCRETE I-GIRDERS.
- COIL TIES SHALL BE HELD IN PLACE IN THE FORMS BY SLOTTED WIRE-SETTING-STUDS PROJECTING THROUGH FORMS. STUDS ARE TO BE LEFT IN PLACE OR REPLACED WITH TEMPORARY PLUGS UNTIL GIRDERS ARE ERECTED AND THEN REPLACED BY COIL TIE RODS.
- FOR LOCATION OF COIL INSERTS AT SLAB DRAIN, SEE SHEET NO. B17.

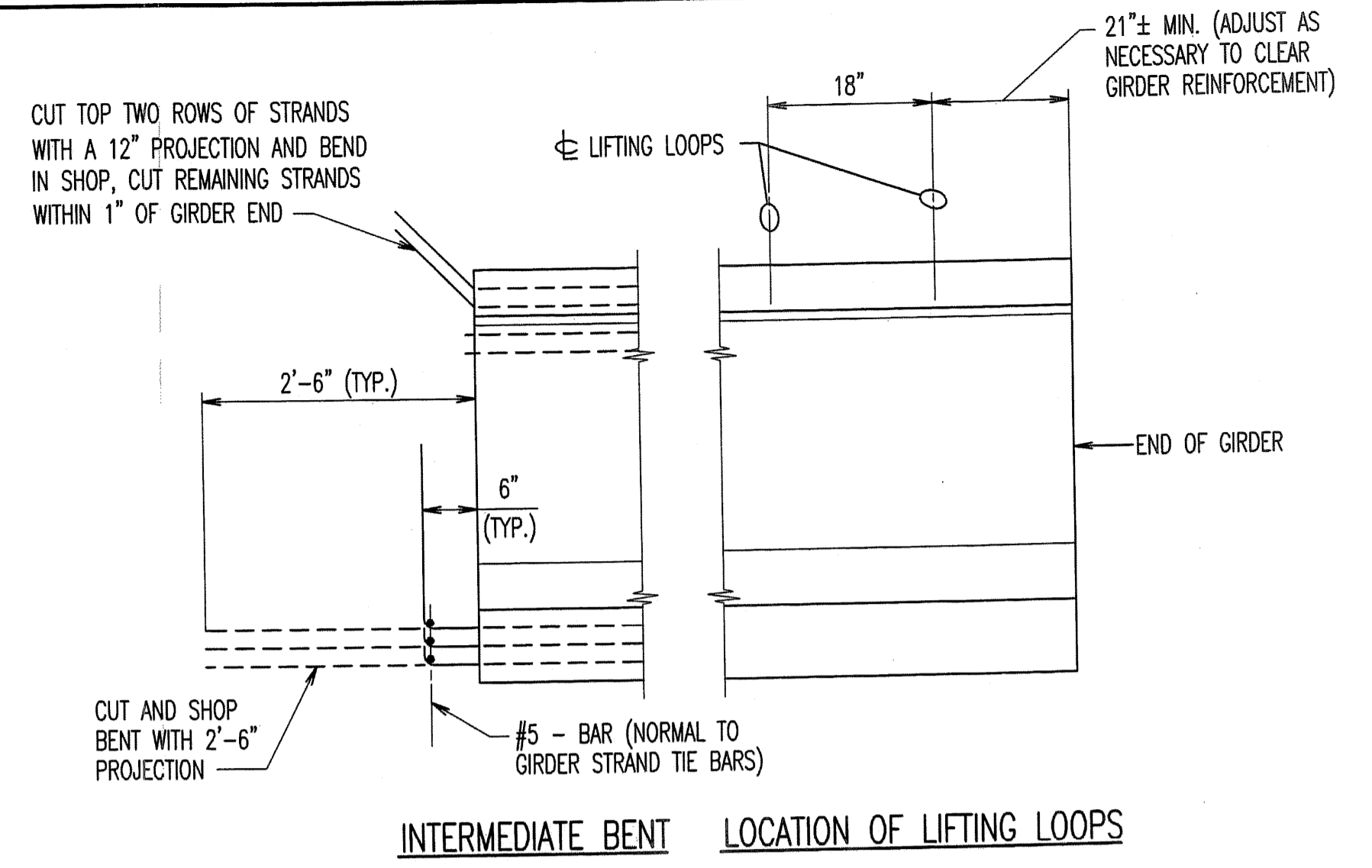
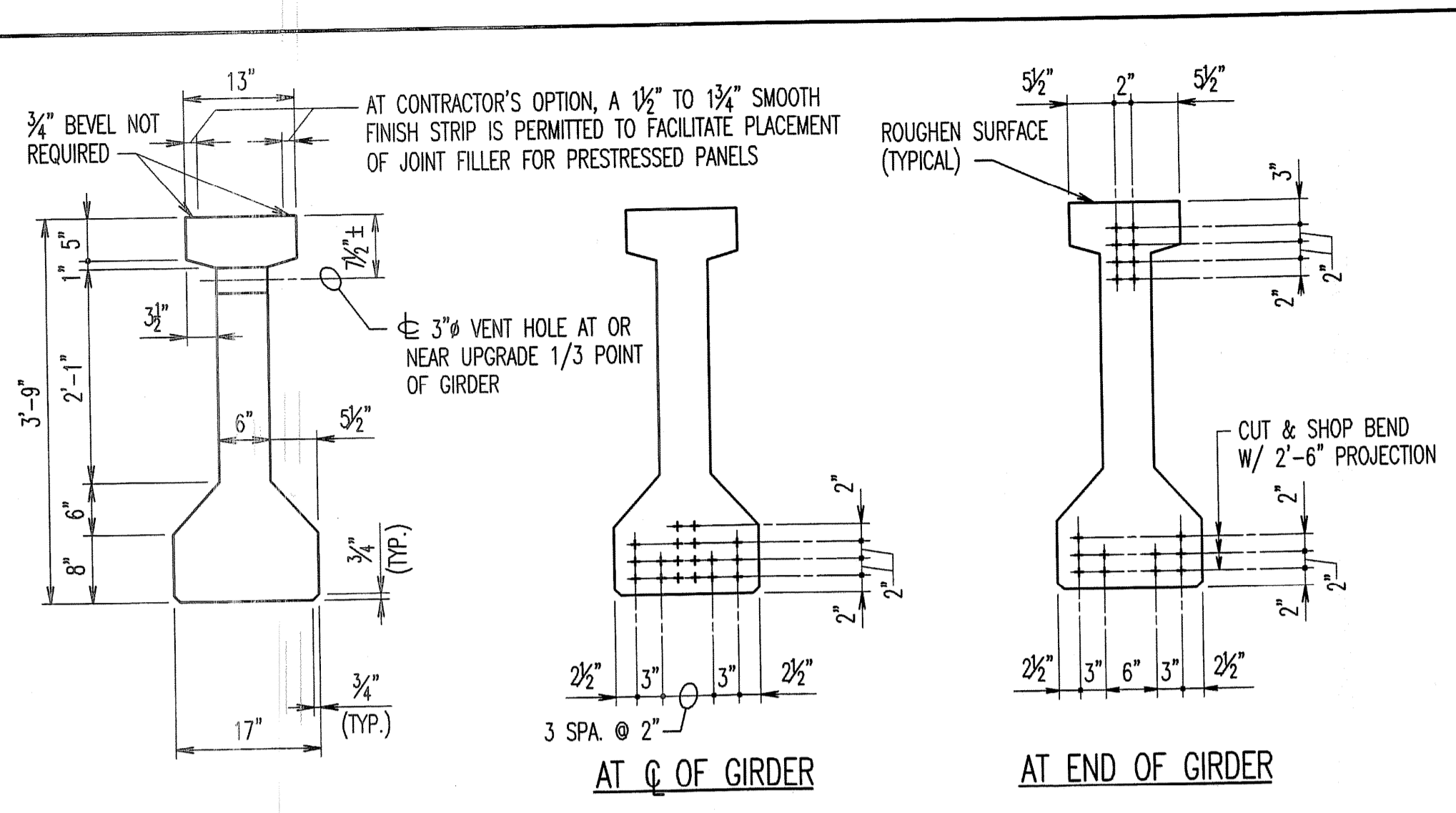
NOTE:

- CAMBER AT 1/4 POINT OF GIRDER IS EQUAL TO 0.7125 CAMBER AT CENTERLINE OF GIRDER.
- IF GIRDER CAMBER IS DIFFERENT FROM THAT SHOWN IN THE CAMBER DIAGRAM, IT SHALL BE NECESSARY TO ADJUST THE SLAB HAUNCHES, INCREASE THE SLAB THICKNESS, OR TO RAISE THE GRADE UNIFORMLY THROUGHOUT THE STRUCTURE. NO PAYMENT WILL BE MADE FOR ADDITIONAL LABOR OR MATERIALS REQUIRED FOR VARIATION IN HAUNCHING, SLAB THICKNESS, OR GRADE ADJUSTMENT.

Designed HAS/HCG
 Drawn JJJ
 Checked GHM
 Date 4-12-07
 EDM No. 03804

EDM EDM Incorporated
 220 Mansion House, 3rd Floor
 St. Louis, Missouri 63102
 (314) 231-5485 Fax: (314) 231-8167





BILL OF REINFORCING STEEL - EACH 18 STRAND GIRDER

NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE	BENDING DIAGRAMS
2	#5 - A1	65'-3"	20	
74	#4 - B1 *	5'-2"	11	
16	#6 - B2	4'-7"	11	
98	#4 - C1	13"	10	
196	#4 - D1	2'-7"	9	

GIRDER DIMENSIONS

STRAND ARRANGEMENT

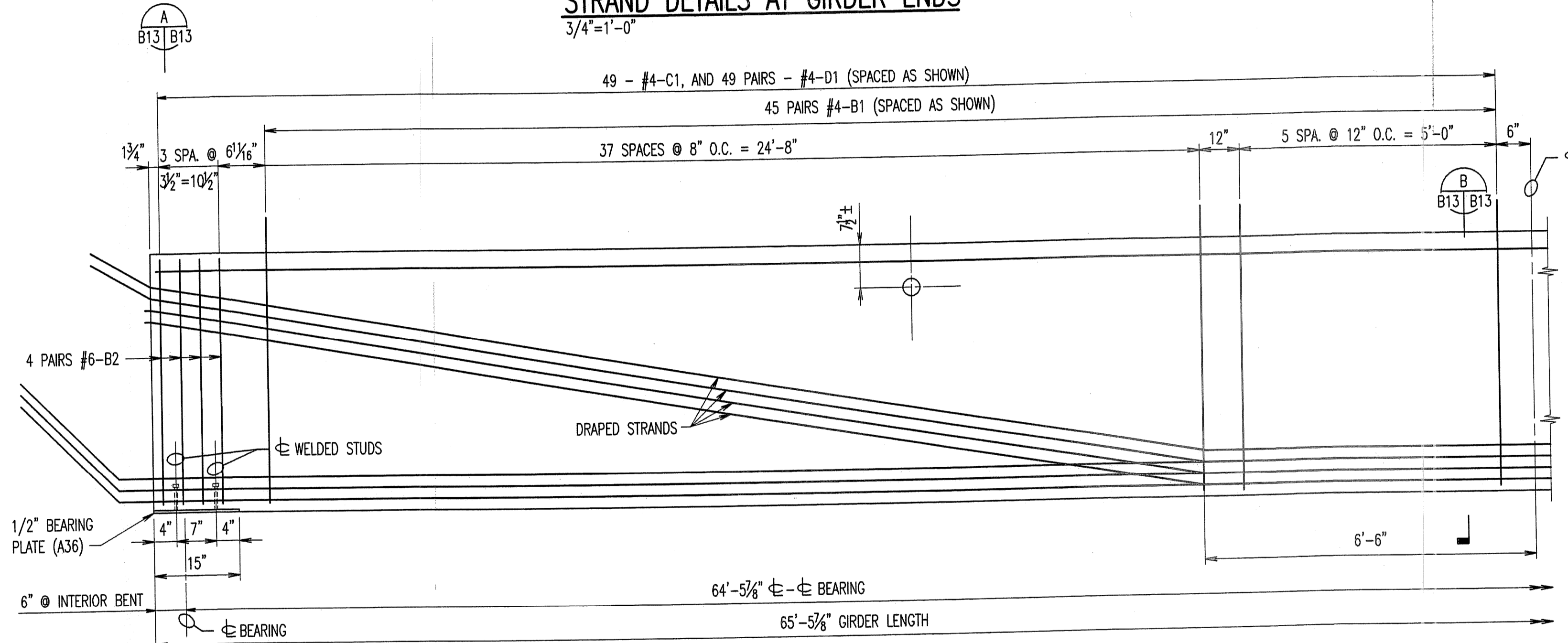
STRAND DETAILS AT GIRDER ENDS

PRECAST GIRDER NOTES:

- CONCRETE FOR PRESTRESSED GIRDER SHALL BE CLASS A1 WITH F'c = 6,000 PSI, F'ci = 4,500 PSI.
- (+) INDICATES PRESTRESSED STRANDS.
- GIRDER WEIGHT = 447 PLF.
- PRESTRESSING TENDONS SHALL BE UNCOATED, SEVEN-WIRE, LOW RELAXATION STRANDS - 1/2 INCH DIAMETER CONFORMING TO A.A.S.H.T.O. M203, GRADE 270. (SEE SPECIFICATIONS 705.4.8) USE 18 STRANDS WITH AN INITIAL PRESTRESS FORCE OF 558 KIPS.
- PLACE VENT HOLES AT OR NEAR UPGRADE 1/3 POINT OF GIRDERS AND CLEAR REINFORCING STEEL OR STRANDS BY 1 1/2" MINIMUM AND STEEL INTERMEDIATE DIAPHRAGM BOLT CONNECTIONS BY 6" MINIMUM. COST OF VENT HOLES IN PLACE TO BE INCLUDED IN THE CONTRACT UNIT PRICE FOR PRESTRESSED CONCRETE "I"-GIRDERS.
- ALL TOP FLANGE SURFACES OF THE GIRDERS SHALL BE ROUGHENED.
- GALVANIZE THE 1/2" BEARING PLATE (ASTM A709 GRADE 36) IN ACCORDANCE WITH ASTM A123.
- COST OF FURNISHING, GALVANIZING AND INSTALLING THE 1/2" BEARING PLATE (ASTM A709 GRADE 36) AND WELDED STUDS IN THE PRESTRESSED GIRDER SHALL BE INCLUDED IN THE PRICE BID FOR PRESTRESSED CONCRETE I-GIRDER PER EACH.
- SEE SHEET B12 FOR THEORETICAL SLAB HAUNCHING DIAGRAM.
- SEE SHEET B12 FOR GIRDER CAMBER DIAGRAM.

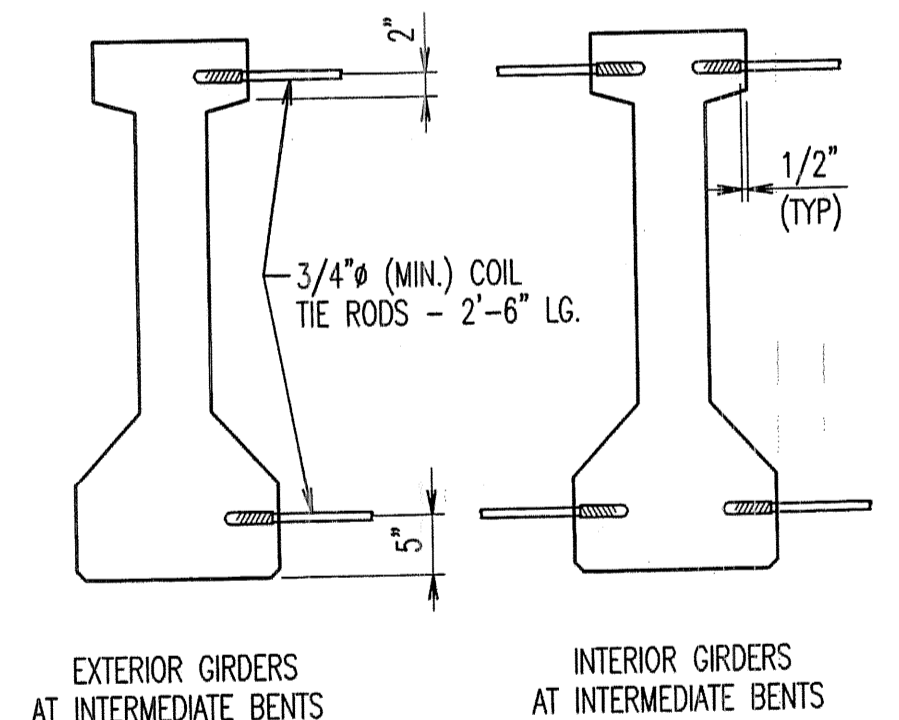
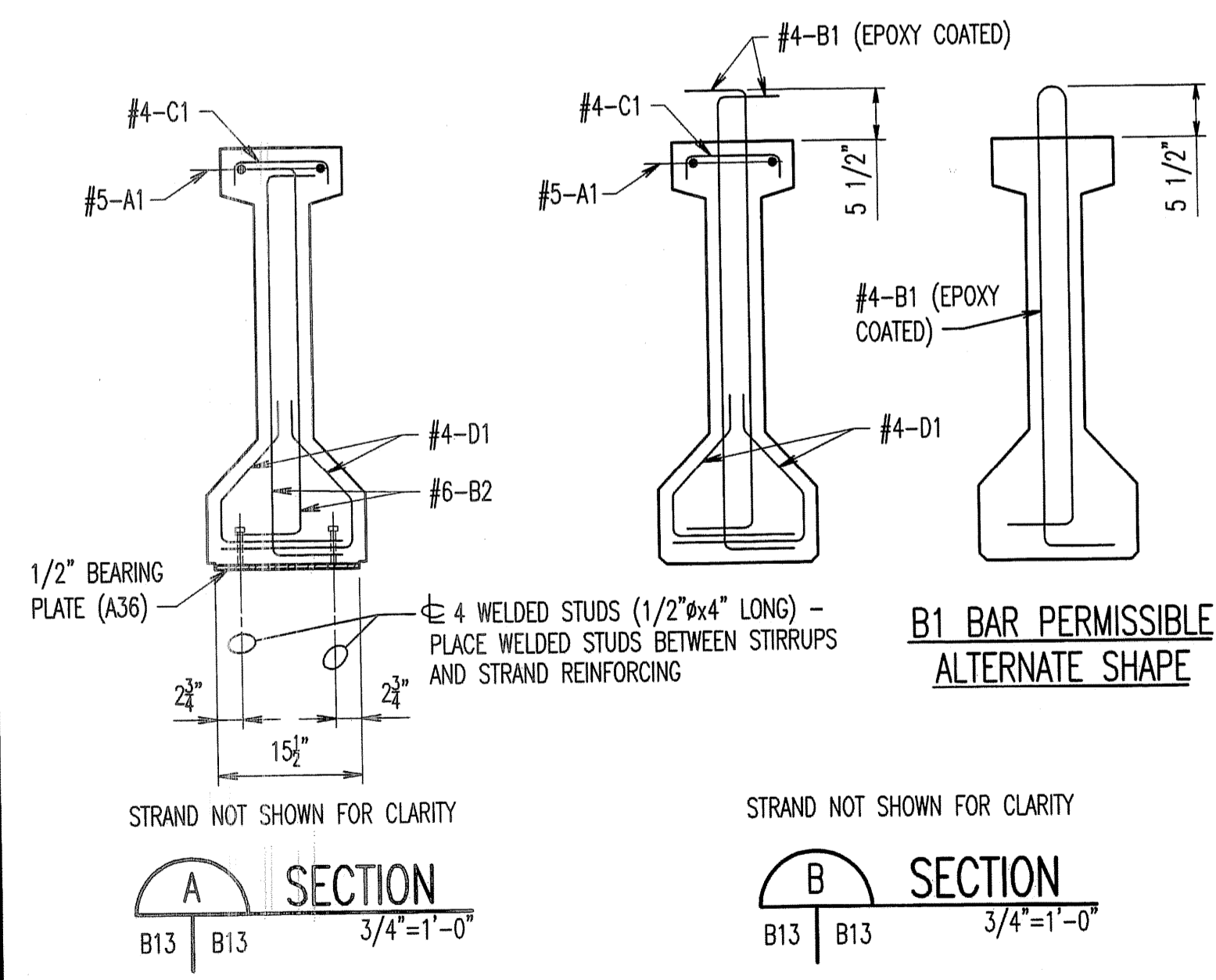
PRECAST GIRDER NOTES:

- ALL DIMENSIONS IN BENDING DIAGRAM ARE OUT TO OUT.
- HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE CRSI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES STIRRUP AND TIE DIMENSIONS.
- ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE TO THE NEAREST INCH.
- MINIMUM CLEARANCE TO REINFORCING SHALL BE 1" UNLESS NOTED OTHERWISE.
- ALL REINFORCING STEEL SHALL BE GRADE 60.
- ALL B1 BARS SHALL BE EPOXY COATED.
- THE TWO D1 BARS MAY BE FURNISHED AS ONE BAR AT THE FABRICATOR'S OPTION.
- COST OF FURNISHING, GALVANIZING, AND INSTALLING THE 1/2" BEARING PLATE (A36) AND WELDED STUDS IN THE PRESTRESSED GIRDER SHALL BE INCLUDED IN THE PRICE BID FOR PRESTRESSED CONCRETE I-GIRDER PER EACH.
- THE 1 1/2" HOLES SHALL BE CAST IN THE WEB FOR STEEL INTERMEDIATE DIAPHRAGMS. DRILLING IS NOT ALLOWED.



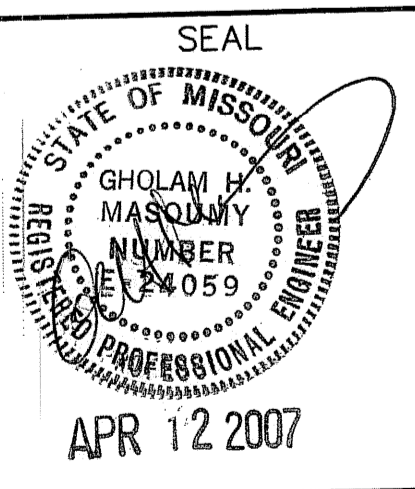
PARTIAL ELEVATION OF GIRDER - SPAN (2-3)

(NOTE: EXTERIOR AND INTERIOR GIRDERS ARE THE SAME EXCEPT FOR COIL TIES AND COIL INSERTS FOR SLAB DRAINS, AND HOLES FOR STEEL INTERMEDIATE DIAPHRAGMS.)

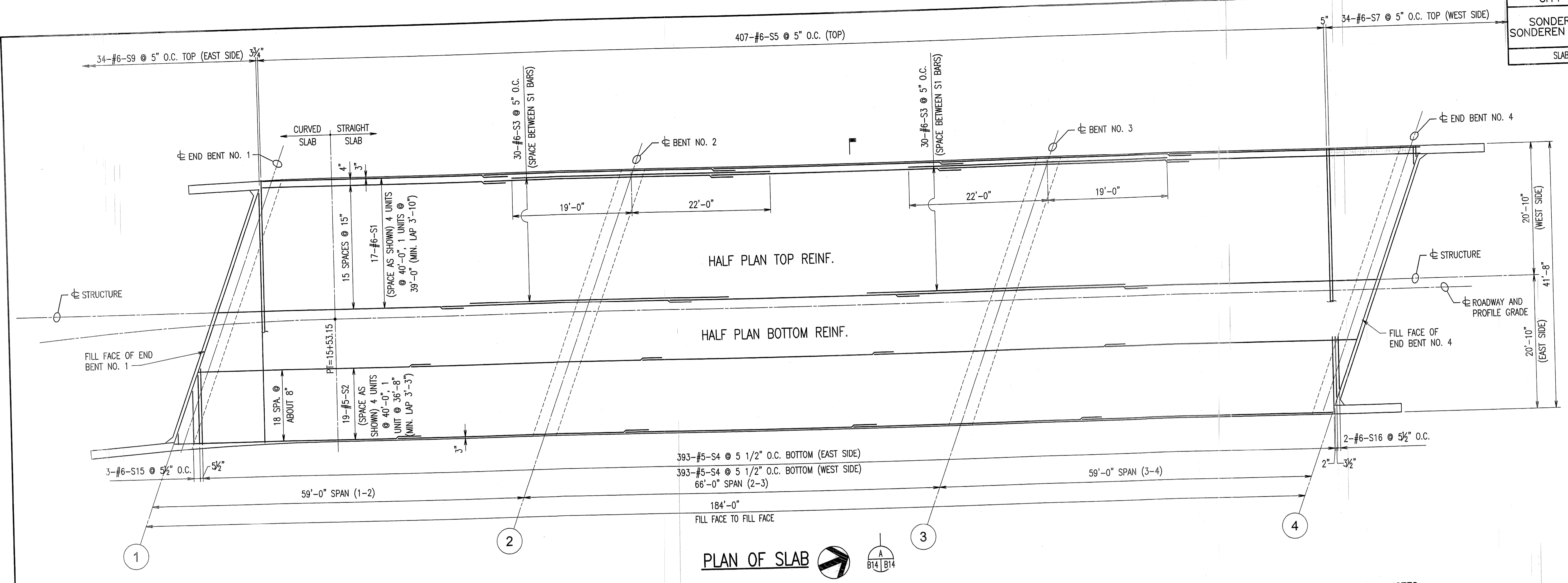


NOTES:

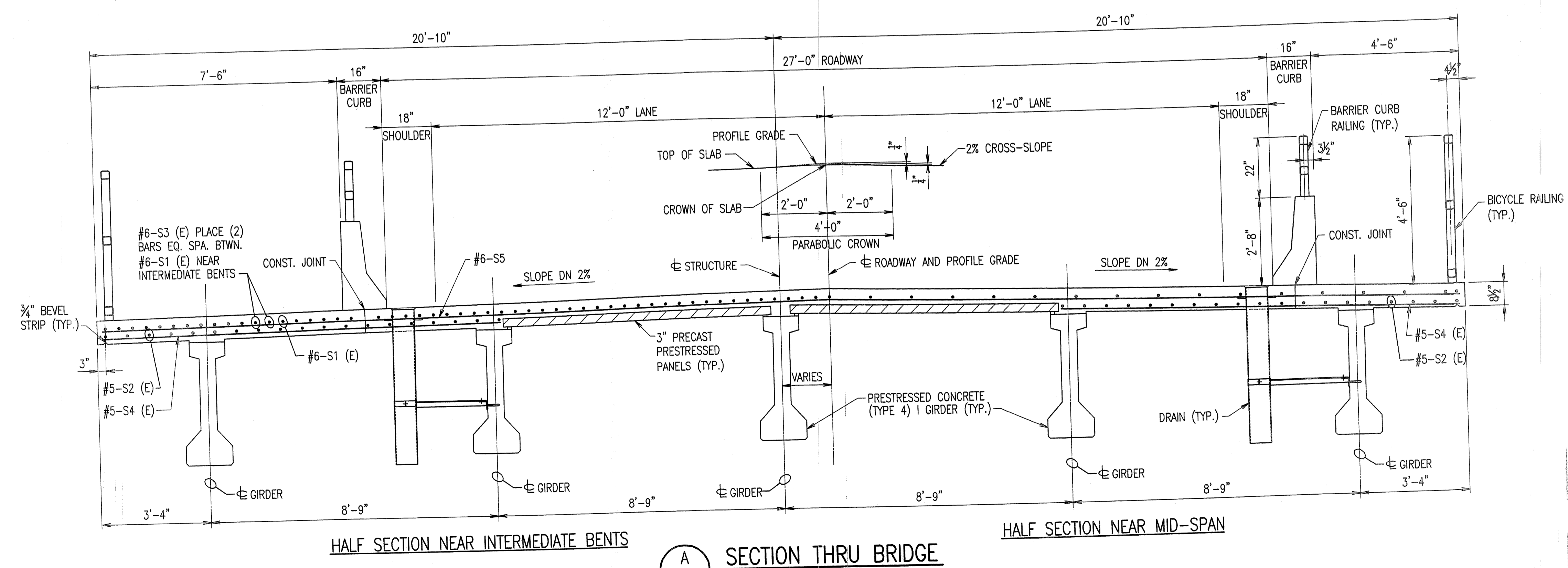
- COST OF 3/4" COIL TIE RODS PLACED IN DIAPHRAGMS IS INCLUDED IN CONTRACT UNIT PRICE FOR PRESTRESSED CONCRETE I-GIRDERS.
- COIL TIES SHALL BE HELD IN PLACE IN THE FORMS BY SLOTTED WIRE-SETTING-STUDS PROJECTING THROUGH FORMS. STUDS ARE TO BE LEFT IN PLACE OR REPLACED WITH TEMPORARY PLUGS UNTIL GIRDERS ARE ERECTED AND THEN REPLACED BY COIL TIE RODS.
- FOR LOCATION OF COIL INSERTS AT SLAB DRAIN, SEE SHEET NO. B17.



Designed	HAS/HCG	EDM No. 03804	EDM Incorporated 220 Mansion House, 3rd Floor St. Louis, Missouri 63102 (314) 231-5485 Fax: (314) 231-8167
Drawn	JJJ		
Checked	GHM		
Date	4-12-07		

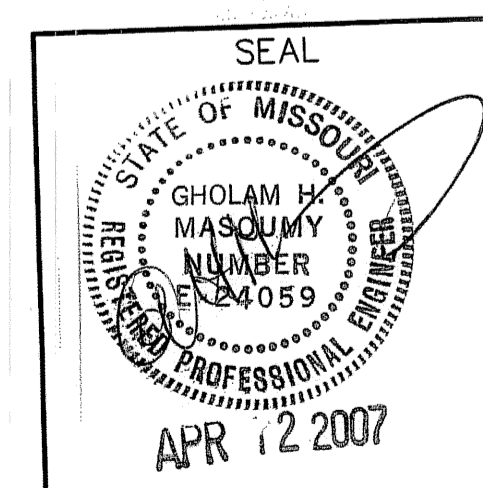


PLAN OF SLAB



SECTION THRU BRIDGE

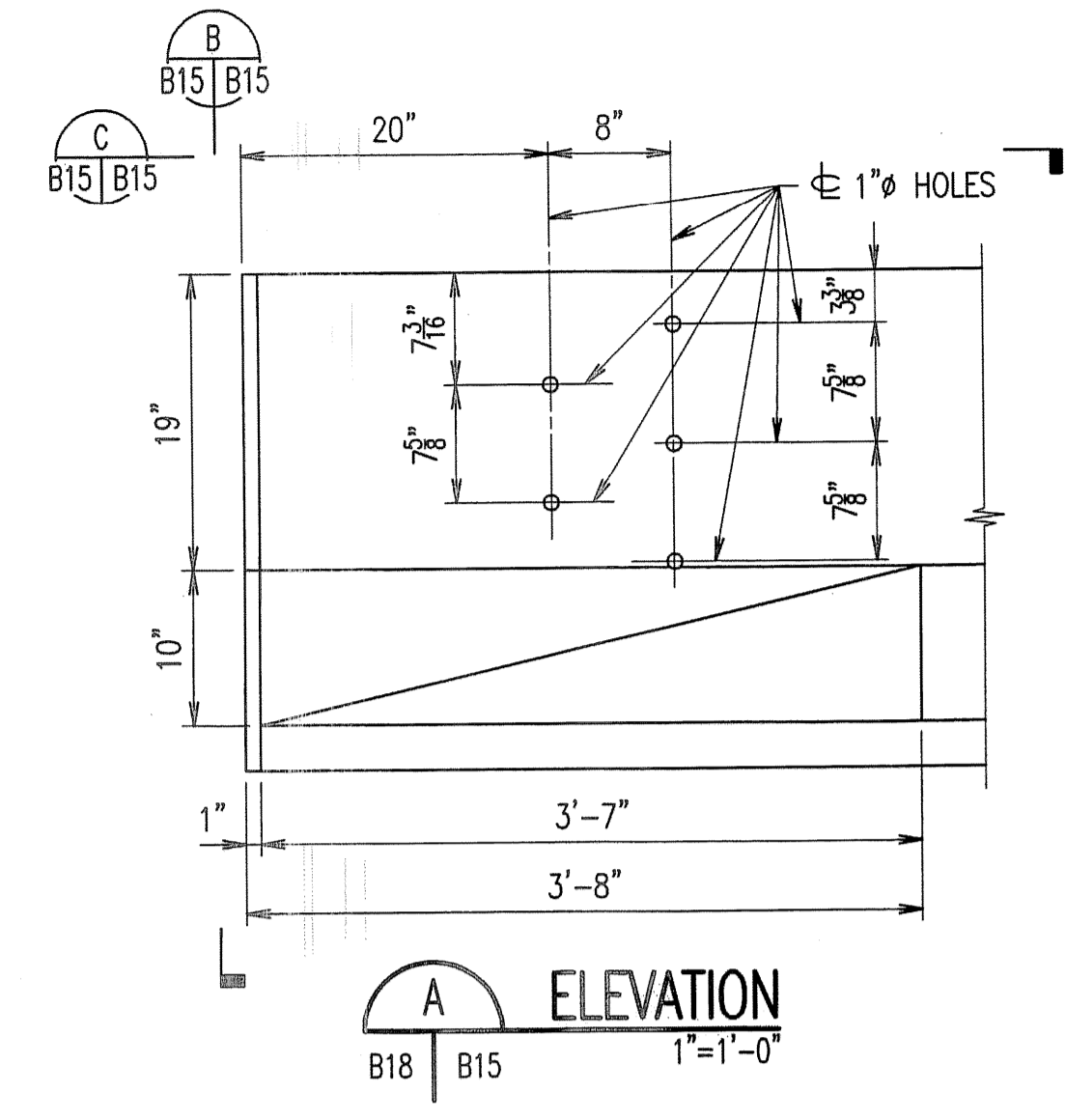
- NOTES:**
- FOR GIRDER CAMBER DIAGRAM - SEE SHEET NO. B12.
 - FOR THEORETICAL SLAB HAUNCHING DIAGRAM - SEE SHEET NO. B12.
 - FOR DETAILS OF PRESTRESSED PRECAST PANELS - SEE SHEET NO. B16.
 - FOR BARRIER CURB REINFORCING - SEE SHEET B18.
 - LONGITUDINAL SLAB DIMENSIONS ARE MEASURED HORIZONTALLY.
 - FOR SLAB POURING SEQUENCE - SEE SHEET NO. B15.



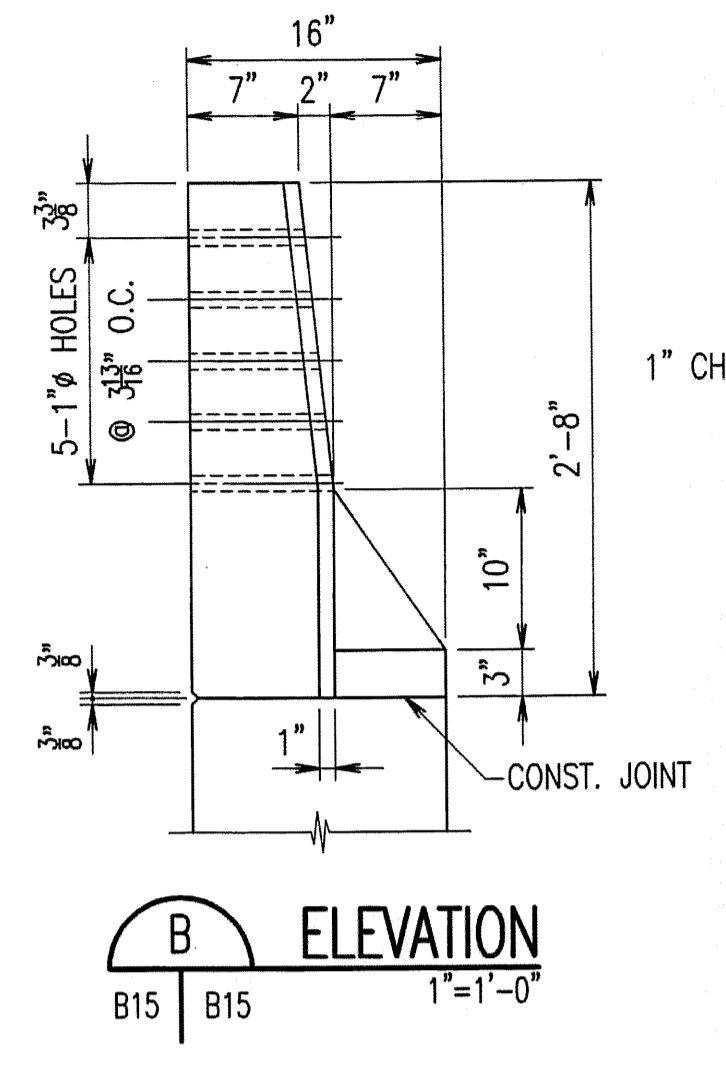
Designed	HAS/HCG
Drawn	JJW
Checked	GHM
Date	4-12-07

EDM No. 03804

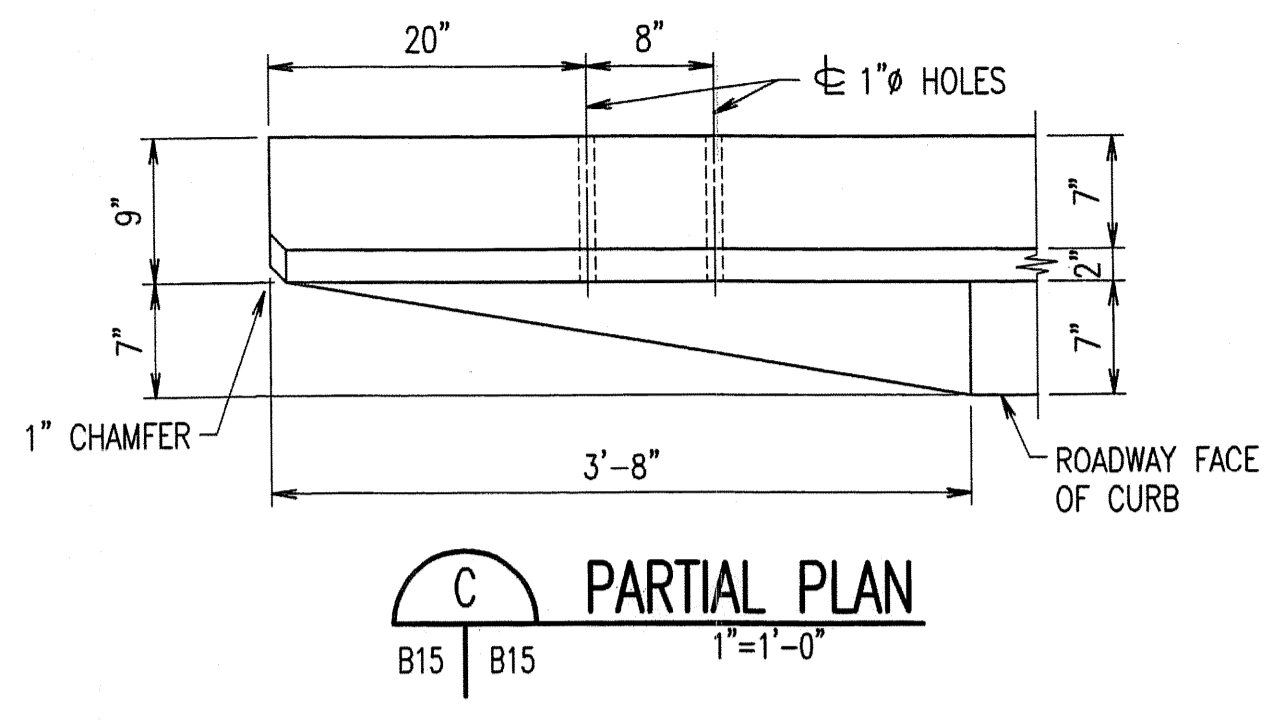
EDM EDM Incorporated
 220 Mansion House, 3rd Floor
 St. Louis, Missouri 63102
 (314) 231-5485 Fax: (314) 231-8167



A ELEVATION
 B18 | B15
 1"=1'-0"

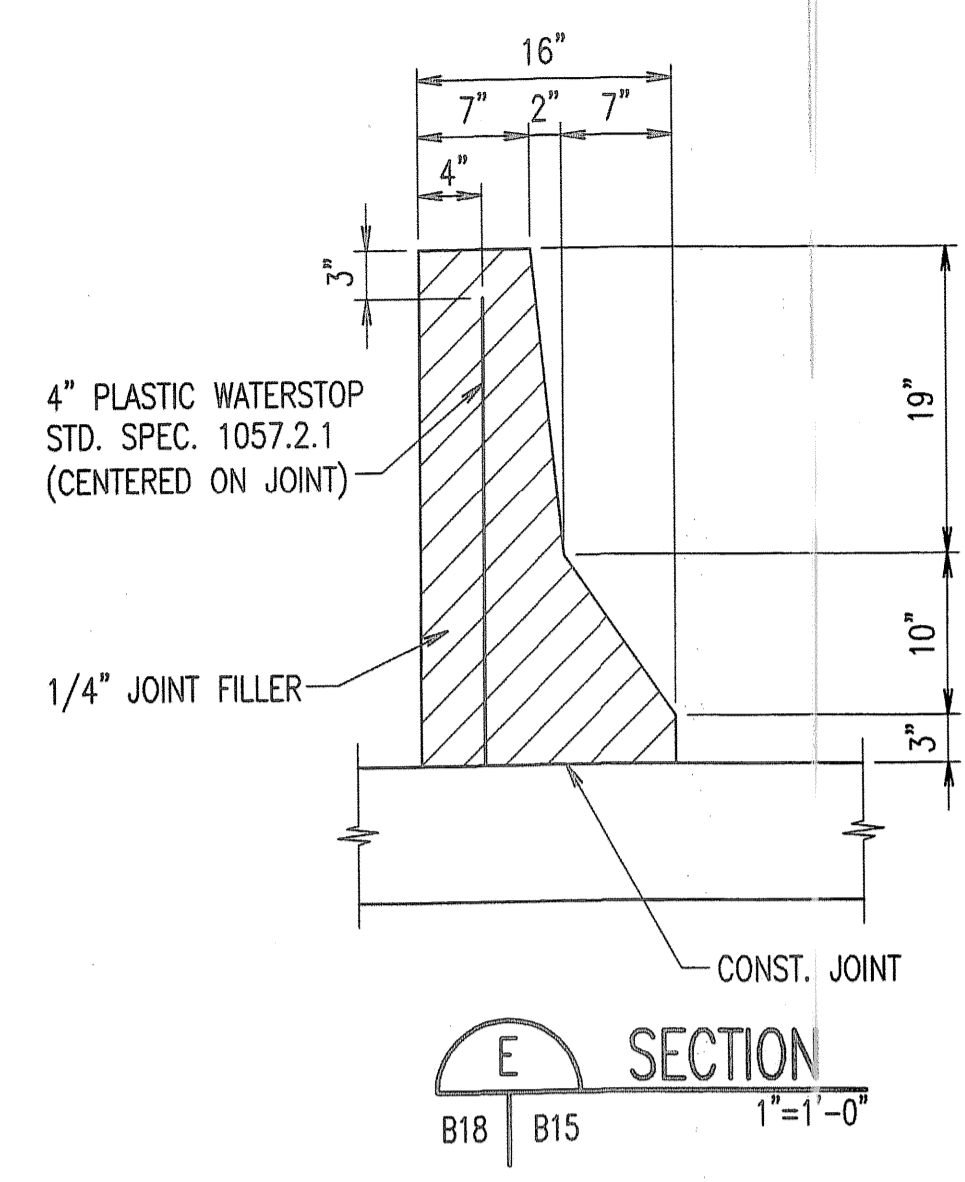


B ELEVATION
 B15 | B15
 1"=1'-0"

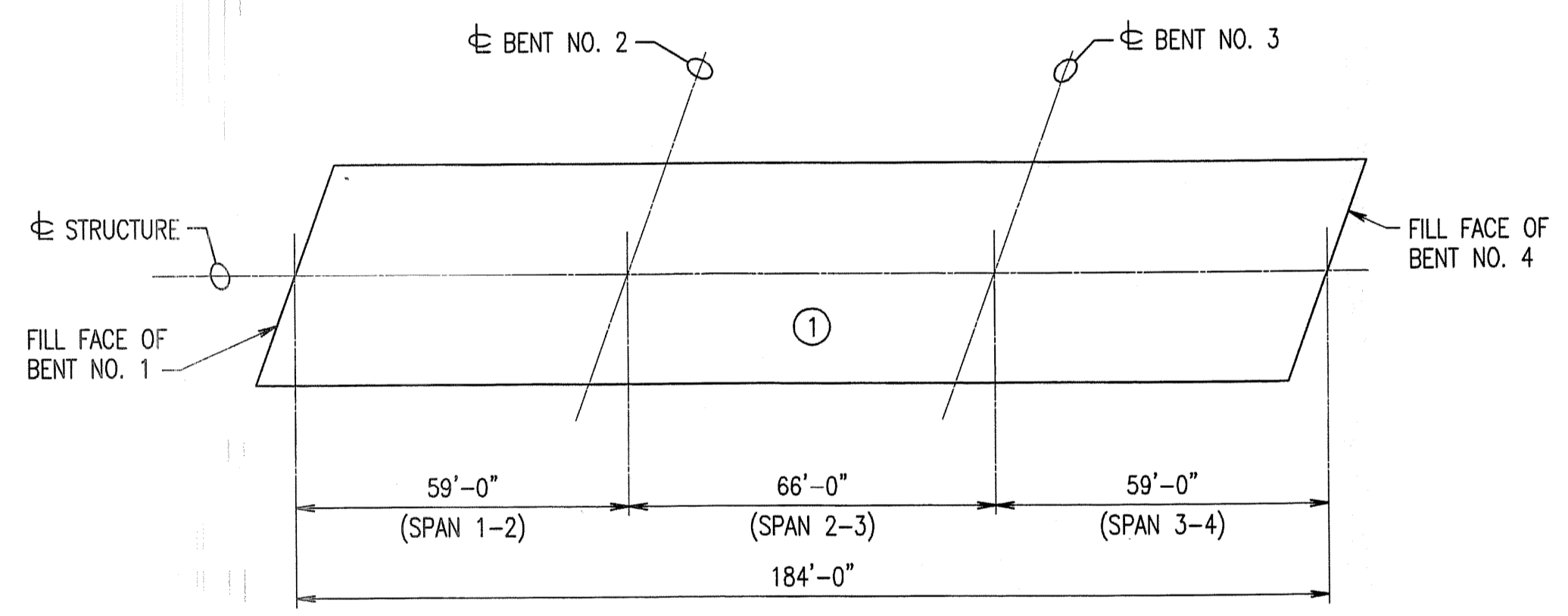


C PARTIAL PLAN
 B15 | B15
 1"=1'-0"

D NOT USED
 NONE



E SECTION
 B18 | B15
 1"=1'-0"

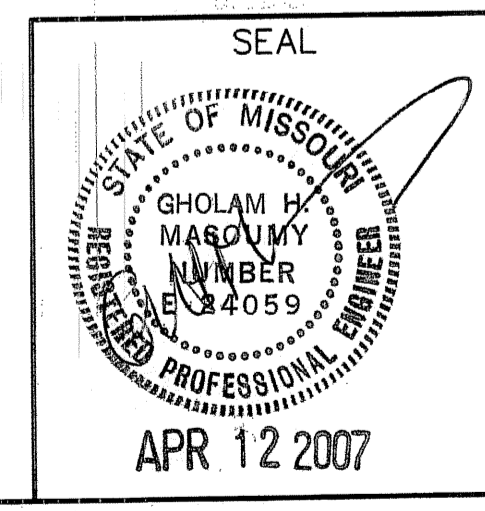


SLAB POURING SEQUENCE

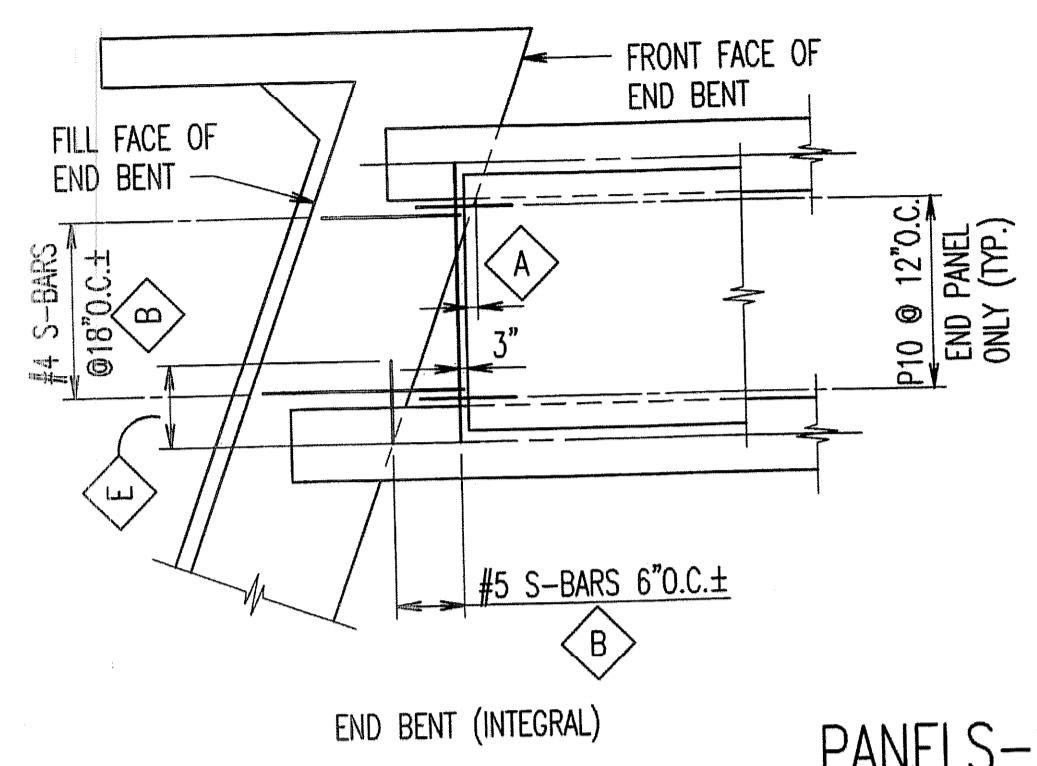
	SEQUENCE OF POURS	MIN. RATE OF POUR (CU. YDS./HR.)
	DIRECTION	WITH RETARDER
BASIC SEQUENCE	1 END BENT #4 TO END BENT #1	65

SLAB POURING SEQUENCE NOTES:

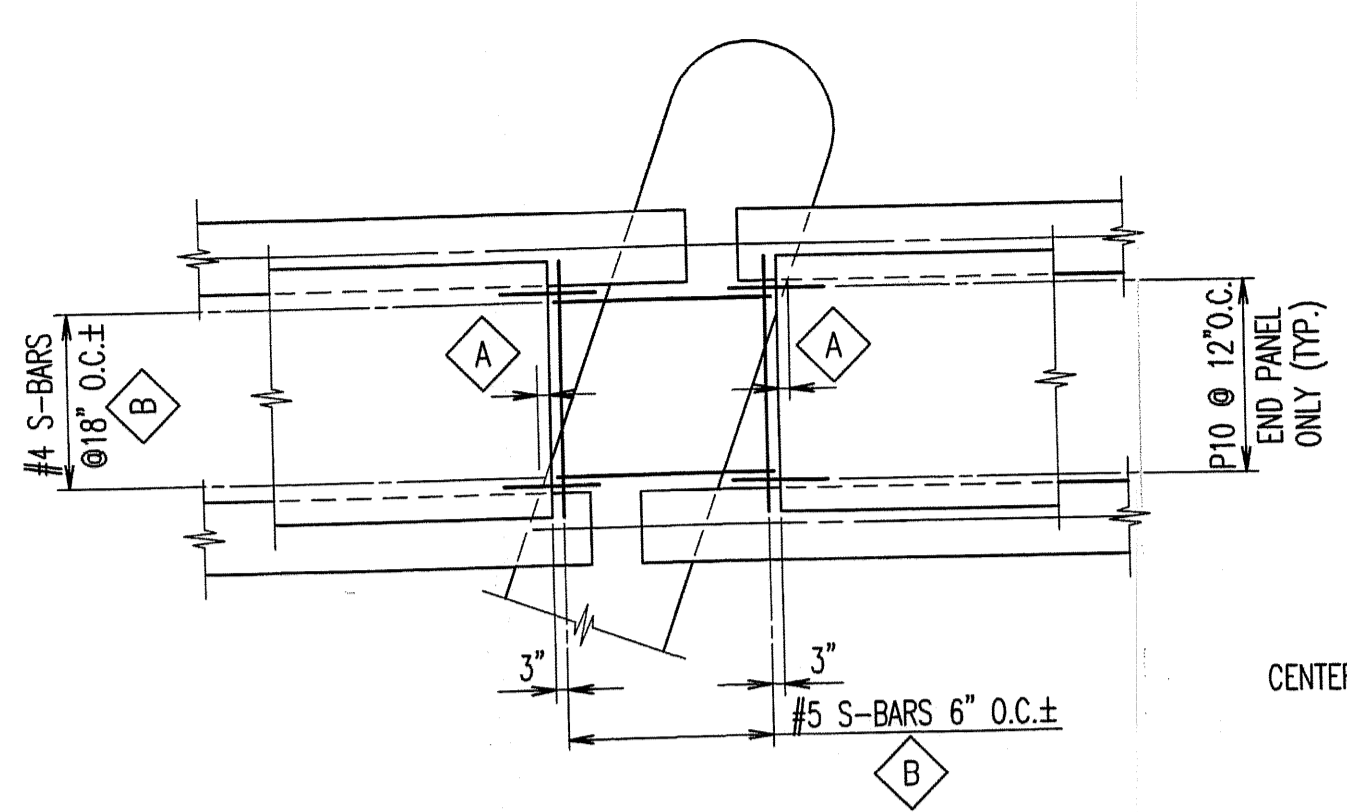
1. THE CONTRACTOR SHALL FURNISH AN APPROVED RETARDER TO RETARD THE SET OF CONCRETE TO 2.5 HOURS AND SHALL POUR AND SATISFACTORILY FINISH THE SLAB POURS AT THE RATE GIVEN.
2. MACHINE FINISHING AS SPECIFIED IN SECTION 703.3.14, WILL BE REQUIRED ON THIS PROJECT.
3. THE CONCRETE DIAPHRAGMS AT THE INTERMEDIATE BENTS AND INTEGRAL END BENTS SHALL BE POURED A MINIMUM OF 30 MINUTES AND A MAXIMUM OF 2 HOURS BEFORE THE SLAB IS POURED.
4. SLAB SHALL BE POURED UPGRADE.



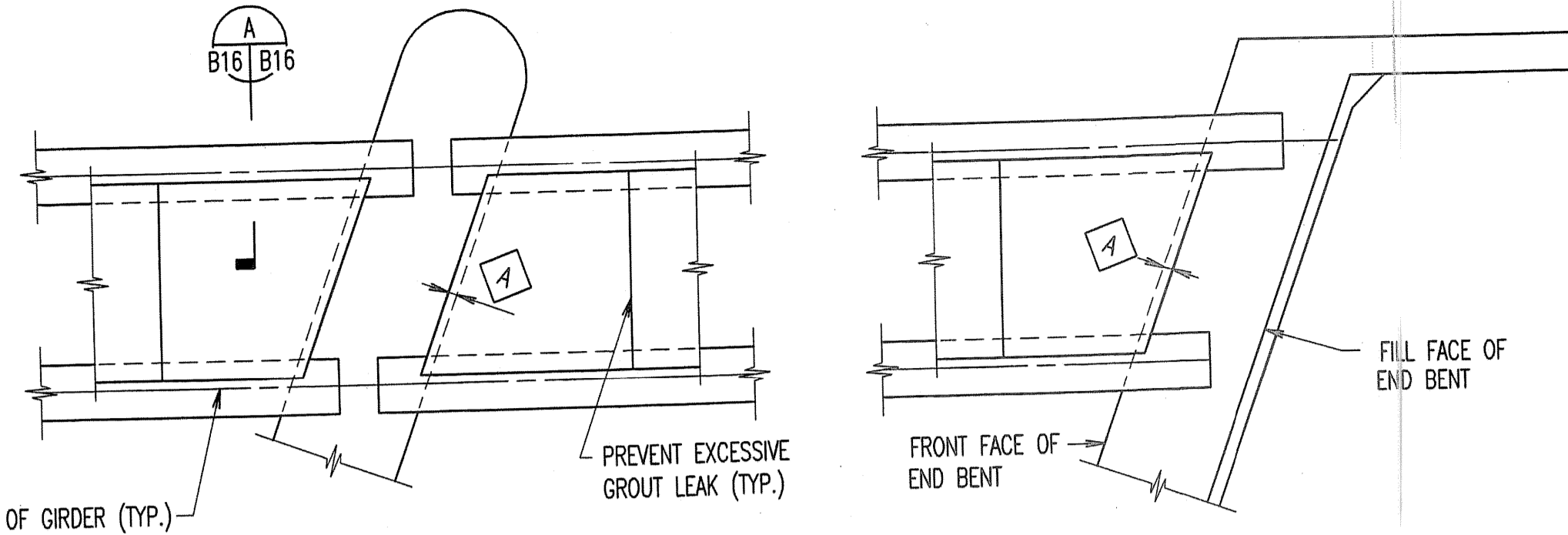
Designed	HAS	EDM No. 03804	EDM EDM Incorporated 220 Mansion House, 3rd Floor St. Louis, Missouri 63102 (314) 231-5485 Fax: (314) 231-8167
Drawn	JJJ		
Checked	GHM		
Date	4-12-07		



END BENT (INTEGRAL)



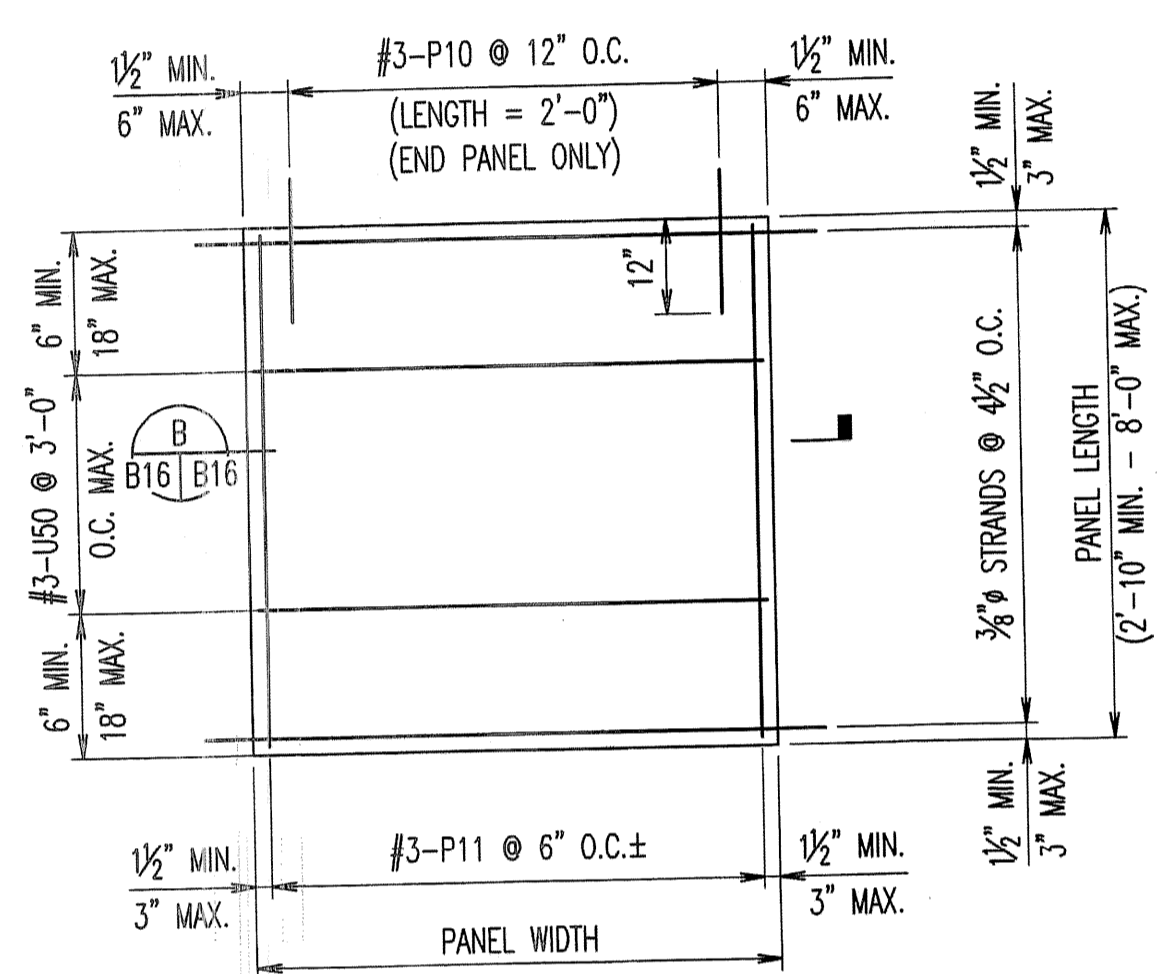
PANELS-SQUARED ENDS



PANELS-SKEWED ENDS

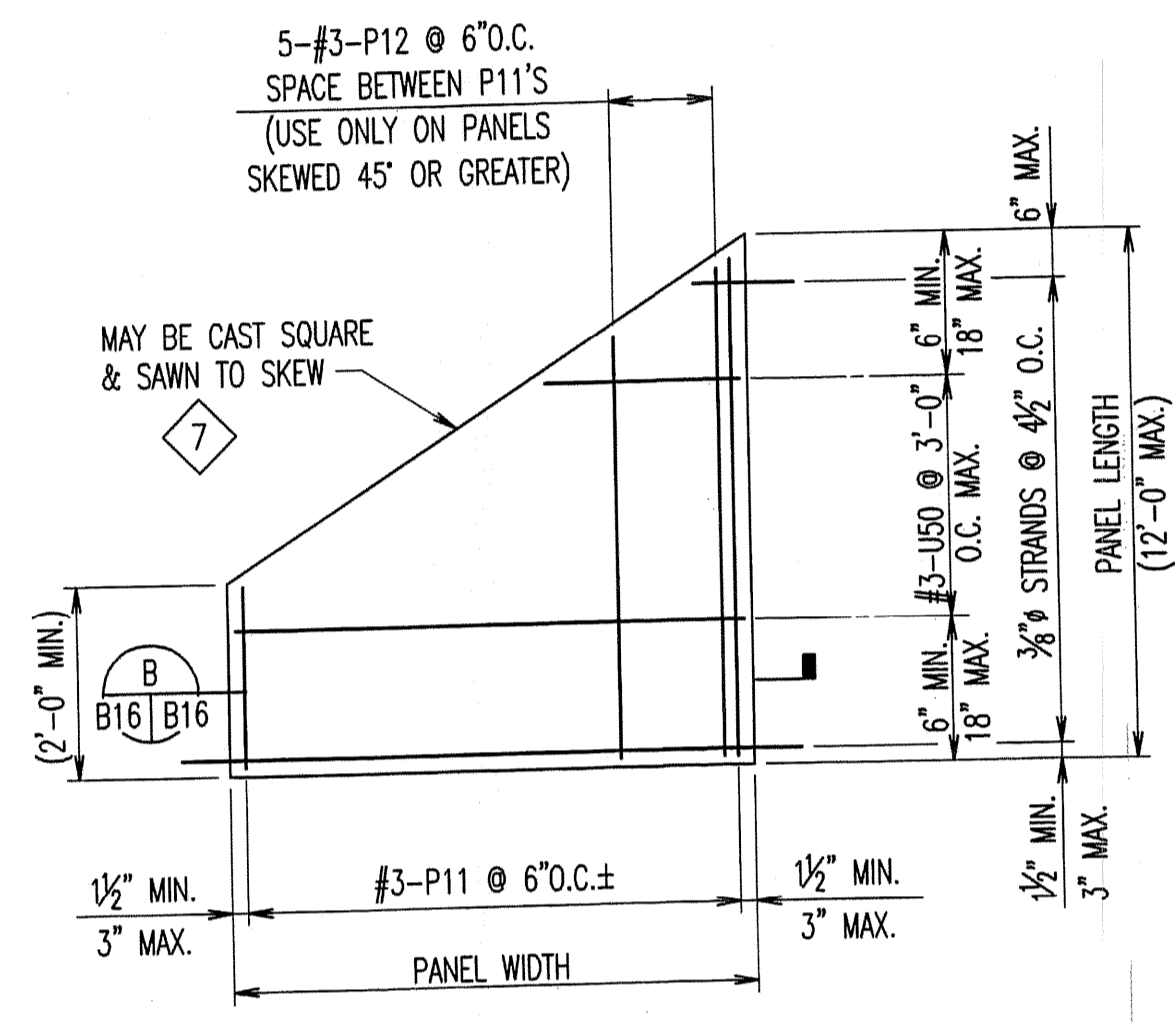
PLAN OF PRECAST PRESTRESSED PANELS PLACEMENT

N.T.S.



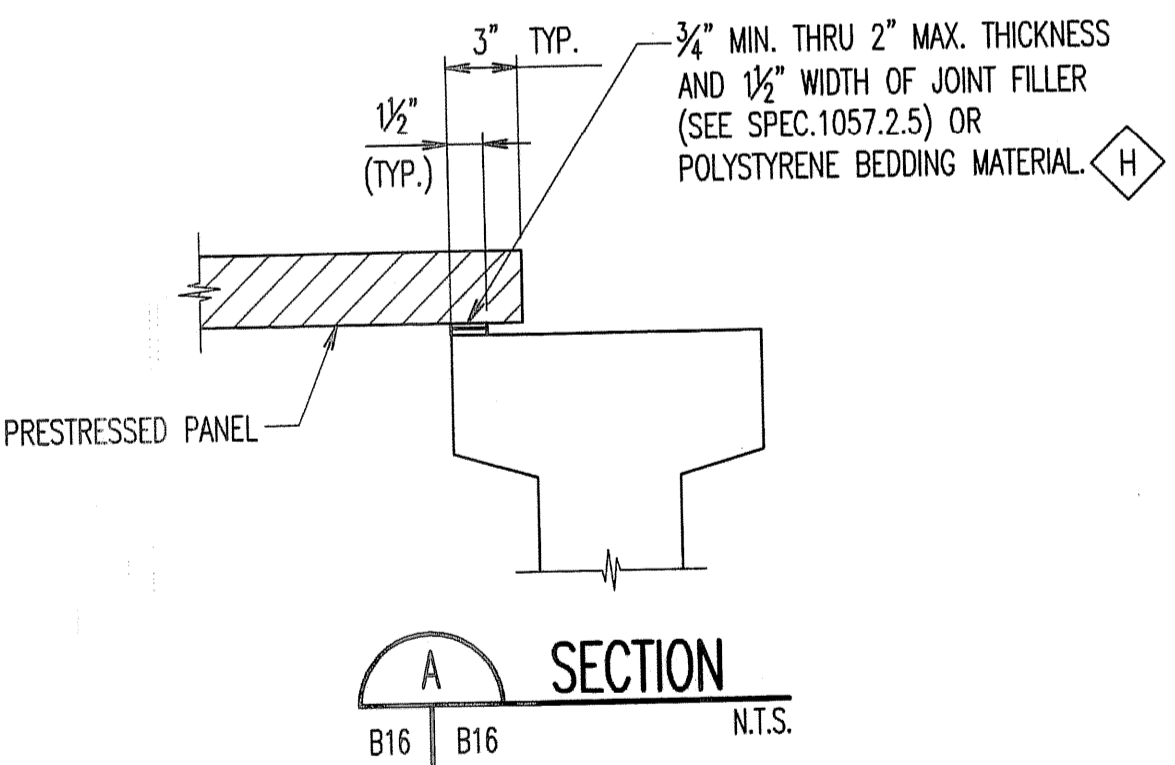
PLAN OF PRECAST PRESTRESSED PANEL

N.T.S.

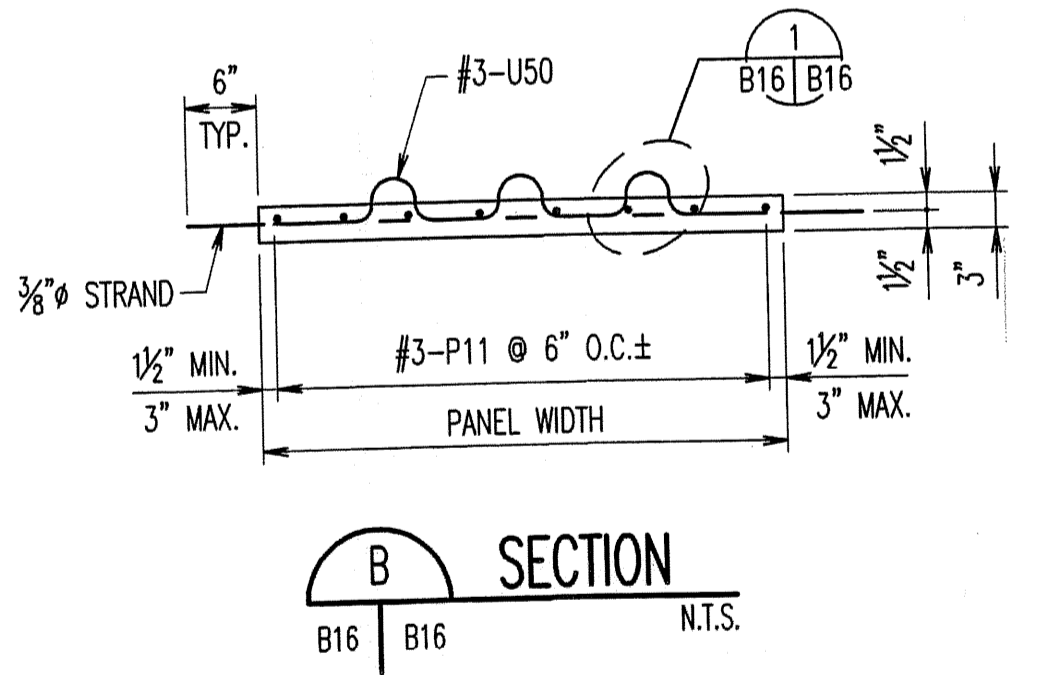


PLAN OF PRECAST PRESTRESSED PANEL

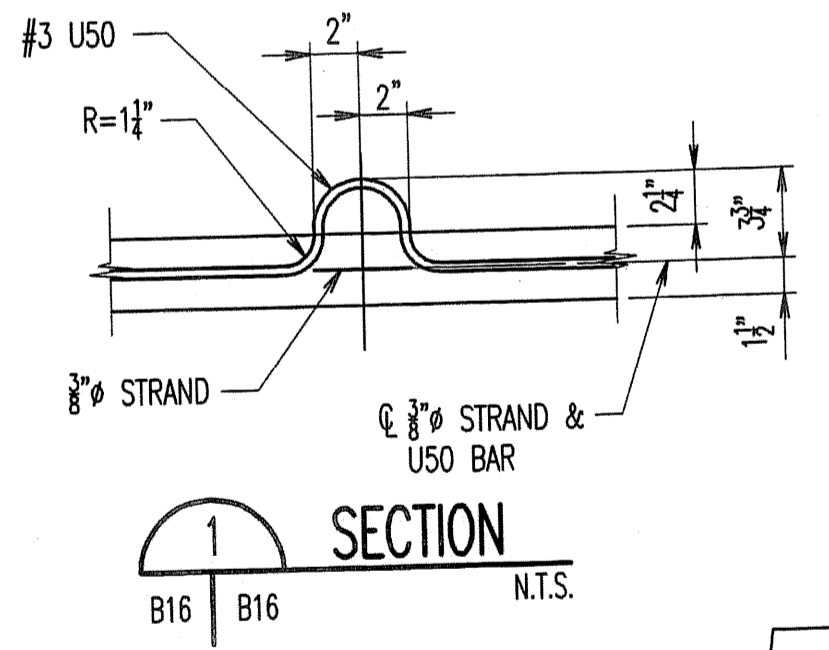
N.T.S.



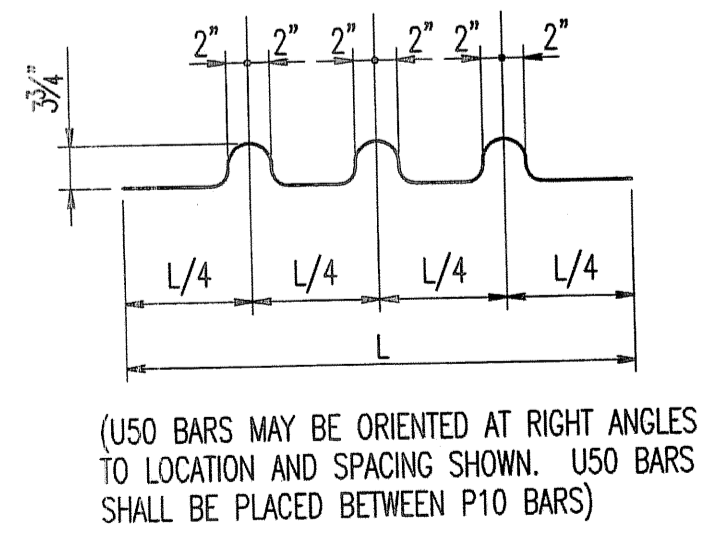
SECTION A



SECTION B

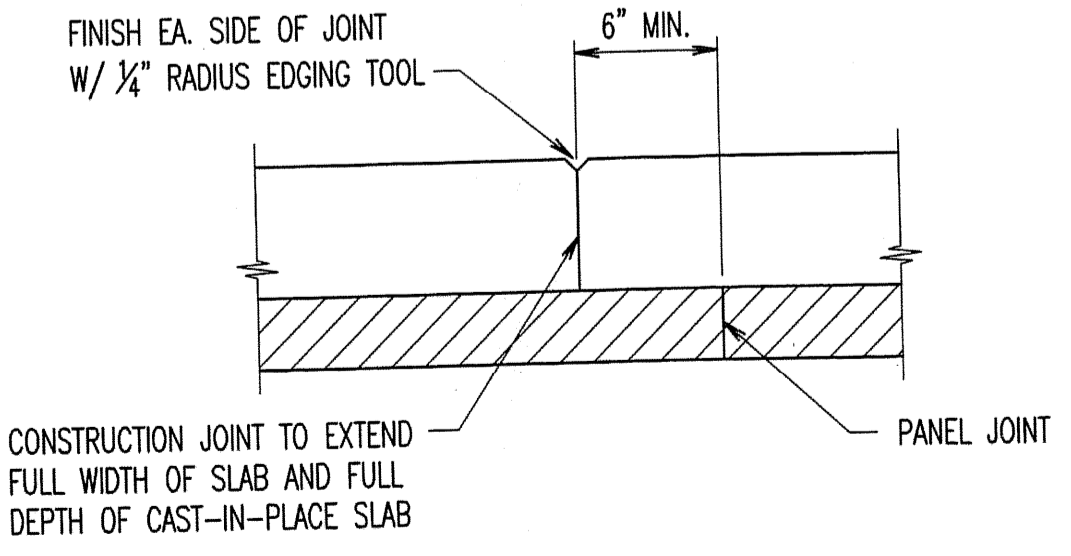


SECTION 1



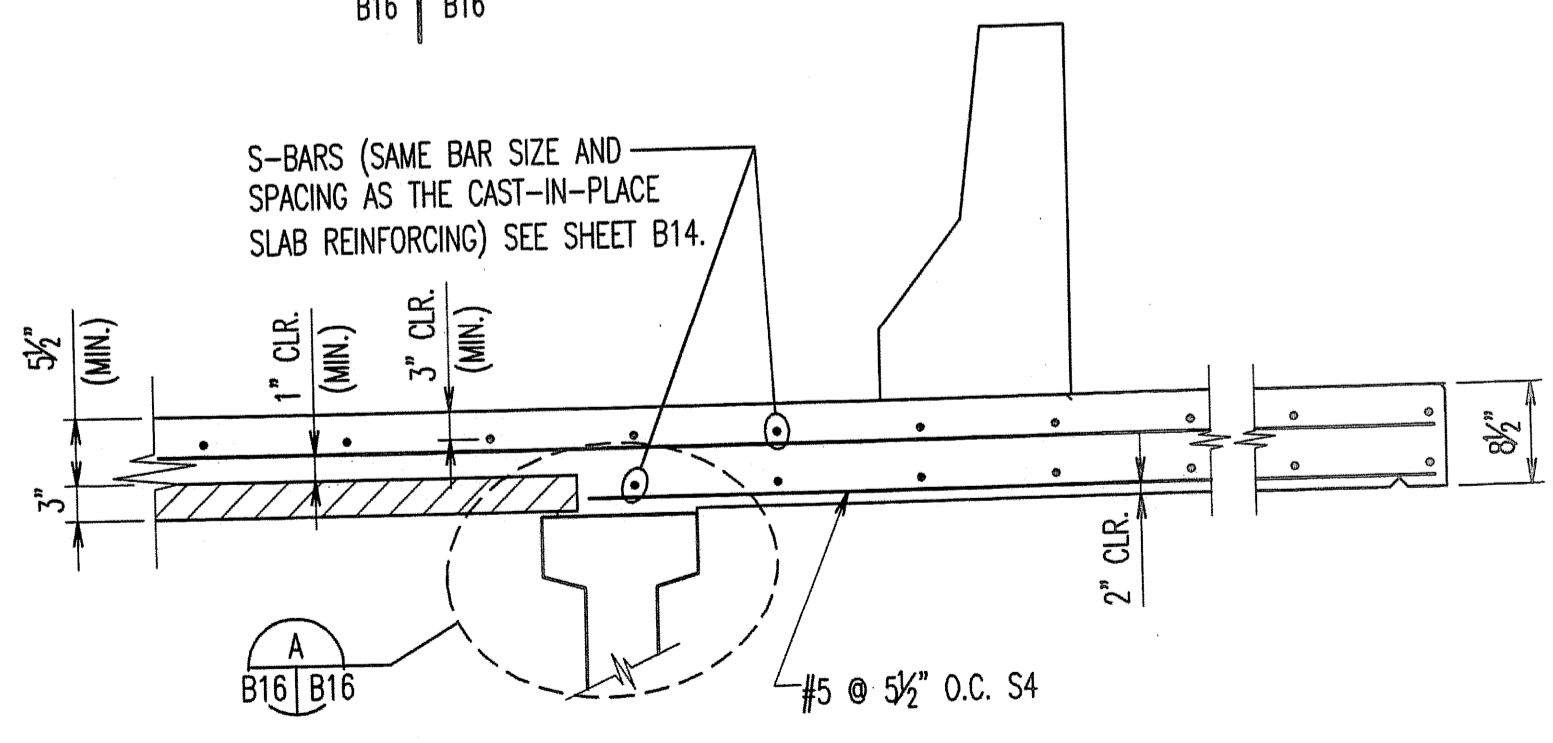
BENDING DIAGRAM FOR U50 BAR

N.T.S.



SECTION THROUGH CONSTRUCTION JOINT

N.T.S.



SECTION THRU CANTILEVER

3/4"=1'-0"

- NOTES:**
- A END PANELS TO BE DIMENSIONED 1" MIN. TO 1 1/2" MAX. FROM THE INSIDE FACE OF DIAPHRAGM.
 - B S-BARS SHOWN ARE BOTTOM STEEL IN SLAB BETWEEN PANELS AND USED WITH SQUARE END PANELS ONLY.
 - C COST OF S-BARS SHALL BE INCLUDED IN PRICE BID FOR SLAB ON CONCRETE I-GIRDER PER SQ. YARD. S-BARS ARE NOT LISTED IN BILL OF REINFORCING.
 - D SLAB THICKNESS OVER PRE STRESSED PANELS VARIES DUE TO GIRDER CAMBER.
 - E EXTEND S-BARS 18 INCHES BEYOND THE FRONT FACE OF END BENTS ONLY.
 - F IN ORDER TO MAINTAIN MINIMUM SLAB THICKNESS, IT MAY BE NECESSARY TO RAISE THE GRADE UNIFORMLY THROUGHOUT THE STRUCTURE. NO PAYMENT WILL BE MADE FOR ADDITIONAL LABOR OR MATERIALS REQUIRED FOR NECESSARY GRADE ADJUSTMENT.
 - G ANY STRAND 2'-0" OR SHORTER SHALL HAVE A #4 REINFORCING BAR ON EACH SIDE IF IT CENTERED BETWEEN STRANDS. STRANDS 2'-0" OR SHORTER MAY THEN BE DEBONDED AT THE FABRICATORS OPTION.
 - H ALL PANEL SUPPORT PADS SHALL BE GLUED TO THE GIRDER. WHEN SUPPORT THICKNESS EXCEEDS 1 1/2", THE PADS SHALL BE GLUED TOP AND BOTTOM. THE GLUE USED SHALL BE THE TYPE RECOMMENDED BY THE PANEL SUPPORT PADS MANUFACTURER.
- I. PRECAST PANELS MAY BE IN CONTACT WITH STIRRUP REINFORCING IN DIAPHRAGMS.
- J. SUPPORT FROM DIAPHRAGM FORMS IS REQUIRED UNDER THE OPTIONAL SKEWED END UNTIL CAST-IN-PLACE CONCRETE HAS REACHED 3,000 PSI COMPRESSIVE STRENGTH.

PRESTRESSED PANEL NOTES:

1. CONCRETE FOR PRESTRESSED PANELS SHALL BE CLASS A1 WITH $f'_c = 6,000$ PSI $f_{ci} = 3,500$ PSI.
2. THE TOP SURFACE OF ALL PANELS SHALL RECEIVE A SCORED FINISH WITH A DEPTH OF 1/8 INCH PERPENDICULAR TO THE PRESTRESSING STRANDS IN THE PANELS (SEE SPECIAL PROVISIONS).
3. PRESTRESSED TENDONS SHALL BE HIGH-TENSILE STRENGTH UNCOATED SEVEN WIRE (7), LOW-RELAXATION STRANDS FOR PRE STRESSED CONCRETE CONFORMING TO AASHTO M203 GRADE 270, WITH NOMINAL DIAMETER OF STRANDS = 3/8 INCH AND NOMINAL AREA = 0.085 SQ. IN. AND MINIMUM ULTIMATE STRENGTH = 22.95 KIPS (270 KSI) LARGER STRANDS MAY BE USED WITH THE SAME SPACING AND INITIAL TENSION.
4. INITIAL PRESTRESSING FORCE = 17.2 KIPS/STRAND. INITIAL PRESTRESSING STRESS = 202.5 KSI.
5. THE METHOD AND SEQUENCE OF RELEASING THE STRANDS SHALL BE SHOWN ON THE SHOP DRAWINGS.
6. SUITABLE ANCHORAGE DEVICES FOR LIFTING PANELS MAY BE CAST IN PANELS, PROVIDED THEY ARE SHOWN ON THE SHOP DRAWINGS AND APPROVED BY THE ENGINEER. PANEL LENGTHS SHALL BE DETERMINED BY THE CONTRACTOR AND SHOWN ON THE SHOP DRAWINGS.
7. WHEN SQUARE END PANELS ARE USED AT SKEWED BENTS, IT IS REQUIRED THAT THE SKEWED PORTION BE CAST FULL DEPTH. NO SEPARATE PAYMENT WILL BE MADE FOR THE ADDITIONAL CONCRETE AND REINFORCING REQUIRED.
8. MINIMUM JOINT FILLER OR POLYSTYRENE BEDDING MATERIAL THICKNESS SHALL BE 3/4 INCH. THICKER JOINT FILLER OR POLYSTYRENE BEDDING MATERIAL MAY BE USED ON ONE OR BOTH SIDES OF THE GIRDER TO REDUCE CAST-IN-PLACE CONCRETE THICKNESS, WITHIN TOLERANCES. NO MORE THAN 2 INCHES TOTAL THICKNESS OF JOINT FILLER OR POLYSTYRENE BEDDING MATERIAL SHALL BE USED.
9. THE SAME THICKNESS OF JOINT FILLER MATERIAL SHALL BE USED UNDER ANY ONE EDGE OF ANY PANEL AND THE MAXIMUM CHANGE IN THICKNESS BETWEEN ADJACENT PANELS SHALL BE 1/4 INCH. THE POLYSTYRENE BEDDING MATERIAL MAY BE CUT TO MATCH HAUNCH HEIGHT ABOVE TOP OF FLANGE.
10. AT THE CONTRACTORS OPTION, THE VARIATION ON SLAB THICKNESS OVER PRE STRESSED PANEL MAY BE ELIMINATED OR REDUCED BY INCREASING AND VARYING THE GIRDER TOP FLANGE THICKNESS. DIMENSIONS SHALL BE SHOWN ON THE SHOP DRAWINGS.
11. THE PRESTRESSED PANEL QUANTITIES ARE NOT INCLUDED IN THE TABLE OF ESTIMATED QUANTITIES FOR SLAB ON CONCRETE I-GIRDER.
12. USE SLAB HAUNCHING DIAGRAM ON SHEET B12 FOR DETERMINING THICKNESS OF JOINT FILLER OF POLYSTYRENE BEDDING MATERIAL WITHIN THE LIMITS NOTED ABOVE.

REINFORCING STEEL:

1. ALL DIMENSIONS ARE OUT TO OUT.
2. ALL REINFORCING OTHER THAN PRESTRESSING STRANDS SHALL BE EPOXY COATED.
3. MINIMUM CLEARANCES TO REINFORCING STEEL SHALL BE 1 1/2". UNLESS NOTED OTHERWISE.
4. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE C.R.S.I. MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES, STIRRUPS, AND THE DIMENSIONS.
5. ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE OF BAR TO THE NEAREST INCH.
6. IF U50 BARS INTERFERE WITH PLACEMENT OF SLAB STEEL, U50 LOOPS MAY BE BENT OVER AS NECESSARY, TO CLEAR SLAB STEEL.
7. WELDED WIRE FABRIC OR WELDED DEFORMED BAR MATS PROVIDING A MINIMUM AREA OF REINFORCING PERPENDICULAR TO STRANDS OF 0.22 SQ. IN./FT. WITH SPACING PARALLEL TO STRANDS SUFFICIENT TO INSURE PROPER HANDLING, MAY BE USED IN LIEU OF THE #3-P11 BARS SHOWN. WIRE OR BAR DIAMETER SHALL NOT BE LARGER THAN 0.375 INCHES. THE ABOVE ALTERNATIVE REINFORCEMENT CRITERIA MAY BE USED IN LIEU OF THE #3-P12 BARS, WHEN REQUIRED, AND PLACED OVER A WIDTH NOT LESS THAN 2 FEET.
8. THE REINFORCING STEEL SHALL BE TIED SECURELY TO THE 3/8" STRANDS WITH THE FOLLOWING MAXIMUM SPACING IN EACH DIRECTION:
 - #3-P11 BARS AT 16 INCHES.
 - WELDED WIRE FABRIC OR WELDED DEFORMED BAR MATS AT 24 INCHES.
 - TIE THE #3-U50 BARS TO THE #3-P11 BARS, TO THE WELDED WIRE FABRIC OR THE WELDED DEFORMED BAR MAT AT ABOUT 36 INCH CENTERS.
9. PRECAST PANEL REINFORCING IS NOT LISTED IN THE BILL OF REINFORCING STEEL.

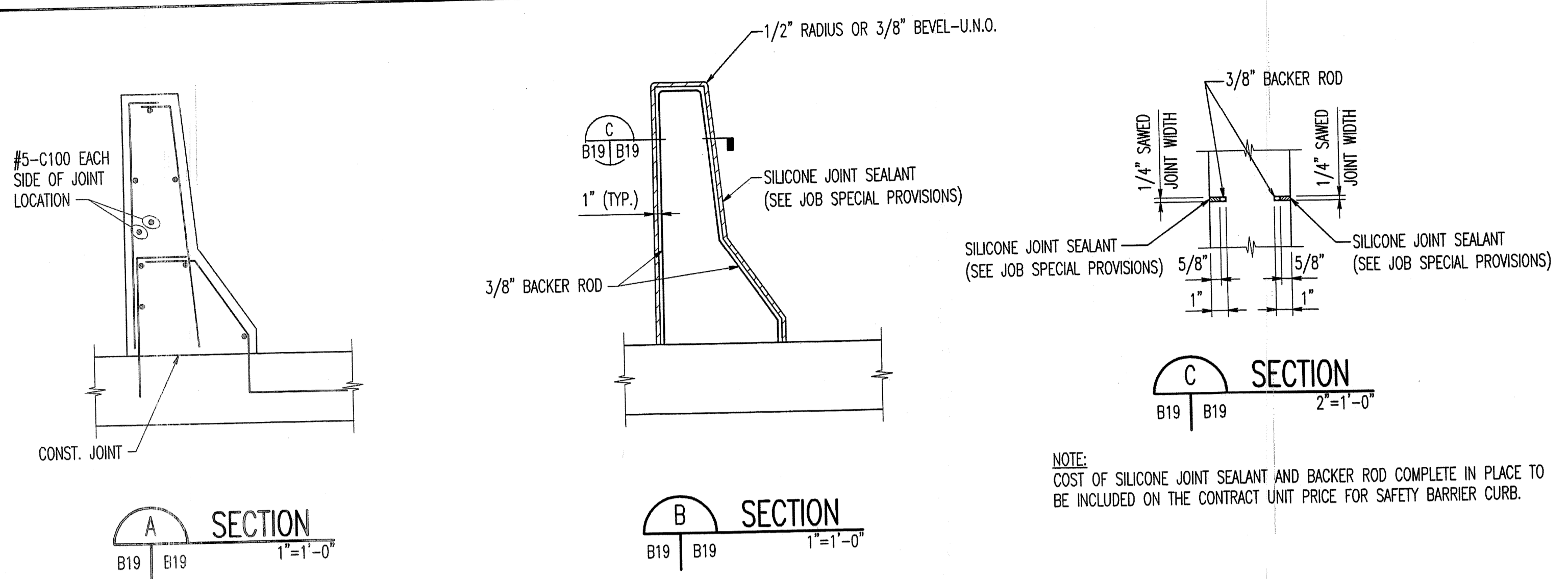
Designed	HAS
Drawn	JJJ
Checked	GHM
Date	4-12-07

EDM No. 03804
 EDM Incorporated
 220 Mansion House, 3rd Floor
 St. Louis, Missouri 63102
 (314) 231-5485 Fax: (314) 231-8167

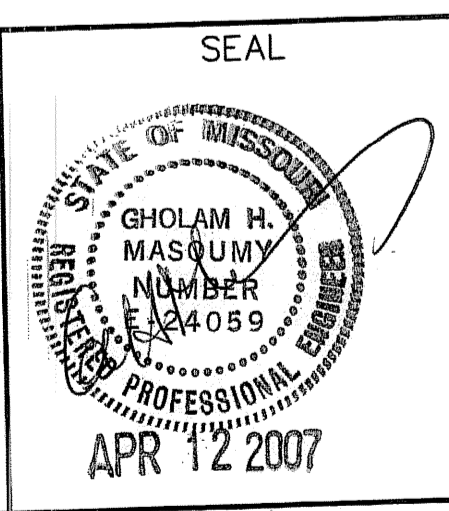
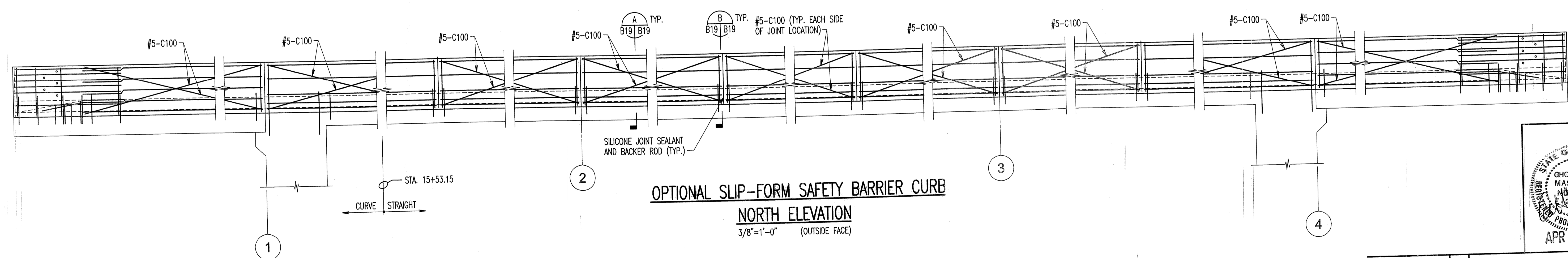
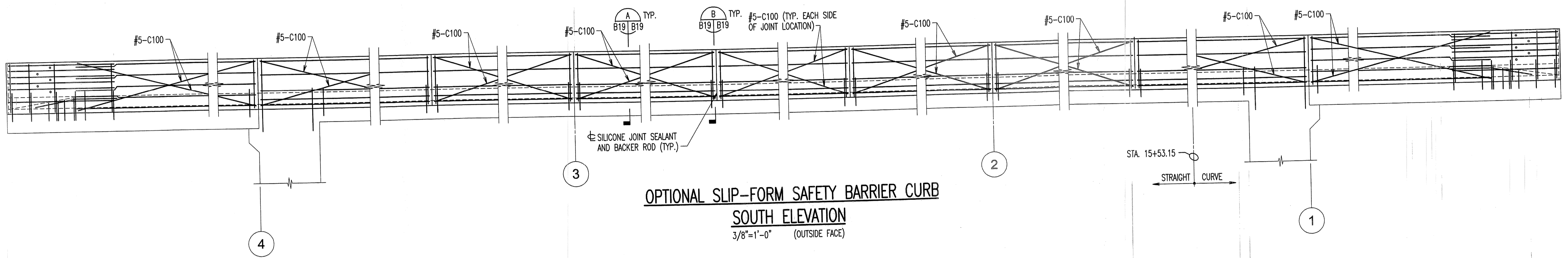
SEAL
 STATE OF MISSOURI
 GHOLOM H. MASOUMY
 REGISTERED PROFESSIONAL ENGINEER
 NUMBER 224059
 APR 12 2007

SLIP-FORM BARRIER CURB NOTES:

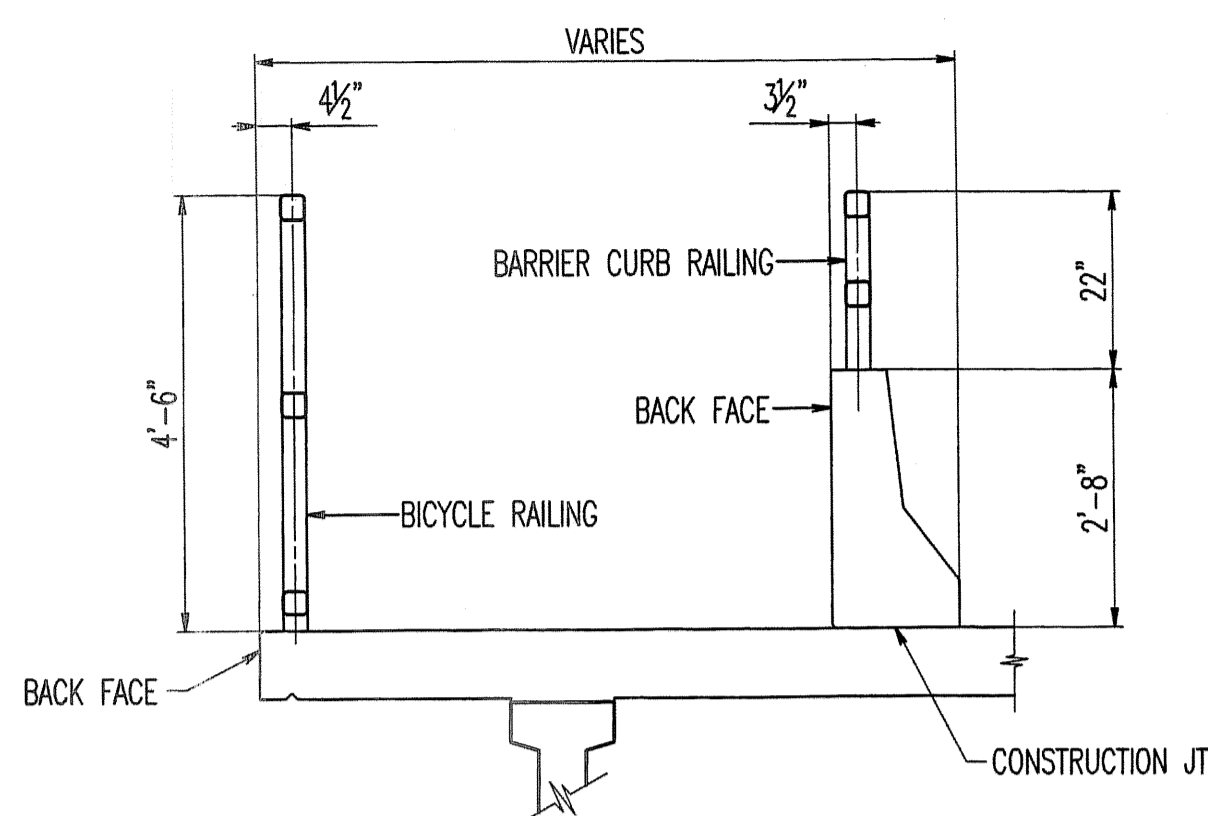
- TOP OF SAFETY BARRIER CURB SHALL BE BUILT PARALLEL TO GRADE WITH SAFETY BARRIER CURB JOINTS (EXCEPT AT END BENTS) NORMAL TO GRADE.
- WHEN THE SAFETY BARRIER CURB IS BID BY LINEAR FEET, THE CONTRACT UNIT PRICE SHALL INCLUDE THE COST OF ALL CONCRETE AND REINFORCEMENT, COMPLETE-IN-PLACE.
- CONCRETE IN THE SAFETY BARRIER CURB SHALL BE CLASS B1.
- MEASUREMENT OF SAFETY BARRIER CURB IS TO THE NEAREST LINEAR FOOT FOR EACH STRUCTURE, MEASURED ALONG THE OUTSIDE TOP OF SLAB FROM END OF APPROACH SLAB TO END OF APPROACH SLAB.
- JOINT SEALANT AND BACKER RODS SHALL BE USED ON ALL SLIP-FORM BRIDGE SAFETY BARRIER CURBS INSTEAD OF JOINT FILLER.
- PLASTIC WATERSTOP SHALL NOT BE USED WITH SLIP-FORM OPTION.
- C BARS (SLIP-FORM OPTION ONLY) SHALL BE USED IN ADDITION TO CAST-IN-PLACE CONVENTIONAL FORMING REINFORCEMENT FOR BRIDGE SAFETY BARRIER CURB.
- FOR SLIP-FORM OPTION, ALL SIDES OF THE SAFETY BARRIER CURB SHALL HAVE A VERTICALLY BROOMED FINISH AND THE CURB TOP SHALL HAVE A TRANSVERSELY BROOMED FINISH.
- ALL EXPOSED EDGES OF SAFETY BARRIER CURB SHALL HAVE EITHER A 1/2" RADIUS OR A 3/8" BEVEL, UNLESS NOTED OTHERWISE.
- SEE SHEET B18 FOR JOINT SPACING.



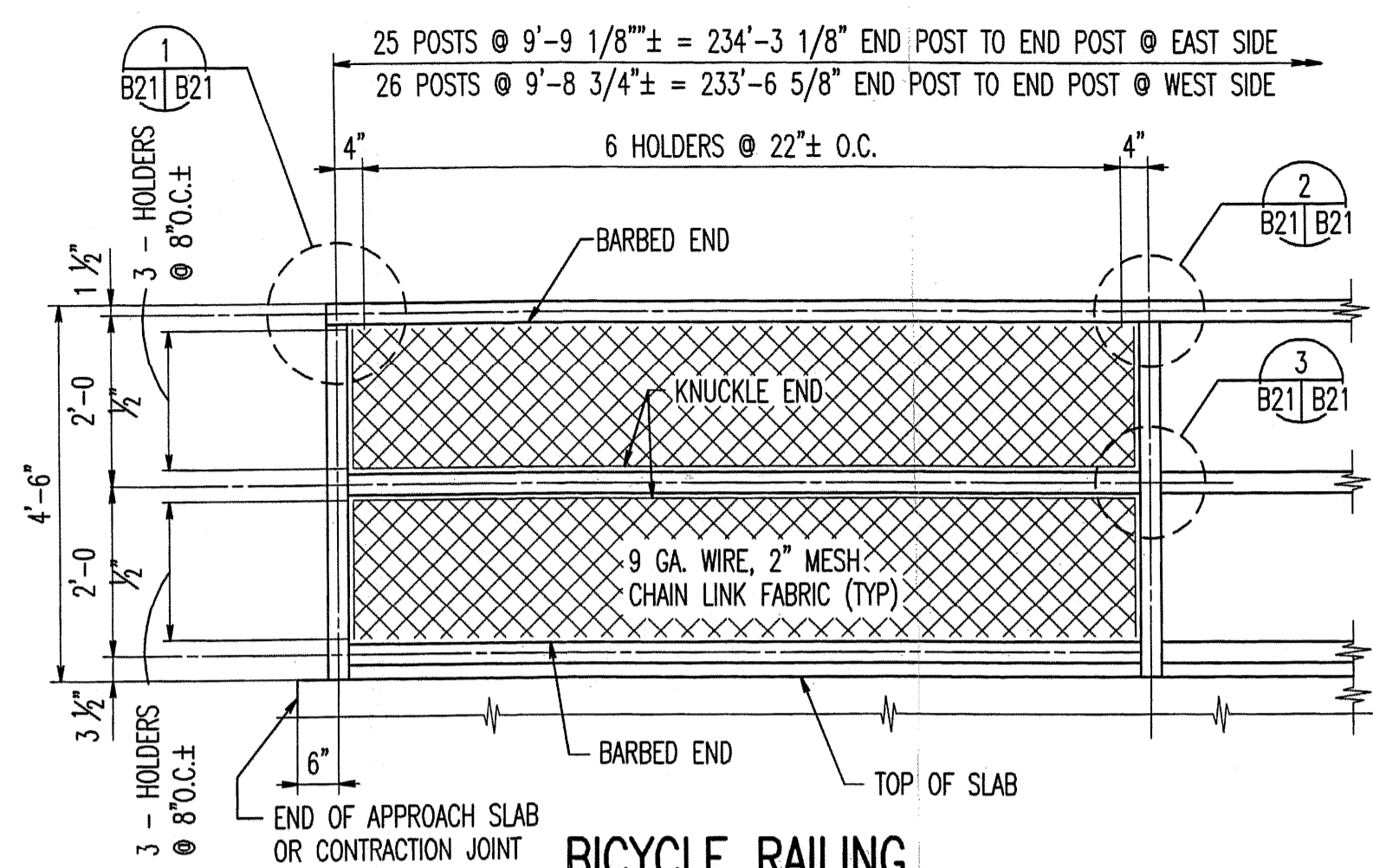
NOTE:
COST OF SILICONE JOINT SEALANT AND BACKER ROD COMPLETE IN PLACE TO BE INCLUDED ON THE CONTRACT UNIT PRICE FOR SAFETY BARRIER CURB.



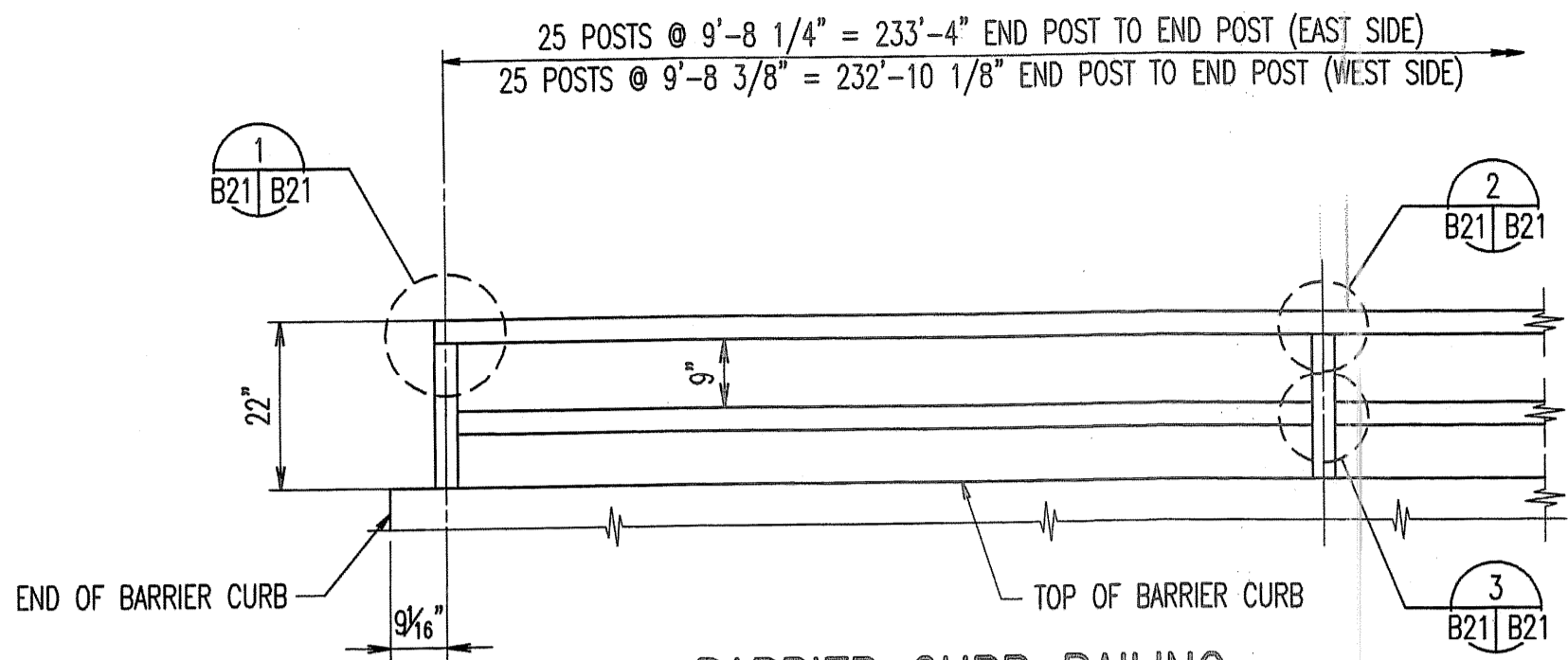
Designed	HAS	EDM No. 03804	EDM EDM Incorporated 220 Mansion House, 3rd Floor St. Louis, Missouri 63102 (314) 231-5485 Fax: (314) 231-8167
Drawn	JJJ		
Checked	GHM		
Date	4-12-07		



SECTION THRU SIDE WALK
 1/2"=1'-0"



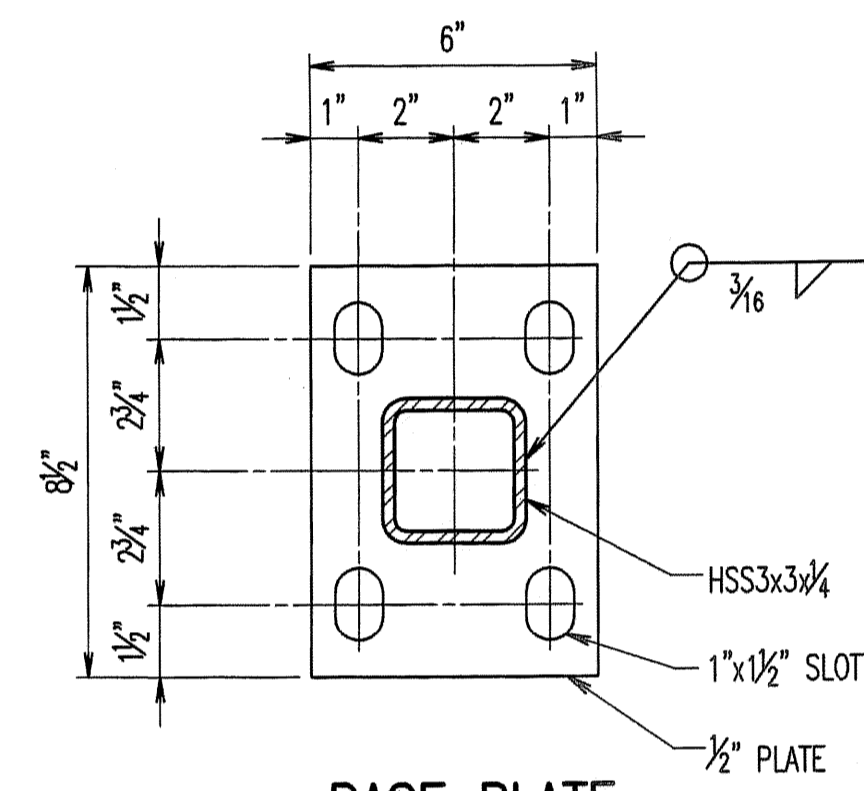
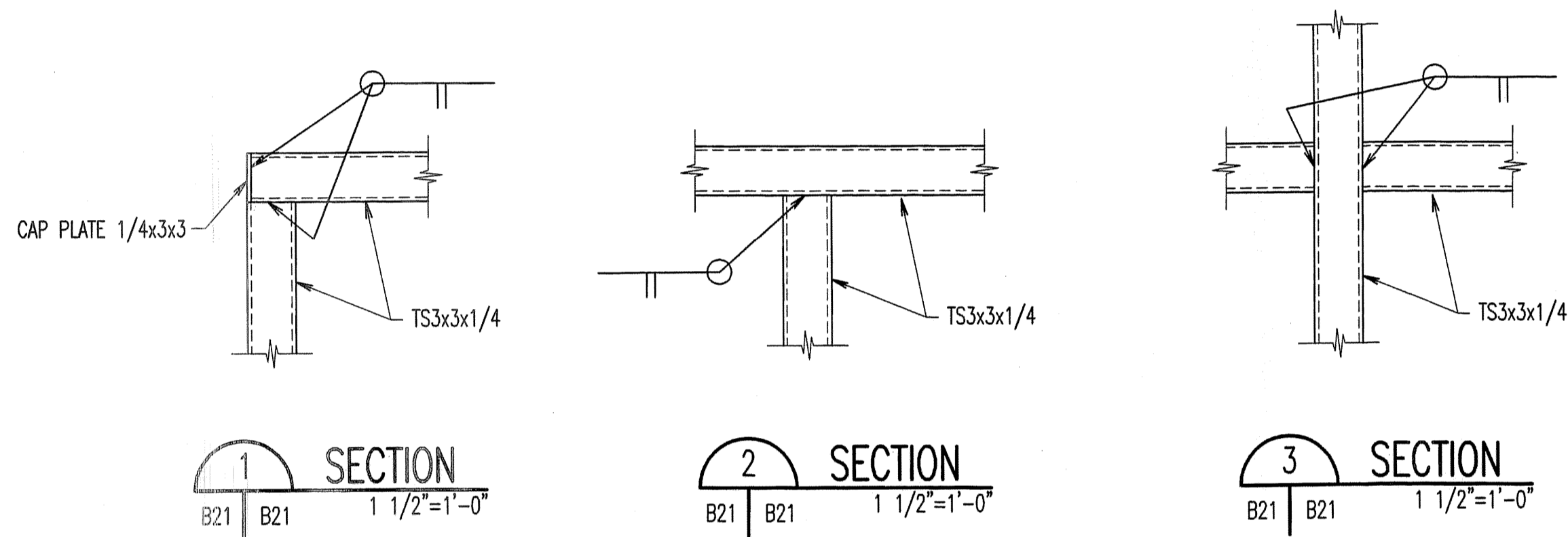
BICYCLE RAILING
 1/2"=1'-0"



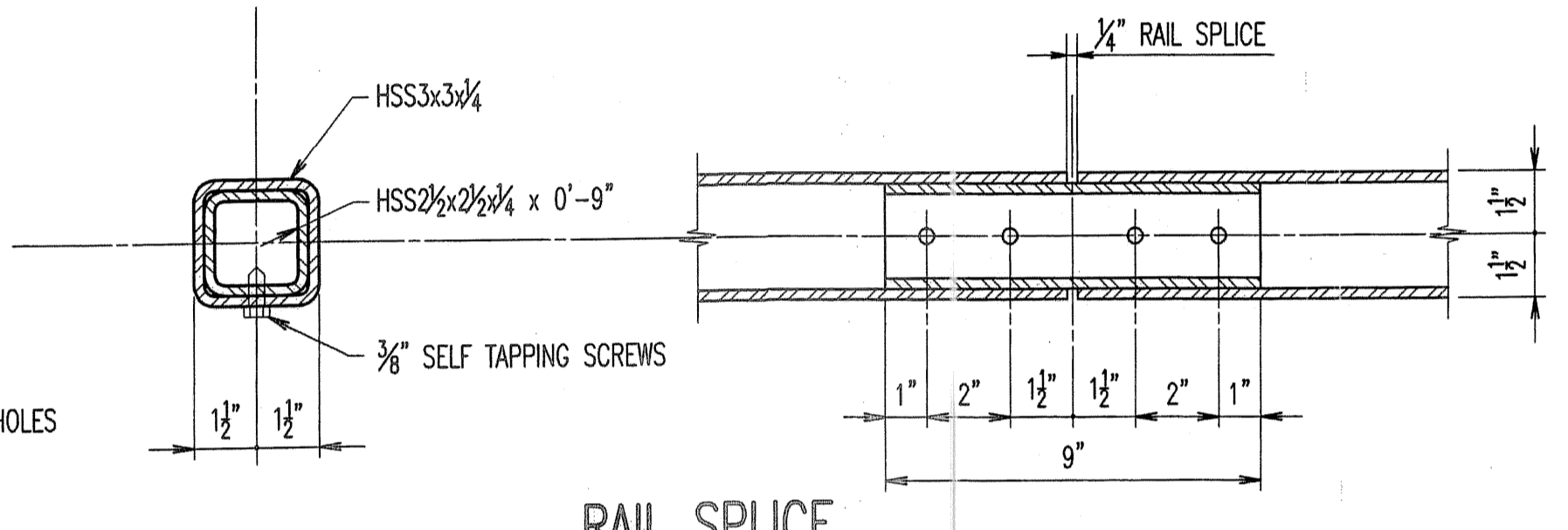
BARRIER CURB RAILING
 1/2"=1'-0"

NOTES:

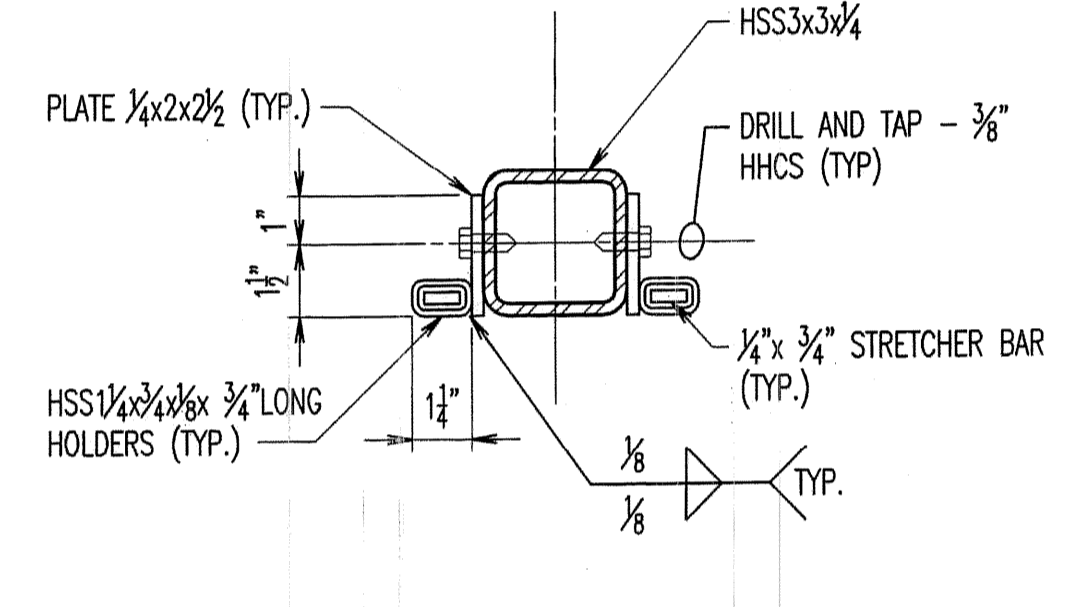
1. ALL RAILING, CHAIN-LINK FABRIC, AND CONNECTION HARDWARE SHALL BE BLACK VINYL COATED.
2. ALL RAILING, CHAIN-LINK FABRIC, AND CONNECTION HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153.
3. ALL RAILING, CHAIN-LINK FABRIC, AND CONNECTION HARDWARE SHALL COMPLY WITH SECTIONS 607 AND 1712 OF THE MISSOURI STANDARD SPECIFICATIONS.
4. ALL MATERIAL TO BE ASTM A36 AND A500 GRADE B.



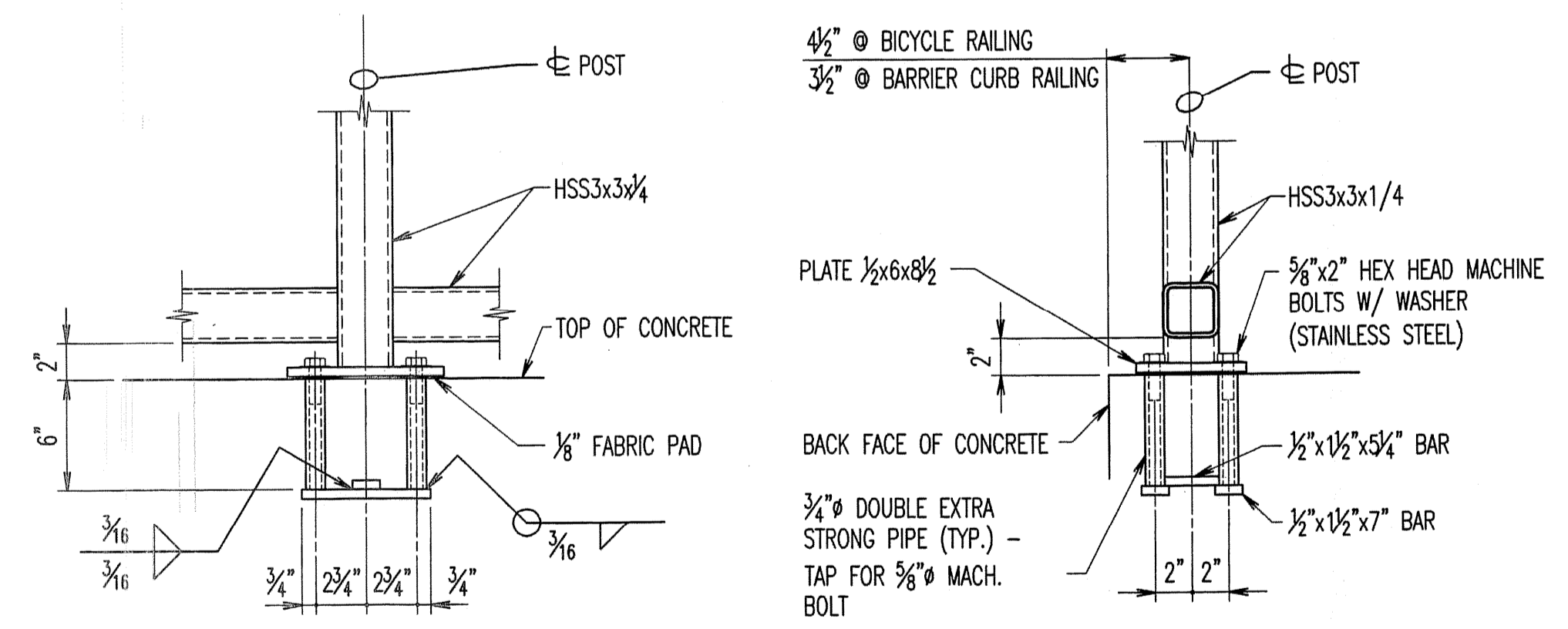
BASE PLATE
 3"=1'-0"



RAIL SPLICE
 3"=1'-0"

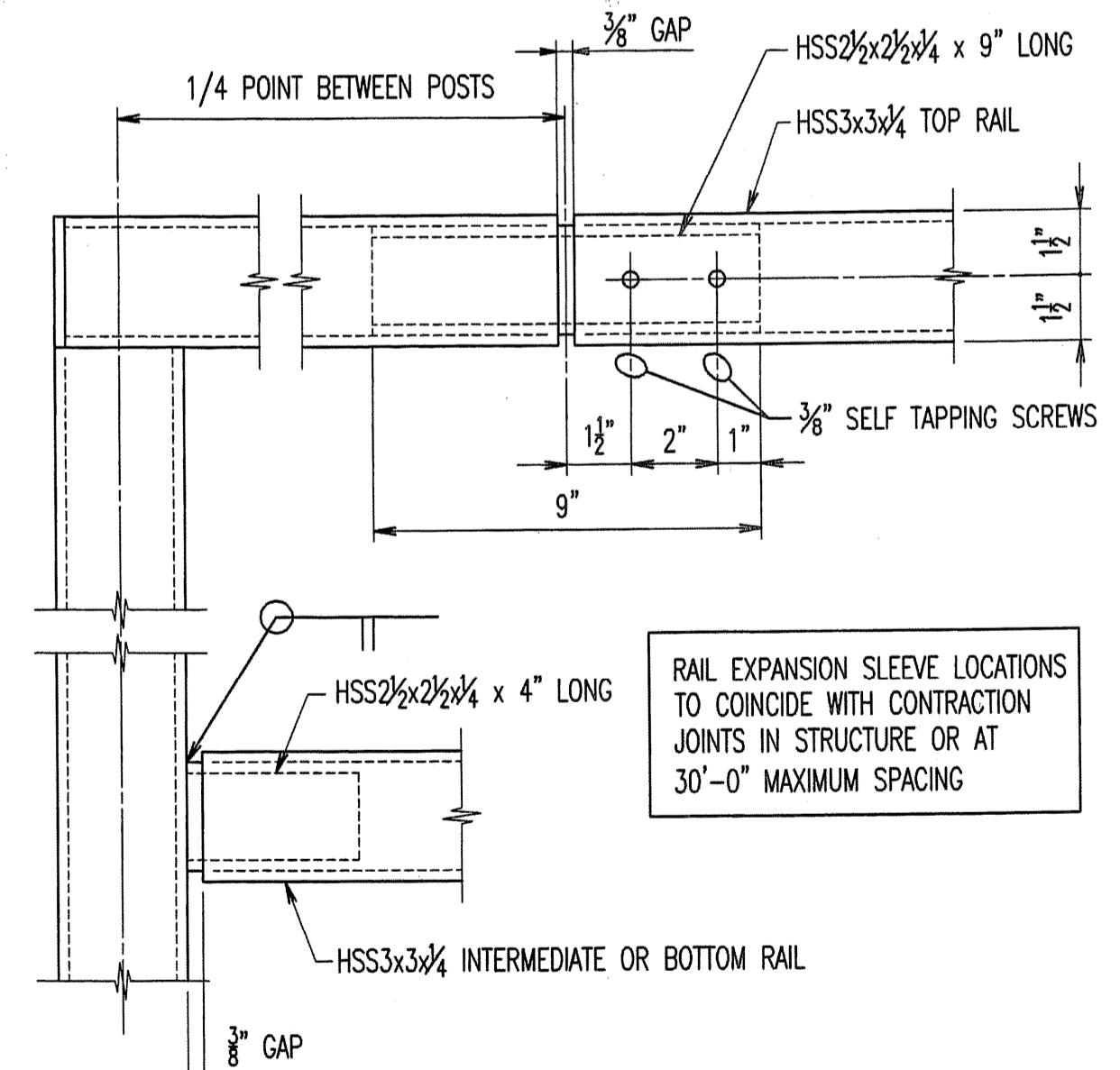


CHAIN LINK HOLDER DETAIL
 3"=1'-0"



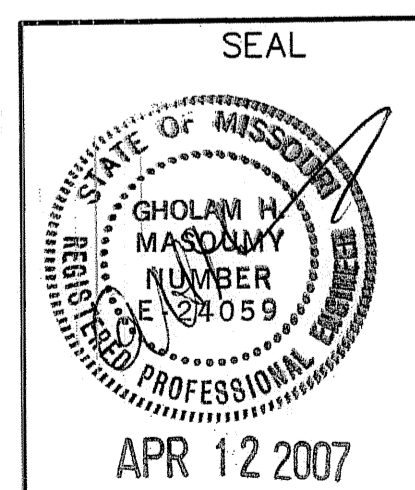
ANCHOR BOLT DETAILS
 3/4"=1'-0"

(TYPICAL AT TOP OF SLAB, APPROACH SLAB AND TOP OF BARRIER CURB)



RAIL EXPANSION SLEEVE
 3"=1'-0"

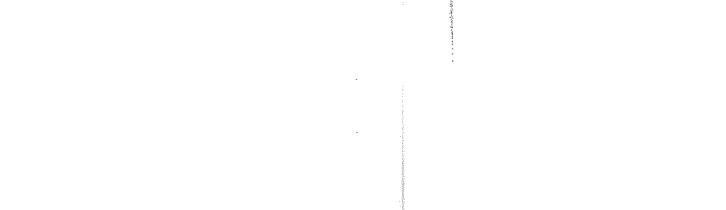
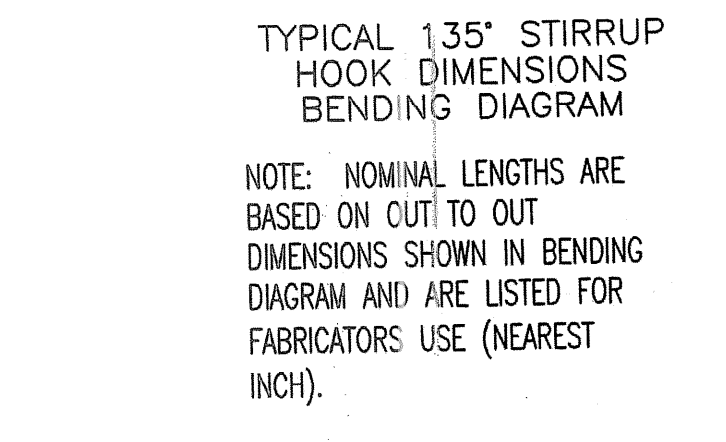
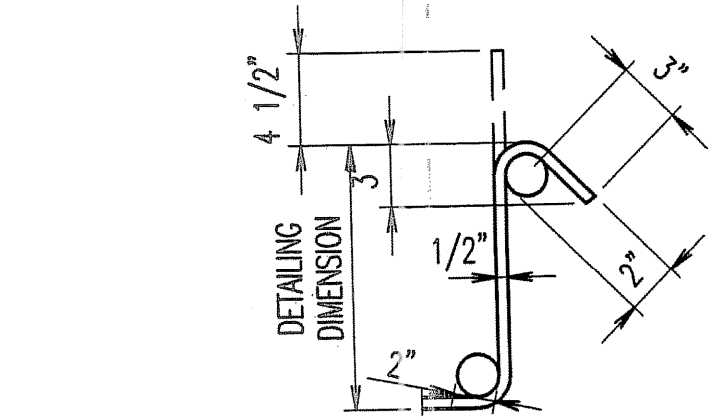
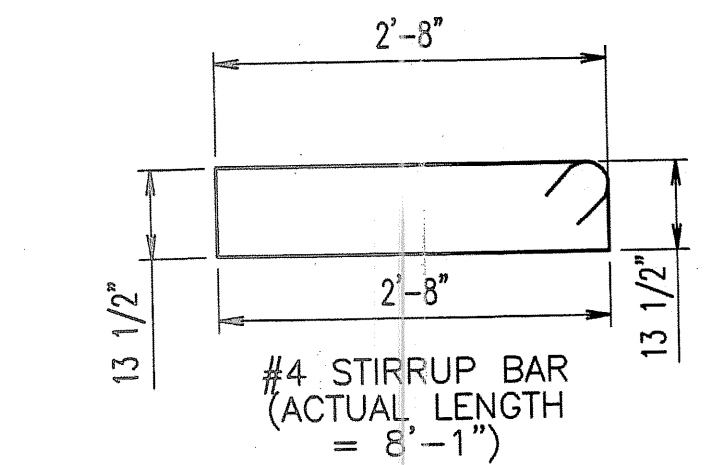
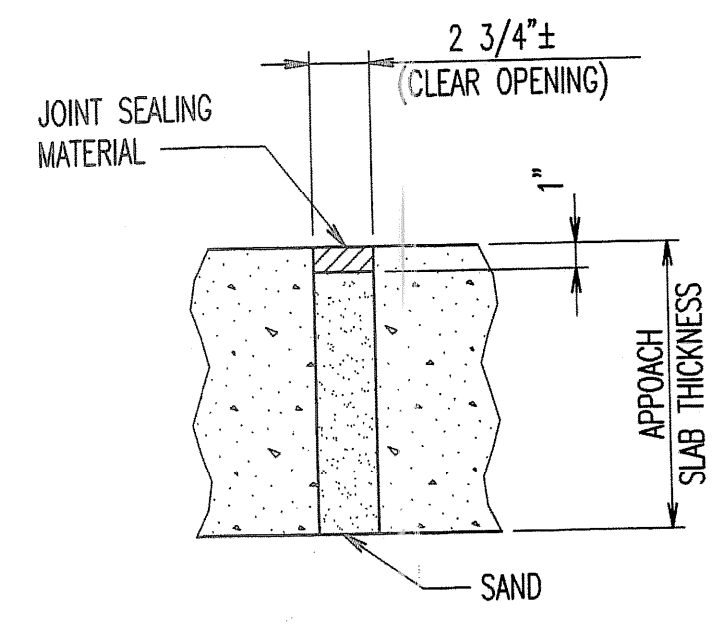
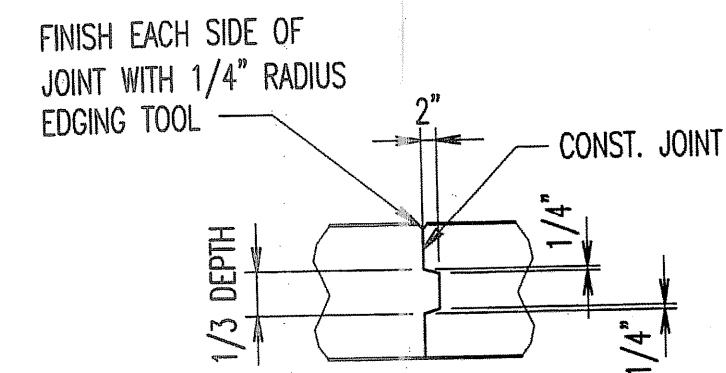
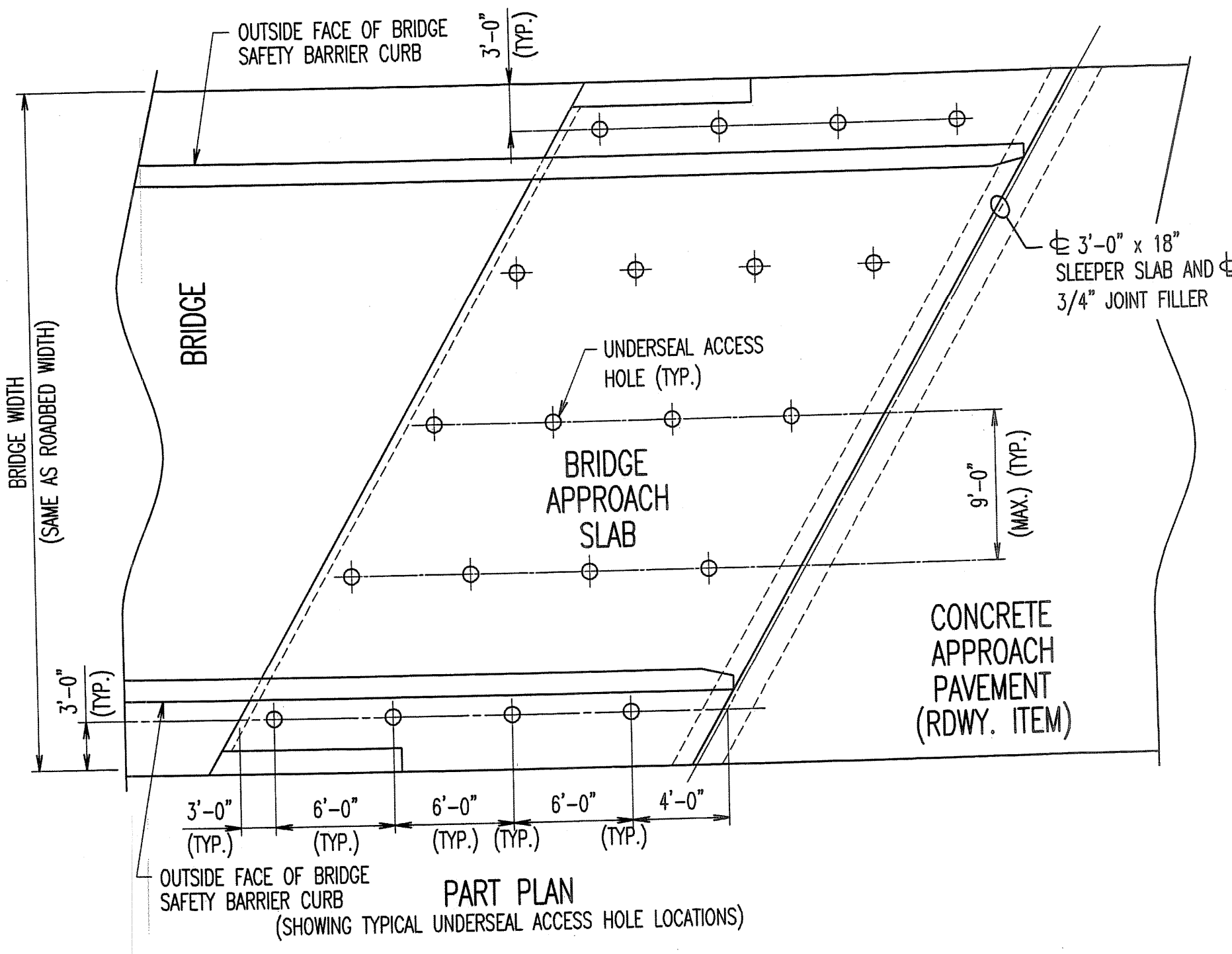
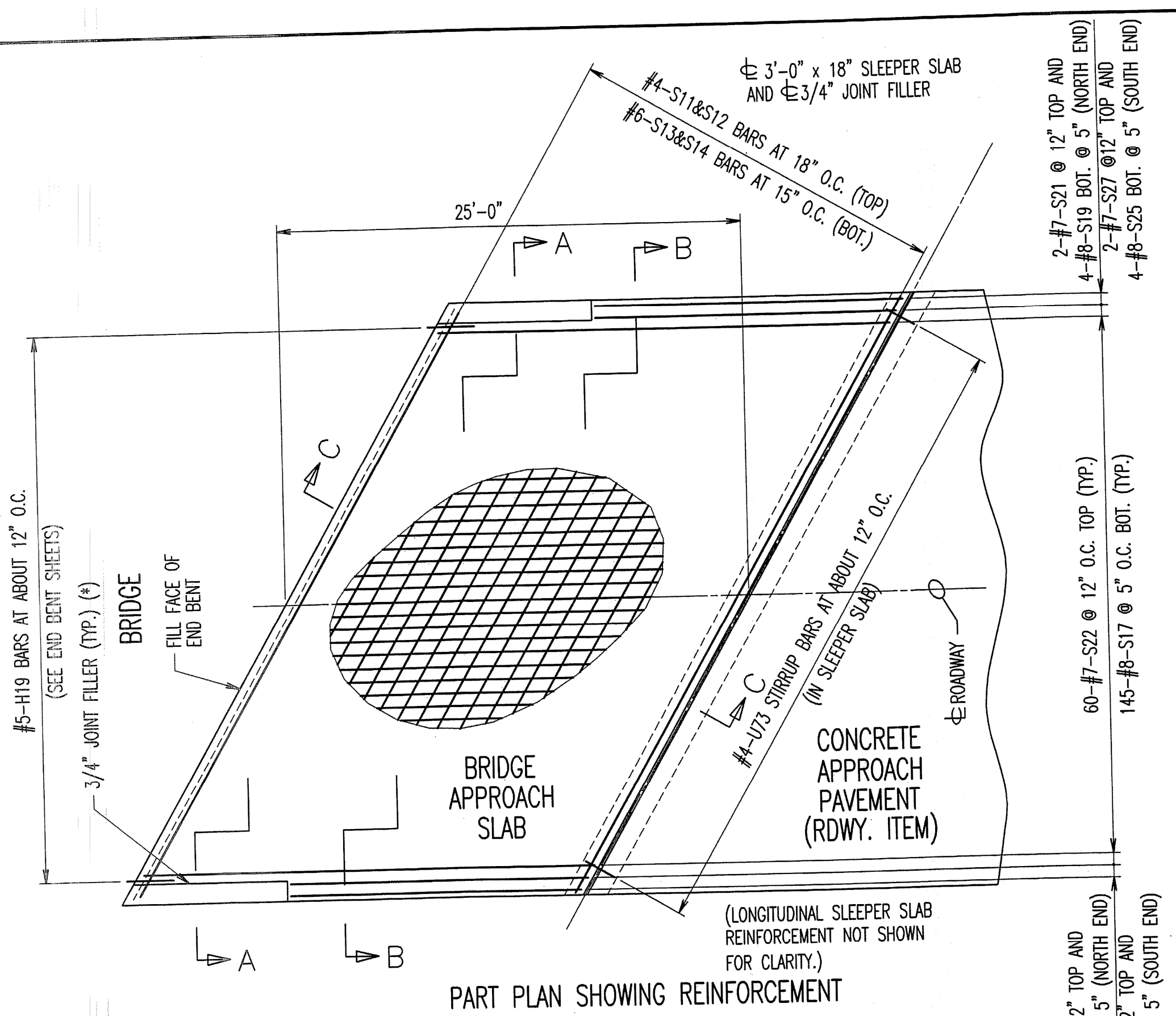
RAIL EXPANSION SLEEVE LOCATIONS TO COINCIDE WITH CONTRACTION JOINTS IN STRUCTURE OR AT 30'-0" MAXIMUM SPACING



Designed	HAS	EDM No. 03804
Drawn	JJJ	
Checked	GHM	
Date	4-12-07	

EDM EDM Incorporated
 220 Mansion House, 3rd Floor
 St. Louis, Missouri 63102
 (314) 231-5485 Fax: (314) 231-8167

GENERAL NOTES:
 ALL CONCRETE FOR THE BRIDGE APPROACH SLAB AND SLEEPER SLAB SHALL BE IN ACCORDANCE WITH SECTION 503 (F'c = 4,000 PSI) OF THE MISSOURI STANDARD SPECIFICATIONS.
 ALL JOINT FILLER SHALL MEET THE REQUIREMENTS OF SECTION 1057.2.5 OF THE MISSOURI STANDARD SPECIFICATIONS, EXCEPT AS NOTED.
 THE REINFORCING STEEL IN THE BRIDGE APPROACH SLAB AND THE SLEEPER SLAB SHALL BE EPOXY COATED GRADE 60 WITH F_y = 60,000 PSI.
 MINIMUM CLEARANCE TO REINFORCING STEEL SHALL BE 2", UNLESS OTHERWISE SHOWN.
 THE REINFORCING STEEL IN THE BRIDGE APPROACH SLAB AND THE SLEEPER SLAB SHALL BE CONTINUOUS. THE TRANSVERSE REINFORCING STEEL MAY BE MADE CONTINUOUS BY LAP SPLICING THE #4 & #6 BARS 2'-1" AND 3'-6" RESPECTIVELY.
 MECHANICAL BAR SPLICES WILL BE PERMITTED AND SHALL DEVELOP AT LEAST 125 PERCENT OF THE SPECIFIED YIELD STRENGTH OF THE REINFORCING BARS BEING SPLICED. THE CONTRACTOR SHALL FURNISH THE ENGINEER THE MANUFACTURER'S CERTIFICATION THAT THIS REQUIREMENT IS MET AND IS REQUIRED TO FOLLOW THE MANUFACTURER'S RECOMMENDATION FOR INSTALLATION.
 MECHANICAL BAR SPLICES SHALL BE EPOXY COATED IN ACCORDANCE WITH SECTION 710 OF THE MISSOURI STANDARD SPECIFICATIONS.
 HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE CRSI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES, STIRRUP AND TIE DIMENSIONS.
 THE CONTRACTOR SHALL POUR AND SATISFACTORILY FINISH THE BRIDGE SLAB BEFORE POURING THE BRIDGE APPROACH SLABS.
 LONGITUDINAL CONSTRUCTION JOINTS IN APPROACH SLAB AND SLEEPER SLAB SHALL BE ALIGNED WITH LONGITUDINAL CONSTRUCTION JOINTS IN BRIDGE SLAB.
 PAYMENT FOR FURNISHING ALL MATERIALS, LABOR AND EXCAVATION NECESSARY TO CONSTRUCT THE APPROACH SLAB, INCLUDING THE TIMBER HEADER, SLEEPER SLAB, UNDERDRAIN, TYPE 5 AGGREGATE BASE AND ALL OTHER APPURTENANCES AND INCIDENTAL WORK AS SHOWN ON THIS SHEET, COMPLETE IN PLACE, SHALL BE CONSIDERED AS COMPLETELY COVERED UNDER THE CONTRACT UNIT PRICE FOR BRIDGE APPROACH SLAB (BRIDGE), PER SQ. YD.
 FOR CONCRETE APPROACH PAVEMENT DETAILS, SEE ROADWAY PLANS.
 SEE MISSOURI STANDARD PLANS DRAWING 609.00 FOR DETAILS OF TYPE A BARRIER CURB.
 WHEN A LAP SPlice IS REQUIRED FOR THE USE OF A MECHANICAL BAR SPlice, THE MINIMUM LAP LENGTH SHALL BE 40" FOR TRANSVERSE APPROACH SLAB BAR SPLICES.
 AT THE CONTRACTOR'S OPTION, GRADE 40 REINFORCEMENT MAY BE SUBSTITUTED FOR THE GRADE 60 #5 DOWEL BARS CONNECTING THE BRIDGE APPROACH SLAB TO THE BRIDGE ABUTMENT. NO ADDITIONAL PAYMENT WILL BE MADE FOR THIS SUBSTITUTION.
 WHEN GRADE 40 REINFORCEMENT IS SUBSTITUTED FOR THE GRADE 60 #5 DOWEL BARS CONNECTING THE BRIDGE APPROACH SLAB TO THE BRIDGE ABUTMENT, THE REINFORCEMENT MAY BE BENT UP TO 90 DEGREES WITH A 2" MINIMUM RADIUS NEAR THE ABUTMENT TO ALLOW COMPACTION OF THE BACKFILL MATERIAL NEAR THE ABUTMENT. DAMAGE TO EPOXY COATING SHALL BE REPAIRED ACCORDING TO SECTION 710.3.3 OF THE MISSOURI STANDARD SPECIFICATIONS.
 DRAIN PIPE MAY BE EITHER 6" DIAMETER CORRUGATED METALLIC-COATED PIPE UNDERDRAIN, 4" DIAMETER CORRUGATED, SCHEDULE 40 (MIN.), POLYVINYL CHLORIDE (PVC) DRAIN PIPE, OR 4" DIAMETER CORRUGATED POLYETHYLENE (PE) DRAIN PIPE.
 SEE ANCHOR BOLT DETAILS ON SHEET B21 FOR CONNECTION OF BICYCLE RAILING TO APPROACH SLAB.



NOTE: WITH THE APPROVAL OF THE ENGINEER, THE CONTRACTOR MAY CROWN THE BOTTOM OF THE APPROACH SLAB TO MATCH THE CROWN OF THE ROADWAY SURFACE.

NOTE: REMOVE TIMBER HEADER WHEN CONCRETE PAVEMENT IS PLACED.

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

NOTE: NOMINAL LENGTHS ARE BASED ON CUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAM AND ARE LISTED FOR FABRICATORS USE (NEAREST INCH).

DESIGNED: HAS
 DRAWN: JJJ
 CHECKED: GHM
 DATE: 4-12-07

EDM No. 03604

EDM Incorporated
 220 Mansion House, 3rd Floor
 St. Louis, Missouri 63102
 (314) 231-5485 Fax: (314) 231-8167

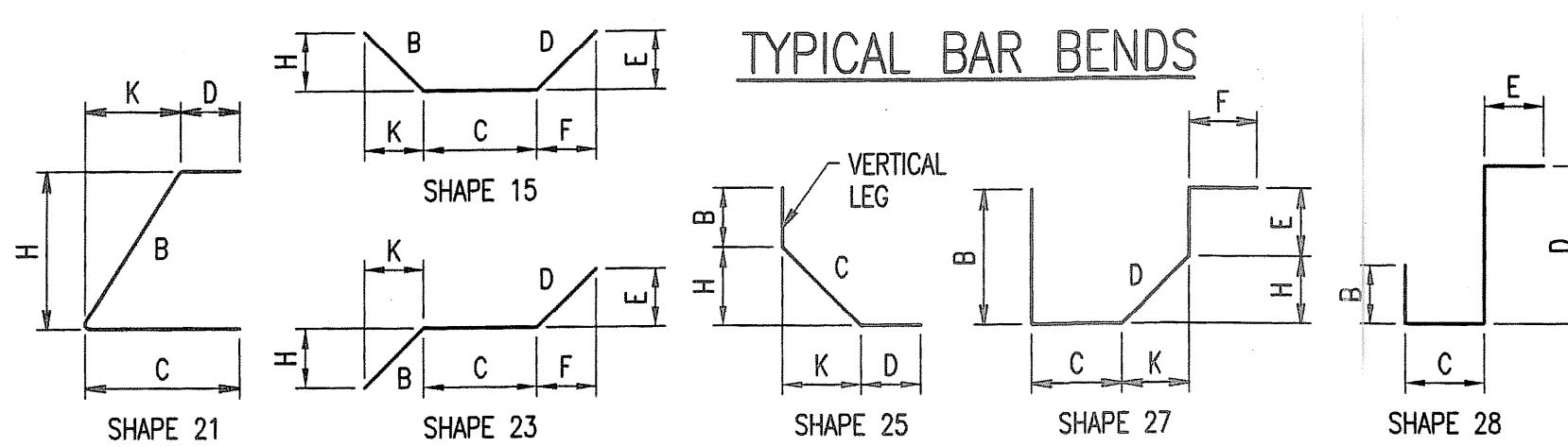
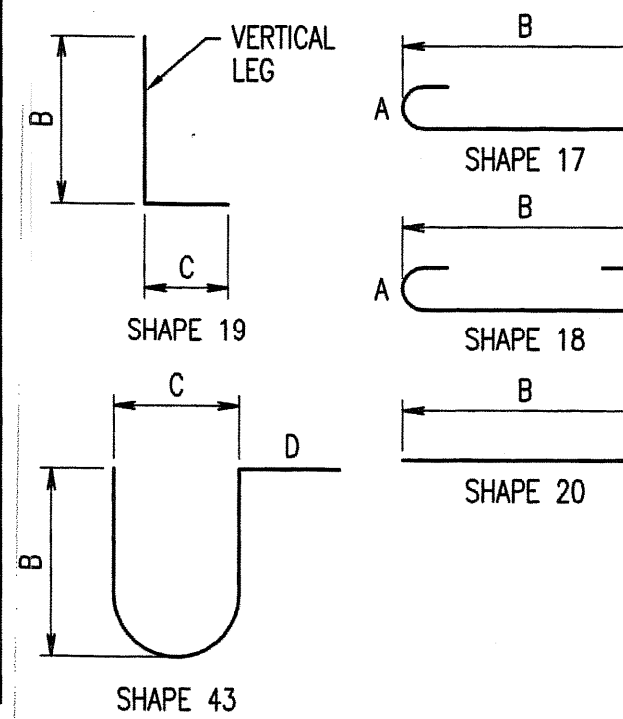
SEAL
 GHOLAM M. MASOUMI
 CIVIL ENGINEER
 LICENSE NO. 059
 APR 12 2007

BILL OF REINFORCING STEEL

NO. REQUIRED	MARK NO.	LOCATION	(E)	(S)	(V)	DIMENSIONS	DIMENSIONS				NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT										
							B	C	D	E				F	H	K	NO. EACH						
SIZE	MARK	SUPER STRUCTURE	SHAPE NO.	STIRRUPS	SUBSTRUCTURE (X)	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	LBS.					
		BARRIER CURB																					
382	5 R1	BARRIER CURB	E 19	S		2	6	0	3 1/2			2	10	2	8			1062					
382	5 R2	BARRIER CURB	E 15	S				0	3 1/2			2	10	2	8			1062					
504	5 R3	BARRIER CURB	E 19	S		1	5	0	6			1	11	1	9			920					
504	5 R4	BARRIER CURB	E 27	S				0	6	0	11 1/4	0	7	1	0	0	9 1/4	6 3/4	3	12	9	1446	
180	5 R5	BARRIER CURB	E 19	S		2	5	0	5 1/2			2	10	2	8			501					
180	5 R6	BARRIER CURB	E 14	S		0	5 1/8	0	11 1/8	1	5 1/8		0	2	1	5 1/2	2	10	2	8	501		
10	5 R7	BARRIER CURB	E 27	S		2	5 1/2	0	5 1/2	1	0	1	8		0	9 1/2	0	6 1/2	5	7	5	4	56
44	5 R8	BARRIER CURB	E 43			1	7 1/4	0	6	1	0							4	7	4	3	195	
4	5 R9	BARRIER CURB	E 27	S		-	0	6	0	6 1/4	0	9	1	0	0	5 1/2	0	4	2	10	2	7	11
4	5 R10	BARRIER CURB	E 27	S		-	0	6	0	7 1/2	0	9	1	0	0	6 1/2	0	4 1/2	2	11	2	8	11
4	5 R11	BARRIER CURB	E 27	S		-	0	6	0	9 1/2	0	9	1	0	0	7 1/2	0	5 1/2	3	12	10	12	
4	5 R12	BARRIER CURB	E 27	S		-	0	6	0	11 1/4	0	9	1	0	0	9 1/4	0	6 1/2	3	2	2	11	12
42	5 R14	BARRIER CURB	E 20			40	3					40	3	40	3								1763
4	5 R15	BARRIER CURB	E 8			2	2					2	2			2 1/2		4	4	4	4	4	18
14	5 R16	BARRIER CURB	E 20			8	8					8	8			8		8	8	8	8	127	
40	4 R17	BARRIER CURB	E 20			22	0					22	0	22	0								588
48	5 R18	BARRIER CURB	E 20			7	8					7	8			7		8	7	8	8	384	
56	5 R19	BARRIER CURB	E 20			9	9					9	9			9		9	9	9	9	569	
14	5 R20	BARRIER CURB	E 20			11	6					11	6	11	6								168
14	5 R21	BARRIER CURB	E 20			12	2					12	2	12	2								178
42	5 C100	SLIP FORM OPTION	E 20			9	11					9	11	9	11								434

BILL OF REINFORCING STEEL

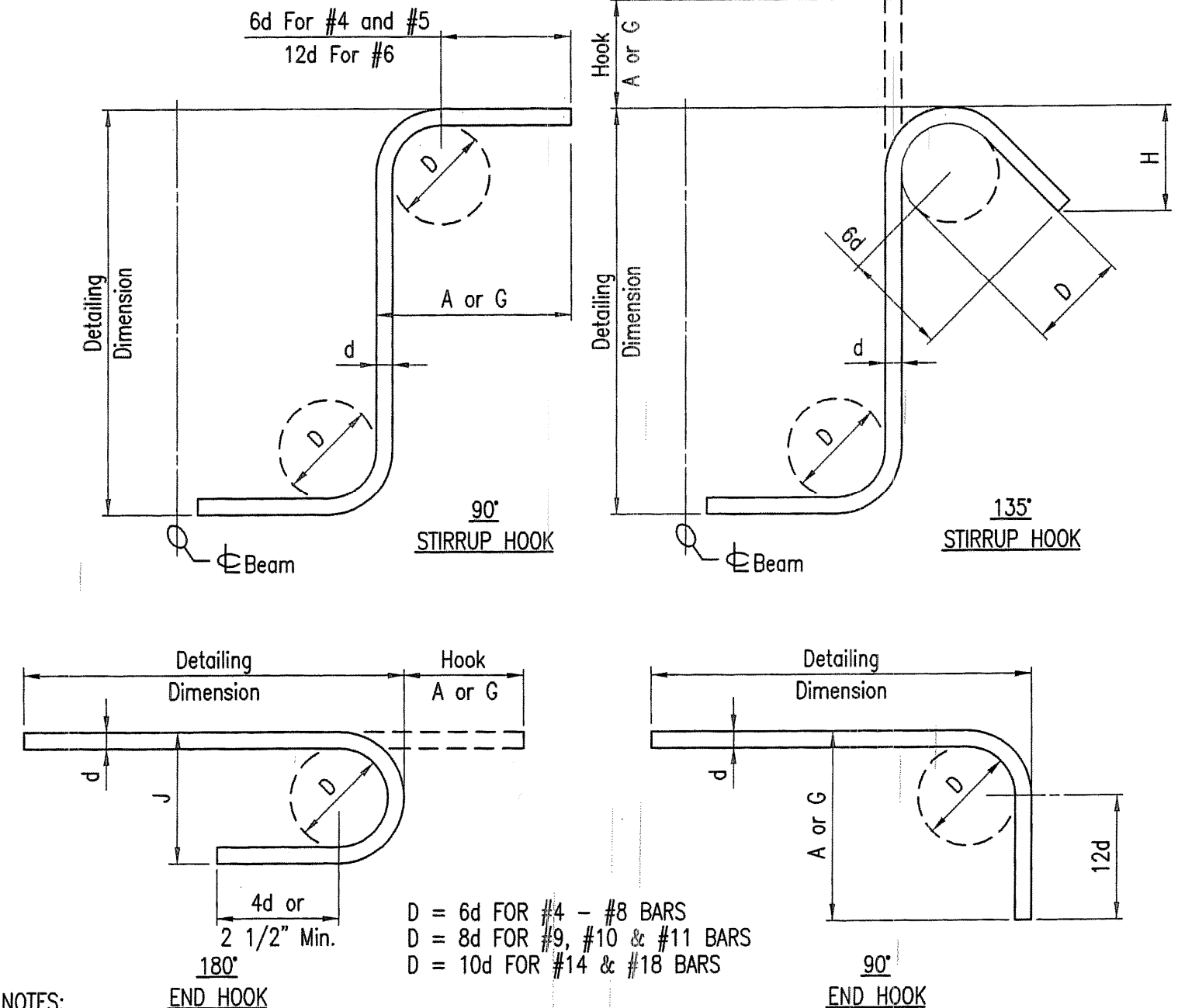
NO. REQUIRED	MARK NO.	LOCATION	(E)	(S)	(V)	DIMENSIONS	DIMENSIONS				NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT					
							B	C	D	E				F	H	K	NO. EACH	
SIZE	MARK	SUPER STRUCTURE	SHAPE NO.	STIRRUPS	SUBSTRUCTURE (X)	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	LBS.



STIRRUP HOOK DIMENSIONS

BAR SIZE	D (in.)	90° HOOK		135° HOOK	
		Hook A or G	Hook A or G	H Approx.	H
#4	2"	4 1/2"	4 1/2"	3"	3"
#5	2 1/2"	6"	5 1/2"	3 3/4"	3"
#6	4 1/2"	12"	8"	4 1/2"	

STIRRUP AND TIE HOOKS



- NOTES:**
- E - EPOXY COATED REINFORCEMENT
 - S - STIRRUP
 - V - BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE
 - X - BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES
 - NO. EA. - NUMBER OF BARS OF EACH LENGTH
 - ALL STANDARD HOOKS AND BENDS OTHER THAN 180° ARE TO BE BENT WITH THE SAME PROCEDURE AS FOR 90° STANDARD HOOKS.
 - HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
 - NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)
 - PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
 - ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
 - NOTE TO DETAILER: ALL REINFORCEMENT IN THE SLAB AND ABOVE, AND ALL REINFORCEMENT THAT EXTENDS INTO THE SLAB, SHALL BE EPOXY COATED; ALSO, ANY WING REINFORCEMENT THAT EXTENDS INTO THE SAFETY BARRIER CURB SHALL BE EPOXY COATED.
 - TWO ADDITIONAL REINFORCING BARS OF EACH BAR SIZE THAT IS REQUIRED TO BE EPOXY COATED, SHOULD BE INCLUDED IN THE BAR BILL FOR TEST PURPOSES. THESE ADDITIONAL BARS SHOULD BE ADDED TO ONE OF THE REQUIRED BAR MARKS AND NOT AS A SPECIAL BAR. TEST BARS SHOULD, PREFERABLY, BE 10 FEET OR MORE IN LENGTH. IF A BAR 10 FOOT LONG CANNOT BE FOUND, USE THE BAR WITH THE LARGEST AVAILABLE STRAIGHT SECTION.
 - TWO ADDITIONAL S4 BARS ARE INCLUDED IN BAR BILL FOR TESTING.

END HOOK DIMENSIONS

BAR SIZE	180° HOOKS		90° HOOKS	
	A or G	J	A or G	A or G
#3	5"	3"	6"	6"
#4	6"	4"	8"	8"
#5	7"	5"	10"	10"
#6	8"	6"	12"	12"
#7	10"	7"	14"	14"
#8	11"	8"	16"	16"
#9	15"	11 3/4"	19"	19"
#10	17"	13 1/4"	22"	22"

APR 12 2007

Designed - HAS
 Drawn - JJJ
 Checked - GHM
 Date - 4-12-07

EDM EDM Incorporated
 220 Mansion House, 3rd Floor
 St. Louis, Missouri 63102
 (314) 231-5485 Fax: (314) 231-8167