



CUY-90-14.90

PID 77332/85531

APPENDIX EX-37

CUY-490-0027 PID 12153

(Reference Document)

State of Ohio
Department of Transportation
Jolene M. Molitoris, Director

**Innerbelt Bridge
Construction Contract Group 1 (CCG1)**

PLOT SUBMITTED: 09-NOV-1992 03:05

c:\dgn\pc6\malloy\c4900027\fst

PLOT SUBMITTED BY: bridges

51-17

STATE OF OHIO
 DEPARTMENT OF TRANSPORTATION
CUY-490-0.27
 CITY OF CLEVELAND
 CUYAHOGA COUNTY

| | |
|-----------------|---------------|
| CUYAHOGA COUNTY | OHIO |
| CUY-490-0.27 | FHWA REGION 5 |
| FEDERAL PROJECT | |

1/10

BR-76-92

BRIDGE PIER COLUMN REPAIR

LIMITED ACCESS

This improvement is especially designed for through traffic and has been declared a limited access highway or freeway by action of the Director in accordance with the provisions of Section 5511.02 of the Revised Code of Ohio

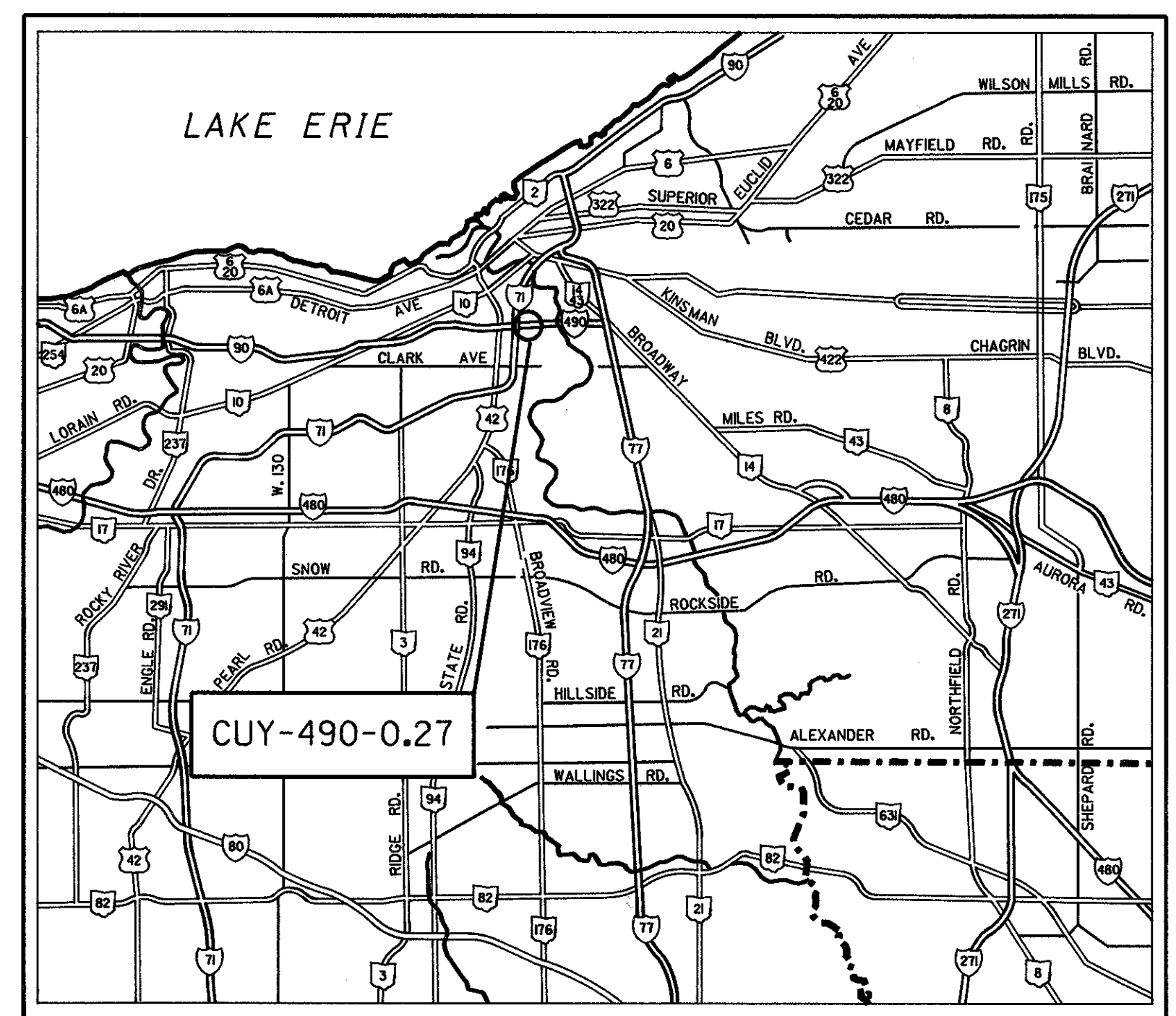
1991 SPECIFICATIONS

The standard specifications of the State of Ohio, Department of Transportation, including changes and supplemental specifications listed in the proposal shall govern this improvement.

I hereby approve these plans and declare that the making of this improvement will not require the closing to traffic of the highway and that provisions for the maintenance and safety of traffic will be as set forth in the plans and estimates.

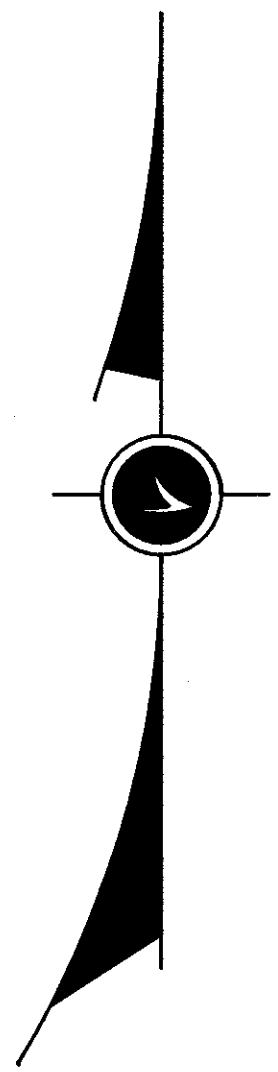
INDEX OF SHEETS

| | |
|----------------------------------|------|
| TITLE SHEET | 1 |
| SCHEMATIC PLAN | 2 |
| ESTIMATED QUANTITIES | 3 |
| GENERAL NOTES | 4 |
| SITE PLAN | 5 |
| STRUCTURE DETAILS | 6-7 |
| MAINTENANCE OF TRAFFIC | 8-10 |



LOCATION MAP

SCALE IN MILES



LINE DATA

WORK LIMITS
 STA. 13+50 TO STA. 15+25 = 175.00 L.F.
 = 0.033 MILES

| STANDARD DRAWINGS | |
|-------------------|--------|
| MC - 9.2 | 5-6-91 |
| | |
| | |
| | |
| | |
| | |
| | |

| SUPPLEMENTAL SPECIFICATIONS | | |
|-----------------------------|-----|----------|
| SS | 852 | 6-10-87 |
| SS | 952 | 12-14-88 |
| | | |
| | | |
| | | |
| | | |
| | | |

UNDERGROUND UTILITIES
 TWO WORKING DAYS
BEFORE YOU DIG
 Call...800-362-2764 (Toll free)
 OHIO UTILITIES PROTECTION SERVICE
 NON-MEMBERS
 MUST BE CALLED DIRECTLY

Project: CUY-490-0.27 P.I.D. 12153
 Date of Letting 19 , Contract No.

Approved Bryan T. Groden (M)
 Date 11-9-92 District Deputy Director of Transportation

Approved B. D. Harshilammi DFT
 Date 1-8-93 Engineer, Bureau of Bridges and Structural Design

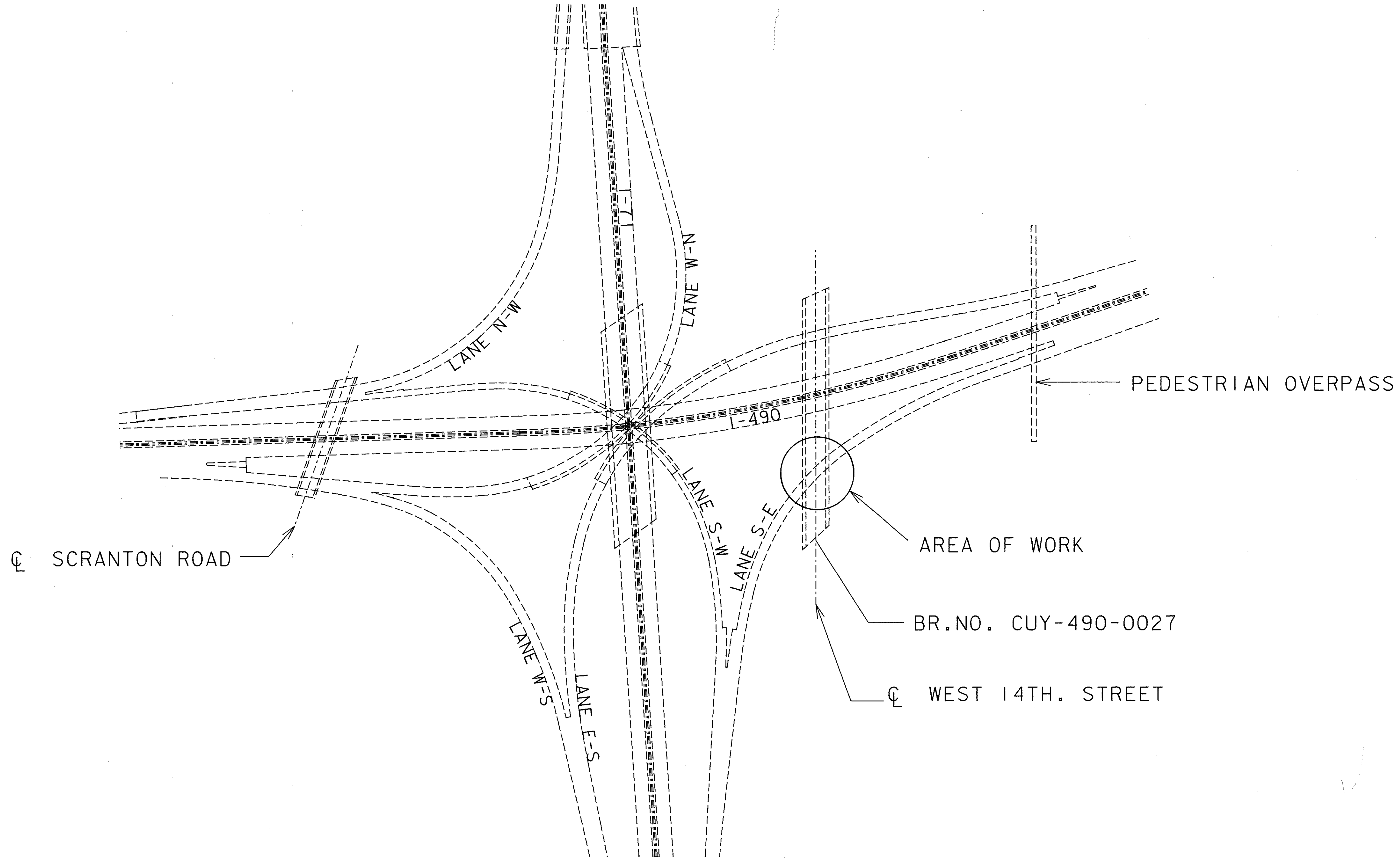
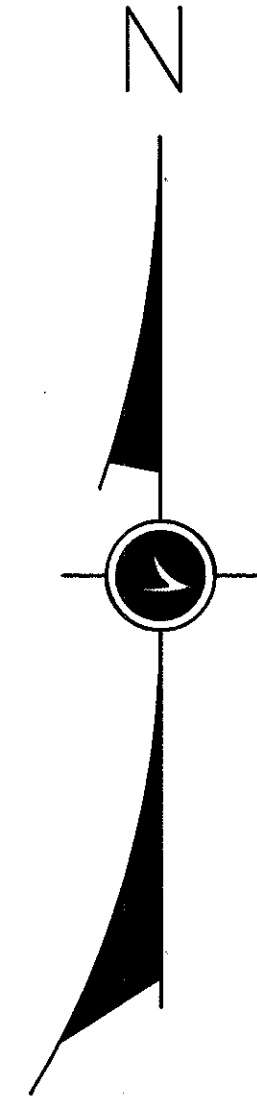
Approved Alexander H. Hynds
 Date 1-15-93 Deputy Director, Operations

Approved Jerry Wray
 Date 1-15-93 Director, Department of Transportation

Plan Prepared By:
 OHIO DEPARTMENT OF TRANSPORTATION
 DISTRICT 12
 BRIDGE DEPT.

DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 APPROVED
 DIVISION ADMINISTRATOR _____ DATE _____

SCHEMATIC



PLOTTED BY: bridges
 PLOTTED FROM: c:\dgn\pc6\m11oy\c4900027\sch
 FILENAME: dgn
 PLOT SUBMITTED: 09-NOV-1992 08:59

| | | | | |
|--|--------------|----------------|-------------------------------|------------------|
| STATE OF OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 12 BRIDGE DEPARTMENT | | | | |
| SCHEMATIC BR. NO. CUY-490-0027 WEST 14TH. ST. OVER I-490 | | | | |
| CUYAHOGA COUNTY OHIO | | | | |
| DESIGNED MJM | DRAWN JJW | CHECKED BGW | REVIEWED DWL DATE 11/92 | REVISED SHEET |

ESTIMATED QUANTITIES

CUYAHOGA COUNTY
CUY-490-0.27

OHIO

FHWA
REGION 5

FEDERAL
PROJECT

3

10

| ITEM | ITEM EXT. | DESCRIPTION | QUANTITY | UNITS |
|---------|-----------|---|----------|----------|
| 202 | 11000 | PORTIONS OF STRUCTURE REMOVED | LUMP | |
| 503 | 21300 | UNCLASSIFIED EXCAVATION | LUMP | |
| 509 | 11400 | REINFORCING STEEL (GRADE 60) | 2671 | LBS. |
| 510 | 11101 | DOWEL HOLES, AS PER PLAN * | 18 | EACH |
| 511 | 41500 | CLASS C CONCRETE, SUBSTRUCTURE | 8 | CU. YDS. |
| SPECIAL | 51267502 | SEALING CONCRETE SURFACES (EPOXY) | 43 | SQ. YD. |
| SPECIAL | 51911502 | PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR * | 5 | SQ. FT. |
| SPECIAL | 51912600 | CONCRETE REPAIR BY EPOXY INJECTION | 60 | LIN. FT. |
| SPECIAL | 53000200 | TEMPORARY SUPPORT | LUMP | |
| 614 | 11000 | MAINTAINING TRAFFIC | LUMP | |
| 622 | 40020 | PORTABLE CONCRETE BARRIER, 32" | 250 | LIN. FT. |
| 624 | 10000 | MOBILIZATION | LUMP | |
| | | | | |
| | | | | |
| | | | | |

* SUBJECT TO NON-PERFORMANCE
WITH NO PENALTY TO THE STATE OF OHIO.

Revised 1-5-93 JJJ

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 BRIDGE DEPARTMENT

ESTIMATED QUANTITIES
BR. NO. CUY-490-0027
WEST 14TH. STREET OVER I-490

| | | | | | | | | | |
|------------|-----|-------|-----|---------|--|----------|-------|---------|--|
| DESIGNED | | DRAWN | | CHECKED | | REVIEWED | | REVISED | |
| MJM | JJW | BCW | DWL | | | | | | |
| DATE 11/92 | | | | | | | SHEET | | |

PLOT SUBMITTED: 13-NOV-1992 04:10

filename.dgn

PLOTTED BY: brldges
PLOTTED FROM: c:\dgn\pc6\mally\c490002\est

GENERAL NOTES

PROPOSED WORK

REPLACE COLLISION-DAMAGED CONCRETE BRIDGE PIER COLUMN.

DESIGN DATA

ORIGINAL DESIGN LOADING- CF400(57)

DESIGN STRESSES
CONCRETE CLASS C - UNIT STRESS 1333 P.S.I.
REINFORCING STEEL ASTM A615, A616 OR A617
GRADE 40 - UNIT STRESS 20,000 P.S.I.

SEQUENCE OF OPERATIONS FOR COLUMN REPAIR

- EXCAVATE AROUND FOOTING AND DEWATER.
- PLACE TEMPORARY SUPPORTS.
- REMOVE COLUMN.
- EPOXY INJECT ANY CRACKS WHICH HAVE PROPAGATED INTO THE FOOTING. THIS IS ONLY NECESSARY PRIOR TO COLUMN CONSTRUCTION IF CRACKS ARE UNDER PROPOSED COLUMN.
- CONSTRUCT COLUMN.
- CURE CONCRETE FOR 28 DAYS.
- EPOXY INJECT REMAINING LOCATIONS.
- REMOVE TEMPORARY SUPPORTS.
- BACKFILL MATERIAL AROUND COLUMN.

PROPOSAL NOTES

| TITLE | NUMBER |
|---|--------|
| SEALING OF CONCRETE SURFACES (EPOXY) | 110 |
| CONCRETE REPAIR BY EPOXY INJECTION | 113 |
| PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR | 340 |

SUPPLEMENTAL SPECIFICATIONS

| | |
|-------|----------|
| SS852 | 06-10-87 |
| SS952 | 12-14-88 |

EXISTING STRUCTURE VERIFICATION

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS, PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND/OR FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK, BUT, THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05 AND 105.02.

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURES BY THE CONTRACTOR. HOWEVER, ALL PROJECT WORK SHALL BE BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD. PLANS OF THE EXISTING STRUCTURES ARE AVAILABLE FOR EXAMINATION AT THE ODOT DISTRICT TWELVE OFFICE IN GARFIELD HEIGHTS, OHIO.

CONTINGENCY QUANTITIES

THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK FOR PLAN ITEMS SET UP TO BE USED "AS DIRECTED BY THE ENGINEER" UNLESS AUTHORIZED BY THE ENGINEER.

ITEM 202 - PORTIONS OF STRUCTURE REMOVED

WORK TO BE PAID FOR UNDER THIS ITEM SHALL INCLUDE THE REMOVAL OF STRUCTURAL COMPONENTS AS DETAILED IN THE PLANS AND AS DIRECTED BY THE ENGINEER.

EXTREME CARE SHALL BE TAKEN TO AVOID DAMAGING THE EXISTING REINFORCING STEEL WHICH IS TO REMAIN IN PLACE. NO BACKHOE RAMS SHALL BE USED. ANY STEEL WHICH IS MADE UNUSABLE BY THE CONTRACTOR'S CONCRETE REMOVAL OPERATIONS SHALL BE REPLACED AT NO ADDITIONAL COST TO THE STATE.

ITEM 509 - REINFORCING STEEL (GRADE 60)

THIS NOTE SHALL APPLY ONLY TO C1103 REINFORCING BARS.

THIS ITEM SHALL BE USED TO REPLACE REINFORCING STEEL WHICH WAS TO REMAIN IN PLACE BUT IS MISSING, TOO BENT, ELONGATED OR CORRODED. THE BARS SHALL BE AS SPECIFIED IN THE PLANS AND SHALL BE PLACED IN HOLES DRILLED UNDER ITEM 510 - DOWEL HOLES, AS PER PLAN.

THIS ITEM SHALL INCLUDE THE COST OF ALL MATERIALS AND LABOR NECESSARY TO FURNISH AND INSTALL THE REINFORCING BAR. THE EXISTING STEEL SHALL BE REMOVED AS PER ITEM 202.

ITEM 510 - DOWEL HOLES, AS PER PLAN

THIS ITEM SHALL BE USED TO ANCHOR THE REINFORCING STEEL USED TO REPLACE THE REINFORCING STEEL WHICH WAS TO REMAIN IN PLACE BUT IS MISSING, TOO BENT TO BE REUSED, ELONGATED OR CORRODED TO 75% OF ORIGINAL DIAMETER.

THE HOLES FOR THE REPLACEMENT BARS SHALL BE PLACED AS NEAR AS POSSIBLE TO THE POSITION OF THE ORIGINAL BAR WITHOUT REDUCING COVER CONCRETE DEPTH.

BEFORE ANY DOWELING IS DONE THE LOCATION OF ALL EXISTING REBARS IN THE AREA OF THE DOWEL HOLE SHALL BE DETERMINED WITH THE AID OF A REBAR LOCATOR. IT IS IMPORTANT THAT NO EXISTING BARS BE DAMAGED DURING THE DOWELING PROCESS. IF AN EXISTING BAR IS ENCOUNTERED AT THE SAME LOCATION AS A PROPOSED DOWEL HOLE THE DOWEL HOLE SHALL BE MOVED TO EITHER SIDE OF THE BAR SO AS NOT TO DAMAGE THE REBAR.

THE EPOXY RESIN ANCHORAGE SHALL CONFORM TO SUPPLEMENTAL SPECIFICATIONS 852 AND 952 AND PAYMENT SHALL CONFORM TO ITEM 510 AND SHALL INCLUDE THE COST OF ALL MATERIALS, LABOR AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

THE FOLLOWING ESTIMATED QUANTITY OF DOWEL HOLES IS TO BE USED AS DIRECTED BY THE ENGINEER.

| ITEM | NO. | UNIT | DESCRIPTION |
|------|-----|------|--------------------------|
| 510 | 10 | EACH | DOWEL HOLES, AS PER PLAN |

ITEM SPECIAL - CONCRETE REPAIR BY EPOXY INJECTION

CONCRETE REPAIR BY EPOXY INJECTION SHALL BE PERFORMED ON BRIDGE NO. CUY-490-0027 TO THE FOLLOWING AREAS.

THE PIER CAP ABOVE THE DAMAGED PIER COLUMN

THE FOOTING OF THE DAMAGED COLUMN

THE AREA BETWEEN THE PIER CAP AND THE REPLACEMENT COLUMN AFTER CONCRETE SHRINKAGE OCCURS

ALL EPOXY INJECTION SHALL BE PERFORMED WHILE THE TEMPORARY SUPPORTS ARE IN PLACE. THE AREA BETWEEN THE PIER CAP AND THE REPLACEMENT COLUMN SHALL BE INJECTED AFTER THE REPLACEMENT COLUMN CONCRETE HAS BEEN CURED FOR 28 DAYS.

SEE PROPOSAL NOTE NO. 113 FOR SURFACE PREPARATION REQUIREMENT, APPLICATION RATES, MATERIAL REQUIREMENTS, AND APPLICATION PROCEDURES.

ITEM SPECIAL - PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR

WORK UNDER THIS ITEM SHALL BE PERFORMED UPON:

THE PIER 2 CAP AT THE DAMAGED PIER COLUMN ON BRIDGE NO. CUY-490-0027.

WORK SHALL OCCUR AFTER ALL CONCRETE REPAIR BY EPOXY INJECTION HAS BEEN PERFORMED.

THE WORK AND PAYMENT FOR THIS ITEM SHALL CONFORM TO THE PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR PROPOSAL NOTE NUMBER 340.

ITEM SPECIAL - SEALING OF CONCRETE SURFACES (EPOXY)

AN EPOXY SHALL BE APPLIED ON BRIDGE NO. CUY-490-0027 TO THE FOLLOWING AREAS:

REPLACEMENT PIER 2 COLUMN

TOP OF FOOTING OF THE DAMAGED PIER COLUMN

THE PIER CAP WITHIN 5 FEET OF THE CENTERLINE OF THE REPLACEMENT PIER COLUMN

SEE THE PROPOSAL NO. 110 FOR SURFACE PREPARATION REQUIREMENTS, APPLICATION RATES, MATERIAL REQUIREMENTS AND APPLICATION PROCEDURES.

ITEM SPECIAL - TEMPORARY SUPPORT

THE TEMPORARY SUPPORTS AND JACKS SHALL BE INSTALLED, AND SUBSEQUENTLY REMOVED, TO SUPPORT THE PIER CAP WHILE THE PROPOSED COLUMN IS BEING INSTALLED.

THE TEMPORARY SUPPORTS SHALL BE ERECTED AS SHOWN IN THE PLANS. THE TEMPORARY SUPPORTS, WHICH SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF OHIO, SHALL EACH BE CAPABLE OF SUSTAINING A 175 TON LOAD AND SHALL BE APPROVED BY THE DIRECTOR. THE BASE PLATE SHALL BE NO SMALLER THAN AS SHOWN IN THE PLANS.

BEFORE ANY REMOVAL OF THE COLUMN BEGINS THE ELEVATION SHALL BE TAKEN AT THE PIER CAP WHERE THE COLUMN IS BEING REMOVED. THE TEMPORARY SUPPORT SHALL BE PUT IN PLACE SNUG WITH 5 TONS OF PRELOAD, AGAINST THE PIER CAP. AFTER THE COLUMN HAS BEEN REMOVED THE CONTRACTOR SHALL MONITOR THE PIER CAP ELEVATION AT LEAST ONCE A DAY AND ADJUST AS NECESSARY, BEGINNING WITH THE DAY THE COLUMN IS POURED AND CONTINUING FOR SEVEN DAYS. THE ELEVATION SHALL BE ALSO SET IMMEDIATELY PRIOR TO THE EPOXY INJECTION OF THE GAP BETWEEN PIER CAP AND NEW COLUMN CONCRETE.

THE COST OF ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY FOR TEMPORARY SUPPORTS, BRACKETS, JACKS, INSTALLATION, JACKING, MONITORING, AND REMOVAL SHALL BE PAID FOR UNDER:

| ITEM | UNIT | DESCRIPTION |
|---------|------|-------------------|
| SPECIAL | LUMP | TEMPORARY SUPPORT |

Revised 1-5-93 MJM

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 BRIDGE DEPARTMENT

GENERAL NOTES
BR. NO. CUY-490-0027
WEST 14TH. STREET OVER I-490

| CUYAHOGA COUNTY | | | | OHIO | |
|-----------------|-------|---------|----------|---------|---------|
| DESIGNED | DRAWN | CHECKED | REVIEWED | REVISOR | |
| MJM | JJW | BGW | DWL | | SHEET / |
| DATE 11/92 | | | | | |

PLOT SUBMITTED: 09-NOV-1992 05:43

filename.dgn

plotted by: br1dges
plotted from: c:\dgn\p06\mail\loy\c4900027\gen

SITE PLAN

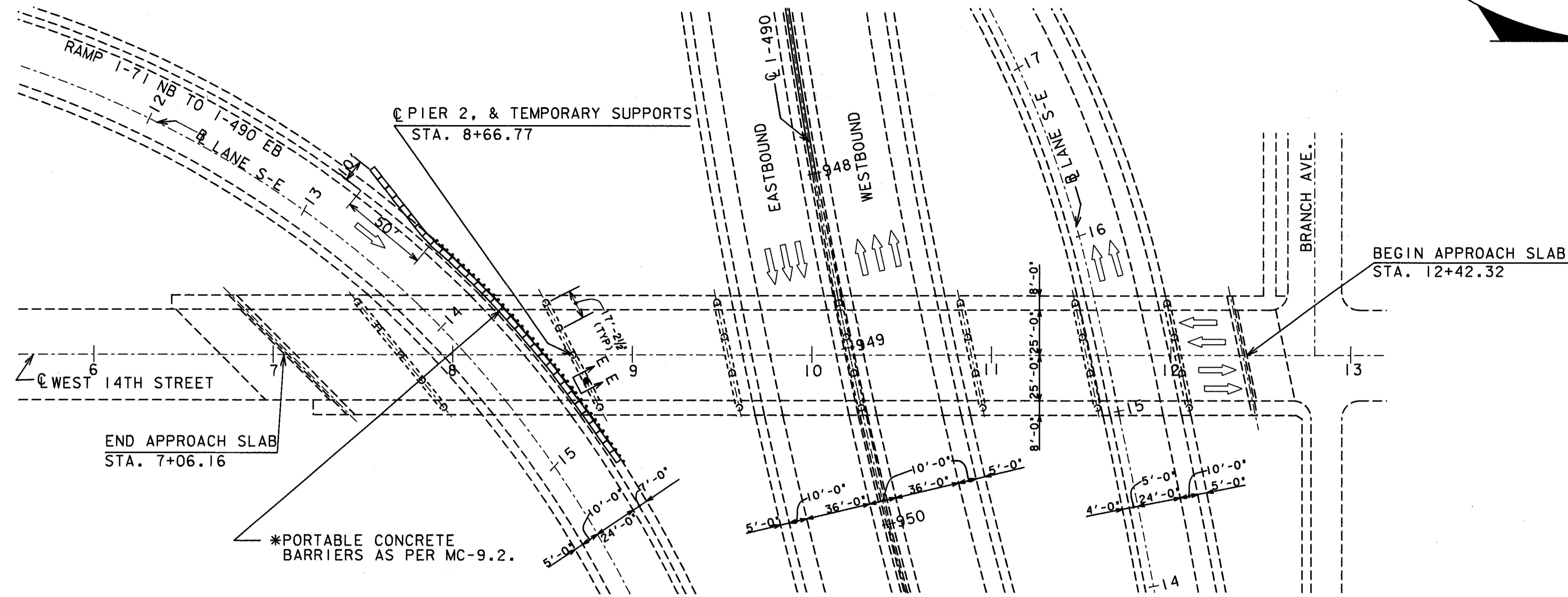
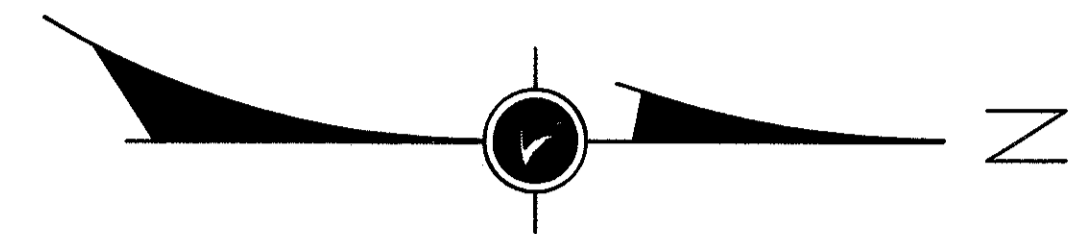
CUYAHOGA COUNTY
CUY-490-0.27

OHIO

FHWA
REGION 5

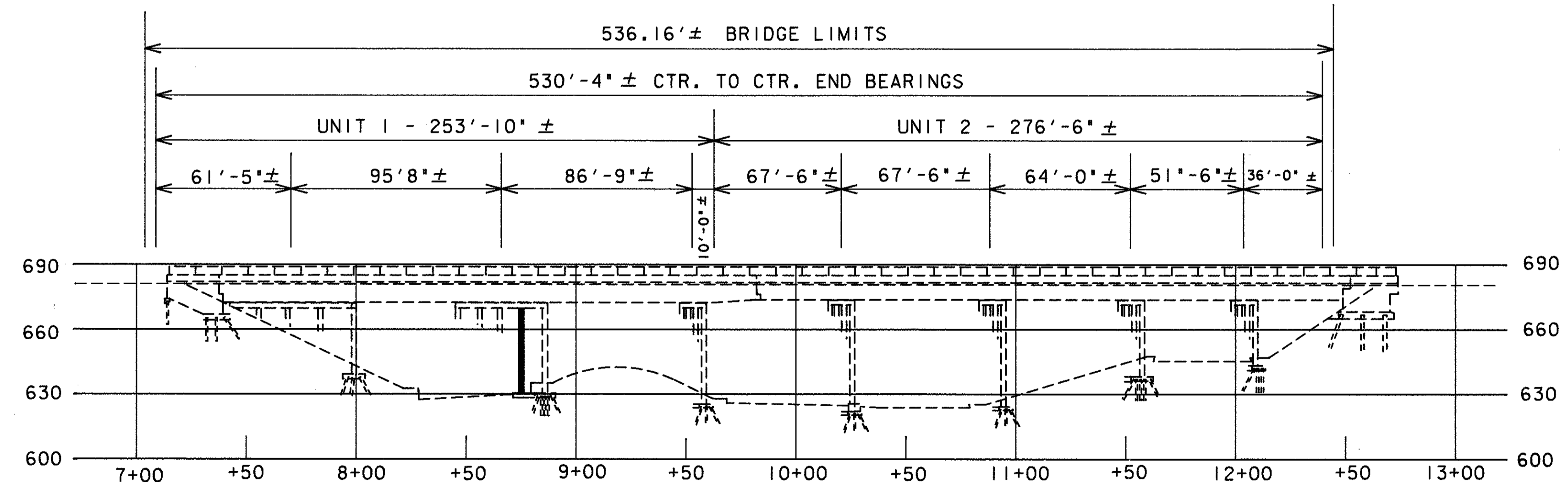
FEDERAL
PROJECT

5
10



PLAN

* THE PORTABLE CONCRETE BARRIER SHALL BE PLACED ALONG THE EXISTING GUARDRAIL. THE LIMITS OF THE BARRIER SHALL BE AS SHOWN.



ELEVATION

● — REPRESENTS DAMAGED PIER COLUMN TO BE REPLACED

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 BRIDGE DEPARTMENT

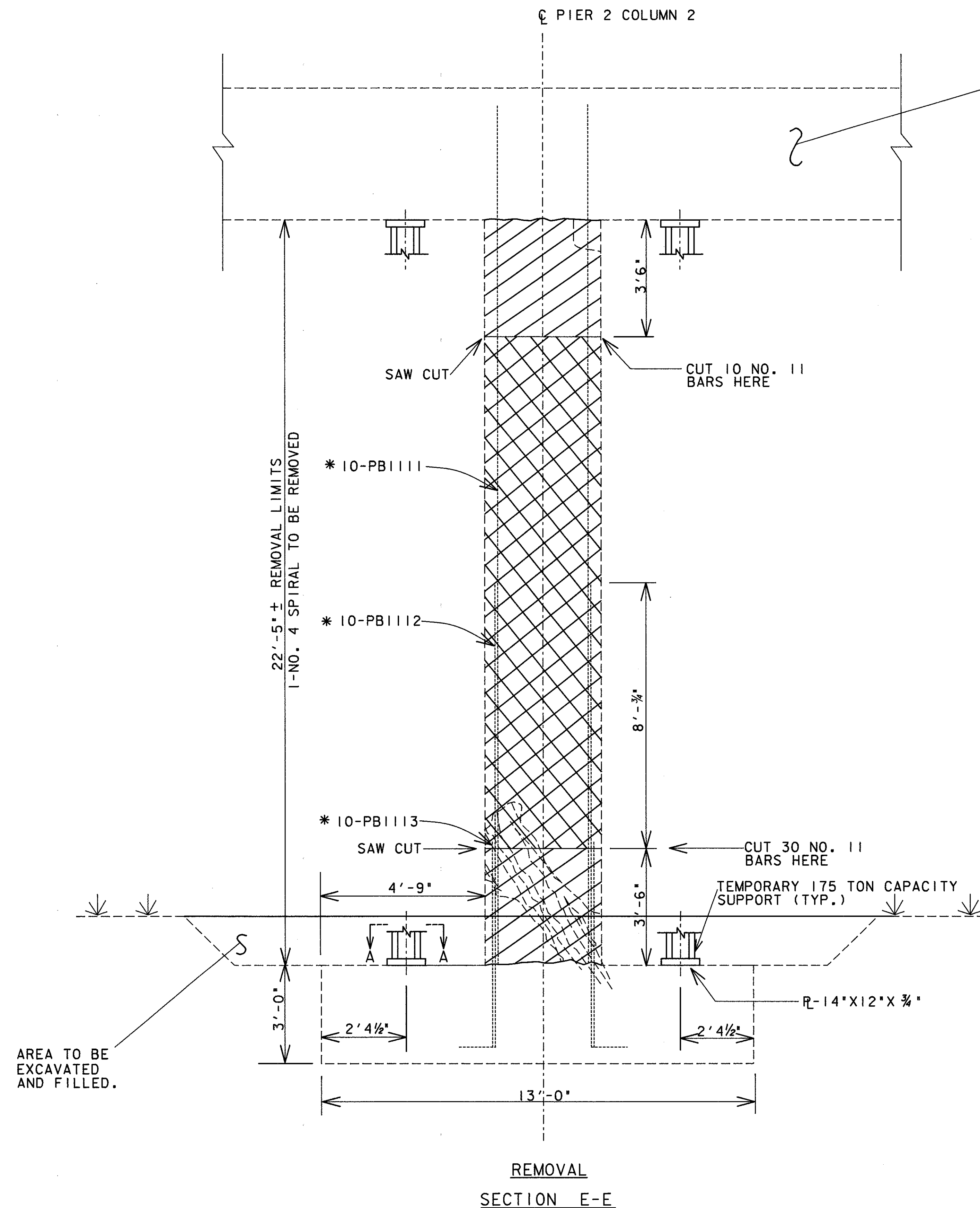
SITE PLAN
BR. NO. CUY-490-0027
WEST 14TH. STREET OVER I-490

| | | | | | | | | | |
|----------|--|-------|--|---------|--|----------|--|------------|-------|
| DESIGNED | | DRAWN | | CHECKED | | REVIEWED | | REVISED | |
| MJM | | JJW | | BCW | | DWL | | DATE 11/92 | |
| | | | | | | | | | SHEET |



PLOTTED BY: bridges
 PLOTTED FROM: c:\dgn\pc6\malloy\c4900027.sit
 FILENAME: dgn

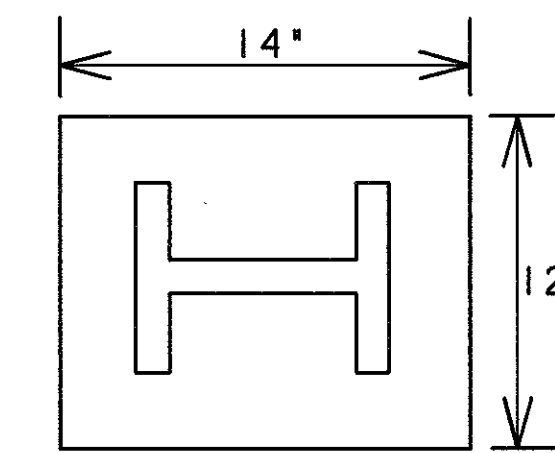
PLOT SUBMITTED: 10-NOV-1992 00:49

PIER COLUMN DETAILS



SOUND PIER CAP BETWEEN THE CENTER LINES OF THE ADJACENT PIER COLUMNS. AS PER PATCHING CONCRETE STRUCTURE WITH TROWELABLE MORTAR

-  - AREA TO BE REMOVED BETWEEN SAW CUTS
-  - AREA TO BE REMOVED BY JACK HAMMER (DO NOT DAMAGE ANY VERTICAL REINFORCING BARS). AFTER COMPLETE REMOVAL OF THE EXISTING CONCRETE, REMOVE THE 10 PB1111 NEAR THE FOOTING.



R-14"x12"x 3/4" (MINIMUM)
 TEMPORARY SUPPORT BASEPLATE
 SECTION A-A

* RETAIN PB1113, PB1112 BELOW BOTTOM SAWCUT AND PB1111 ABOVE TOP SAWCUT UNLESS DAMAGED

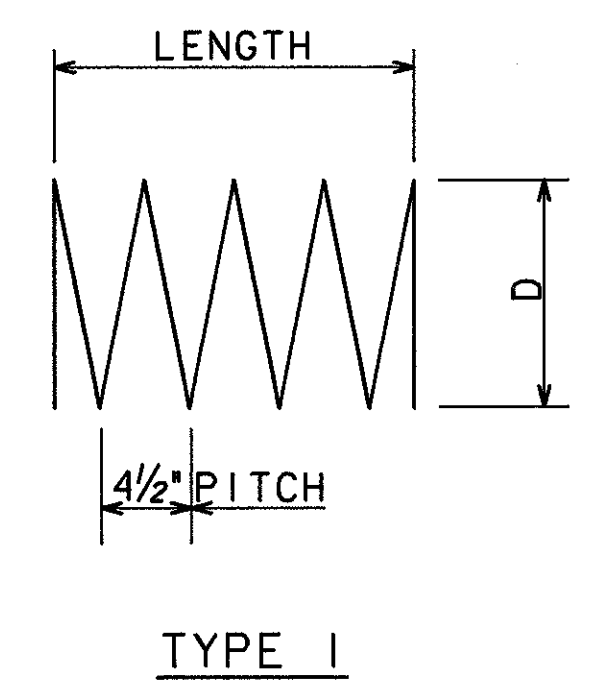
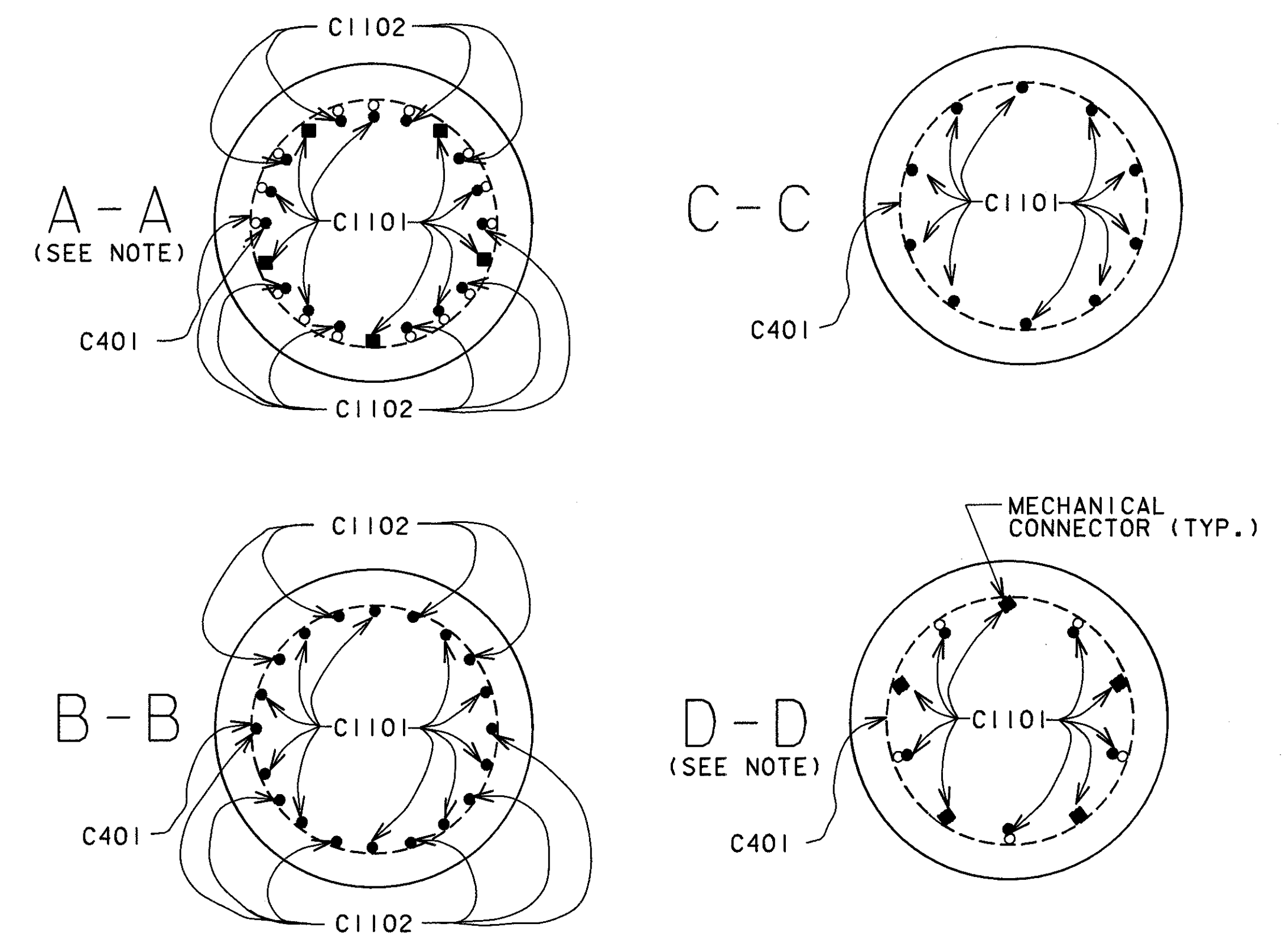
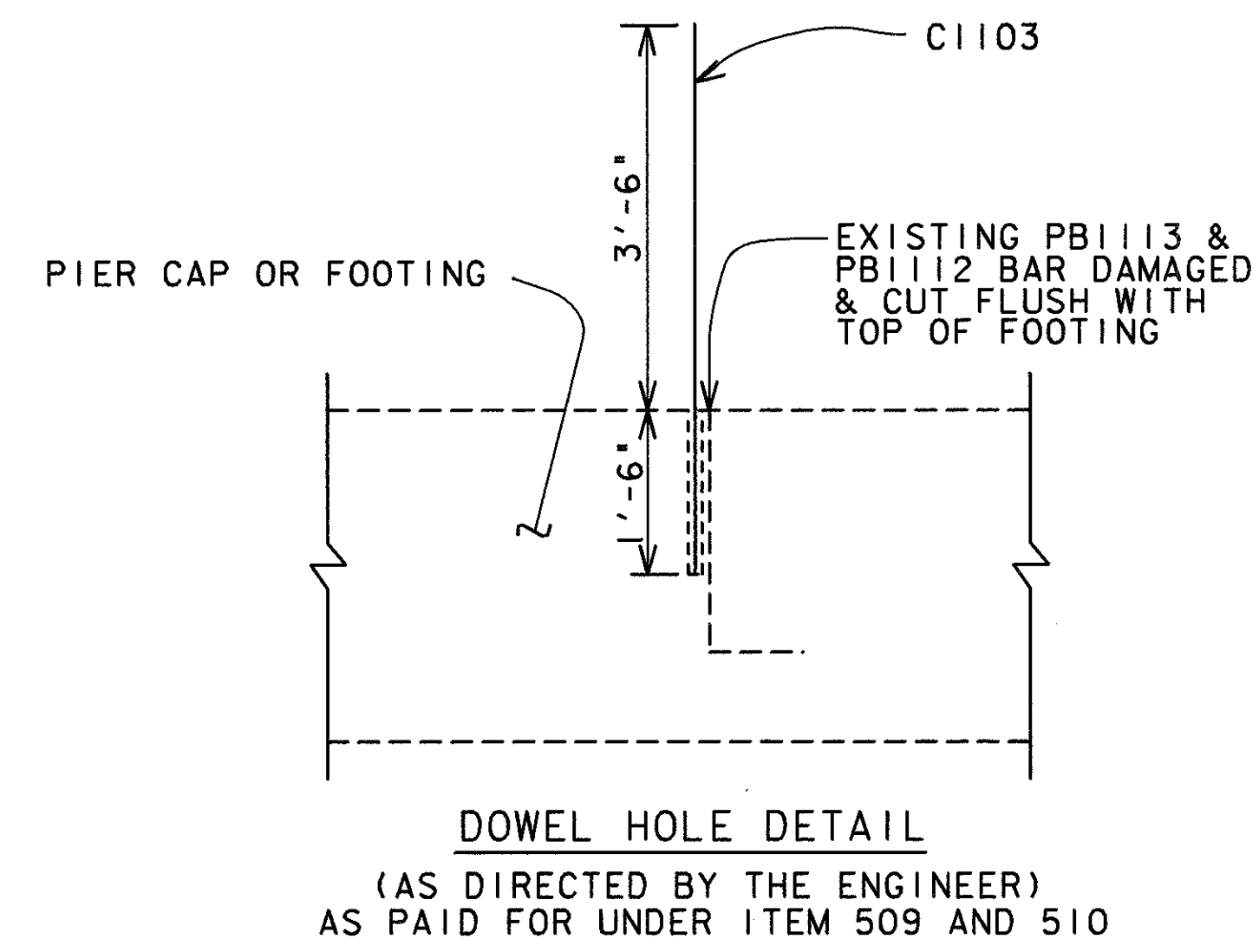
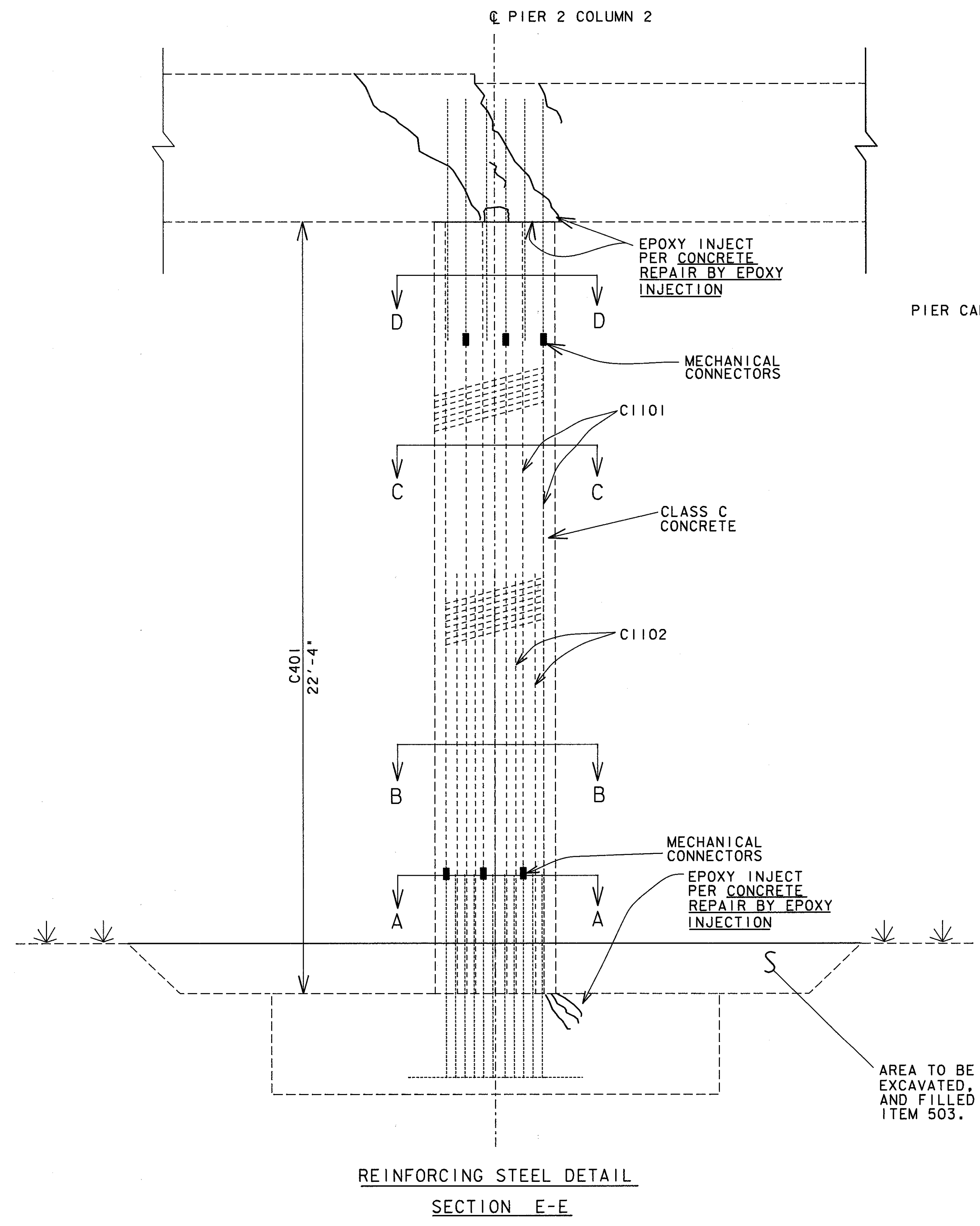
REMOVAL
 SECTION E-E

| | | | | |
|--|--------------|----------------|-------------------------------|--------------------|
| STATE OF OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 12 BRIDGE DEPARTMENT | | | | |
| PIER COLUMN DETAILS BR.NO. CUY-490-0027 WEST 14TH. STREET OVER I-490 | | | | |
| CUYAHOGA COUNTY OHIO | | | | |
| DESIGNED MJM | DRAWN JJW | CHECKED BGW | REVIEWED DWL DATE 11/92 | REVISED SHEET / |

PLOTTED BY: brldges
 PLOTTED FROM: c:\dgn\pc6\malloy\c4900027.pie
 FILENAME: dgn
 PLOT SUBMITTED: 09-NOV-1992 08:27

PIER COLUMN DETAILS

PLOTTED BY: bridges
 PLOTTED FROM: c:\dgn\pc6\ma\loy\c4900027\p1e
 filename.dgn
 PLOT SUBMITTED: 06-JAN-1993 02:09



| REINFORCING STEEL LIST | | | | | |
|------------------------|-----|---------|---------|------|------|
| MARK | NO. | LENGTH | WEIGHT | TYPE | D |
| C401 | 1 | 22'-4" | 487 LB | I | 3'2" |
| C1101 | 10 | 18'-11" | 1010 LB | STR. | - |
| C1102 | 10 | 12'-3" | 650 LB | STR. | - |
| C1103* | 10* | 5'-0" | 266 LB | STR. | - |

NOTE: ALL DIMENSIONS ARE OUT-TO-OUT
 * SEE NOTE SHT. 4 OF 10.
 ARE SUBJECT TO FULL OR PARTIAL NON-PERFORMANCE WITH NO PENALTY TO THE STATE OF OHIO.

NOTE: THE "NUMBER OF TURNS" SHOWN IS THE "LENGTH" DIVIDED BY "PITCH" PLUS THREE TURNS (TOTAL NUMBER OF COILS), EXPRESSED AS THE NEAREST WHOLE NUMBER WITH 1/2 CLOSED COILS PROVIDED AT THE ENDS OF EACH SPIRAL UNIT. FOUR STEEL CHANNEL, TEE OR ANGLE SPACERS WEIGHING APPROXIMATELY 0.80 POUNDS PER LINEAR FOOT OF SPACERS SHALL BE PROVIDED FOR EACH SPIRAL UNIT. THEY SHALL BE EQUALLY SPACED ALONG THE PERIPHERY OF THE COIL. THE WEIGHT OF THESE SPACERS WILL BE PAID FOR AS REINFORCING STEEL AND IS INCLUDED IN THE TABULATED QUANTITY OF THE SPIRAL BARS.

NOTE: EACH C1101 SHALL BE MECHANICALLY CONNECTED AT ONE END AND LAP SPLICED AT THE OTHER END. THE C1101'S SHALL BE MECHANICALLY CONNECTED AT EVERY OTHER C1101 AT BOTH THE BOTTOM AND TOP OF THE COLUMN.

Revised 1-5-93 *MM*

| | | | | |
|--|--------------|----------------|-------------------------------|--------------------|
| STATE OF OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 12 BRIDGE DEPARTMENT | | | | |
| PIER COLUMN DETAILS BR.NO. CUY-490-0027 WEST 14TH. STREET OVER I-490 | | | | |
| DESIGNED MJM | DRAWN JJW | CHECKED BGW | REVIEWED DWL DATE 11/92 | REVISED SHEET / |

CUYAHOGA COUNTY OHIO

MAINTENANCE OF TRAFFIC

| | |
|---------------------------------|--|
| CUYAHOGA COUNTY CUY-490-0.27 | OHIO FHWA REGION 5 FEDERAL PROJECT |
|---------------------------------|--|

8
10

ITEM 614 - MAINTAINING TRAFFIC

GENERALLY THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS AS TO MAKE THE PROPOSED REPAIR WITH A MINIMUM OF HAZARD, DELAY AND INCONVENIENCE TO THE MOTORISTS USING THE HIGHWAY AFFECTED BY THE WORK DONE UNDER THIS CONTRACT. FURTHERMORE, IN ADDITION TO THE CONSTRUCTION AND MATERIAL SPECIFICATIONS, THE FOLLOWING SPECIFIC PROVISIONS ARE MANDATORY.

NOTIFICATION

THE CONTRACTOR SHALL SUBMIT A SCHEDULE TO THE OHIO DEPARTMENT OF TRANSPORTATION INDICATING THE DATES OF THE PARTIAL RAMP CLOSURE PRIOR TO IMPLEMENTATION.

RESTRICTIONS

- A. ALL INTERSTATE TRAFFIC LANES SHALL BE KEPT OPEN AT ALL TIMES.
- B. NIGHTTIME WORK IS PROHIBITED.

MAINTENANCE OF TRAFFIC SYSTEMS

A. WHEN REQUIRED

WHENEVER ANY PART OF THE TRAVELED SURFACE IS BEING WORKED UPON OR IS OTHERWISE NOT SUITABLE FOR SAFE AND CONVENIENT USE BY VEHICLES, TRAFFIC CONTROL DEVICES SUFFICIENT TO PROTECT SUCH AREAS TO ASSURE THE SAFE AND CONVENIENT PASSAGE OF VEHICULAR TRAFFIC SHALL BE INSTALLED AND MAINTAINED. SUCH TRAFFIC CONTROL DEVICES AND THE MANNER IN WHICH THEY ARE USED SHALL BE CONSISTENT WITH THESE PLANS AND THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, HEREINAFTER REFERRED TO AS THE "MANUAL". THE TRAFFIC CONTROL DEVICE SYSTEM SHALL CONSTITUTE THE MINIMUM PROVISIONS FOR TRAFFIC CONTROL FOR EACH PARTICULAR SITUATION. WHENEVER THE ENGINEER DEEMS IT NECESSARY ESPECIALLY WHERE A GRADE, CURVE, OR MERGE CONDITIONS EXISTS, HE MAY DIRECT THAT ADDITIONAL OR ALTERNATIVE DEVICES BE USED.

B. CONDITIONS

THE CONTRACTOR SHALL STORE MATERIAL AND PARK VEHICLES ONLY BEHIND THE PORTABLE CONCRETE BARRIER.

C. ADVANCE WARNING SIGNS

ALL ADVANCE WARNING SIGNS FOR ANY CONDITION WHICH RESTRICTS TRAFFIC SHALL BE ERECTED BEFORE ANY SUCH RESTRICTION IS PUT INTO EFFECT. ALL SUCH SIGNS SHALL BE COVERED OR REMOVED FROM THE VIEW OF TRAFFIC WHENEVER THEY ARE NOT APPLICABLE.

MAINTENANCE OF TRAFFIC MATERIALS

A. SIGNS

SIGN DIMENSIONS AND SPECIFICATIONS, INCLUDING LETTER SIZES SHALL BE PROVIDED IN THE "MANUAL", OR IN DESIGN DRAWINGS PROVIDED BY THE DEPARTMENT OF TRANSPORTATION. THE SIGNS SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER PRIOR TO THE START OF THE PROJECT.

B. SIGN SUPPORTS

AS PER PLAN INSERT SHEETS.

C. CONES

CONES SHALL BE LOCATED AS SHOWN IN THE "MANUAL" AND THE TRAFFIC CONTROL PLANS.

VI. PAYMENT

PAYMENT FOR PROVIDING, ERECTING, MAINTAINING AND REMOVING TEMPORARY MAINTENANCE OF TRAFFIC CONTROL DEVICES SHALL BE MADE UNDER THE LUMP SUM PRICE BID FOR ITEM 614 - MAINTAINING TRAFFIC.

MAINTENANCE OF TRAFFIC

PLOT SUBMITTED: 09-NOV-1992 06:57

filename.dgn

PLOTTED BY: bridges
PLOTTED FROM: c:\dgn\pc6\md11oy\c4900027.gen

TEMPORARY SIGN SUPPORT REQUIREMENTS

A. PLACEMENT OF SIGNS WHICH WILL REMAIN MORE THAN ONE DAY:

- 1) LATERAL PLACEMENT TO NEAREST EDGE OF SIGNS SHALL BE AS FOLLOWS:
 - a) ON THE RIGHT SIDE OF THE ROAD FOR APPROACHING TRAFFIC (EXCEPT FOR DUAL MOUNTED SIGNS AND SIGNS DESIGNATED IN THE PLANS FOR LEFT SIDE MOUNTING).
 - b) CURBED ROADWAY - PREFERABLY 2 FT. (MINIMUM 1 FT.) BEHIND FACE OF CURB.
 - c) UNCURBED ROADWAY-12 FT. FROM EDGE OF TRAFFIC LANE OR 6 FT. FROM EDGE OF PAVED OR USEABLE SHOULDER, WHICHEVER IS GREATER.
 - d) BEHIND GUARDRAIL OR BARRIER - PREFERABLY 2 FT. BEHIND FACE OF GUARDRAIL (MINIMUM 1 FT.) FOR SIGNS ON CLASS A SUPPORTS; 4 FT. FOR CLASS B OR C SUPPORTS 1 FT. BEHIND FACE OF CONCRETE BARRIER UNLESS BARRIER TOP MOUNTING IS REQUIRED BY THE PLAN.
- 2) VERTICAL CLEARANCE OF SIGNS, MEASURED ABOVE ROADWAY ELEVATION; SHALL BE AS FOLLOWS:
 - a) RURAL - 5 FT. WHEN PARKED CARS, CONSTRUCTION EQUIPMENT, ETC WILL NOT OBSCURE SIGN VISIBILITY.
 - b) RURAL AREAS WITH PARKED CARS OR CONSTRUCTION EQUIPMENT - 7 FT.
 - c) URBAN - 7 FT.
 - d) CARE SHALL BE TAKEN TO ASSURE THAT SIGNS WILL NOT BE OBSCURED BY CONSTRUCTION EQUIPMENT, TREES, WEEDS OR OTHER OBSTACLES. BRUSH, WEEDS OR GRASS WITHIN THE RIGHT OF WAY SHALL BE TRIMMED AS NECESSARY. SIGNS SHALL NORMALLY BE VISIBLE TO TRAFFIC 400 TO 600 FT. IN ADVANCE OF THE SIGN.
- 3) SUPPORTS FOR SIGNS WHICH WILL REMAIN IN PLACE MORE THAN ONE DAY SHALL BE FIXED RATHER THAN PORTABLE EXCEPT IN SITUATIONS WHERE THE SIGN MUST REST ON PERMANENT PAVEMENT OR OTHER SURFACE WHICH WOULD BE DAMAGED BY INSERTION OF POST TYPE SUPPORTS.

B. PLACEMENT OF SIGNS WHICH WILL REMAIN FOR ONE DAY OR LESS:

- 1) SAME AS A-1 ABOVE EXECPT THAT SIGNS MAY BE PLACED ON THE ROADWAY ONLY IF THEY DO NOT INTRUDE INTO A TRAFFIC LANE IN USE.
- 2) MINIMUM OF 1 FT. ABOVE ROADWAY

C. CLASSES OF SUPPORTS:

ALL TEMPORARY SIGN SUPPORTS SHALL BE OF THE FOLLOWING TYPES:

1) CLASS A:

SUPPORTS SHALL BE USED FOR EXPOSED LOCATIONS ON HIGHWAYS WHERE TRAFFIC APPROACH SPEEDS OF 40 MPH AND HIGHER ARE ENCOUNTERED. THEY ARE ALSO SUITABLE FOR USE IN ALL OTHER LOCATIONS.

2) CLASS B:

SUPPORTS SHALL BE USED FOR EXPOSED LOCATIONS ON HIGHWAYS WHERE TRAFFIC APPROACH SPEEDS OF LESS THAN 40 MPH ARE ENCOUNTERED. THEY ARE ALSO SUITABLE FOR USE IN ALL APPLICATIONS DEFINED FOR CLASS C SUPPORTS.

3) CLASS C:

SUPPORTS MAY ONLY BE USED WHERE FULLY PROTECTED BY GUARDRAIL, CONCRETE BARRIER AND IN LOCATIONS POSITIVELY PROTECTED FROM TRAFFIC SUCH AS ON RETAINING WALLS OR WHERE TRAFFIC APPROACH SPEEDS ARE LESS THAN 25 MPH.

D. TRAFFIC APPROACH SPEEDS:

TRAFFIC APPROACH SPEEDS SHALL BE THE LOCALLY POSTED SPEED (NOT ADVISORY SPEED SIGNS) OR THE MEASURED ACTUAL (85TH PERCENTILE) SPEED (IF AVAILABLE) OF APPROACHING TRAFFIC, WHICHEVER IS HIGHER, ADJACENT TO THE SIGN LOCATION.

TABLE

| APPROACH SPEED (MPH) | COMPLETELY PROTECTED BY GUARDRAIL OR BARRIER | PARTLY PROTECTED BY GUARDRAIL OR BARRIER * | GREATER THAN 30' FROM EDGE OF PAVEMENT | WITHIN 30' FROM EDGE OF PAVEMENT |
|----------------------|--|--|--|----------------------------------|
| 40 AND HIGHER | A, B OR C | A OR B | A OR B ** | A ONLY |
| 26 TO 39 | A, B OR C | A OR B | A OR B | A OR B |
| 0 TO 25 | A, B OR C | A, B OR C | A, B OR C | A, B OR C |

* IF SUPPORTS ARE BEHIND GUARDRAIL BUT NOT FULLY 5.5' BEHIND FACE OF RAIL OR IF SIGN IS NOT 1' BEHIND FACE OF CONCRETE BARRIER.

** 30' CRITERION IS BASED UPON STRAIGHT ROADWAY AND A SLOPE OF 6:1 OR FLATTER. SUPPORTS ON THE OUTSIDE OF CURVES OR LOCATED DOWN A SLOPE (STEEPER THAN 6:1) WILL REQUIRE USE OF CLASS A SUPPORTS.

E. BALLASTING

BALLASTING OF PORTABLE SUPPORTS SHALL BE WITH SANDBAGS PLACED WITHIN 1 FT. OF THE GROUND. IN NO CASE SHALL HARD OBJECTS BE USED FOR BALLAST.

F. STRENGTH OF SIGN SUPPORTS

THE CONTRACTOR SHALL CHOOSE SIGN SUPPORTS OF ADEQUATE STRENGTH AND WITH ADEQUATE FOUNDATIONS AND ANCHORAGE TO SUPPORT THE SIGN SIZES ERRECTED. PROPRIETARY DEVICES SHALL NOT BE LOADED BEYOND THE LIMITS RECOMMENDED BY THE MANUFACTURER. SLIP BASE TYPE BREAKAWAY BEAM CONNECTIONS SHALL BE AT LEAST PARTIALLY EMBEDDED IN CONCRETE CONSISTING OF A 1 FT. DEEP BY 12" DIAMETER COLLAR. SIGN SUPPORTS WHICH FAIL UNDER TYPICAL WIND LOAD CONDITIONS SHALL BE IMMEDIATELY MODIFIED OR REPLACED WITH A SUPPORT OF ADEQUATE STRENGTH.

G. PROHIBITED SUPPORTS

THE FOLLOWING SUPPORT TYPES SHALL NOT BE PERMITTED ON PROJECTS:

- 1) SUPPORTS FABRICATED FROM AUTOMOTIVE AXLE DIFFERENTIAL ASSEMBLIES AND SIMILARLY HEAVY ASSEMBLIES WHICH CANNOT BE CONSIDERED BREAKAWAY TYPE.
- 2) SUPPORTS CONSISTING OF VERTICAL POSTS WITH ANGLED BRACES MADE FROM DRIVEPOST OR OTHER RIGID ELEMENTS.

| | | | |
|-----------------------------|-----------------|---------------|---------|
| CALC BY _____ DATE _____ | CUYAHOGA COUNTY | OHIO | 9 10 |
| CHKD BY _____ DATE _____ | CUY-490-0.27 | FHWA REGION 5 | |

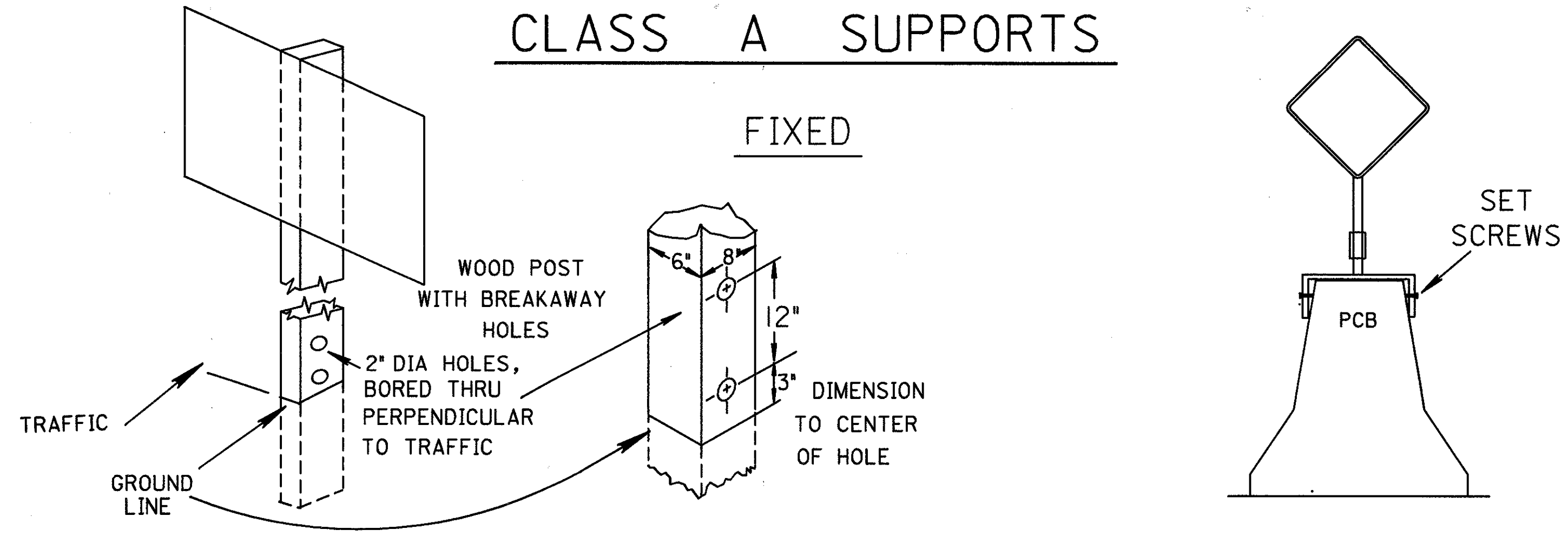
CLASS A SUPPORTS FIXED SUPPORTS

- 1) ALL *2, *3, AND *4 POST WHEN INSTALLED SINGLY OR IN PAIRS ACCORDING TO THE DETAILS OF TC-41.20. THE NUMBER OF SUPPORTS SHALL BE AS SHOWN ON TC-52.10 AND TC-52.20.
- 2) THE FOLLOWING POST TYPES, WHEN INSTALLED SINGLY, BY IMBEDMENT OR DRIVING INTO EARTH TO A DEPTH OF ABOUT 42 INCHES:
 - a) - UP TO 4" X 4" WOOD
 - b) - UP TO 2 INCH DIAMETER SCHEDULE 40 STEEL PIPE
 - c) - UP TO 3 INCH DIAMETER SCHEDULE 40 ALUMINUM PIPE
 - d) - UP TO 2 1/4 INCH SQUARE, 12 GAUGE WALL, PUNCHED STEEL POST
 - e) - UP TO 6" X 8" WOOD WITH BREAKAWAY HOLES SHOWN BELOW
- 3) THE FOLLOWING POST TYPES WHEN INSTALLED IN PAIRS WITH LESS THAN 7 FT. BETWEEN POSTS, BY IMBEDMENT OR DRIVING INTO EARTH TO A DEPTH OF ABOUT 42 INCHES:
 - a) - UP TO 4" X 4" WOOD
 - b) - UP TO 2 INCH DIAMETER SCHEDULE 40 STEEL PIPE
 - c) - UP TO 3 INCH DIAMETER SCHEDULE 40 ALUMINUM PIPE
 - d) - UP TO 2 INCH SQUARE, 14 GAUGE WALL, PUNCHED STEEL POST
- 4) FIXED TYPE III BARRICADES:
- 5) ALL BREAKAWAY CONNECTION BEAM SUPPORTS, WHEN INSTALLED ACCORDING TO THE PROPER DETAILS SHOWN ON TC-41.10 WITH A MINIMUM CLEAR DISTANCE BETWEEN SUPPORTS OF 7 FT. FOR SUPPORTS LARGER THAN W6 X 9.
- 6) ANY BREAKAWAY POST OR POST AND CONNECTION WHICH HAS BEEN CRASH TESTED AND APPROVED BY THE FHWA AS SATISFYING THE BREAKAWAY CRITERIA DESCRIBED IN 630.06.

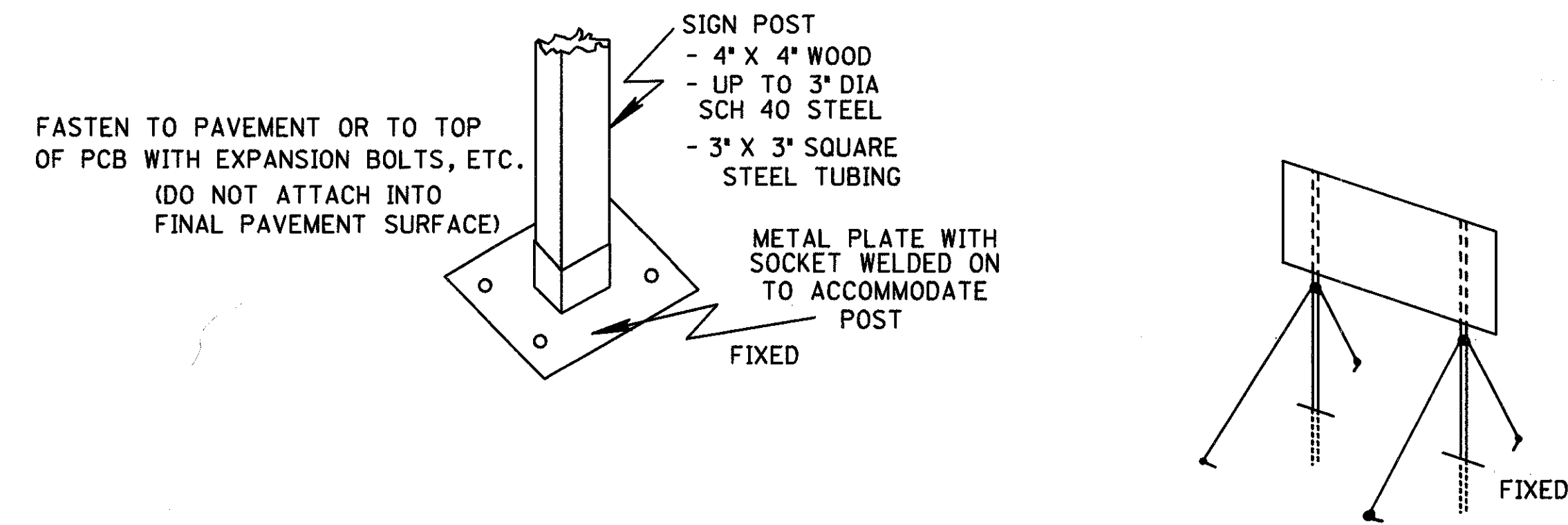
ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH 614 AND OTHER APPLICABLE PORTIONS OF THE C & M SPECIFICATIONS AS WELL AS IN ACCORDANCE WITH PART 7 OF THE OMTCD. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS TO PROVIDE THIS METHOD OF TRAFFIC CONTROL SHALL BE INCLUDED IN THE LUMP SUM BID FOR 614 MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

| | |
|------------------------|------------------|
| REVISED BY: | DATE: |
| 210510 | DATE 05/07/90 |
| TEMPORARY SIGN SUPPORT | |
| PLAN INSERT SHEET | |

CLASS A SUPPORTS

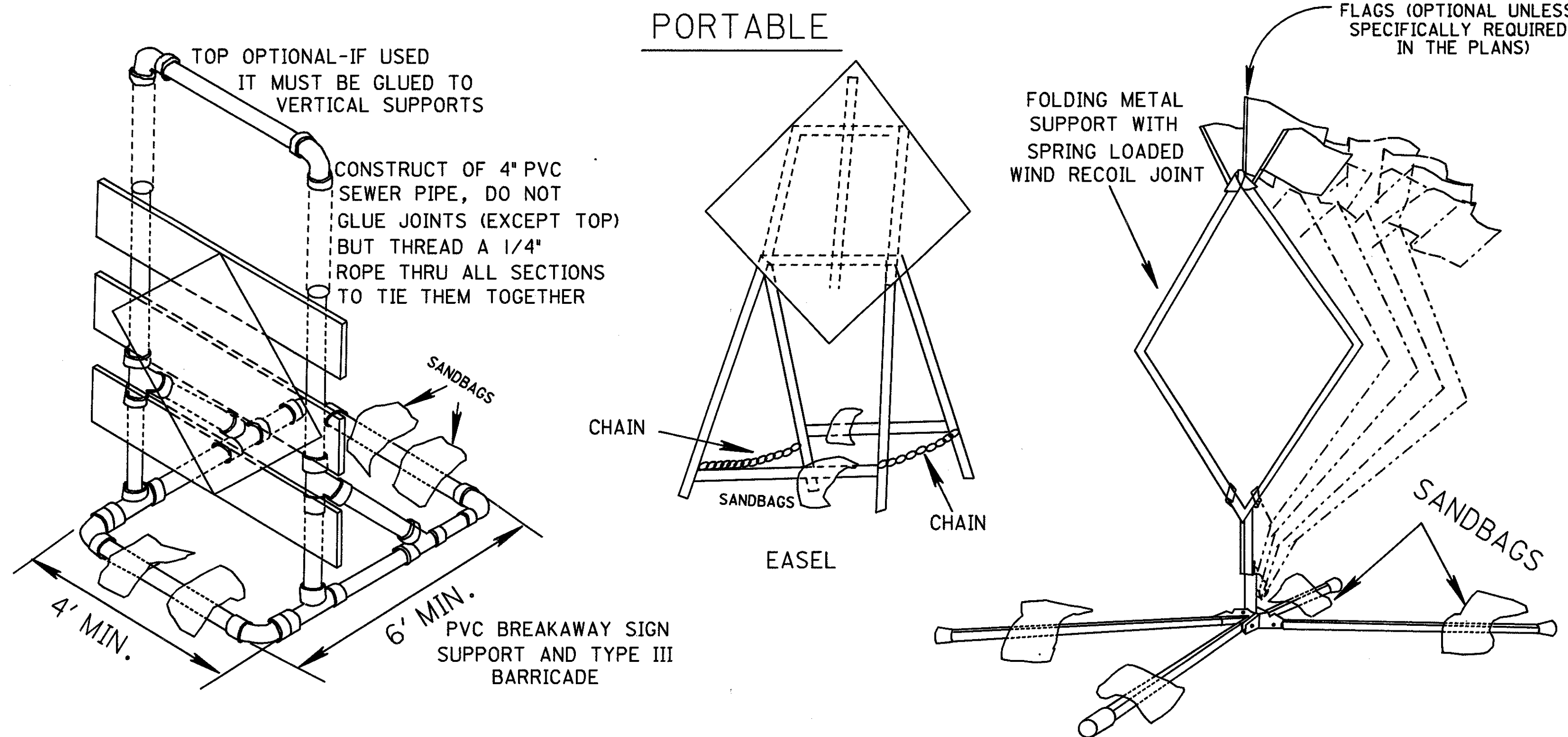


CLASS B SUPPORTS



ANY CLASS A SIGN POST WITH GUY WIRES ADDED TO INCREASE SIGN CARRYING ABILITY. (GUY WIRES SHALL NOT BE HEAVIER THAN 1/8" DIA. BRAIDED CABLE. GUY ANCHORS SHALL NOT EXTEND MORE THAN 6" ABOVE GROUND SURFACE).

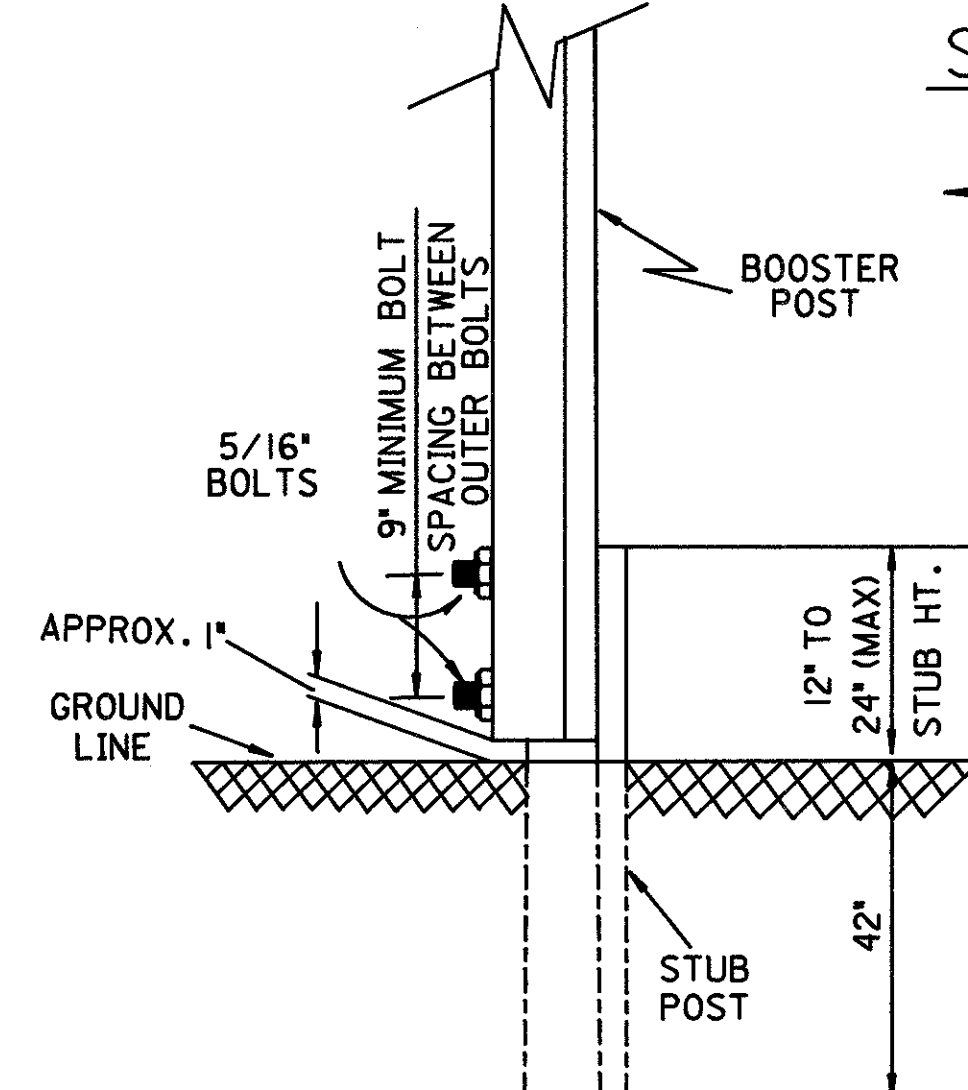
PORTABLE



CLASS C SUPPORTS

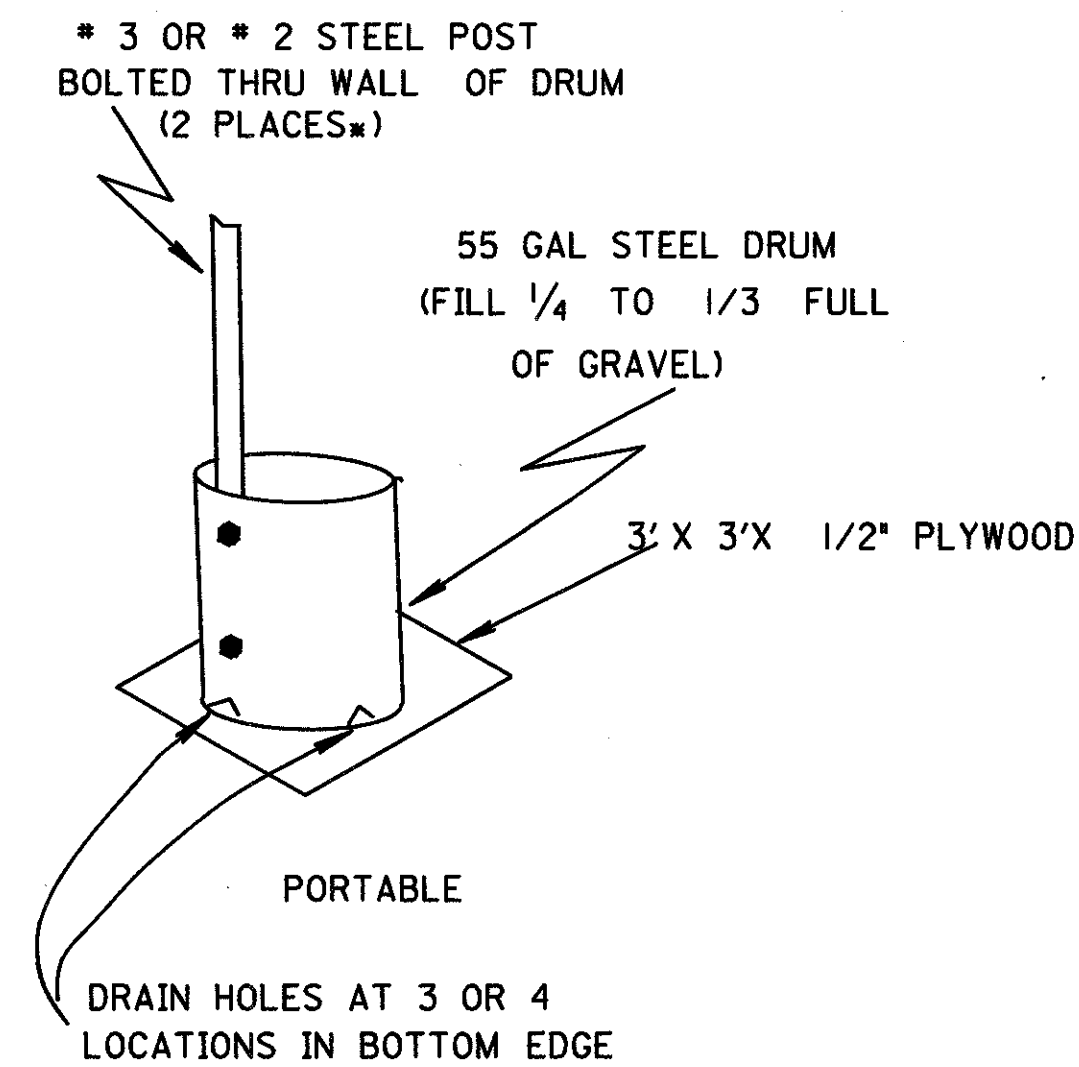
1. ALL BEAM TYPE SUPPORTS WITHOUT BREAKAWAY CONNECTIONS.
2. SUPPORTS SIMILAR TO BUT LARGER THAN PERMITTED FOR CLASS A OR B.
3. THE STEEL DRUM(S) SHOWN BELOW MAY BE USED ONLY WHEN LOCATED BEHIND GUARDRAIL OR BARRIER.

STUBBING STANDARD



NOTES

1. FOR USE WITH #3 POST OR SMALLER ONLY
2. BOLTS SHALL BE STEEL OR ALUMINUM
3. A MINIMUM OF TWO FASTENERS SHALL BE USED PER ASSEMBLY
4. BOOSTER POST SHALL BE MOUNTED BEHIND STUB POST
5. BOOSTER POST SHALL BE THE SAME OR 1 LB./FT. LESS THAN STUB POST



ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH 614 AND OTHER APPLICABLE PORTIONS OF THE C & M SPECIFICATIONS AS WELL AS IN ACCORDANCE WITH PART 7 OF THE OMTCD. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS TO PROVIDE THIS METHOD OF TRAFFIC CONTROL SHALL BE INCLUDED IN THE LUMP SUM BID FOR 614 MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

| | |
|------------------------|---------------|
| REVISED BY: | DATE: |
| 210511 | DATE 05/07/90 |
| TEMPORARY SIGN SUPPORT | |
| PLAN INSERT SHEET | |

CUT - NAD - 0.53 10th rev 15