FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	STP 96(830)MM		1
STATE	STATE DIST. NO.	COUNTY	
TEXAS	DAL	ROCKWALL	
CONT.	SECT.	JOB	HIGHWAY NO.
1014	03	041	FM 740

d186401/rockwall/title740.dgn

STATE OF TEXAS
DEPARTMENT OF TRANSPORTATION

PLANS OF PROPOSED
STATE HIGHWAY IMPROVEMENT

FEDERAL AID PROJECT STP 96(830)MM

ROCKWALL COUNTY
FM 740

NET LENGTH OF PROJECT = 2884.00 FT. = 0.546 MI.

FROM: SOUTH OF FM 3097
TO: NORTH OF IH 30

FOR THE CONSTRUCTION OF THE WIDENING OF A NON-FREEWAY FACILITY CONSISTING OF GRADING, DRAINAGE, ASPHALT CONCRETE PAVEMENT, LIME TREATED SUBGRADE, CONCRETE PAVEMENT, PAVEMENT MARKINGS & SIDEWALKS.

DESIGN SPEED = 40 MPH

NOTE:

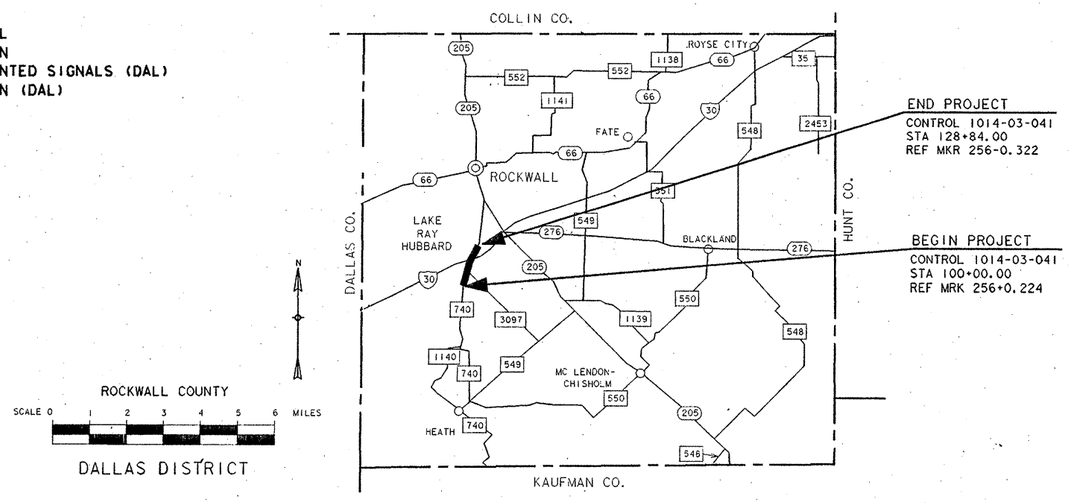
SPECIFICATIONS ADOPTED BY THE TEXAS DEPARTMENT OF TRANSPORTATION, MARCH 1, 1993, AND THE CONTRACT PROVISIONS LISTED AND DATED AS FOLLOWS SHALL GOVERN ON THIS PROJECT: REQUIRED CONTRACT PROVISIONS FOR ALL FEDERAL-AID CONSTRUCTION CONTRACTS (FORM FHWA 1273, DECEMBER, 1993)

THE CONTRACTOR SHALL PROVIDE AND ERECT BARRICADES AND WARNING SIGNS IN ACCORDANCE WITH BC-(1) THRU (9)-1994 AT POINTS INDICATED AND AT OTHER POINTS AS DIRECTED BY THE ENGINEER.

INDEX OF SHEETS

DISTRICT STANDARD SHEETS

STANDARD SHEETS



NO EQUATIONS
NO EXCEPTIONS
NO RAILROAD CROSSINGS

THE STANDARD SHEETS SPECIFICALLY IDENTIFIED ABOVE HAVE BEEN SELECTED BY ME OR UNDER MY RESPONSIBLE SUPERVISION AS BEING APPLICABLE TO THIS PROJECT.

G. K. Wetzig, P.E. 5-3-96
DATE

STATE OF TEXAS · G. K. WETZIG · 80322 · REGISTERED · PROFESSIONAL ENGINEER

CITY OF ROCKWALL

RECOMMENDED FOR APPROVAL 5/24 19 96

CITY MANAGER

TEXAS DEPARTMENT OF TRANSPORTATION

RECOMMEND FOR LETTING 5-3 19 96
, P.E.
DESIGN ENGINEER

RECOMMEND FOR LETTING 5-30 19 96
Charles R. Tucker, P.E.
DIRECTOR OF TRANSPORTATION PLANNING & DEVELOPMENT

RECOMMEND FOR LETTING 5-3 19 96
, P.E.
AREA ENGINEER

RECOMMEND FOR LETTING: 5-31 19 96
FOR James F. Looper, P.E.
DISTRICT ENGINEER

APPROVED FOR LETTING June 14 19 96
, P.E.
FOR DIRECTOR, DESIGN DIVISION

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED:

DIVISION ADMINISTRATOR — DATE

STP 96(830)MM
Rockwall

132

ADDED SHEETS

SHEET NO.	DESCRIPTION
NONE	C.O. NO. 1 (REIMBURSEMENT OF ½ PARTNERING WORKSHOP)
15A,18A, 20A,21A,23A	C.O. NO. 2 (ACCESS MEDIAN BREAK & ASSOC DRAINAGE INLET REVISIONS)
NONE	C.O. NO. 3 (ADDITION OF TY "C" QUICKLIME)
NONE	C.O. NO. 4 (REMOV EXIST CONC PVMT ROADBED, MANHOLE, & CONDUIT)
NONE	C.O. NO. 5 (RELOC PROPOSED ROADWAY ILLUM CONDUIT)
51A	C.O. NO. 6 (CHG BLOCK SOD TO BERMUDA GRASS)
NONE	C.O. NO. 7 (CONC PVG PRICE REDUCTION; ADDL WORKING DAYS/UTILITY CONFLICT)
NONE	C.O. NO. 8 (REMOV COLORED-TEXTURIZED CONC SIDEWALK)
NONE	C.O. NO. 9 (ADD'L COMP FOR ITEM 3063-0504-003, HOT MIX ASPH TY B)

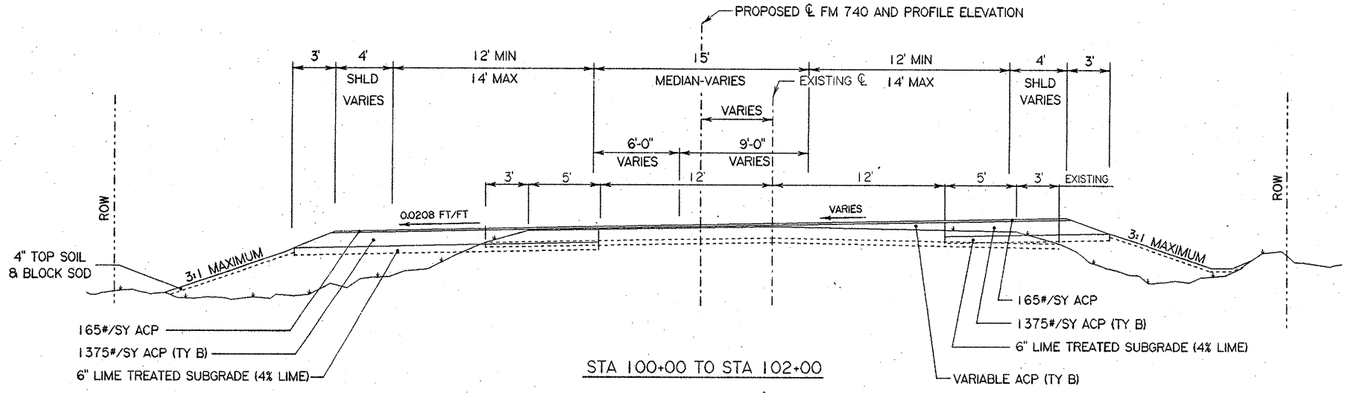
DATE OF LETTING	:	08/96
DATE OF WORK ORDER	:	10/03/96
DATE WORK BEGAN	:	01/16/97
DATE WORK COMPLETED	:	01/07/98
DATE WORK ACCEPTED	:	01/07/98

"THIS CONSTRUCTION WORK WAS PERFORMED IN ACCORDANCE WITH THE PLANS AND CONTRACT."

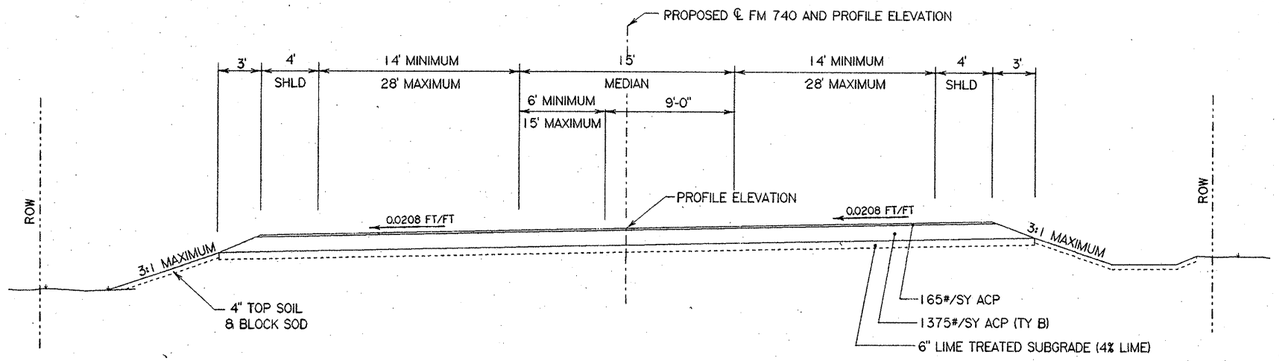
STATE OF TEXAS
WILLIAM HALE
64917
REGISTERED PROFESSIONAL ENGINEER

Will J Hale
2/12/98

FED.RD. DIV . NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	STP 96(830)MM		
STATE	STATE DIST. NO.		COUNTY
TEXAS	DALLAS		ROCKWALL
CONT.	SECT.	JOB	HIGHWAY NO.
1014	03	041	FM 740



STA 100+00 TO STA 102+00



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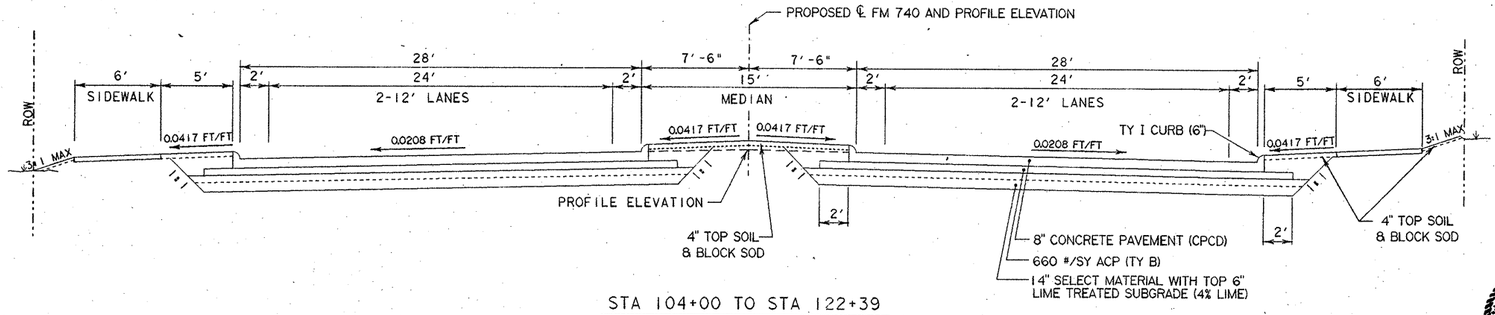

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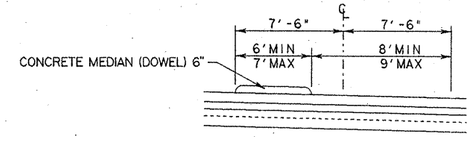


TYPICAL MEDIAN SECTION
LEFT TURN LANE

STATE OF TEXAS
G. K. WETZIG
80322
REGISTERED
PROFESSIONAL ENGINEER

G. K. Wetzig
5-29-96

TYPICAL SECTIONS
SHEET 1 OF 2

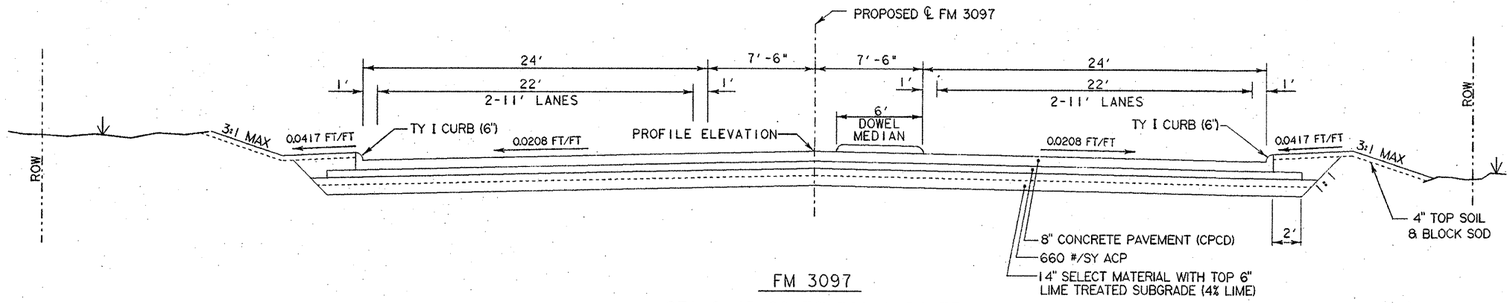
FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	STP 96(830)MM		2
STATE	STATE DIST. NO.	COUNTY	
TEXAS	DALLAS	ROCKWALL	
CONT.	SECT.	JOB	HIGHWAY NO.
1014	03	041	FM 740

REMOVALS

LEVELS
DRAINAGE
ALIGNMENT
HORIZONTAL & VERT.
FILES
REFERED

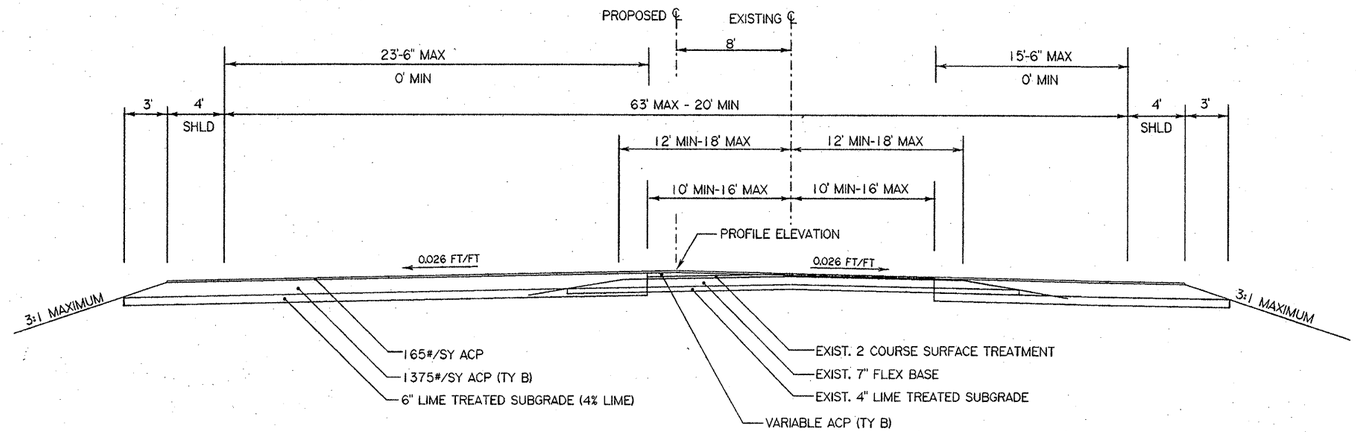
DESIGN FILES
FM740TYP.DGN

$$$$date$$$$



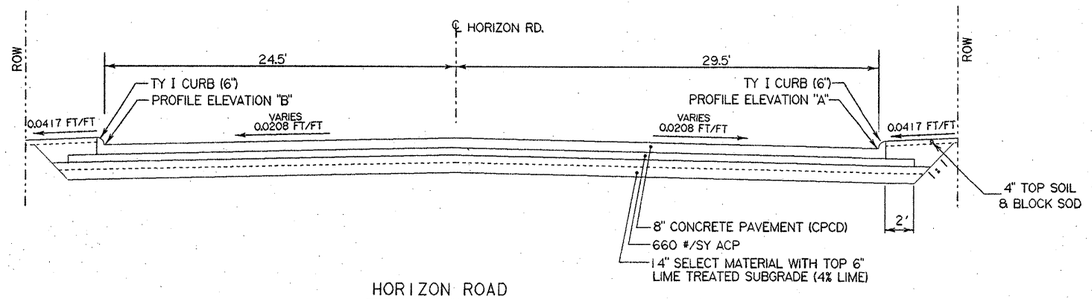
FM 3097

STA 0+45.08 TO STA 1+84.75



FM 3097

STA 1+84.75 TO STA 4+60



HORIZON ROAD

STA 15+33.52 TO STA 16+54.18

STATE OF TEXAS
G. K. WETZIG
80322
REGISTERED
PROFESSIONAL ENGINEER

G. K. Wetzig
5-29-96

TYPICAL SECTIONS
SHEET 2 OF 2

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	STP 96(830)MM		3
STATE	STATE DIST. NO.	COUNTY	
TEXAS	DALLAS	ROCKWALL	
CONT.	SECT.	JOB	HIGHWAY NO.
1014	03	041	FM 740

REMOVALS

LEVELS

REFERENCE	HORIZONTAL & VERTIC. ALIGNMENT	DRAINAGE
DESIGN FILES		
FM740TYPDGN		

$$$$date$$$$

GENERAL NOTES AND SPECIFICATION DATA--

SPECIFICATION DATA
TEST TO BE IN ACCORDANCE WITH TEXAS DEPARTMENT OF TRANSPORTATION
STANDARD TEST METHODS

ITEM	DESCRIPTION	GRADING REQUIREMENTS % RETAINED, SIEVES	CONSTANTS PI	MAX	MIN
132	EMBK (TY C)			40	8
132	EMBK (TY C)(MOD)			20	8

MINIMUM COMPACTION REQUIREMENTS FOR BASE COURSES
% DENSITY AS DETERMINED BY COMPACTION RATIO (TEX-114-E)

ITEM	MATERIAL	ROADWAY COURSE	ROADWAY DENSITY	RAMPS COURSE	RAMPS DENSITY
260	LIME TREAT SUBGR	ALL	95	ALL	95

BASIS OF ESTIMATE FOR PERMANENT CONSTRUCTION

ITEM	DESCRIPTION	RATE	UNIT	QUANTITY
168	VEGETATIVE WATERING (BLOCK SOD)(3 WK)	2.8 GAL/SY/WK	6895 SY	58 MG
260	LIME (TY A SLURRY) OR (TY B)	4% BY WT.	20874 SY	209 TON

GENERAL NOTES AND SPECIFICATION DATA--

BASIS OF ESTIMATE FOR TEMPORARY EROSION CONTROL ITEMS

ITEM	DESCRIPTION	RATE	UNIT	QUANTITY
164	BROCST SEED (TEMP)(COOL)	SEE SPECS	-	6823 SY
168	VEGETATIVE WATERING (BROCST SEED TEMP) (6 WK)	2.8 GAL/SY/WK	6823 SY	115 MG

GENERAL:

ERECTION OF POLES, LUMINAIRES AND STRUCTURES LOCATED NEAR ANY OVERHEAD OR UNDERGROUND UTILITIES SHALL BE ACCOMPLISHED USING ESTABLISHED INDUSTRY AND UTILITY SAFETY PRACTICES. THE CONTRACTOR SHALL CONSULT WITH THE APPROPRIATE UTILITY COMPANY PRIOR TO BEGINNING SUCH WORK. BENCH MARKS WILL BE SET BY TEXAS DEPARTMENT OF TRANSPORTATION FORCES PRIOR TO BEGINNING OF CONSTRUCTION.

PRIOR TO CONTRACT LETTING, REPRODUCIBLE EARTHWORK CROSS SECTIONS WILL BE AVAILABLE AT THE DISTRICT OFFICE.

THE CONSTRUCTION, OPERATION AND MAINTENANCE OF THIS PROPOSED PROJECT WILL BE CONSISTENT WITH THE STATE IMPLEMENTATION PLAN AS PREPARED BY THE TEXAS AIR CONTROL BOARD.

THE DETERMINATION OF THE LIQUID LIMIT OF SOILS SHALL BE IN ACCORDANCE WITH TEST METHOD, TEX-104-E.

THE CONTRACTOR SHALL MAINTAIN AN ACCURATE VERTICAL AND HORIZONTAL CONTROL THROUGHOUT THE CONTRACT. SURVEY MONUMENTS, FURNISHED BY THE DEPARTMENT, SHALL BE PLACED BY THE CONTRACTOR AT POINTS INDICATED AND AS DETAILED IN THE PLANS OR AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL FURNISH THE AREA ENGINEER SURFACE COORDINATES AND THE ELEVATION OF THE SET MONUMENT AND AN AZIMUTH FROM THE MONUMENT TO SOME PROMINENT PHYSICAL FEATURE, PREFERABLY ANOTHER SURVEY MONUMENT ON THE PROJECT. THIS WORK WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED SUBSIDIARY TO THE VARIOUS BID ITEMS.

IF AT ANY TIME DURING THE CONSTRUCTION OF THIS PROJECT THE CONTRACTOR FALLS MORE THAN 30 DAYS BEHIND HIS SCHEDULE SUBMITTED UNDER PROVISIONS OF ARTICLE 8.2, HE SHALL FURNISH THE ENGINEER WITH AN UPDATED,

GENERAL NOTES AND SPECIFICATION DATA--

GENERAL:, CONT'D
REALISTIC CONSTRUCTION SCHEDULE.

EXISTING ROADS WITHIN THE LIMITS OF THE PROJECT THAT ARE TO REMAIN TEMPORARILY FOR THE PURPOSE OF HANDLING TRAFFIC THROUGH THE PROJECT SHALL BE MAINTAINED BY THE CONTRACTOR IN A MANNER THAT IS ACCEPTABLE TO THE ENGINEER. THIS WORK WILL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED SUBSIDIARY TO THE VARIOUS BID ITEMS.

THE CONTRACTOR SHALL STABILIZE ALL UNPAVED AREAS OF THE PROJECT WITH A MINIMUM 70% DENSITY OF VEGETATIVE COVER UTILIZING THE ITEMS IN THIS CONTRACT.

THE ENVIRONMENTAL DOCUMENT PREPARED FOR THIS PROJECT BY THE DEPARTMENT IS AVAILABLE FOR ANYONE TO PURCHASE AND READ FROM THE DISTRICT OFFICE.

ITEM 6:

THE CONTRACTOR SHALL FURNISH THE ENGINEER WITH A COPY OF CALCULATIONS AND MEASUREMENTS FOR ALL VEHICLES DESCRIBED IN ARTICLE 6.7 AS MAY BE NECESSARY TO ESTABLISH THE MAXIMUM LEGAL WEIGHT FOR EACH VEHICLE HAULING MATERIALS ON OR DELIVERING MATERIALS TO THE PROJECT. THESE SHALL BE PROVIDED PRIOR TO THE UNLOADING OF THE VEHICLE INVOLVED AND WILL BE USED AS A BASIS FOR ENFORCING THE ACCEPTANCE PROVISIONS OF THIS ITEM FOR THE VEHICLE FOR THE DURATION OF THE PROJECT. THE MEASUREMENTS AND CALCULATIONS SHALL BE NEAT, LEGIBLE AND ON A GOOD GRADE OF PAPER SUITABLE FOR FILING AS A PERMANENT RECORD. MEASUREMENTS AND CALCULATIONS SHALL, AS A MINIMUM, CONSIST OF: THE DATES MEASURED AND CALCULATED, THE NAMES AND SIGNATURES OF THE PERSONS MAKING THEM, THE LICENSE NUMBER OR OTHER IDENTIFYING MARK ON THE VEHICLE AND A SKETCH OR DESCRIPTION OF THE VEHICLE. VEHICLES NOT OWNED, LEASED, HIRED OR OTHERWISE UNDER THE CONTROL OF THE CONTRACTOR OR HIS SUBCONTRACTORS USED FOR THE DELIVERY OF MATERIALS FROM COMMERCIAL SOURCES MAY BE EXEMPTED FROM THIS REQUIREMENT PROVIDED THE CONTRACTOR MAKES SUFFICIENT SPOT CHECKS OF VEHICLES FROM EACH SOURCE TO SATISFY THE ENGINEER THAT OVERLOADING IS NOT OCCURING. COPIES OF MEASUREMENTS AND CALCULATIONS SHALL BE FURNISHED, AS DESCRIBED ABOVE, AS EVIDENCE OF SPOT CHECKS. FURNISHING OF THE ABOVE DESCRIBED MATERIALS BY THE CONTRACTOR CONSTITUTES CERTIFICATION BY HIM TO THE ACCURACY OF THE MEASUREMENTS AND CALCULATIONS THEREON. FULFILLING OF THE ABOVE REQUIREMENTS WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED SUBSIDIARY TO THE VARIOUS BID ITEMS.

GENERAL NOTES AND SPECIFICATION DATA--

ITEM 104:

EXISTING CONCRETE PAVEMENT TO BE REMOVED SHALL BE SAWED ALONG NEAT LINES WHERE PORTIONS ARE TO BE LEFT IN PLACE. SAWING WILL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED SUBSIDIARY TO THIS ITEM.

ALL OF THE EXISTING OLD CONCRETE TO BE REMOVED ON THIS PROJECT BECOMES THE PROPERTY OF THE CONTRACTOR TO BE DISPOSED OF BY HIM OUTSIDE THE LIMITS OF THE RIGHT-OF-WAY AT HIS EXPENSE AND IN A MANNER APPROVED BY THE ENGINEER.

THE QUANTITY FOR REMOVAL OF EXISTING CURBS FOR WHEELCHAIR RAMPS AT THE IH 30 INTERSECTIONS IS CALCULATED FOR 21 LOCATIONS.

ITEM 110:

EXCAVATION FOR DRIVEWAYS AND INTERSECTIONS WILL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED SUBSIDIARY TO THIS ITEM.

ALL EXCAVATION MATERIAL NOT NEEDED ELSEWHERE ON THE PROJECT WILL BECOME THE PROPERTY OF THE CONTRACTOR AND BE DISPOSED OF BY HIM OUTSIDE THE LIMITS OF THE PROJECT.

ITEMS 110 AND 260:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FURNISHING, MAINTENANCE AND STORAGE OF ONE NUCLEAR DENSITY GUAGE ON THE PROJECT DURING THE PLACEMENT OF THE LIME TREATED SUBGRADE, ACP AND EMBANKMENT.

ITEM 132:

THIS MATERIAL SHALL CONSIST OF SUITABLE EARTH MATERIAL SUCH AS LOAM, CLAY OR OTHER MATERIALS THAT WILL FORM A STABLE EMBANKMENT AND BE FREE FROM VEGETATION OR OTHER OBJECTIONABLE MATTER AND, WHEN TESTED BY TEXAS DEPARTMENT OF TRANSPORTATION METHODS, SHALL MEET THE SOIL CONSTANT REQUIREMENTS ON SHEET "A" IN ITS NATURAL STATE.

WHEN THE MOISTURE CONTENT OF THE EMBANKMENT EXCEEDS THE SPECIFIED OPTIMUM CONTENT, AS DETERMINED BY THE ENGINEER, IT SHALL BE AERATED BY

GENERAL NOTES AND SPECIFICATION DATA--

ITEM 132:, CONT'D
DISKING, HARROWING, BLADING OR OTHER MEANS SATISFACTORY TO THE ENGINEER, TO REDUCE THE MOISTURE CONTENT TO THE OPTIMUM CONDITION BEFORE ROLLING COMMENCES. THE CONTRACTOR SHALL NOT AERATE WET MATERIAL WITH COMPACTION EQUIPMENT SUCH AS SHEEPSFOOT ROLLERS OR OTHER DEVICES THAT TEND TO OVER-COMPACT THE PREVIOUS LAYER OF MATERIAL. SUCH AERATION SHALL BE CONSIDERED SUBSIDIARY TO THIS ITEM AND WILL NOT BE PAID FOR DIRECTLY.

SHALE WILL NOT BE CONSIDERED AS SUITABLE MATERIAL. SHALEY CLAYS MAY NOT BE USED IN EMBANKMENTS UNLESS APPROVED IN WRITING BY THE ENGINEER.

ITEM 160:

THE CONTRACTOR SHALL ARRANGE THE SEQUENCE OF HIS OPERATIONS IN SUCH A MANNER THAT TOPSOIL WILL BE SALVAGED FROM ONE LOCATION AND PLACED DIRECTLY ON NEARBY SLOPE AREAS TO RECEIVE THIS ITEM. STOCKPILING OF TOPSOIL AND GRASS SOD SHALL BE KEPT TO A MINIMUM AND SHALL BE AS APPROVED BY THE ENGINEER.

TOP SOIL SHALL BE PLACED ON ALL UNSURFACED DISTURBED AREAS WITHIN THE LIMITS OF THE RIGHT-OF-WAY, AS DIRECTED BY THE ENGINEER.

ITEMS 162 AND 166:

BLOCK SOD (PRAIRIE BUFFALO) AND FERTILIZER SHALL BE PLACED ON ALL UNSURFACED DISTURBED AREAS WITHIN LIMITS OF RIGHT-OF-WAY, AS DIRECTED BY THE ENGINEER.

PERMANENT EROSION CONTROL ITEMS SHALL BE PLACED ON APPROVED AREAS AS SOON AS POSSIBLE AT THE END OF EACH PHASE DURING THE WARM-SEASON. TEMPORARY EROSION CONTROL ITEMS SHALL BE PLACED ON APPROVED AREAS AS SOON AS POSSIBLE AT THE END OF EACH PHASE DURING THE COOL-SEASON. SODDING WILL NOT BE DELAYED UNTIL THE END OF THE PROJECT. MULTIPLE MOVE-INS FOR SODDING WILL BE REQUIRED.

ITEM 204:

GENERAL NOTES AND SPECIFICATION DATA--

ITEM 204:, CONT'D
SPRINKLING, AS ORDERED BY THE ENGINEER TO CONTROL DUST ON THIS PROJECT, SHALL BE CONSIDERED SUBSIDIARY TO THE VARIOUS BID ITEMS.

ITEM 260:

THE STANDARD PLATFORM TRUCK SCALES WILL BE REQUIRED FOR THIS PROJECT AND SHALL BE LOCATED AT A POINT APPROVED BY THE ENGINEER. CERTIFIED PUBLIC SCALES, WHEN APPROVED BY THE ENGINEER, MAY BE USED, PROVIDING THEY CONFORM TO THE REQUIREMENTS SET FORTH IN ARTICLE 520.3(1).

THE LIMITS OF PAYMENT FOR THIS ITEM SHALL BE TO THE NEAT LINES AS SHOWN ON THE TYPICAL SECTIONS.

UNLESS OTHERWISE DIRECTED BY THE ENGINEER IN WRITING, LIME SHALL BE CURED WITH MS-2 ASPHALT APPLIED AT A RATE OF 0.25 GAL/SY AND WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED SUBSIDIARY TO THIS ITEM.

THE FINISHED GRADE OF "LIME TREAT SUBGR (DC)(6")" SHALL BE TO THE SECTION OF THE BOTTOM OF THE ASPHALTIC CONCRETE PAVEMENT AND CONCRETE PAVEMENT AS SHOWN ON THE PLANS, OR LOWER. PATCHING OF CURED BASE SECTIONS WILL NOT BE ALLOWED, BUT SHALL BE FILLED WITH EXTRA DEPTH ASPHALTIC CONCRETE PAVEMENT OR BE REWORKED COMPLETELY BY SCARIFYING, ADDING MATERIAL, APPLYING LIME SLURRY AND RECOMPACTING. NO ADDITIONAL COMPENSATION WILL BE MADE FOR THE WORK REQUIRED TO REWORK A SECTION OF SUBGRADE. THE EXTRA DEPTH ASPHALTIC CONCRETE PAVEMENT SHALL BE AT THE CONTRACTORS EXPENSE.

ITEMS 301 AND 3063:

AN APPROVED ANTISTRIPPING AGENT WILL BE REQUIRED. TEST METHOD TEX-530-C IS REQUIRED FOR EVALUATION TESTING DURING DESIGN AND ALSO FOR PRODUCTION STAGES.

THE EFFECTIVENESS OF THE ANTISTRIPPING AGENT WILL BE EVALUATED AT THE RATES SHOWN:

LIME AT 1% AND 2% OF THE TOTAL AGGREGATE TO BE PLACED IN SLURRY FORM, OR LIQUID AGENTS AT 0.5% AND 1% OF THE ASPHALT IN THE MIX.

GENERAL NOTES AND SPECIFICATION DATA--

ITEM 305:

RECLAIMED ASPHALTIC PAVEMENT (RAP) NOT USED ON THE PROJECT SHALL BE HAULED TO THE STOCKPILE SITE ON S.H. 205 JUST SOUTH OF S.H. 276 IN ROCKWALL COUNTY BY THE CONTRACTOR.

ITEM 360:

THE DOWEL SUPPORT ASSEMBLIES USED IN CONCRETE PAVEMENT SHALL BE CONSTRUCTED USING NO. 1/0 (0.306" DIAMETER) WIRE IN THE MAIN VERTICAL MEMBERS. DOWELS SHALL BE RIGIDLY SUPPORTED IN PARALLEL POSITIONS AND SHALL BE WELDED ON ONE END TO THE SUPPORT FRAME. THE WELD ATTACHMENT SHALL BE MADE ALTERNATELY ON OPPOSITE ENDS OF SUCCESSIVE DOWELS. THE SUPPORT ASSEMBLY SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.

ALL CURBS SHALL BE CONSTRUCTED MONOLITHICALLY WITH THE CONCRETE PAVEMENT. IF CONTINUOUS MONOLITHIC CURB HAS TO BE TEMPORARILY OMITTED FOR ANY REASON, THE CONTRACTOR SHALL DOWEL ON PROPOSED CURBS AS DETAILED IN THE PLANS. AN APPROVED EPOXY RESIN SHALL BE APPLIED TO THE PAVEMENT TO RECEIVE THE CURB AS DIRECTED BY THE ENGINEER. THIS WORK AND MATERIALS SHALL BE CONSIDERED SUBSIDIARY TO THIS ITEM AND WILL NOT BE PAID FOR DIRECTLY.

CONCRETE SHALL BE FURNISHED FROM A STATIONARY MIXER (CENTRAL MIX) OR PAVING MIXER (TRUCK MOUNTED) MEETING THE REQUIREMENTS OF ARTICLE 360.3(4).

CONCRETE AGGREGATES SHALL BE STOCKPILED AT THE PLANT SITE.

THE PAVEMENT ANCHOR JOINT, DETAILED IN THE PLANS, IS TO BE USED AT ALL LOCATIONS WHERE CONCRETE PAVEMENT IS TO BE PLACED ADJACENT TO EXISTING CONCRETE PAVEMENT. PAYMENT FOR INSTALLATION OF THESE JOINTS WILL NOT BE MADE DIRECTLY, BUT SHALL BE CONSIDERED SUBSIDIARY TO THIS ITEM.

THE CURING MACHINE SHALL BE PROVIDED WITH RUBBER TIRES, OR ANOTHER ARRANGEMENT APPROVED BY THE ENGINEER, SO THAT THE MACHINE WILL BRIDGE OVER OR SPAN THE PAVEMENT AND MONOLITHIC CURB OPERATIONS IN A MANNER SATISFACTORY TO THE ENGINEER.

JOINTS 3/8" AND LESS IN WIDTH SHALL BE FILLED WITH RUBBER JOINT SEALING COMPOUND OR PREFORMED NEOPRENE COMPRESSION SEAL. JOINTS WIDER THAN 3/8" SHALL BE FILLED WITH TWO COMPONENT CLASS 1-A OR 1-B, SYNTHETIC POLYMER JOINT MATERIAL OR PREFORMED NEOPRENE COMPRESSION SEAL (CLASS

GENERAL NOTES AND SPECIFICATION DATA--

ITEM 471:, CONT'D
FOR THE CAST IRON MANHOLE FRAME AND COVER.

ITEM 496:

MEASUREMENT AND PAYMENT FOR "REMOVING OLD STRUCTURES (SMALL)" SHALL INCLUDE ONLY THE STRUCTURES LISTED ON THE SUMMARY SHEET. THE COST OF REMOVAL OF ALL OTHER STRUCTURES AND PIPE SHALL BE CONSIDERED SUBSIDIARY TO THE VARIOUS BID ITEMS.

ALL PIPE TO BE REMOVED AND NOT REPLACED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF BY HIM OUTSIDE THE LIMITS OF THE RIGHT-OF-WAY. EXISTING PIPE THAT IS LEFT IN PLACE SHALL BE PLUGGED WITH A CONCRETE PLUG OF THICKNESS EQUAL TO 1-1/2" PER FOOT OF DIAMETER OF PIPE WITH MINIMUM THICKNESS EQUAL TO 3 INCHES. THIS WORK SHALL BE CONSIDERED SUBSIDIARY TO THIS ITEM AND NO DIRECT PAYMENT SHALL BE MADE.

ITEM 502:

SUBJECT TO THE APPROVAL OF THE ENGINEER, PORTIONS OF THIS PROJECT WHICH ARE NOT AFFECTED BY OR IN CONFLICT WITH THE PROPOSED METHOD OF HANDLING TRAFFIC OR UTILITY ADJUSTMENTS CAN BE CONSTRUCTED DURING ANY PHASE.

THE TRAFFIC CONTROL PLAN FOR THIS PROJECT SHALL CONSIST OF THE TRAFFIC CONTROL PLANS, TRAFFIC CONTROL TYPICAL SECTIONS, THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS", STANDARD SHEETS BC (1)-94 THRU BC (9)-94 AND AS DIRECTED BY THE ENGINEER. ANY VARIATION SHALL BE REQUIRED THE ENGINEER'S APPROVAL.

TEMPORARY SIGNS WILL BE REQUIRED DURING CONSTRUCTION FOR THE EXISTING SIGNING WHICH INTERFERES WITH THE CONSTRUCTION. THE EXISTING SIGN FACES ON TEMPORARY SUPPORTS MAY BE USED FOR THE TEMPORARY SIGNS AS LONG AS THEY ARE REMOVED AND ERECTED ON TEMPORARY MOUNTS ON THE SAME DAY. THE WARNING AND REGULATORY SIGNS MUST BE IN PLACE AT ALL TIMES.

BARRICADES AND SIGNS SHALL BE PLACED IN SUCH A MANNER AS NOT TO INTERFERE WITH THE SIGHT DISTANCE OF DRIVERS ENTERING THE HIGHWAY FROM DRIVEWAYS OR SIDE STREETS. TO FACILITATE SHIFTING, BARRICADES AND SIGNS USED IN LANE CLOSURES OR TRAFFIC STAGING MAY BE ERECTED AND MOUNTED ON PORTABLE SUPPORTS. THE DESIGN OF THESE SUPPORTS IS SUBJECT TO THE APPROVAL OF THE ENGINEER.

GENERAL NOTES AND SPECIFICATION DATA--

ITEM 360:, CONT'D
4).

THESE PLANS REQUIRE SAWED JOINTS. CONSTRUCTION, SAWED AND CONTRACTION JOINTS SHALL BE PLACED IN ACCORDANCE WITH THE PAVEMENT DETAIL SHEET AND AS DIRECTED BY THE ENGINEER. JOINT LOCATIONS, OTHER THAN AS SHOWN ON THE PLANS, WILL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.

THE CONTRACTOR SHALL SAW TRANSVERSE JOINTS ACROSS PAVEMENT AND CURBS.

THE CONTRACTOR WILL BE ALLOWED TO USE A DOWEL INSERTOR OF A DESIGN THAT HAS PROVEN EFFECTIVE AND PERFORMS IN A MANNER ACCEPTABLE TO THE ENGINEER. THE CONTRACTOR, IF HE ELECTS TO USE SUCH A DOWEL INSERTOR, SHALL PROVIDE A DEVICE TO MEASURE THE DEPTH OF THE INSERTED DOWEL IN PLACE.

PAVEMENT LEAVEOUTS WILL BE REQUIRED ON THIS PROJECT AS NECESSARY TO PROVIDE FOR TRAFFIC AT DRIVEWAYS AND SIDE STREETS AS SHOWN IN THE PLANS OR AS DIRECTED BY THE ENGINEER. THE COST OF PROVIDING THESE LEAVEOUTS INCLUDING THE CONSTRUCTION OF A SUITABLE CROSSOVER CONNECTION AT EACH SITE WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED SUBSIDIARY TO THIS ITEM.

IF A TRAVELING FORM PAVER IS USED, IT SHALL BE EQUIPPED WITH AN ELECTRONICALLY OPERATED HORIZONTAL CONTROL DEVICE.

ANY AREA IN EXCESS OF THREE SQUARE YARDS WITH GROOVES LESS THAN 1/8" DEEP WILL BE SAW GROOVED BY THE CONTRACTOR AT HIS EXPENSE.

TYPE "B" FLY ASH SHALL NOT BE USED WHEN TYPE II CEMENT IS USED.

THE PAVEMENT SHALL BE CORED BY THE CONTRACTOR AT LOCATIONS SELECTED BY THE ENGINEER FOR THE PURPOSE OF DETERMINING DEFICIENT PAVEMENT THICKNESS. THIS WORK SHALL BE CONSIDERED SUBSIDIARY TO THIS ITEM.

ITEMS 360 AND 421:

THE CONTRACTOR SHALL FURNISH PERSONNEL TO REMOVE THE TEST SPECIMENS FROM THE MOLDS AND TO TRANSPORT THEM TO THE PROPER CURING LOCATION AT THE SCHEDULE DESIGNATED BY THE ENGINEER AND IN ACCORDANCE WITH THE GOVERNING SPECIFICATION. FOR ALL CONCRETE ITEMS, THE CONTRACTOR SHALL HAVE A WHEELBARROW OR OTHER CONTAINER, ACCEPTABLE TO THE ENGINEER, AVAILABLE TO USE IN THE SAMPLING OF THE CONCRETE.

GENERAL NOTES AND SPECIFICATION DATA--

ITEM 502:, CONT'D

THE CONTRACTOR SHALL PROVIDE AND MAINTAIN FLAGMEN AT SUCH POINTS AND FOR SUCH PERIODS OF TIME AS MAY BE REQUIRED TO PROVIDE FOR THE SAFETY AND CONVENIENCE OF PUBLIC TRAVEL, THE CONTRACTOR'S PERSONNEL, AS SHOWN ON THE PLANS AND/OR AS DIRECTED BY THE ENGINEER.

PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE FURNISHED AND PLACED ON THE CONTRACTOR'S PLAN OF CONSTRUCTION OPERATIONS, SEQUENCE OF WORK AND AS REQUIRED BY THE ENGINEER. A MINIMUM OF TWO LIGHTED CHANGEABLE MESSAGE SIGNS WILL BE REQUIRED AT ALL TIMES. TEXT WILL BE SPECIFIED BY THE ENGINEER.

ITEM 504:

THE CONTRACTOR SHALL FURNISH ONE TYPE B FIELD OFFICE FOR THIS PROJECT. THE FURNITURE FOR THE FIELD OFFICE SHALL INCLUDE TWO DESKS, ONE DRAFTING TABLE, FIVE CHAIRS, 1-4 DRAWER METAL FILE CABINET AND A COPY MACHINE INCLUDING PAPER AND MAINTENANCE. THE CONTRACTOR SHALL INSTALL AND PAY THE MONTHLY CHARGES FOR A TELEPHONE IN THE FIELD OFFICE. THE OFFICE SHALL BE FURNISHED WITH COOLED, POTABLE WATER. A LOCKABLE VEHICLE GATE SHALL BE PROVIDED. THIS PARKING AREA WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED SUBSIDIARY TO THE VARIOUS BID ITEMS.

IN ADDITION, THE CONTRACTOR SHALL FURNISH ONE TYPE A FIELD LABORATORY AT THE CONCRETE MIXING PLANT AND ONE TYPE D FIELD LABORATORY AT THE ASPHALT MIXING PLANT. BOTH LABORATORIES SHALL BE FURNISHED WITH COOLED, POTABLE WATER. THESE ITEMS WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED SUBSIDIARY TO THE VARIOUS BID ITEMS.

ALL BEAM TANKS SHALL BE ELEVATED A MINIMUM OF ONE FOOT ABOVE THE GROUND.

ITEM 512:

FOR THIS PROJECT 2200 L.F. OF PORTABLE LOW PROFILE BARRIER SHALL BE FURNISHED BY THE CONTRACTOR IN ACCORDANCE WITH THE LOW PROFILE BARRIER DETAILS. THIS BARRIER SHALL BECOME THE PROPERTY OF THE STATE UPON COMPLETION OF THE PROJECT.

GENERAL NOTES AND SPECIFICATION DATA--

ITEMS 360 AND 421:, CONT'D
A WASHOUT PIT WILL BE REQUIRED FOR ALL CONCRETE DELIVERY VEHICLES; THE LOCATION OF THE PIT REQUIRES WRITTEN APPROVAL BY THE ENGINEER PRIOR TO USE OF THE PIT.

THE COARSE AGGREGATE FROM EACH SOURCE MUST COMPLY WITH THE SPECIFIED QUALITY TESTS.

ITEM 400:

ALL EXCAVATION NOT USED IN BACKFILL OR EMBANKMENT SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF BY HIM OUTSIDE THE LIMITS OF THE RIGHT-OF-WAY.

ITEM 421:

TYPE II CEMENT WILL BE REQUIRED IN CLASS "S" AND "C" CONCRETE BUT WILL BE PERMITTED IN ALL CONCRETE.

ITEM 464:

ANY ABANDONED UTILITIES OR DRAINAGE STRUCTURES THAT ARE ENCOUNTERED BY THE CONTRACTOR SHALL BE REMOVED TO A MINIMUM OF ONE FOOT BELOW SUBGRADE AND PLUGGED WITH A CONCRETE PLUG OF A THICKNESS EQUAL TO 1-1/2 INCHES PER FOOT OF DIAMETER OF PIPE WITH A MINIMUM THICKNESS OF 3 INCHES. THE COST OF THE PLUGS SHALL BE CONSIDERED SUBSIDIARY TO THE VARIOUS BID ITEMS.

CONNECTIONS OF PIPES TO EXISTING STRUCTURES SHALL BE CONSTRUCTED AS SHOWN IN THE PLANS OR AS DIRECTED BY THE ENGINEER. THIS WORK WILL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED SUBSIDIARY TO THE PRICE BID PER FOOT FOR "PIPE SEWER".

ITEM 471:

ALL INLET GRATES AND MANHOLE COVERS SHALL BE TACKWELDED TO THE FRAME WITH TWO 1-INCH WELDS. PAYMENT SHALL BE SUBSIDIARY TO THIS ITEM. NO PAINTING WILL BE REQUIRED FOR THE CAST IRON INLET GRATE AND FRAME OR

GENERAL NOTES AND SPECIFICATION DATA--

ITEM 512:, CONT'D
WHEN THE PORTABLE LOW PROFILE BARRIER IS NO LONGER REQUIRED ON THE PROJECT, THE TRAFFIC BARRIER SHALL BE STOCKPILED BY THE CONTRACTOR AT A SITE BENEATH THE SL & SF RAILROAD OVERPASS ON IH 635 WEST OF IH35E IN FARMERS BRANCH.

ITEM 530:

THE MONOLITHIC CURB CONSTRUCTED ON DRIVEWAYS SHALL BE BUILT TO THE SAME DIMENSIONS AS "MONO CURB TY 1". THIS CURB WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED SUBSIDIARY TO THIS ITEM.

DRIVEWAY LOCATIONS SHOWN ARE SUBJECT TO CHANGE TO SUIT ACTUAL FIELD CONDITIONS AT THE TIME OF CONSTRUCTION AND MAY BE SHIFTED AS DIRECTED BY THE ENGINEER.

ITEM 610:

LUMINAIRE BALLASTS SHALL BE RATED FOR OPERATION AT 240 VOLTS.

THE CONDUCTORS FROM THE SERVICE POLE TO THE LUMINAIRE SHALL BE NO.8 XHHW WIRE.

ITEM 618:

THE CONTRACTOR SHALL SECURE PERMISSION FROM THE PROPER AUTHORITY AND THE APPROVAL OF THE ENGINEER BEFORE CUTTING INTO OR REMOVING ANY WALKS OR CURBS WHICH MIGHT BE REQUIRED IN MAKING THE INSTALLATION.

LOCATIONS OF CONDUIT AND GROUND BOXES ARE DIAGRAMMATIC ONLY AND MAY BE SHIFTED BY THE ENGINEER TO ACCOMMODATE FIELD CONDITIONS.

WHEN CONDUIT IS LAID IN A TRENCH, THE MINIMUM DEPTH AS MEASURED TO THE TOP OF THE CONDUIT SHALL BE 18 INCHES.

WHERE A TRENCH IS CUT THROUGH THE SURFACED PARKING SHOULDER, MEDIAN OR DRIVEWAYS FOR LAYING CONDUIT, THE BASE AND SURFACING SHALL BE REPLACED WITH SIMILAR MATERIALS EQUAL IN APPEARANCE AND QUALITY TO THE ORIGINAL CONSTRUCTION. REPLACING BASE AND SURFACE WILL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED SUBSIDIARY TO ITEM 618. MAXIMUM

GENERAL NOTES AND SPECIFICATION DATA--

ITEM 618:, CONT'D
ALLOWABLE OVERCUT SHALL BE 1" IN DIAMETER.

THE CONTRACTOR SHALL INSTALL A NON-METALLIC PULL ROPE IN CONDUIT RUNS IN EXCESS OF 50 FEET.

A CLEANER-PRIMER SHALL BE USED ON ALL PVC TO PVC JOINTS BEFORE APPLICATION OF PVC CEMENT.

ALL PROPOSED CONDUIT SHALL BE PLACED BY THE OPEN TRENCH METHOD BELOW THE PROPOSED SUBGRADE, UNLESS OTHERWISE INDICATED ON THE PLANS. IF THE CONTRACTOR FAILS TO PLACE THE CONDUIT AS PROPOSED, HE CAN CHOOSE A METHOD APPROVED BY THE ENGINEER AND AT NO ADDITIONAL COST TO THE STATE SUCH AS BORING OR OPEN CUTTING NEW PAVEMENT.

CONDUIT INSTALLED FOR FUTURE USE SHALL BE CAPPED USING STANDARD WEATHER TIGHT CONDUIT CAPS, AS APPROVED BY THE ENGINEER. THIS WORK SHALL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED SUBSIDIARY TO THIS ITEM.

CONDUIT INSTALLED FOR FUTURE IRRIGATION SHALL BE CAPPED USING STANDARD WEATHER TIGHT CONDUIT CAPS AS APPROVED BY THE ENGINEER. THIS WORK WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED SUBSIDIARY TO THIS ITEM. A "X" SHALL BE CHISELED ON THE CURB ABOVE THE CONDUIT TO MARK ITS LOCATION.

ITEM 624:

GROUND BOX COVERS FOR FUTURE ILLUMINATION SHALL BE PERMANENTLY LABELED "STREET LIGHTS" AND GROUND BOX COVERS FOR SIGNALS SHALL BE LABELED "TRAFFIC SIGNALS".

ITEM 627:

THE TIMBER POLE HEIGHTS SHOWN ON THE PLANS AND IN THE MATERIAL SUMMARY ARE TO BE USED FOR BIDDING PURPOSES ONLY. PRIOR TO CONSTRUCTION, THE CONTRACTOR IN COOPERATION WITH THE ENGINEER, SHALL MAKE FIELD MEASUREMENTS TO DETERMINE THE ACTUAL POLE HEIGHT NECESSARY TO ENSURE A VERTICAL CLEARANCE OF 17 FEET MINIMUM, 19 FEET MAXIMUM FROM THE HIGH POINT ON THE ROADWAY SURFACE TO THE SPAN. THESE FIELD MEASUREMENTS AND ELEVATIONS SHALL BE DETERMINED FROM THE ACTUAL FIELD LOCATION OF THE POLES, CONSIDERING ALL ABOVE AND BELOW GROUND UTILITIES AND THE PROPOSED ROADWAY ELEVATIONS. THE CONTRACTOR SHALL PLACE DUCT SEAL AT THE ENDS OF ALL CONDUIT WHERE CONDUCTORS AND/OR CABLES ARE PRESENT AND

GENERAL NOTES AND SPECIFICATION DATA--

ITEM 681:, CONT'D
OF EACH TROUBLE CALL. THE ERROR LOG IN THE CONFLICT MONITOR SHALL NOT BE CLEARED WITHOUT THE APPROVAL OF THE ENGINEER.

6. SUBMITTAL LITERATURE SHALL BE PROVIDED FOR ALL TRAFFIC SIGNAL EQUIPMENT PRIOR TO INSTALLATION.

7. THE CONTRACTOR SHALL HAVE A QUALIFIED TECHNICIAN ON THE PROJECT SITE TO PLACE THE TRAFFIC SIGNALS IN OPERATION.

8. SIGNAL HEAD LOCATIONS SHOWN ARE APPROXIMATE AND WILL REQUIRE ADJUSTMENTS DURING AND AFTER CONSTRUCTION. SIGNAL HEADS SHOULD BE OVER THE THROUGH LANES OF TRAFFIC. SEE THE TRAFFIC CONTROL PLAN FOR FURTHER INFORMATION REGARDING THE SEQUENCE OF WORK FOR THE PROJECT.

9. THE TRAFFIC SIGNAL CABLE LENGTHS SHOWN ON THE "SIGNAL HEAD PLACEMENT CHART" ARE THE MAXIMUM LENGTHS NEEDED DURING CONSTRUCION.

10. THE CONTRACTOR SHALL INSTALL THE STEEL STRAIN POLES SUPPLIED BY THE STATE AS SHOWN ON THE PLANS. ANCHOR BOLTS FOR THE STRAIN POLES SHALL BE FURNISHED BY THE CONTRACTOR. THE STRAIN POLES CAN BE PICKED UP AT THE TXDOT MAINTENANCE YARD AT 592 EAST SH 121 IN LEWISVILLE.

11. AN EIGHT-PHASE NEMA CONTROLLER COMPLETE WITH CABINET AND ACCESSORIES WILL BE PROVIDED BY TXDOT FOR THIS PROJECT. THE CONTROLLER AND CABINET CAN BE PICKED UP AT THE TXDOT SIGNAL SHOP, 9700 EAST R. L. THORNTON FREEWAY, DALLAS.

12. CONTACT THE TXDOT SIGNAL SHOP AT (214) 320-6682 TWO WEEKS PRIOR TO NEEDING THE SIGNAL EQUIPMENT TO BE SUPPLIED BY THE STATE.

13. THE CONTRACTOR SHALL INSTALL THE OPTICOM EQUIPMENT SUPPLIED BY THE CITY OF ROCKWALL.

THE LIST OF MATERIAL BELOW IS FOR THE CONTRACTOR'S INFORMATION ONLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL ITEMS AND QUANTITIES LISTED BELOW.

GENERAL NOTES AND SPECIFICATION DATA--

ITEM 627:, CONT'D
REQUIRED FOR THE INTENDED OPERATION OF THE TRAFFIC SIGNALS. THIS WORK SHALL BE CONSIDERED SUBSIDIARY TO THIS ITEM.

ITEM 628:

CONDUIT AND CONDUCTORS ATTACHED TO THE SERVICE POLE AND UNDERGROUND WITHIN 12 INCHES OF THE SERVICE POLE WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED SUDSIDIARY TO ITEM 681.

SERVICE ENCLOSURE SHALL BE ATTACHED WITH GALVANIZED CHANNEL (UNISTRUT, KINDORF OR EQUAL). THE POLE SHALL BE NOTCHED IN TWO PLACES TO PROVIDE FLAT SURFACES. ENDS OF CHANNEL SHALL BE PAINTED WITH ZINC RICH PAINT.

THE ELECTRICAL SERVICE FOR THIS PROJECT SHALL BE BILLED IN THE NAME OF THE STATE.

ITEM 666:

THE PAINT FOR THIS ITEM SHALL BE PURCHASED FROM THE DEPARTMENT AT THE FOLLOWING PRICES:

OHT NO.	DESCRIPTION	UNIT	PRICE
137959	PAINT; TRAFFIC WHITE ACRYLIC WATER BORNE	5 GAL.	$ 27.91
137960	PAINT; TRAFFIC YELLOW ACRYLIC WATER BORNE	5 GAL.	$ 32.84
117702	PAINT; TRAFFIC WHITE ARCYLIC WATER BORNE	55 GAL.	$ 290.16
117703	PAINT; TRAFFIC YELLOW ARCYLIC WATER BORNE	55 GAL.	$ 359.62

ANY NECESSARY PILOT MARKINGS FOR ANY STRIPING OPERATION SHALL BE THE SAME COLOR AS THE PROPOSED STRIPE. PILOT MARKINGS SHALL BE LIMITED TO ONE 2" DIAMETER MARK FOR EACH 100' OF STRIPE. ALL PILOT MARKINGS SHALL BE TOTALLY OBLITERATED AFTER COMPLETION OF THE STRIPING OPERATION.

GENERAL NOTES AND SPECIFICATION DATA--

LIST OF MATERIAL/LABOR
SUBSIDIARY TO ITEM 681
FM 740 AND FM 3097

DESCRIPTION	UNIT	QUANTITY
40' TIMBER POLE (CLASS 2 POLE)	EA	2
INSTALL 30' STRAIN POLE PROVIDED BY STATE	EA	2
FOUNDATION FOR TRAF SIG (36 INCH)	LF	26
1 3/4" DIAMETER ANCHOR BOLT ASSY.	SET	2
8' LUMINAIRE MAST ARM FOR WOOD POLE MOUNTING WITH 250 WATT HPS LUMINAIRE	EA	2
YELLOW PLASTIC GUY GUARD	EA	4
DOUBLE EYE ANCHOR ROD	EA	4
GROUND ANCHOR	EA	4
INSTALL POLE MOUNTED CONTROLLER CABINET WITH 8 PHASE NEMA CONTROLLER AND ACCESSORIES	EA	1
5/8" X 8' COPPERCLAD GROUND ROD AND CLAMP	EA	1
CABLE STRAPS	EA	420
3/8" STEEL GUY CABLE	LF	1750
SIGN R10-12	EA	4
SIGN R3-5R	EA	1
STREET NAME SIGNS	EA	4
12 CIRCUIT DISCONNECT HANGER	EA	8
12" SIGNAL SECTION	EA	32
3-SECTION SIGNAL HEAD BACKPLATE	EA	4

GENERAL NOTES AND SPECIFICATION DATA--

DESCRIPTION CONT'D	UNIT	QUANTITY,
5-SECTION SIGNAL HEAD BACKPLATE	EA	4
ELEC SERV TY S(120/240)000(NS)GS(T)TP(0)	EA	1
1 1/2" RM CONDUIT	LF	14
2" RM CONDUIT	LF	4
3" RM CONDUIT	LF	22
1 1/2" WEATHERHEAD	EA	2
3" WEATHERHEAD	EA	1
NO. 6 AWG BARE CNDR.	LF	37
NO. 6 AWG TYPE XHHW CNDR.	LF	74
NO. 8 AWG TYPE XHHW CNDR.	LF	1023
7 CNDR. TRAF SIGNAL CABLE (TYPE A)	LF	720
INSTALL OPTICOM EQUIPMENT SUPPLIED BY CITY OF ROCKWALL	-	-

LIST OF MATERIAL
SUPPLIED BY THE STATE
FM 740 AND FM 3097

DESCRIPTION	UNIT	QUANTITY
30' STEEL STRAIN POLE	EA	2
POLE MOUNTED CONTROLLER CABINET COMPLETE WITH 8 PHASE NEMA CONTROLLER AND ACCESSORIES	EA	1

GENERAL NOTES AND SPECIFICATION DATA--

ITEM 682:

TRAFFIC SIGNAL HEADS FOR THIS ITEM SHALL BE YELLOW ALUMINUM WITH BLACK POLYCARBONATE BACK PLATES. SIGNAL LENSES SHALL BE GLASS.

TRAFFIC SIGNAL LAMPS SHALL BE 135 WATT.

ALL SIGNAL HEADS SHALL BE COVERED WITH BURLAP OR OTHER TYPE MATERIAL APPROVED BY THE ENGINEER UNTIL PLACED INTO OPERATION.

SIGNAL HEADS MOUNTED ON THE SPAN WIRES SHALL BE LEVEL AND PLUMB AND AIMED AS DIRECTED BY THE ENGINEER.

ITEM 684:

THE CONDUCTORS IN THE TRAFFIC SIGNAL CABLE SHALL BE STRANDED FOR THIS ITEM. INDIVIDUAL CONDUCTORS SHALL BE NO. 12 AWG.

EACH CABLE SHALL BE IDENTIFIED AS SHOWN IN THE PLANS (CABLE 1, ETC.) WITH PERMANENT MARKING LABELS (PANDUIT TYPE PLM STANDARD SINGLE MARKER TIE, THOMAS & BETTS TYPE 548M OR EQUIVALENT) AT EACH GROUND BOX AND AT THE CONTROLLER.

ITEM 686:

POLES REQUIRE NUTS ON TOP AND BOTTOM (DOUBLE NUTS) OF THE BASE PLATE.

ANCHOR BOLTS FOR STRAIN POLES SHALL BE SET SO THAT TWO ARE IN TENSION AND TWO ARE IN COMPRESSION.

TESTING:

ALL SIGNAL CABLES AND POWER CONDUCTORS SHALL BE CHECKED FOR INSULATION RESISTANCE UPON INSTALLATION AND PRIOR TO TERMINATION. THE TESTS SHALL BE MADE WITH A TEST SET OPERATING AT A MINIMUM OF 500 VOLTS D.C. APPLIED TO THE CONDUCTORS.

EACH CONDUCTOR IN THE MULTICONDUCTOR SIGNAL CABLES SHALL BE TESTED FOR INSULATION RESISTANCE RELATIVE TO EACH OTHER AND TO THE OUTER COVERING OF THE CABLE. THE MINIMUM ACCEPTABLE VALUE FOR INSULATION RESISTANCE SHALL BE 50 MEGOHMS.

GENERAL NOTES AND SPECIFICATION DATA--

ITEM 686: CONT'D

ITEM 3063:

LAYDOWN OPERATIONS FOR HOT MIX ASPHALTIC CONCRETE SHALL BE PERFORMED IN SUCH SEQUENCE THAT THE CENTER JOINT WILL BE CARRIED ALONG WITHOUT EXCESS DISTANCE OF LAPBACK, NOT TO EXCEED ONE DAY'S OPERATION.

THE POLISH VALUE OF THE COARSE AGGREGATE FROM EACH SOURCE USED IN THE SURFACE COURSE, EXCEPT THE SHOULDERS, SHALL NOT BE LESS THAN 32 WHEN TESTED IN ACCORDANCE WITH TEST METHOD TEX-438-A.

WHEN THE COARSE AGGREGATE FROM ANY ONE SOURCE CONTAINS MATERIALS WITH SUBSTANTIALLY DIFFERENT MINERALOGY, EACH TYPE OF MATERIAL SHALL COMPLY WITH THE REQUIRED POLISH VALUE.

BLENDING OF COURSE AGGREGATES TO MEET THE POLISH VALUE REQUIREMENTS WILL NOT BE ALLOWED.

THE UTILIZATION OF RAP FROM OFF PROJECT, STATE OWNED NON-DESIGNATED SOURCES CAN BE PROPOSED BY THE CONTRACTOR. THIS WILL BE CONSIDERED A VALUE ENGINEERING PROPOSAL AND HANDLED AS SUCH BY THE ENGINEER.

ALL SURFACE MIXTURES WILL REQUIRE LATEX MODIFIED ASPHALT CEMENT OR POLYMERS.

ASPHALT PAVEMENT TO BE REMOVED WITHIN THE LIMITS OF THE PROJECT AND ASPHALT PAVEMENT MATERIALS USED IN THE CONSTRUCTION OF DETOURS MAY BE USED AS RAP (RECLAIMED ASPHALT PAVEMENT) IN NONSURFACE COURSES IF THE MATERIAL MEETS ALL THE PHYSICAL REQUIREMENTS OF THE APPROPRIATE ITEM. THERE WILL BE NO COST TO THE CONTRACTOR FOR THE USE OF THIS MATERIAL.

ITEM 5004:

THE SEDIMENTATION AND WATER POLLUTION PREVENTION PLAN (SW3P) FOR THIS PROJECT SHALL CONSIST OF USING THE FOLLOWING AS DIRECTED BY THE ENGINEER.

EARTHWORK FOR EROSION CONTROL
TEMPORARY SEDIMENT CONTROL FENCE
BALED HAY

GENERAL NOTES AND SPECIFICATION DATA--

ITEM 5326: COLORED-TEXTURED CONCRETE

CONCRETE TO BE RUNNING BOND USED BRICK FORM WITH DARK BROWN RED COLOR.

DOWELS (SMOOTH BARS) 1" X 18" SPACED AT 12" SHALL BE PLACED IN THE CONCRETE AT THE LEAVEOUTS FOR THE TEXTURIZED CONCRETE STREET CROSSWALK AREAS AT THE INTERSECTION OF FM 740 AND FM 3097.

ITEM 6010:

THE EXISTING TRAFFIC SIGNALS AT F.M. 3097 SHALL BE REMOVED AFTER THE PROPOSED SIGNALS ARE FULLY OPERATIONAL. THE EQUIPMENT SHALL BE SALVAGED AND REMAIN THE PROPERTY OF THE STATE. EQUIPMENT TO BE SALVAGED SHALL CONSIST OF POLES, CABINETS, SIGNAL HEADS, SERVICE POLES OR EQUIPMENT, EXPOSED CONDUIT AND ANY OTHER EQUIPMENT AS DIRECTED BY THE ENGINEER. THIS EQUIPMENT SHALL BE STOCKPILED AT THE TXDOT MAINTENANCE YARD AT 592 EAST S.H. 121 IN LEWISVILLE.

TIMBER POLES NOT SET IN CONCRETE, SHALL BE COMPLETELY REMOVED WITHOUT CUTTING OFF THE POLE. TIMBER POLES SET IN CONCRETE SHALL BECOME THE PROPERTY OF THE CONTRACTOR.

ESTIMATE SUMMARY

PROJECT STP 96(830)MM
CONTROL 1014-03-041
FM 740
ALL BID ITEMS

EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	ALT	ITEM-CODE ITEM NO	ITEM-CODE DESC CODE	ITEM-CODE SP NO	DESCRIPTION	UNIT	TOTAL EST.	TOTAL FINAL
								51.000			104	0505		REMOV CONC (MED)	SY	51.000	
								1888.000			104	0511		REMOV CONC (DRVWY)	SY	1888.000	
								472.000			104	0514		REMOV CONC (CURB)	LF	472.000	
								21966.000			110	0501		EXCAVATION (RDWY)	CY	21966.000	
								2575.000			132	0509		EMBANK (DENS CONT)(TY C)(CL 3)	CY	2575.000	
								6144.000			132	0525		EMBANK (DENS CONT)(TY C MOD)(CL 3)	CY	6144.000	
								6823.000			160	0506		FURN AND PLAC TPSL (CL 2)(4 ")	SY	6823.000	
								6895.000			162	0507	001	BLOCK SOD (PRAIRIE BUFFALO)	SY	6895.000	
								6823.000			164	0519	001	BRDCST SEED (TEMP)(COOL)	SY	6823.000	
								58.000			168	0501		VEGETATIVE WATERING	MG	58.000	
								115.000			168	0502		VEG WATERING (TEMP EROSN CONTROL)	MG	115.000	
								20874.000			260	0505	001	LIME TREAT SUBGR (DC)(6 ")	SY	20874.000	
								209.000			260	0514	001	LIME (TY A SLURRY) OR (TY B)	TON	209.000	
								10787.000			305	0502		SALV, HAUL & STKPL RCL APH PV (0 TO 2")	SY	10787.000	
								1160.000			305	0506		SALV, HAUL & STKPL RCL APH PV (4 ")	SY	1160.000	
								1658.000			305	0516		SALV, HAUL & STKPL RCL ASPH PAV (6 ")	SY	1658.000	
								4144.000			360	0523	016	MONO CURB (TY 1)	LF	4144.000	
								16332.000			360	0524	016	CONC PAV (CPCD)(8")	SY	16332.000	
								42.200			400	0510	001	CUT AND RESTORING PAV (ASPH)	SY	42.200	
								75.000			402	0501		TRENCH EXCAV PROTECTION	LF	75.000	
								926.000			464	0559		RC PIPE (SEWER)(CL III)(18 IN)	LF	926.000	
								5.000			465	0509		INLET (COMPL)(TY I)	EA	5.000	
								9.000			465	0540		INLET EXT	EA	9.000	
								1.000			465	0587		MANH (COMPL)(TY II)	EA	1.000	
								4.000			467	0676	002	SAFE END TRT (TY II)(18 IN)(RCP)(4:1)	EA	4.000	
								12.000			496	0502		REMOV OLD STR (SMALL)	EA	12.000	
								1.000			500	0501		MOBILIZATION	LS	1.000	
								9.000			502	0501	004	BARRICADES, SIGNS AND TRAF HANDLE	MO	9.000	
								22.900			508	0501		CONSTRUCT DETOURS (CL 1)	STA	22.900	
								2200.000			512	0516	001	PORT CTB (LOW PRF)(FURN & INSTL)	LF	2200.000	
								2740.000			512	0517	001	PORT CTB (LOW PRF)(MOVE & RESET)	LF	2740.000	
								2200.000			512	0518	001	PORT CONC TRAF BAR (LOW PRF)(REMOVE)	LF	2200.000	
								1087.000			530	0501		DRVWYS (CONC)(6 ")	SY	1087.000	
								1680.000			531	0507		CONCRETE SIDEWALK (4 ")	SY	1680.000	
								2835.000			618	0511		CONDUIT (PVC)(SCHD 40)(2 ")	LF	2835.000	
								947.000			618	0513		CONDUIT (PVC)(SCHD 40)(3 ")	LF	947.000	
								1280.000			618	0514		CONDUIT (PVC)(SCHD 40)(4 ")	LF	1280.000	
								25.000			624	0501		GROUND BOX TY A (122311) W/APRON	EA	25.000	
								2.000			624	0503		GROUND BOX TY C (162911) W/APRON	EA	2.000	
								18925.000			662	0501	002	WRK ZN PAV MRK REMOV (W) (4") (SLD)	LF	18925.000	
								164.000			662	0502	002	WRK ZN PAV MRK REMOV (W) (4") (BRK)	LF	164.000	
								300.000			662	0507	002	WRK ZN PAV MRK REMOV (W) (8") (SLD)	LF	300.000	
								132.000			662	0511	002	WRK ZN PAV MRK REMOV (W) (24") (SLD)	LF	132.000	
								19520.000			662	0523	002	WRK ZN PAV MRK REMOV (Y) (4") (SLD)	LF	19520.000	
								440.000			662	0524	002	WRK ZN PAV MRK REMOV (Y) (4") (BRK)	LF	440.000	
								3900.000			666	0501	016	REFL PAV MRK TY I (W) (4") (SLD)	LF	3900.000	
								1020.000			666	0502	016	REFL PAV MRK TY I (W) (4") (BRK)	LF	1020.000	
								1284.000			666	0506	016	REFL PAV MRK TY I (W) (8") (SLD)	LF	1284.000	
								85.000			666	0509	016	REFL PAV MRK TY I (W) (12") (SLD)	LF	85.000	
								173.000			666	0512	016	REFL PAV MRK TY I (W) (24") (SLD)	LF	173.000	

ESTIMATE SUMMARY

PROJECT STP 96(830)MM
CONTROL 1014-03-041
FM 740
ALL BID ITEMS

EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	ALT	ITEM-CODE ITEM NO	DESC CODE	SP NO	DESCRIPTION	UNIT	TOTAL EST.	TOTAL FINAL
								12.000			666	0513	016	REFL PAV MRK TY I (W) (ARROW)	EA	12.000	
								3.000			666	0517	016	REFL PAV MRK TY I (W) (WORD)	EA	3.000	
								5099.000			666	0524	016	REFL PAV MRK TY I (Y) (4") (SLD)	LF	5099.000	
								100.000			666	0525	016	REFL PAV MRK TY I (Y) (4") (BRK)	LF	100.000	
								180.000			666	0530	016	REFL PAV MRK TY I (Y) (12") (SLD)	LF	180.000	
								3900.000			666	0535	016	REFL PAV MRK TY II (W) (4") (SLD)	LF	3900.000	
								1020.000			666	0536	016	REFL PAV MRK TY II (W) (4") (BRK)	LF	1020.000	
								1284.000			666	0539	016	REFL PAV MRK TY II (W) (8") (SLD)	LF	1284.000	
								85.000			666	0541	016	REFL PAV MRK TY II (W) (12") (SLD)	LF	85.000	
								173.000			666	0544	016	REFL PAV MRK TY II (W) (24") (SLD)	LF	173.000	
								12.000			666	0545	016	REFL PAV MRK TY II (W) (ARROW)	EA	12.000	
								3.000			666	0549	016	REFL PAV MRK TY II (W) (WORD)	EA	3.000	
								5099.000			666	0556	016	REFL PAV MRK TY II (Y) (4") (SLD)	LF	5099.000	
								100.000			666	0557	016	REFL PAV MRK TY II (Y) (4") (BRK)	LF	100.000	
								180.000			666	0561	016	REFL PAV MRK TY II (Y) (12") (SLD)	LF	180.000	
								107.000			672	0509	012	RAIS PAV MRKR CL B (REFL) TY II-A-A	EA	107.000	
								117.000			672	0510	012	RAIS PAV MRKR CL B (REFL) TY II-C-R	EA	117.000	
								93.000			672	0516	012	RAIS PAV MRKR CL C (TRAF BTN) TY W	EA	93.000	
								158.000			672	0517	012	RAIS PAV MRKR CL C (TRAF BTN) TY Y	EA	158.000	
								4862.000			677	0501		ELIM EXT PAV MRK & MRKR (4")	LF	4862.000	
								100.000			677	0503		ELIM EXT PAV MRK & MRKR (8")	LF	100.000	
								65.000			677	0504		ELIM EXT PAV MRK & MRKR (12")	LF	65.000	
								48.000			677	0506		ELIM EXT PAV MRK & MRKR (24")	LF	48.000	
								13.000			677	0507		ELIM EXT PAV MRK & MRKR (ARROW)	EA	13.000	
								1961.000			677	0518		ELIM EXT PAV MRK & MRKR (RAIS PAV MRKR)	EA	1961.000	
								10119.000			678	0501		PAV SURF PREP FOR MRKS (4")	LF	10119.000	
								1284.000			678	0503		PAV SURF PREP FOR MRKS (8")	LF	1284.000	
								265.000			678	0504		PAV SURF PREP FOR MRKS (12")	LF	265.000	
								173.000			678	0506		PAV SURF PREP FOR MRKS (24")	LF	173.000	
								12.000			678	0507		PAV SURF PREP FOR MRKS (ARROW)	EA	12.000	
								3.000			678	0508		PAV SURF PREP FOR MRKS (WORD)	EA	3.000	
								1.000			681	0501		TEMP TRAF SIGNALS FOR CONSTRUCTION	EA	1.000	
								330.000			3063	0502	003	HOT MIX ASPH (TY C)(SURF)	TON	330.000	
								12942.000			3063	0504	003	HOT MIX ASPH (TY B)	TON	12942.000	
								91.000			5007	0501		BALED HAY FOR EROSN & SEDMT CONT	EA	91.000	
								182.000			5007	0502		BL HAY FOR ERSN & SED CONT (RMV & REPL)	EA	182.000	
								91.000			5007	0503		BALED HAY FOR EROSN & SED CONT (REMOV)	EA	91.000	
								10.000			5012	0511		BKH WRK OR FRNT END LDR WRK (EC)(CL 1)	HR	10.000	
								1681.000			5249	0501		TEMP SEDMT CONT FENCE	LF	1681.000	
								1681.000			5249	0502		TEMP SEDMT CONT FENCE (REMOVE & REPLAC)	LF	1681.000	
								1681.000			5249	0503		TEMP SEDMT CONT FENCE (REMOV)	LF	1681.000	
								2162.000			5326	0502		COLORED-TEXTURIZED CONCRETE (4")	SY	2162.000	
								666.000			5326	0503		COLORED-TEXTURIZED CONCRETE (6")	SY	666.000	
								615.000			5326	0504		COLORED-TEXTURIZED CONCRETE (8")	SY	615.000	
								1.000			6010	0501		SALV TRAF SIGNALS	EA	1.000	
														STATE FORCE ACCOUNT WORK (PART)			
														SIGNING	LS	1.000	

ESTIMATE & QUANTITY SHEET

STATE DIST. NO.	COUNTY	PROJECT NO.	SHEET NO.
18	ROCKWALL	STP 96(830)MM	9

ESTIMATE SUMMARY

EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	PROJECT STP 96(830)MM CONTROL 1014-03-041 FM 740 ALL BID ITEMS EST.	FINAL	ALT	ITEM-CODE ITEM NO	DESC CODE	SP NO	DESCRIPTION	UNIT	TOTAL EST.	FINAL
														MATERIAL FURNISHED BY THE STATE (PART)			
														STRAIN POLES	LS	1.000	

ESTIMATE & QUANTITY SHEET

STATE DIST. NO.	COUNTY	PROJECT NO.	SHEET NO.
18	ROCKWALL	STP 96(830)MM	9A

GRADING SUMMARY

STATION	EXCAVATION (RDWY) CY	EMBANKMENT (DENS CONT) (TY C) (CL3) CY	EMBANKMENT (DENS CONT) (TY C MOD) (CL3) CY	FURNISH AND PLACE TPSL (CL 2) (4") SY
F.M. 740				
100+00	106	78	-	261
101+00	222	276	-	411
102+00	359	291	-	378
103+00	548	135	-	294
104+00	783	106	312	256
105+00	959	85	312	256
106+00	1059	63	312	256
107+00	1096	59	312	239
108+00	1163	54	312	222
109+00	1106	74	286	261
110+00	981	67	286	200
111+00	1126	56	312	161
112+00	1333	70	312	211
113+00	1304	65	312	183
114+00	1111	57	312	144
115+00	922	54	312	172
116+00	954	56	312	189
117+00	930	78	286	233
118+00	830	126	286	294
119+00	854	169	331	311
120+00	1143	161	355	428
121+00	1719	120	370	500
122+00	558	55	149	262
122+39				
TOTAL	21,166	2355	5781	6122
F.M. 3097				
0+63	304	36	149	117
1+13	162	50	149	128
1+63	120	47	65	142
2+13	104	41	-	142
2+63	64	24	-	78
3+13	15	7	-	36
3+63	18	11	-	47
4+13	13	4	-	11
4+63				
TOTAL	800	220	363	701
TOTAL PROJECT	21,966	2575	6144	6823

SUMMARY OF BLOCK SOD, VEGETATIVE WATERING, SIDEWALK AND COLORED-TEXTURIZED CONCRETE

LOCATION	BLOCK SOD (PRAIRIE BUFFALO) SY	VEGETATIVE WATERING MG	SIDEWALK (4") SY	COLORED-TEXTURIZED CONCRETE 4" INTER WALKS ISLANDS & RAMPS SY	6" MEDIAN SY	8" STREET SY
FM 740-STA 100+00 TO STA 122+39	6122	51	1597	85		
FM 3097-STA 0+45.08 TO STA 4+60	701	6			79	
HORIZON RD.	72	1				
MEDIAN-STA 104+00 TO STA 105+05					74	
FM 740, FM 3097 & HORIZON RD INTER.				538		615
STA 106+36 TO STA 109+17					171	
STA 110+84 TO STA 113+40					171	
STA 114+45 TO STA 117+01					171	
STA 119+00				44		
STA 122+00				38		
STA 124+00				38		
IH 30 INTERSECTIION			83	1419		
TOTAL	6895	58	1680	2162	666	615

SUMMARY OF BALED HAY & SEDIMENT CONTROL FENCE

LOCATION	TEMP SEDMT CONT FENCE LF	TEMP SEDMT CONT FENCE (REMOVE & REPLACE) LF	TEMP SEDMT CONT FENCE (REMOVE) LF	BALED HAY EA	BALED HAY (REMOVE & REPLACE) EA	BALED HAY (REMOVE) EA
FM 3097-STA 4+80(LT & RT)				10	20	10
FM 740 -STA 100+00(LT & RT)				10	20	10
FM 740-STA 104+50(RT)				5	10	5
FM 740-STA 106+00(RT)				5	10	5
FM 740-STA 107+60(LT)				14	28	14
FM 740-STA 108+80(RT)				14	28	14
FM 740-STA 110+00(LT)				5	10	5
FM 740-STA 118+80(RT)				14	28	14
FM 740-STA 122+20(RT)				14	28	14
FM 740-STA 100+00 TO STA 106+40(RT)	674	674	674			
FM 740-STA 107+00 TO 108+15(RT)	158	158	158			
FM 740-STA 114+15 TO STA 119+00(LT)	485	485	485			
FM 740-STA 117+28 TO STA 120+16(RT)	315	315	315			
FM 740-STA 122+78	22	22	22			
FM 740-STA 123+97	27	27	27			
TOTAL	1681	1681	1681	91	182	91

SUMMARY SHEET

SHEET 1 OF 4

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	STP 96(830)MM		10
STATE	STATE DIST. NO.	COUNTY	
TEXAS	DALLAS	ROCKWALL	
CONTROL	SECTION	JOB	HIGHWAY NO.
1014	03	041	FM 740

29-MAY-1996

SUMMARY OF PERMANENT STRIPING

LOCATION	REFLECTIVE PAVEMENT MARKERS TY I										REFLECTIVE PAVEMENT MARKERS TY II										RAISED PAV MARKER				PAV SURF PREP FOR MARKERS					
	(WHITE)							(YELLOW)			(WHITE)							(YELLOW)			CL B		CL C							
	(4") (SLD)	(4") (BRK)	(8") (SLD)	(12") (SLD)	(24") (SLD)	(ARROW)	(WORD)	(4") (SLD)	(4") (BRK)	(12") (SLD)	(4") (SLD)	(4") (BRK)	(8") (SLD)	(12") (SLD)	(24") (SLD)	(ARROW)	(WORD)	(4") (SLD)	(4") (BRK)	(12") (SLD)	TYII A-A	TYII C-R	TY W	TY Y	(4")	(8")	(12")	(24")	(ARROW)	(WORD)
	LF	LF	LF	LF	LF	EA	EA	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	LF	LF	LF	EA	EA	EA	EA	LF	LF	LF	LF	EA	EA
STA 100+00 TO STA 104+00	723	70						800		88	723	70						800		88	24	6			1593		88			
STA 104+00 TO FM 3097	385	140	110	25	44	2		290			385	140	110	25	44	2		290				6			815	110	25	44	2	
FM3097	515	60	120	60	43			760		78	515	60	120	60	43			760		78	16	6			1335	120	138	43		
HORIZON RD.	452	80	184		40	4	2	469		14	452	80	184		40	4	2	469		14	40	41	93	158	1001	184	14	40	4	2
FM 3097 TO STEGER TOWN	1125	330	590		46	2	1	1390			1125	330	590		46	2	1	1390				26			2845	590		46	2	1
STEGER TOWN TO STA 122+39	700	340	280			4		1390	100		700	340	280			4		1390	100		8	32			2530	280			4	
TOTAL	3900	1020	1284	85	173	12	3	5099	100	180	3900	1020	1284	85	173	12	3	5099	100	180	88	117	93	158	10,119	1284	265	173	12	3

SUMMARY OF DRIVEWAYS

LOCATION	WIDTH FT	LENGTH FT	RADIUS	DRVWYS (CONCX6") SY	ACP TY "B" TON
RT STA 103+00	46	21	20	126	31
LT STA 2+30 - FM 3097	30	14	15	57	16
RT STA 108+25	30	19.5	15	76	20
LT STA 108+40	38.5	14.5	15	73	19
LT STA 111+48	36	14	15	55	15
RT STA 111+50	30.5	19	15	75	20
LT STA 113+90	45	19	15	106	26
RT STA 113+90 - STEGER RD	45	15	15	86	22
LT STA 117+15	35	14	15	65	17
RT STA 119+20	28.7	12	15	49	14
RT STA 119+40	12	22	15	40	12
RT STA 120+60	31.3	14	15	59	16
LT STA 120+65	40	24	15	117	29
RT STA 121+63	45	15	30 &15	103	26
TOTAL				1087	283

SUMMARY OF IRRIGATION CONDUIT

LOCATION	CONDUIT (PVC) (SCHD 40) (4") LF
RT ℄ STA 108+25	80
LT ℄ STA 108+35	110
℄ STA 110+00	90
RT ℄ STA 111+45	90
RT ℄ STA 111+50	80
LT ℄ STA 113+90	110
RT ℄ STA 113+90	110
LT ℄ STA 117+10	90
℄ STA 118+35	90
RT ℄ STA 119+15	80
LT ℄ STA 119+35	40
LT ℄ STA 120+50	110
RT ℄ STA 120+60	90
RT ℄ STA 121+60	110
TOTAL	1280

SUMMARY OF BASE & PAVEMENT

LOCATION	SUBGRADE		CONCRETE PAVEMENT (CPCD) (8") SY	MONO CURB (TY 1) LF	ASPHALTIC CONCRETE PAVEMENT		
	LIME TREAT SUBGRADE (DC) (6") SY	LIME (TY A SLURRY) OR (TY B) TON			(TY C) (165 #/SY) TON	(TY B) (660 #/SY) TON	(TY B) (1375 #/SY) TON
FM 740-STA 100+00 TO STA 104+00	2,178	22			204		1403
FM 740-STA 104+00 TO STA 122+39	15,267	153	14,182	3349		9854	
HORIZON RD-STA 15+33.52 TO 16+53.90	1,030	10	920	340		329	
FM 3097-STA 0+45.08 TO STA 1+84.75	1,377	14	1230	455		439	
FM 3097-STA 1+84.75 TO STA 4+60	1,022	10			126		634
TOTAL	20,874	209	16,332	4,144	330	10,622	2,037

SUMMARY OF SIDE ROAD DRAINAGE STRUCTURES

LOCATION	RC PIPE CL III 18"	S.E.T. TY II 18"@ 4:1
FM 3097-STA 2+26, 38' LT	61	2
FM 740-STA 103+00, 44'RT	45	2
TOTAL	106	4

SUMMARY SHEET

SHEET 2 OF 4

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	STP 96(830)MM		//
STATE	STATE DIST. NO.	COUNTY	
TEXAS	DALLAS	ROCKWALL	
CONTROL	SECTION	JOB	HIGHWAY NO.
1014	03	041	FM 740

SUMMARY OF REMOVAL ITEMS

ID	LOCATION	REMOVE OLD CONC MEDIAN SY	REMOVE OLD CONC DRIVEWAY SY	REMOVE OLD CONC CURB OR C&G LF	SALV, HAUL & STKPL RECLAIMABLE ACP 0"-2" SY	SALV, HAUL & STKPL RECLAIMABLE ACP 4" SY	SALV, HAUL & STKPL RECLAIMABLE ACP 6" SY	REMOVE OLD STR (SMALL) EA	REMARKS
R-1	RT STA 103+00		211					1	65'~18" CGMP W/SET
	RT STA 105+00			180					
	FM 3097-STA 0+60 TO STA 1+75	51							
R-2	RT STA 2+20-FM 3097		129					1	54'~18" RCP W/SET
R-3	STA 106+15							1	14'~3'x 2' B W/HDWL, 48'~24"CGMP, 22'X 24" RCP
R-4	RT STA 108+30		137					1	54'~24" RCP W/SET
R-5	LT STA 108+40		160					1	55'~18" CGMP W/SET
R-6	LT STA 111+50		147					1	80'~18" CGMP W/INLETS, SET
R-7	RT STA 111+48				156			1	59'~15" RCP W/SET
	LT STA 113+90		214						
R-8	LT STA 117+15		182					1	90'~18" CGMP W/HDWLS
R-9	RT STA 119+20		137					1	41'~18" CGMP W/HDWLS
R-10	LT STA 119+40		58					1	20'~18" CGMP W/HDWLS
R-12	RT STA 120+60		161					1	62'~18" CGMP W/HDWLS
R-11	LT STA 120+65		352					1	44.6'~18" CGMP W/HDWLS
	LT STA 121+20			40					
	STA 102+00 TO STA 122+39*				10,631				
	LT STA 123+30-ISLAND					271			
	℄ STA 123+90-MEDIAN					36			
	LT STA 125+50					289			
	RT STA 126+00					289			
	LT STA 127+70-ISLAND					81			
	℄ STA 127+70-MEDIAN					34			
	RT STA 128+00-ISLAND					160			
	DETOUR						1658		
	IH 30 INTERSECTION RAMP			272					
		51	1888	472	10,787	1160	1658	12	

* INCLUDES FM 3097 & HORIZON ROAD

SUMMARY OF STORM SEWER

LOCATION	RC PIPE (SEWER) (CL III) (18") LF	INLET (COMPL) (TY I) EA	INLET EXT EA	MANHOLE (COMPL) (TY II) EA	CUT AND RESTORING PAV (ASPH) SY	TRENCH EXCAV PROTECTION LF	*SEWER EXCAV CY
54.1' LT ℄ STA 106+36.2				1			
35.5' LT ℄ STA 107+60		1	2				
35.5' RT ℄ STA 108+80		1	2				
8.46' LT ℄ STA 118+60		1	1				
35.5' RT ℄ STA 118+80		1	2				
47.7' RT ℄ STA 122+20		1	2				
MH-1 TO CI-1	125				8.5		76
CI-1 TO CI-2	140				33.7	75	132
CI-3 TO CI-4	46						18
CI-4 TO CI-5	323						126
CI-5 TO EXIST DI	186						113
TOTAL	820	5	9	1	42.2	75	*465

* FOR BIDDERS INFORMATION ONLY

SUMMARY OF PORT. CONC. TRAF. BAR.

PHASE	LOCATION	PORT CONC TRAF BAR (LOW PROF) FURN & INSTL (TY 1) (TY E) LF	FURN & INSTL (TY 2) (TY E) LF	MOVE & RESET LF	REMOV LF
II-A	RT STA 103+35 TO RT STA 105+35	300	40		
II-A	RT STA 0+30 TO RT STA 1+90-FM 3097	120	40		
II-A	LT STA 0+05 TO LT STA 1+95-FM 3097	160	40		
II-A	RT STA 105+80 TO RT STA 108+00	180	40		
II-A	RT STA 108+60 TO RT STA 111+20	220	40		
II-A	RT STA 111+80 TO RT STA 121+20	900	40		
II-A	RT STA 121+20 TO RT STA 122+40	40	40	100	
II-B	LT STA 103+40 TO LT STA 105+80			240	140
II-B	LT STA 0+05 TO LT STA 1+95-FM 3097			200	
II-B	RT STA 106+60 TO RT STA 106+80			20	
II-B	RT STA 116+80 TO RT STA 118+80			200	
II-B	RT STA 119+60 TO RT STA 122+40			280	
II-B	RT STA 119+55 TO RT STA 121+95			240	
III-A	RT STA 101+90 TO RT STA 105+90			400	
III-A	STA 15+20 TO STA 17+00-HORIZON RD.			180	
III-A	LT STA 120+80 TO 122+40			160	
III-A	RT STA 106+60 TO RT STA 122+40				160
III-B	STA 15+20 TO STA 108+05-HORIZON RD.			400	180
III-B	LT STA 119+50 TO LT STA 122+70			320	
III-B	PROJECT				1720
	TOTAL	1920	280	2740	2200

SUMMARY SHEET

SHEET 3 OF 4

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.			SHEET NO.
6	STP 96(830)MM			12
STATE	STATE DIST. NO.	COUNTY		
TEXAS	DALLAS	ROCKWALL		
CONTROL	SECTION	JOB	HIGHWAY NO.	
1014	03	041	FM 740	

30-MAY-1996

SUMMARY OF DETOURS, WORK ZONE PVT MARKINGS & MARKERS & ELIMINATE EXISTING PAVEMENT MARKINGS & MARKERS

LOCATION	CONSTRUCT DETOURS (CL 1)	ELIMINATE EXISTING PAV. MRK & MRKR						WORK ZONE PAV MRK REMOV						RAIS PAV MRKR CL B(REFL) TY 11-A-A
		4"	8"	12"	24"	ARROW	RAIS. PAV MRKR	(W) (4") (SOLID) (REMOV)	(W) (4") (BROKEN) (REMOV)	(W) (8") (SOLID) (REMOV)	(W) (24") (SOLID) (REMOV)	(Y) (4") (SOLID) (REMOV)	(Y) (4") (BROKEN) (REMOV)	
	STA	LF	LF	LF	LF	EA	LF	LF	LF	LF	LF	LF	LF	EA
PHASE I														
STA 100+00 TO STA 105+65	5.65							565						
STA 106+65 TO STA 118+90	12.25	2595	100					1215		100		1100	280	
PHASE II A														
STA 100+00 TO STA 105+60		1080		65	12			1100		100	22	1090		
STA 0+00 TO STA 4+60 - FM 3097		580			12			900			11	880		
STA 9+72 TO STA 16+98.46- HORIZON RD		32			24	2	1471	790	*18		11	1090	* 20	
STA 105+80 TO 124+40		465				11		2990				3410	* 30	7
PHASE II B														
STA 100+00 to STA 105+80								580			11			
STA 0+00 to STA 4+60 - FM 3097	.5							975			11	800		
STA 9+53 TO 16+96.40 - HORIZON RD							390	1048			11	1180		
STA 106+60 TO STA 124+40	.8							564		40		584	* 24	12
PHASE III A														
STA 100+00 TO STA 105+90								1000			11	1020		
STA 0+00 TO 4+60 - FM 3097								380						
STA 6+53 TO 16+96.46 - HORIZON RD	.5						100	300						
STA 106+50 TO STA 126+90	2.2	110						3698				3183	* 16	
PHASE III B														
STA 9+53-HORIZON RD TO STA 4+60-FM3097								760	** 146	60	33	1753	* 70	
STA 106+20 TO STA 127+00	1.0							600				890		
PHASE IV														
STA 102+00 TO STA 105+30												1080		
STA 105+60 TO 127+00								1460			11	1460		
TOTAL	22.9	4862	100	65	48	13	1961	18,925	164	300	132	19,520	440	19

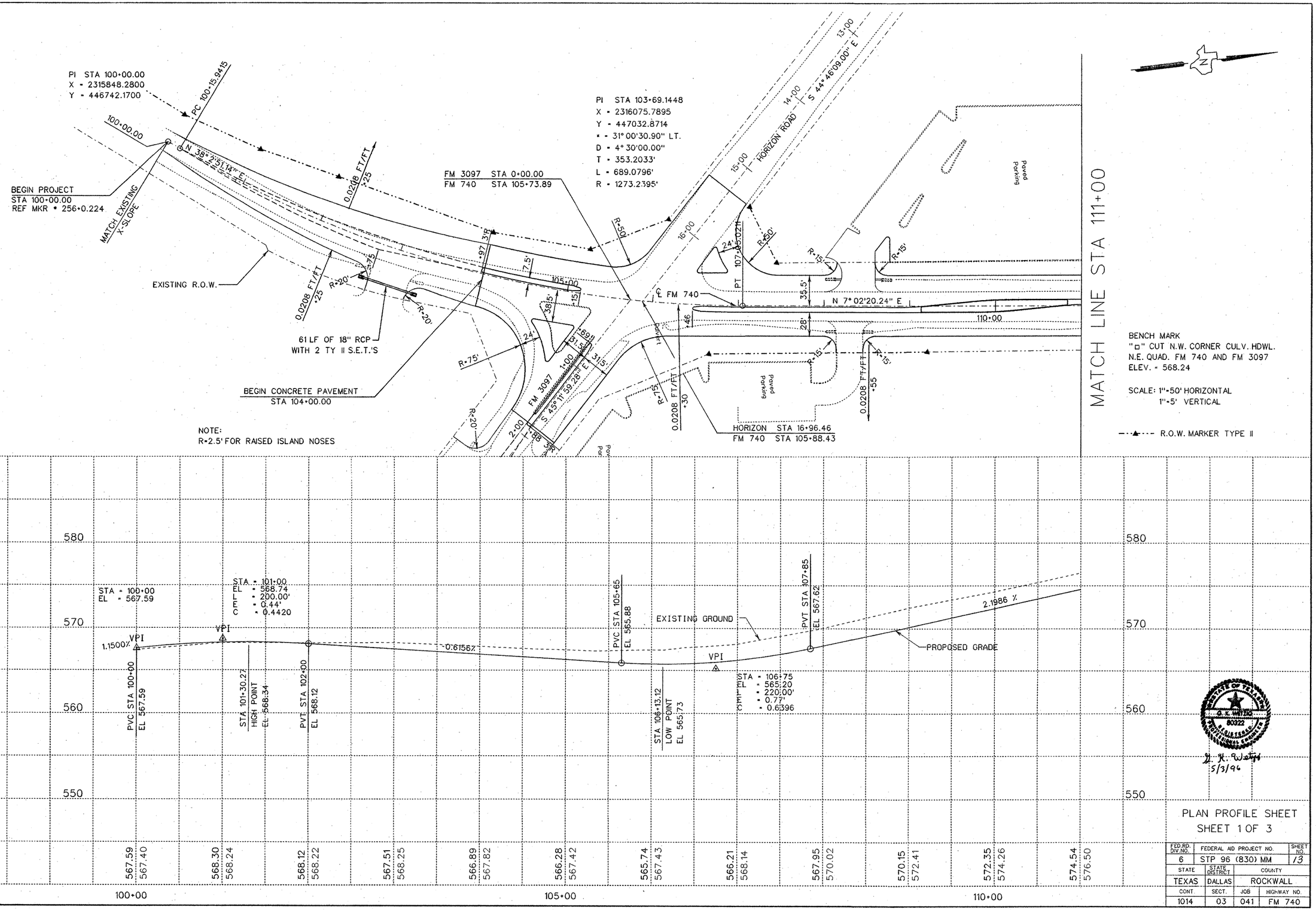
* 2' STRIPE EVERY 6'

** INCLUDES 46 LF OF 2' STRIPE EVERY 6'

SUMMARY SHEET

SHEET 4 OF 4

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	STP 96(830)MM		124
STATE	STATE DIST. NO.	COUNTY	
TEXAS	DALLAS	ROCKWALL	
CONT.	SECT.	JOB	HIGHWAY NO.
1014	03	041	FM 740



REFERENCE FI	PLAN AND PROFILE	DRAINAGE
FM7401.DGN	1,20,21,22,47	1,20,21,22,47
FM740TOPO.DGN	2,3,9,11,13,25,28,61	DISPLAY OFF
DESIGN FILES		
FM740PP1.DGN	1,2,6,30,33,51	1,6,23,40-41

REMOVALS

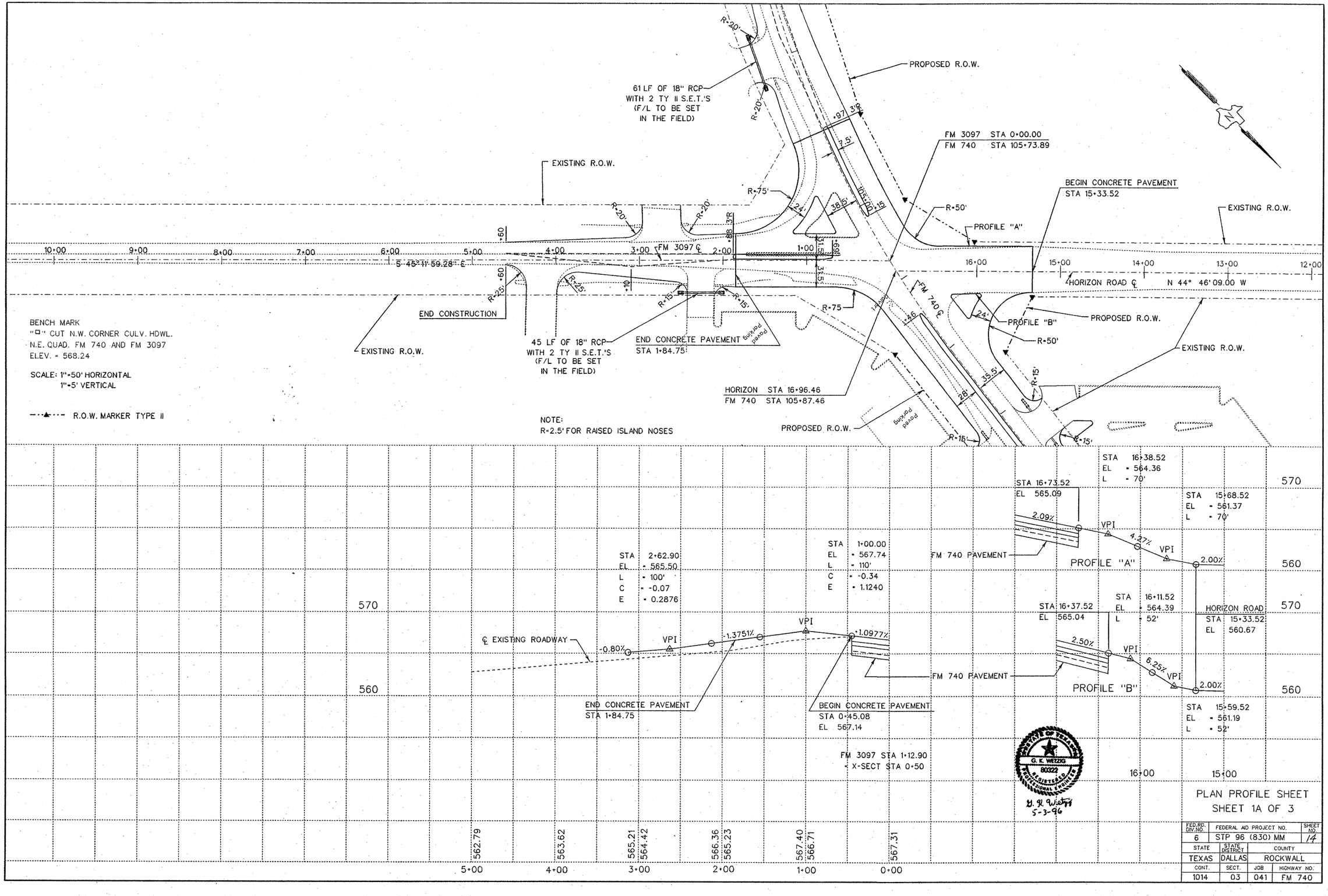
LEVELS

STATE OF TEXAS
G. K. WEITZ
80322
REGISTERED
PROFESSIONAL ENGINEER
5/3/96

PLAN PROFILE SHEET
SHEET 1 OF 3

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	STP 96 (830) MM		13
STATE	STATE DISTRICT	COUNTY	
TEXAS	DALLAS	ROCKWALL	
CONT.	SECT.	JOB	HIGHWAY NO.
1014	03	041	FM 740

FXT 4407



REMOVALS

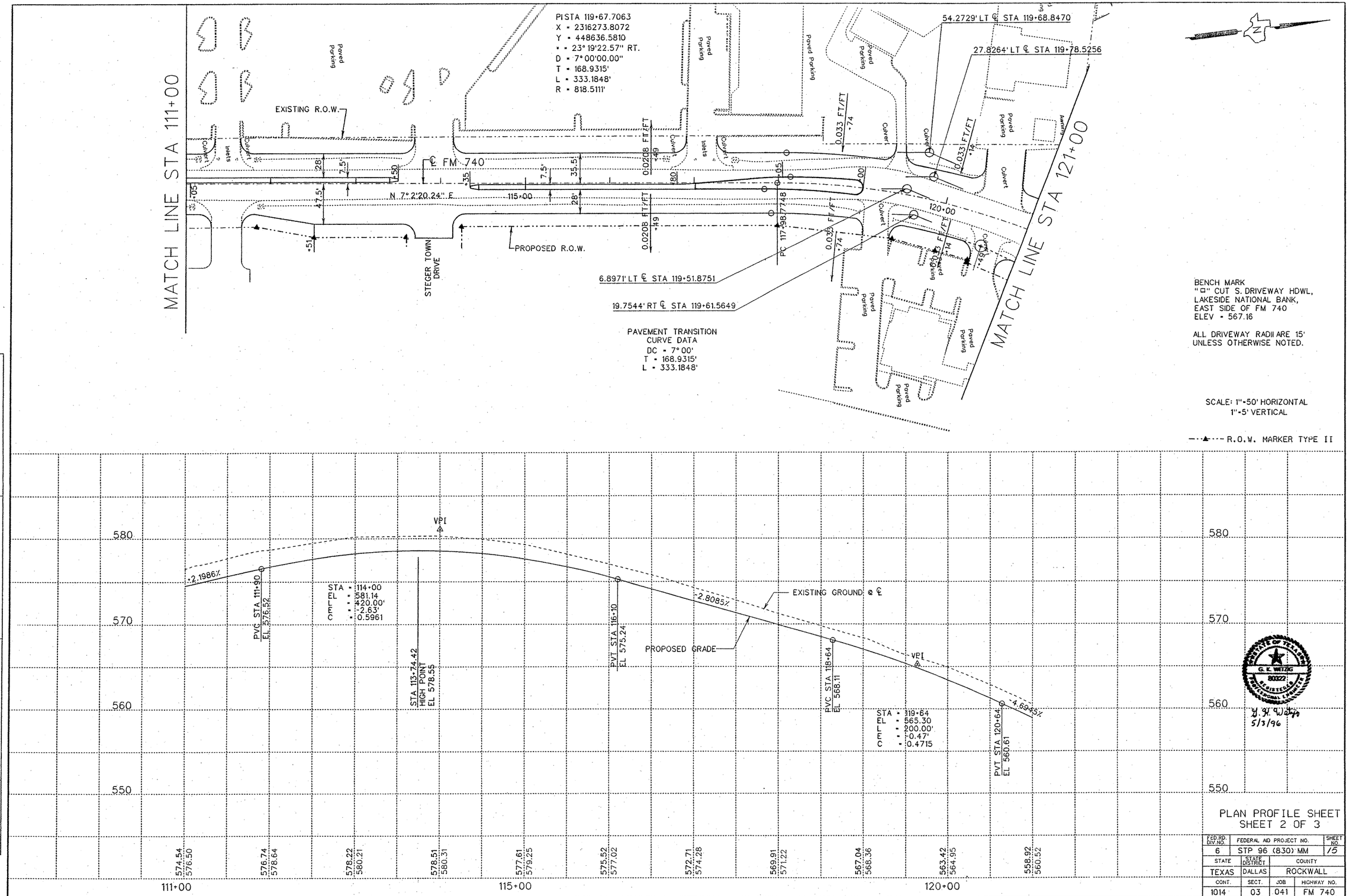
LEVELS

REFERENCE FI	S	HORIZONTAL & VERTICAL ALIGNMENT
FM7401.DGN		1,20,21,22,47
FM740TOPO.DGN		2,3,9,11,13,25,28,61
DESIGN FILES		
FM740PP1.DGN		1,2,6,20,30,33,51

PLAN PROFILE SHEET
SHEET 1A OF 3

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	STP 96 (830) MM		14
STATE	STATE DISTRICT	COUNTY	
TEXAS	DALLAS	ROCKWALL	
CONT.	SECT.	JOB	HIGHWAY NO.
1014	03	041	FM 740

EXT 4407



REFERENC	ILES	PLAN AND PROFILE
FM7401.DGN		1, 20, 21, 22, 47
FM740TOP0.DGN		2, 3, 9, 11, 13, 25, 28, 61
911DRA.DGN		20
DESIGN FILES		20
FM740PP2.DGN		1,2,6,20,33,34

REVISIONS	DRAINAGE
	1, 20, 21, 22, 47
	20
	1,6,40 - 43

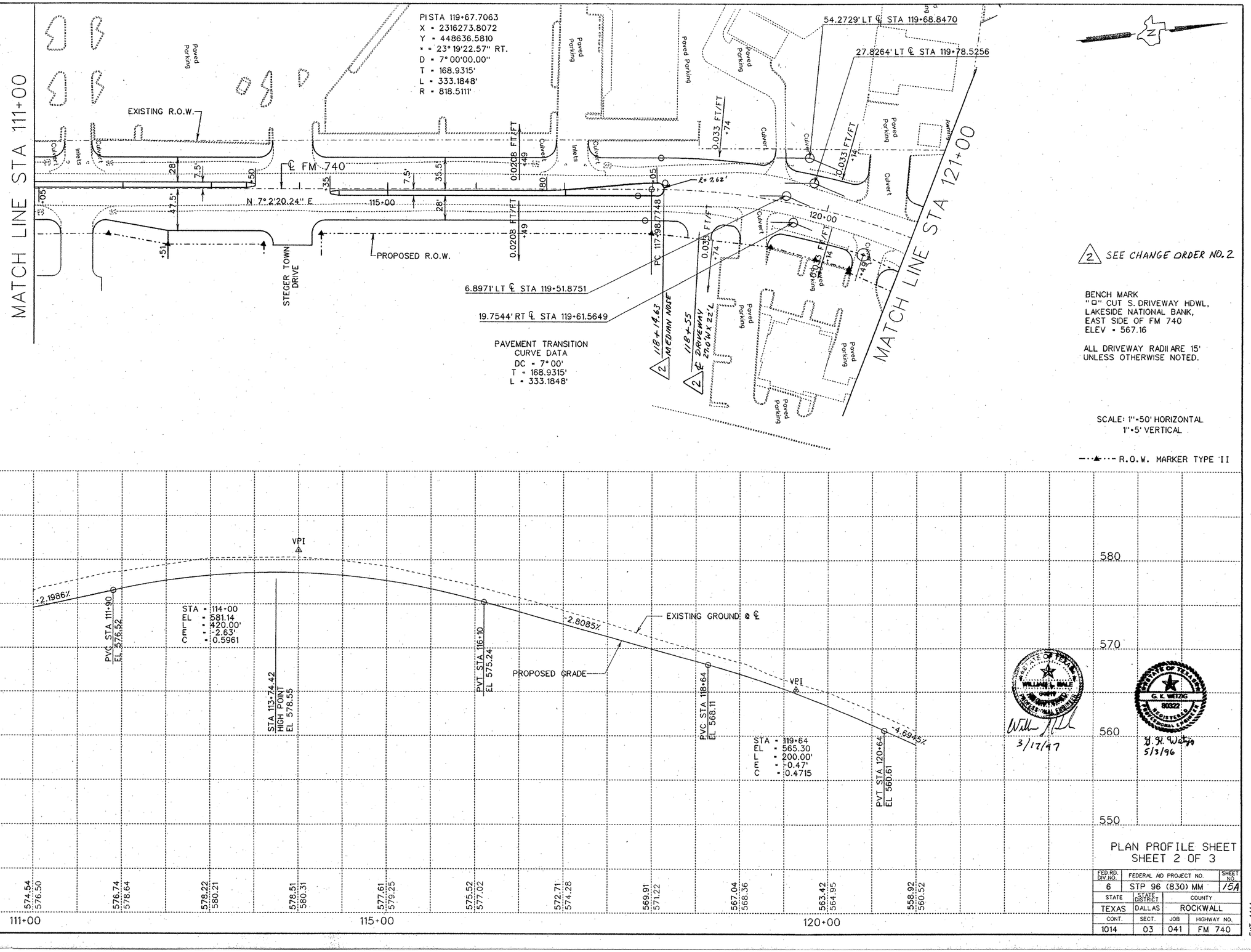
REMOVALS

$$$DATE$$$

PLAN PROFILE SHEET
SHEET 2 OF 3

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	STP 96 (830) MM		15
STATE	STATE DISTRICT	COUNTY	
TEXAS	DALLAS	ROCKWALL	
CONT.	SECT.	JOB	HIGHWAY NO.
1014	03	041	FM 740

EXT 4411



2 SEE CHANGE ORDER NO. 2

BENCH MARK
"□" CUT S. DRIVEWAY HDWL,
LAKESIDE NATIONAL BANK,
EAST SIDE OF FM 740
ELEV = 567.16

ALL DRIVEWAY RADII ARE 15'
UNLESS OTHERWISE NOTED.

SCALE: 1"=50' HORIZONTAL
1"=5' VERTICAL

—·▲·— R.O.W. MARKER TYPE II

REMOVALS

LEVELS

REFEREN	FILES	PLAN AND PROFILE
FM7401.DGN	1, 20, 21, 22, 47	1, 20, 21, 22, 47
FM740TOPO.DGN	2, 3, 9, 11, 13, 25, 28, 61	
911DRA.DGN	20	20
DESIGN FILES		
FM740PP2.DGN	1,2,6,20,33,34	1,6,40 - 43

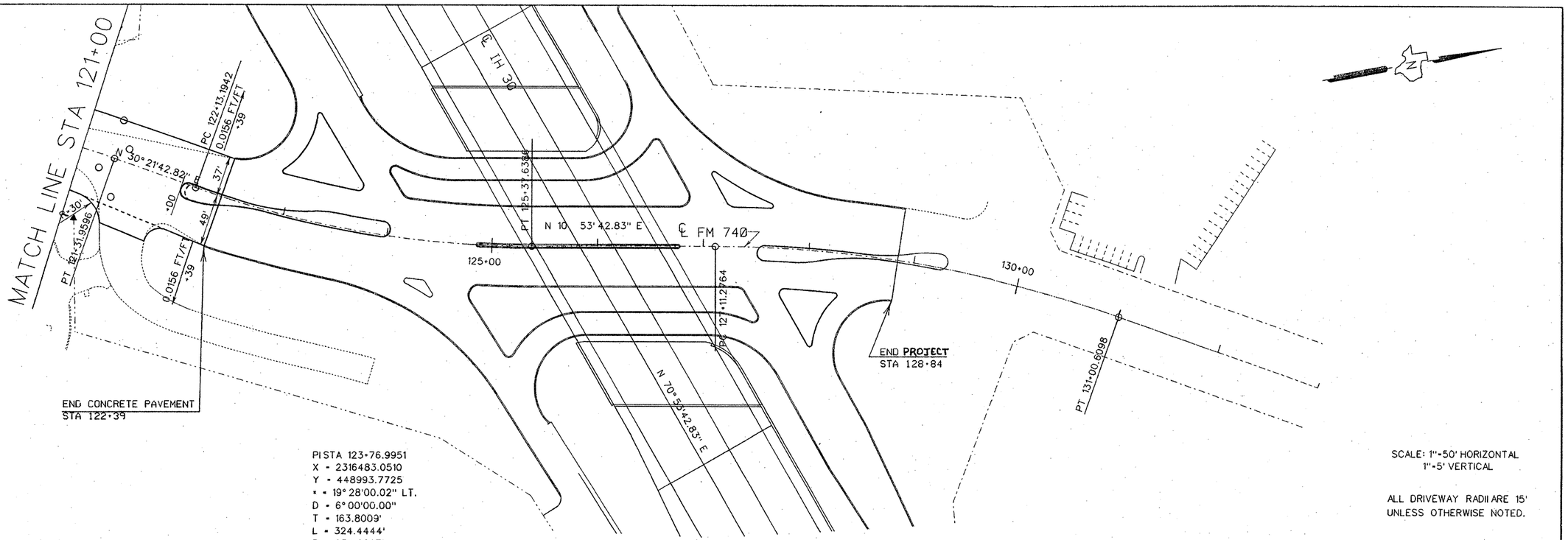
DRAINAGE: 1, 20, 21, 22, 47

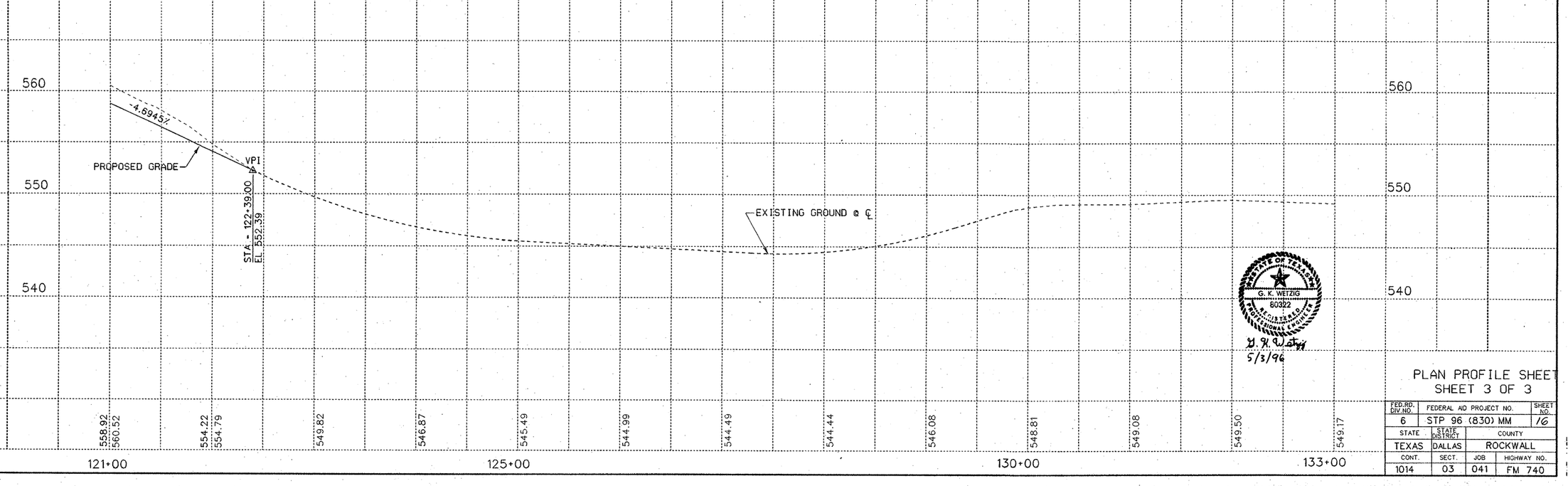
$$$$DATE$$$$

PLAN PROFILE SHEET
SHEET 2 OF 3

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	STP 96 (830) MM		15A
STATE	STATE DISTRICT	COUNTY	
TEXAS	DALLAS	ROCKWALL	
CONT.	SECT.	JOB	HIGHWAY NO.
1014	03	041	FM 740

EXT 4411





LEVELS	
REFERENCE FILES	PLAN AND PROFILE / DRAINAGE
FM7401 - 2.DGN	1,20,21,22,33,47, / 49
FM740TOPO.DGN	2,11,28,34,40 / 63
911DRA.DGN	20 / 20,23
FM740PP3.DGN	1,2,6,20,31,33 / 1,6,41,43,44

REMOVALS

$$$$DATE$$$$

G. K. WETZIG
80322
REGISTERED
PROFESSIONAL ENGINEER
STATE OF TEXAS
5/3/96

PLAN PROFILE SHEET
SHEET 3 OF 3

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	STP 96 (830) MM		/6
STATE	STATE DISTRICT	COUNTY	
TEXAS	DALLAS	ROCKWALL	
CONT.	SECT.	JOB	HIGHWAY NO.
1014	03	041	FM 740

G. K. WETZIG
60322

G. K. Wetzig
5/3/96

DRAINAGE
AREA MAP

SCALE 1"=100'

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.			SHEET NO.
6	STP 96 (830) MM			17
STATE	STATE DISTRICT	COUNTY		
TEXAS	DALLAS	ROCKWALL		
CONTROL	SECTION	JOB	HIGHWAY NO.	
1014	03	041	FM 740	

$$$$date$$$$

RUNOFF COMPUTATIONS

ACRES - DRAINED					TOTAL C.A.	TIME OF CONCENTRATION MINUTES	I_5	Q_5	REMARKS
DRAIN. AREA NO.	AC.	PAVT. C=0.9	R.O.W. (AVG) C=0.5	R.O.W. FUTURE DEVEL. C=0.7					
1	0.67	0.67			0.60	540 / 2.65X60 + 3.4 MIN USE 10 MIN	6.93	4.16	TO EXIST. 10' CURB INLET
2	2.69	1.84	0.85		2.08	360 / 3.20X60 + 220 / 1X60 + 5.6 MIN USE 10 MIN	6.93	14.41	TO EXIST. 15' CURB INLET
3	0.72	0.58	0.14		0.59	620 / 2.80X60 + 3.7 MIN USE 10 MIN	6.93	4.09	TO CI-1
4	0.68	0.54	0.14		0.56	495 / 2.60X60 + 3.2 MIN USE 10 MIN	6.93	3.88	TO CI-2
5	0.54	0.43	0.11		0.44	585 / 2.80X60 + 3.5 MIN USE 10 MIN	6.93	3.05	TO CI-3
6	1.76	0.42		1.34	1.32	650 / 1.50X60 = 7.2 MIN USE 10 MIN	6.93	9.15	TO CI-4
7	0.58	0.52	0.06		0.50	400 / 3.80X60 + 1.8 MIN USE 10 MIN	6.93	3.47	TO CI-5
8	0.48		0.48		0.24	200 / 2.50X60 + 1.3 MIN USE 10 MIN	6.93	1.66	TO EXIST. DROP INLET
9	0.51	0.05	0.46		0.28	320 / 2.00X60 + 2.7 MIN USE 10 MIN	6.93	1.94	TO EXIST. DROP INLET (2 GR)
10	0.39	0.39			0.35	440 / 3.50X60 + 2.1 MIN USE 10 MIN	6.93	2.43	TO EXIST. 10' CURB INLET
11	0.47	0.47			0.42	360 / 3.25X60 + 1.8 MIN USE 10 MIN	6.93	2.91	TO EXIST. 10' CURB INLET

INLET COMPUTATIONS

INLET NO.	LOCATION	TYPE	RUN OFF COMPUTATIONS								INLET DESIGN																REMARKS
			DA NO.	CA	TIME OF CONCENTRATION ACTUAL (MIN)	TIME OF CONCENTRATION DESIGN (MIN)	DESIGN FREQ. (YRS)	INTENSITY (IN/HRS)	Q_a (CFS)	CARRY OVER (CFS)	TOTAL Q_a (CFS)	Z	Z/N	S (FT/FT)	Y (FT)	PONDED WIDTH Y x Z (FT)	a (FT)	q_L (CFS)	$L_r = Q_A/Q_L$ (FT)	L (FT)	L/L_r	A/Y	Q/Q_A	Q (CFS)	ALLOW HEAD (FT)	ACTUAL HEAD (FT)	NO. OF GRATES (EA)	CARRY OVER (CFS)	
EX. CI	25' RT OF HORIZON RD. STA 13+21	I-10'	1	0.60	3.4	10	5	6.93	4.16	0	4.16	48	3200	0	.20	9.6	.25	1.0	4.16	10				4.16				0	EXIST. CURB INLET ADEQUATE
EX. CI	20' LT OF HORIZON RD. STA 13+21	I-15'	2	2.08	5.6	10	5	6.93	14.41	0	14.41	48	3200	0	.22	10.6	.25	1.0	14.41	15				14.41				0	EXIST. CURB INLET ADEQUATE
CI-1	35.5' LT OF FM 740 STA 107+60	I-15'	3	0.59	3.7	10	5	6.93	4.09	0	4.09	48	3200	.0200	.21	10.1	.25	.38	10.76	15				4.09				0	
CI-2	35.5' RT OF FM 740 STA 108+80	I-15'	4	0.56	3.2	10	5	6.93	3.88	0	3.88	48	3200	.0220	.21	10.1	.25	.37	10.48	15				3.88				0	
CI-3	8.5' LT OF FM 740 STA 118+60	I-10'	5	0.44	3.5	10	5	6.93	3.05	0	3.05	34	2267	.0370	.19	6.5	.25	.36	8.47	10				3.05				0	
CI-4	35.5' RT OF FM 740 STA 118+80	I-15'	6	1.32	7.2	10	5	6.93	9.15	0	9.15	30	2000	.0290	.32	9.6	.25	.47	19.47	15	.77	.78	.875	8.00				1.15	CARRY-OVER TO CI-5
CI-5	47.7' RT OF FM 740 STA 122+20	I-15'	7	0.50	1.8	10	5	6.93	3.47	1.15	4.62	63	4200	.0469	.17	10.7	.25	.35	13.20	15				4.62				0	
EX. DI	90.6' LT OF FM 740 STA 122+78	C	8	0.24	1.3	10	5	6.93	1.66	0	1.66						.25							1.66	2.0	< .5	1	0	EXIST. DROP INLET ADEQUATE
EX. DI	66.0' RT OF FM 740 STA 123+97	C	9	0.28	2.7	10	5	6.93	1.94	0	1.94						.25							1.94	1.6	< .5	2	0	EXIST. DROP INLET ADEQUATE
EX. CI	86.6' LT OF FM 740 STA 124+02	I-10'	10	0.35	2.1	10	5	6.93	2.43	0	2.43	58	3867	.0188	.17	9.9	.25	.34	7.14	10				2.43				0	EXIST. CURB INLET ADEQUATE
EX. CI	37' RT OF FM 740 STA 125+00	I-10'	11	0.42	1.8	10	5	6.93	2.91	0	2.91	64	4267	.0056	.21	13.4	.25	.37	7.86	10				2.91				0	EXIST. CURB INLET ADEQUATE

STORM SEWER COMPUTATIONS

LINE	FROM	TO	DRAINAGE AREA NO.	TOTAL D.A. AC.	TOTAL C.A.	LGTH. FT.	TIME OF CONCENTRATION-MINUTES ALONG SEWER LINE	INLET TIME	USED IN DES.	FREQ. YRS.	I IN/HR	Q CFS	DESIGN DIA. IN.	SLOPE % PIPE	SLOPE % H.G.	CAP. CFS	VEL. FT/SEC	REMARKS
A	CI-2	CI-1	4	.68	.56	140	----------	3.20	10	5	6.93	3.88	18	1.857	.11	15.3	7.6	
A	CI-1	MH-1	3,4	1.40	1.15	125	3.20 + [140/(7.6X60)] = 3.50	3.70	10	5	6.93	7.97	18	2.650	.49	18.2	10.0	
A	MH-1	JCT EX-2	3,4	1.40	1.15	283	3.70+ [125/(10.0X60)] = 3.90	--	10	5	6.93	7.97	24	3.030	.11	42.0	10.8	
A	JCT EX-2	JCT EX-3	* 2,3,4	* 4.09	*3.23	18	3.90 + [283/(10.8X60)] = 4.33	--	10	5	6.93	** 30.88	30	4.670	.48	100.0	17.0	
A	JCT EX-3	OUTFALL	* 1,2,3,4	* 4.76	*3.83	199	4.33 + [18/(17.0X60)] = 4.35	--	10	5	6.93	** 35.04	30	4.670	.62	100.0	17.0	
B	CI-3	CI-4	5	.54	.44	46	----------	3.50	10	5	6.93	3.05	18	4.326	.07	23.0	9.2	
B	CI-4	CI-5	5,6	2.30	1.76	323	3.50 + [46/(9.2X60)] = 3.58	7.20	10	5	6.93	12.20	18	4.334	1.15	23.0	13.2	
B	CI-5	EX DI	5,6,7	2.88	2.26	186	7.20 + [323/(13.2X60)] = 7.61	1.80	10	5	6.93	16.82	18	3.341	1.90	19.5	12.5	
B	EX DI	EX CI	5,6,7,9	EXISTING IH 30 STORM SEWER SYSTEM IS DESIGNED TO ACCOMODATE THE FLOW REACHING THE EXISTING DROP INLET														

* DOES NOT INCLUDE DRAINAGE AREA AWAY FROM THE PROJECT THAT CONTRIBUTES 8.5 CFS TO THE EXISTING STORM DRAIN SYSTEM

** FLOW INCLUDES 8.5 CFS GENERATED AWAY FROM THE PROJECT

STATE OF TEXAS
G. K. WETZIG
80322
REGISTERED
PROFESSIONAL ENGINEER

G. K. Wetzig
5/3/96

HYDRAULIC DATA SHEET

SHEET 1 OF 1

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	STP 96 (830) MM		18
STATE	STATE DISTRICT	COUNTY	
TEXAS	DALLAS	ROCKWALL	
CONTROL	SECTION	JOB	HIGHWAY NO.
1014	03	041	FM 740

RUNOFF COMPUTATIONS

DRAIN. AREA NO.	DRAIN. AREA AC.	ACRES - DRAINED: PAVT. C=0.9	R.O.W. (AVG) C=0.5	R.O.W. FUTURE DEVEL. C=0.7	TOTAL C.A.	TIME OF CONCENTRATION MINUTES	I_5	Q_5	REMARKS
1	0.67	0.67			0.60	540 / 2.65X60 = 3.4 MIN USE 10 MIN	6.93	4.16	TO EXIST. 10' CURB INLET
2	2.69	1.84	0.85		2.08	360 / 3.20X60 + 220 / 1X60 = 5.6 MIN USE 10 MIN	6.93	14.41	TO EXIST. 15' CURB INLET
3	0.72	0.58	0.14		0.59	620 / 2.80X60 = 3.7 MIN USE 10 MIN	6.93	4.09	TO CI-1
4	0.68	0.54	0.14		0.56	495 / 2.60X60 = 3.2 MIN USE 10 MIN	6.93	3.88	TO CI-2
5	0.54	0.43	0.11		0.44	585 / 2.80X60 = 3.5 MIN USE 10 MIN	6.93	3.05	TO CI-3
6	1.76	0.42		1.34	1.32	650 / 1.50X60 = 7.2 MIN USE 10 MIN	6.93	9.15	TO CI-4
7	0.58	0.52	0.06		0.50	400 / 3.80X60 = 1.8 MIN USE 10 MIN	6.93	3.47	TO CI-5
8	0.48		0.48		0.24	200 / 2.50X60 = 1.3 MIN USE 10 MIN	6.93	1.66	TO EXIST. DROP INLET
9	0.51	0.05	0.46		0.28	320 / 2.00X60 = 2.7 MIN USE 10 MIN	6.93	1.94	TO EXIST. DROP INLET (2 GR)
10	0.39	0.39			0.35	440 / 3.50X60 = 2.1 MIN USE 10 MIN	6.93	2.43	TO EXIST. 10' CURB INLET
11	0.47	0.47			0.42	360 / 3.25X60 = 1.8 MIN USE 10 MIN	6.93	2.91	TO EXIST. 10' CURB INLET

INLET COMPUTATIONS

△2

RUN OFF COMPUTATIONS

INLET NO.	LOCATION	TYPE	DA NO.	CA	TIME OF CONCENTRATION ACTUAL (MIN)	TIME OF CONCENTRATION DESIGN (MIN)	DESIGN FREQ. (YRS)	INTENSITY (IN/HRS)	Q_a (CFS)	CARRY OVER (CFS)	TOTAL Q_a (CFS)
EX. CI	25' RT OF HORIZON RD. STA 13+21	I-10'	1	0.60	3.4	10	5	6.93	4.16	0	4.16
EX. CI	20' LT OF HORIZON RD. STA 13+21	I-15'	2	2.08	5.6	10	5	6.93	14.41	0	14.41
CI-1	35.5' LT OF FM 740 STA 107+60	I-15'	3	0.59	3.7	10	5	6.93	4.09	0	4.09
CI-2	35.5' RT OF FM 740 STA 108+80	I-15'	4	0.56	3.2	10	5	6.93	3.88	0	3.88
CI-3	6.6' LT OF FM 740 STA 117+87	I-10'	5	0.44	3.5	10	5	6.93	3.05	0	3.05
CI-4	35.6' RT OF FM 740 STA 118+08	I-15'	6	1.32	7.2	10	5	6.93	9.15	0	9.15
CI-5	47.7' RT OF FM 740 STA 122+20	I-15'	7	0.50	1.8	10	5	6.93	3.47	1.15	4.62
EX. DI	90.6' LT OF FM 740 STA 122+78	C	8	0.24	1.3	10	5	6.93	1.66	0	1.66
EX. DI	66.0' RT OF FM 740 STA 123+97	C	9	0.28	2.7	10	5	6.93	1.94	0	1.94
EX. CI	86.6' LT OF FM 740 STA 124+02	I-10'	10	0.35	2.1	10	5	6.93	2.43	0	2.43
EX. CI	37' RT OF FM 740 STA 125+00	I-10'	11	0.42	1.8	10	5	6.93	2.91	0	2.91

INLET DESIGN

INLET NO.	Z	Z/N	S (FT/FT)	Y (FT)	PONDED WIDTH Y x Z (FT)	a (FT)	q_L (CFS)	$L_r = QA/QL$ (FT)	L (FT)	L/L_r	A/Y	Q/Q_A	Q (CFS)	ALLOW HEAD (FT)	ACTUAL HEAD (FT)	NO. OF GRATES (EA)	CARRY OVER (CFS)	REMARKS
EX. CI	48	3200	0	.20	9.6	.25	1.0	4.16	10				4.16				0	EXIST. CURB INLET ADEQUATE
EX. CI	48	3200	0	.22	10.6	.25	1.0	14.41	15				14.41				0	EXIST. CURB INLET ADEQUATE
CI-1	48	3200	.0200	.21	10.1	.25	.38	10.76	15				4.09				0	
CI-2	48	3200	.0220	.21	10.1	.25	.37	10.48	15				3.88				0	
CI-3	79	5267	.0290	.14	11.1	.25	.32	9.53	10				3.05				0	
CI-4	34	2267	.0317	.32	10.9	.25	.49	18.67	15	.80	.78	.875	8.00				1.15	CARRY-OVER TO CI-5
CI-5	63	4200	.0469	.17	10.7	.25	.35	13.20	15				4.62				0	
EX. DI						.25							1.66	2.0	< .5	1	0	EXIST. DROP INLET ADEQUATE
EX. DI						.25							1.94	1.6	< .5	2	0	EXIST. DROP INLET ADEQUATE
EX. CI	58	3867	.0188	.17	9.9	.25	.34	7.14	10				2.43				0	EXIST. CURB INLET ADEQUATE
EX. CI	64	4267	.0056	.21	13.4	.25	.37	7.86	10				2.91				0	EXIST. CURB INLET ADEQUATE

STORM SEWER COMPUTATIONS

△2

LINE	FROM	TO	DRAINAGE AREA NO.	TOTAL D.A. AC.	TOTAL C.A.	LGTH. FT.	TIME OF CONCENTRATION-MINUTES: ALONG SEWER LINE	INLET TIME	USED IN DES.	FREQ. YRS.	I IN/HR	Q CFS	DESIGN: DIA. IN.	SLOPE % PIPE	SLOPE % H.G.	CAP. CFS	VEL. FT/SEC	REMARKS
A	CI-2	CI-1	4	.68	.56	140	----------------	3.20	10	5	6.93	3.88	18	1.857	.11	15.3	7.6	
A	CI-1	MH-1	3,4	1.40	1.15	125	3.20 + [140/(7.6X60)] = 3.50	3.70	10	5	6.93	7.97	18	2.650	.49	18.2	10.0	
A	MH-1	JCT EX-2	3,4	1.40	1.15	283	3.70+ [125/(10.0X60)] = 3.90	--	10	5	6.93	7.97	24	3.030	.11	42.0	10.8	
A	JCT EX-2	JCT EX-3	* 2,3,4	* 4.09	* 3.23	18	3.90 + [283/(10.8X60)] = 4.33	--	10	5	6.93	** 30.88	30	4.670	.48	100.0	17.0	
A	JCT EX-3	OUTFALL	* 1,2,3,4	* 4.76	* 3.83	199	4.33 + [18/(17.0X60)] = 4.35	--	10	5	6.93	** 35.04	30	4.670	.62	100.0	17.0	
B	CI-3	CI-4	5	.54	.44	47	----------------	3.50	10	5	6.93	3.05	18	4.089	.07	23.0	9.2	
B	CI-4	CI-5	5,6	2.30	1.76	395	3.50 + [47/(9.2X60)] = 3.58	7.20	10	5	6.93	12.20	18	4.089	1.15	23.0	13.2	
B	CI-5	EX DI	5,6,7	2.88	2.26	186	7.20 + [395/(13.2X60)] = 7.70	1.80	10	5	6.93	16.82	18	3.341	1.90	19.5	12.5	
B	EX DI	EX CI	5,6,7,9	EXISTING IH 30 STORM SEWER SYSTEM IS DESIGNED TO ACCOMODATE THE FLOW REACHING THE EXISTING DROP INLET														

* DOES NOT INCLUDE DRAINAGE AREA AWAY FROM THE PROJECT THAT CONTRIBUTES 8.5 CFS TO THE EXISTING STORM DRAIN SYSTEM

** FLOW INCLUDES 8.5 CFS GENERATED AWAY FROM THE PROJECT

STATE OF TEXAS — WILLIAM L. HALL — 64917 — REGISTERED PROFESSIONAL ENGINEER

William L. Hall
3/12/97

STATE OF TEXAS — G. K. WETZIG — 60322 — REGISTERED PROFESSIONAL ENGINEER

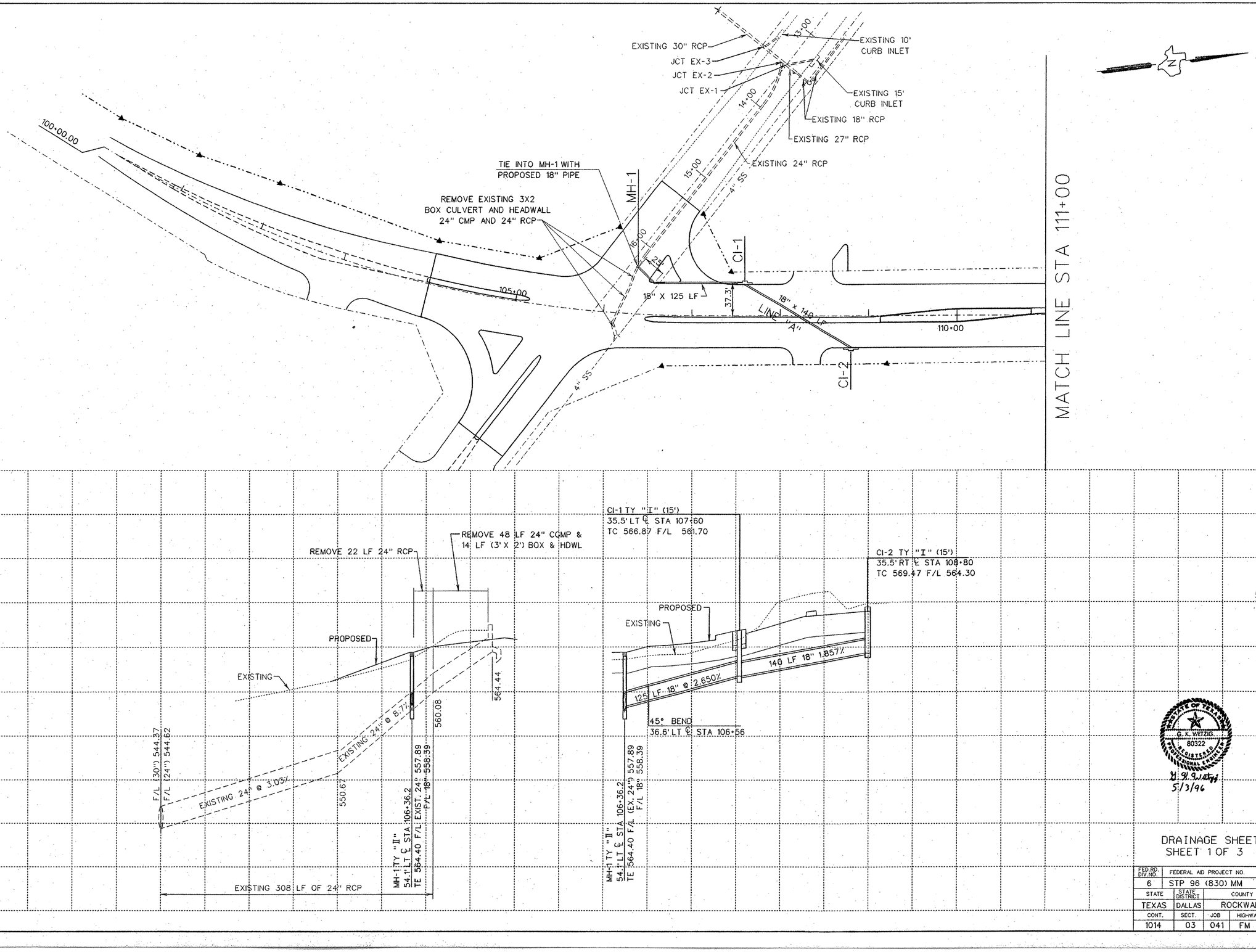
G. K. Wetzig
5/3/96

△2 SEE CHANGE ORDER NO. 2

HYDRAULIC DATA SHEET

SHEET 1 OF 1

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.			SHEET NO.
6	STP 96 (830) MM			18A
STATE	STATE DISTRICT	COUNTY		
TEXAS	DALLAS	ROCKWALL		
CONTROL	SECTION	JOB	HIGHWAY NO.	
1014	03	041	FM 740	



REMOVALS

LEVELS

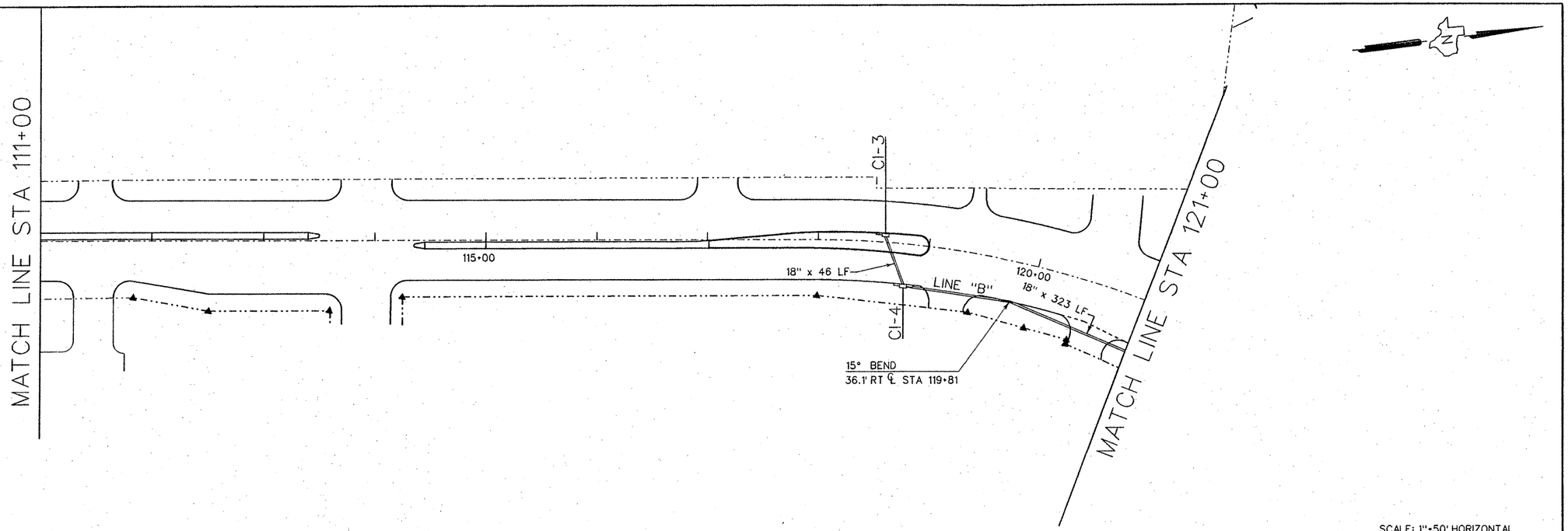
REFERENCE F	S	PLAN AND PROFILE	DRAINAGE
FM7401.DGN		1,20,21,22,47	1,20,21,22,47
FM740TOPO.DGN		2,3,9,11,13,25,28,61	DISPLAY OFF
DESIGN FILES			
FM740PP1.DGN		1,2,6,30,33,51	1,6,23,40-41

STATE OF TEXAS
G. K. WETZIG
80322
REGISTERED
PROFESSIONAL ENGINEER
5/3/96

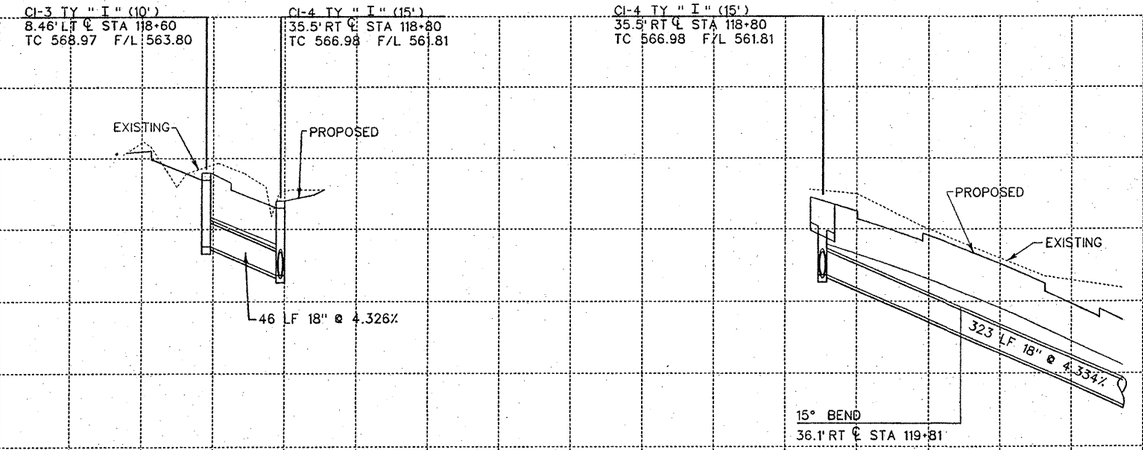
DRAINAGE SHEET
SHEET 1 OF 3

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	STP 96 (830) MM		/9
STATE	STATE DISTRICT	COUNTY	
TEXAS	DALLAS	ROCKWALL	
CONT.	SECT.	JOB	HIGHWAY NO.
1014	03	041	FM 740

$$$$$$$$$$$$$$$$$$$$DGNPEL$$$$$$$$$$$$$$$$$$$$



SCALE: 1"=50' HORIZONTAL
1"=5' VERTICAL



REMOVALS

LEVELS

REFERENCE FILES	PLAN AND PROFILE
FM7401.DGN	1, 20, 21, 22, 47
FM740TOPO.DGN	2, 3, 9, 11, 13, 25, 28, 61
911DR4.DGN	20
DESIGN FILES	
FM740PP2.DGN	1,2,6,20,33,34

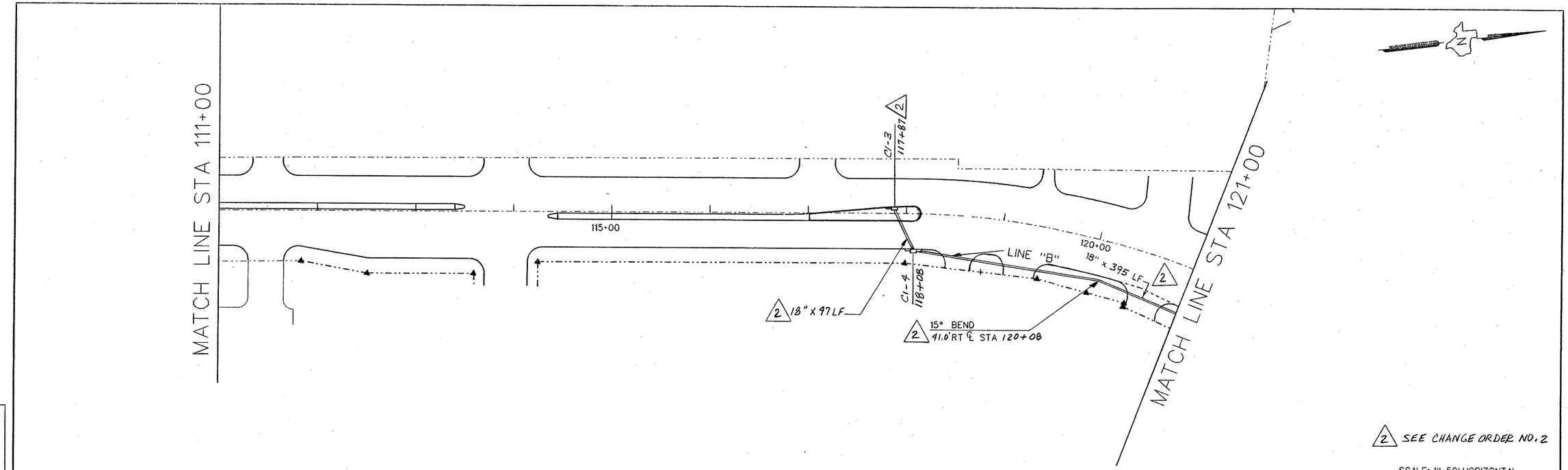
DRAINAGE
1, 20, 21, 22, 47
20
1,6,40 - 43

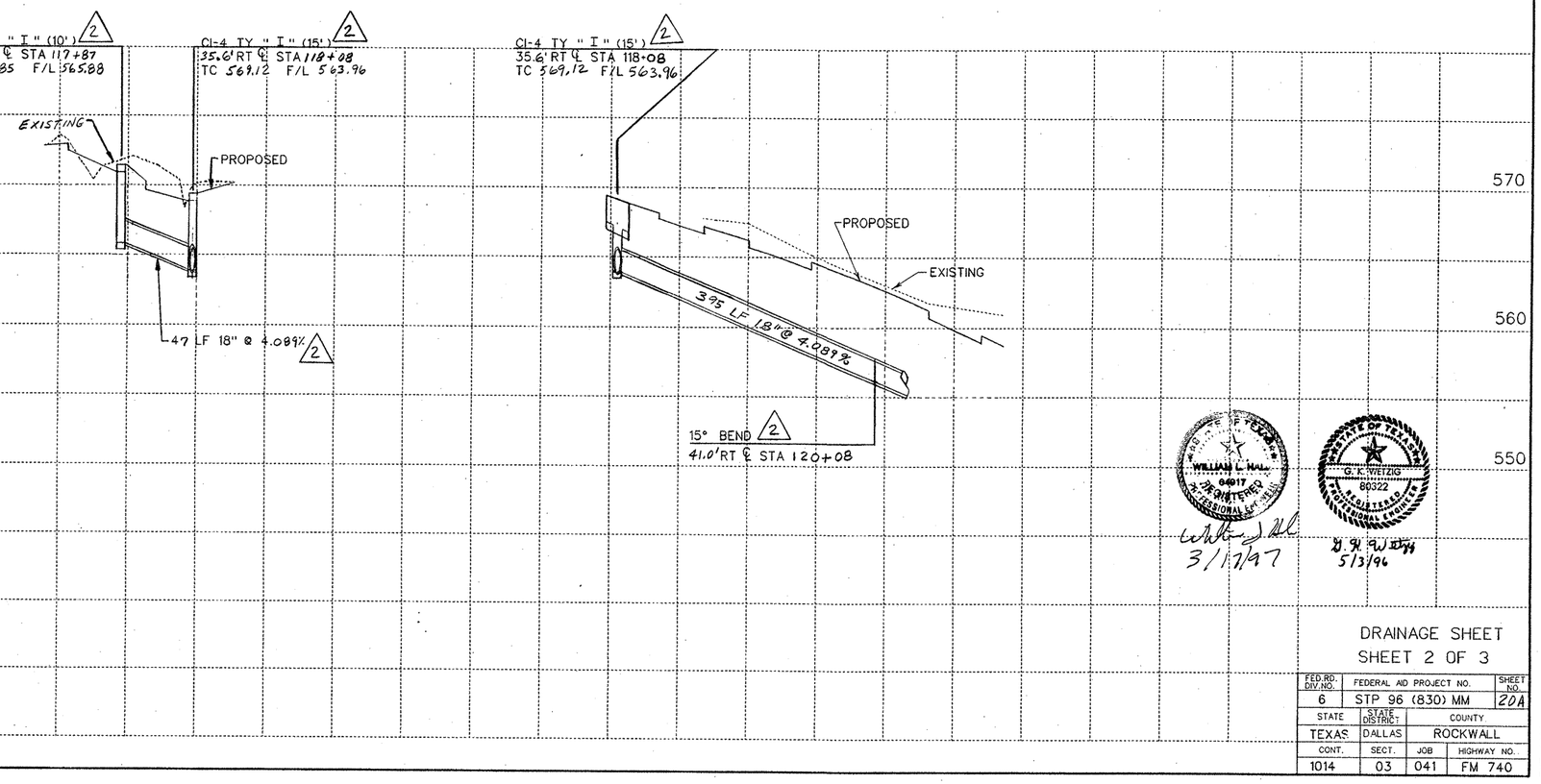
$$$$DATE$$$$

STATE OF TEXAS
G. K. WETZIG
80322
REGISTERED
PROFESSIONAL ENGINEER
5/3/96

DRAINAGE SHEET
SHEET 2 OF 3

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	STP 96 (830) MM		20
STATE	STATE DISTRICT	COUNTY	
TEXAS	DALLAS	ROCKWALL	
CONT.	SECT.	JOB	HIGHWAY NO.
1014	03	041	FM 740





REFERENCE FILES	PLAN AND PROFILE	DRAINAGE
FM7401.DGN	1, 20, 21, 22, 47	1, 20, 21, 22, 47
FM7401OPO.DGN	2, 3, 9, 11, 13, 25, 28, 61	
911DRA.DGN	20	20
DESIGN FILES		
FM740PP2.DGN	12, 6, 20, 33, 34	16, 40 - 43

REMOVALS

$$$DATE$$$$

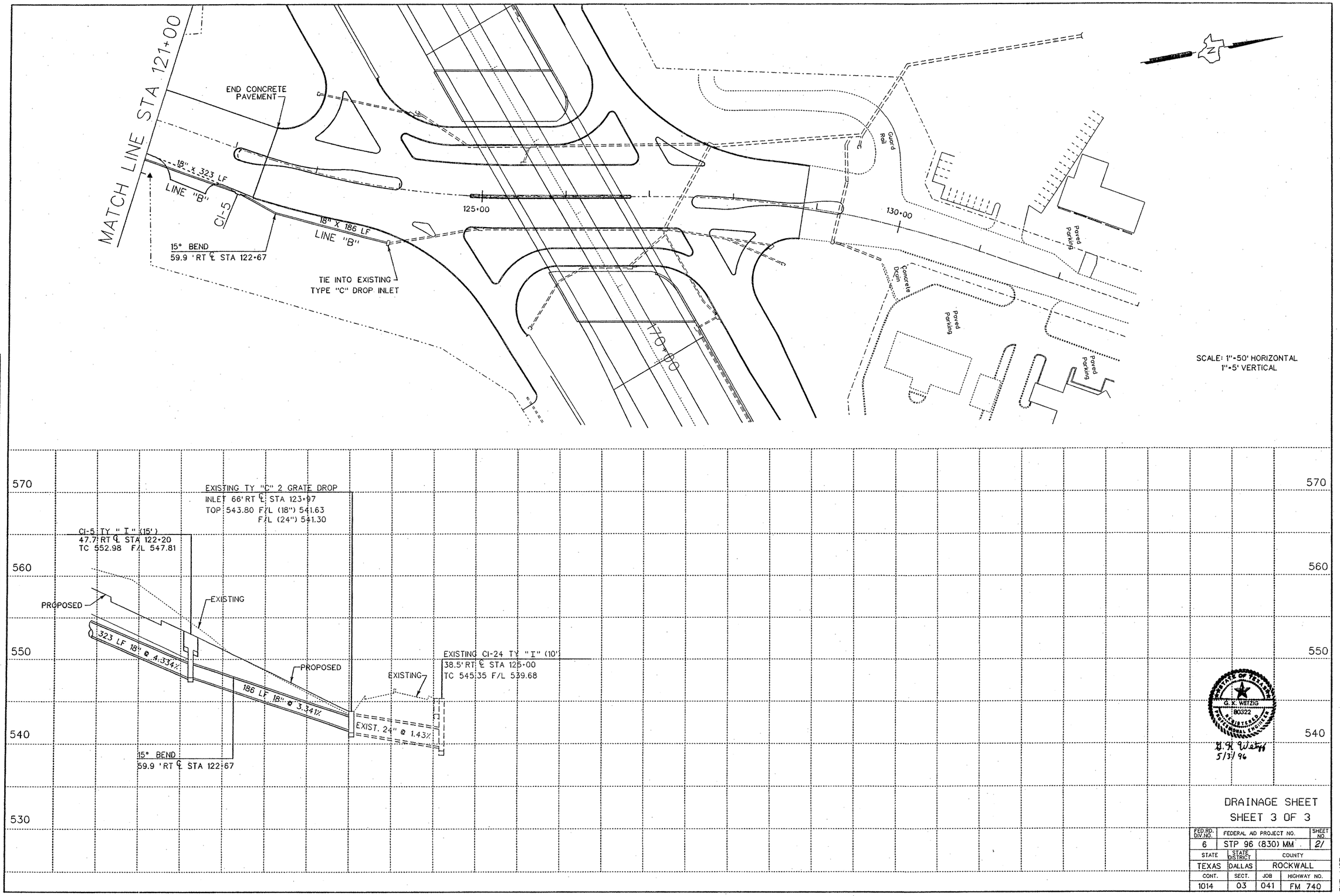
STATE OF TEXAS
WILLIAM L. HALL
84917
REGISTERED
PROFESSIONAL ENGINEER
3/17/97

STATE OF TEXAS
G. K. WEITZIG
80322
REGISTERED
PROFESSIONAL ENGINEER
5/3/96

DRAINAGE SHEET
SHEET 2 OF 3

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	STP 96 (830) MM		20A
STATE	STATE DISTRICT	COUNTY	
TEXAS	DALLAS	ROCKWALL	
CONT.	SECT.	JOB	HIGHWAY NO.
1014	03	041	FM 740

EXT 4411



LEVELS

REFERENCE FILES	PLAN AND PROFILE	REMOVALS	DRAINAGE
FM7401-2.DGN	1,20,21,22,33,47,//	49	1,20,21,22,47,// 49
FM740TOPO.DGN	2,11,28,34,40		63
911DRA.DGN	20		20,23
FM740PP3.DGN	1,2,6,20,31,33		1,6,41,43,44

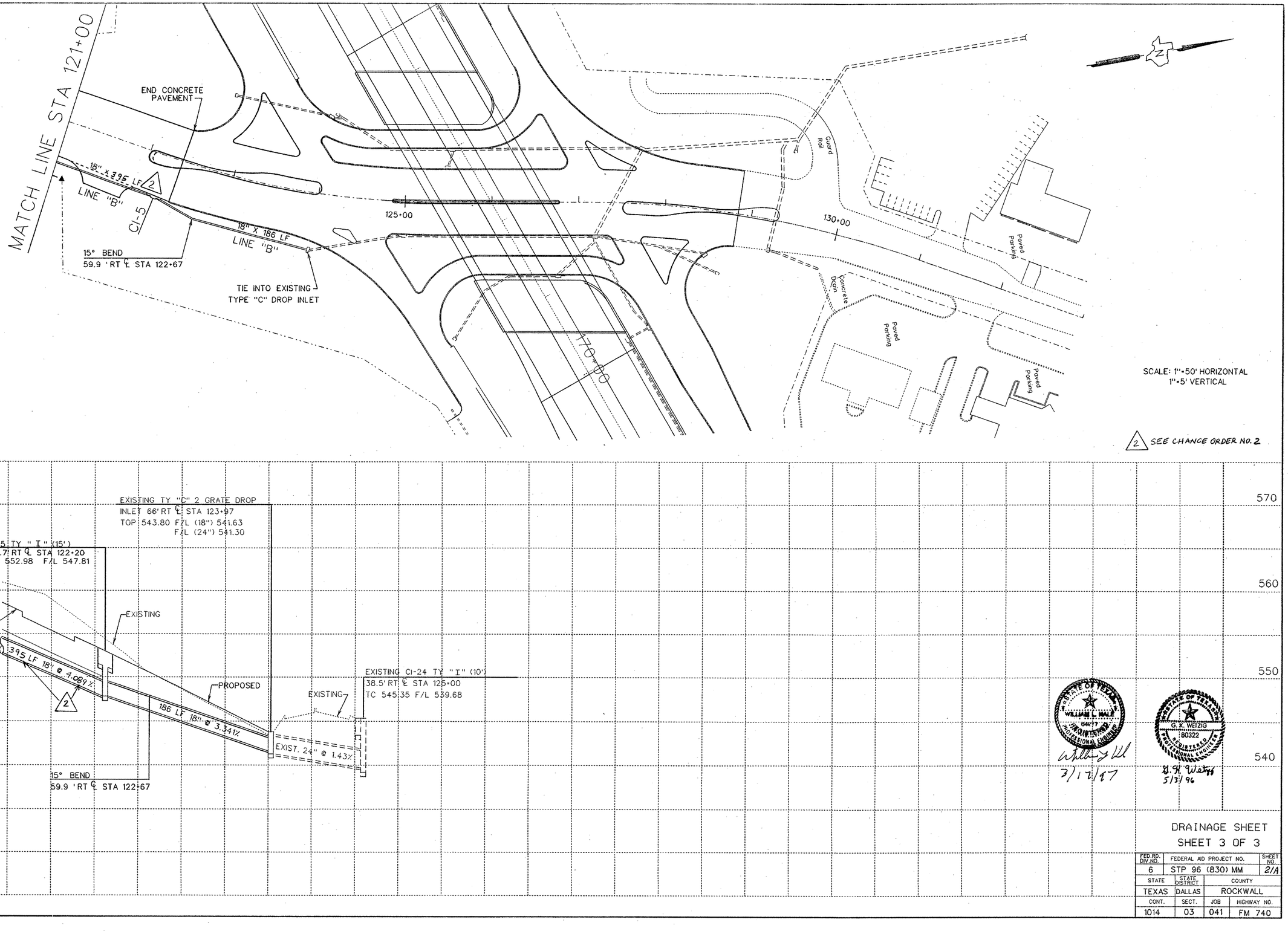
$$$$DATE$$$$

STATE OF TEXAS
G. K. WETZIG
80322
REGISTERED
PROFESSIONAL ENGINEER
G. K. Wetzig
5/31/96

DRAINAGE SHEET
SHEET 3 OF 3

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	STP 96 (830) MM		2/
STATE	STATE DISTRICT	COUNTY	
TEXAS	DALLAS	ROCKWALL	
CONT.	SECT.	JOB	HIGHWAY NO.
1014	03	041	FM 740

EVT 4.0.07



LEVELS

REFERENCE FILES	PLAN AND PROFILE		DRAINAGE	
FM7401-2.DGN	1,20,21,22,33,47, /	49	1,20,21,22,47, /	49
FM740TOPO.DGN	2,11,28,34,40		63	
911DRA.DGN	20		20,23	
FM740PP3.DGN	1,2,6,20,31,33		1,6,41,43,44	

REMOVALS

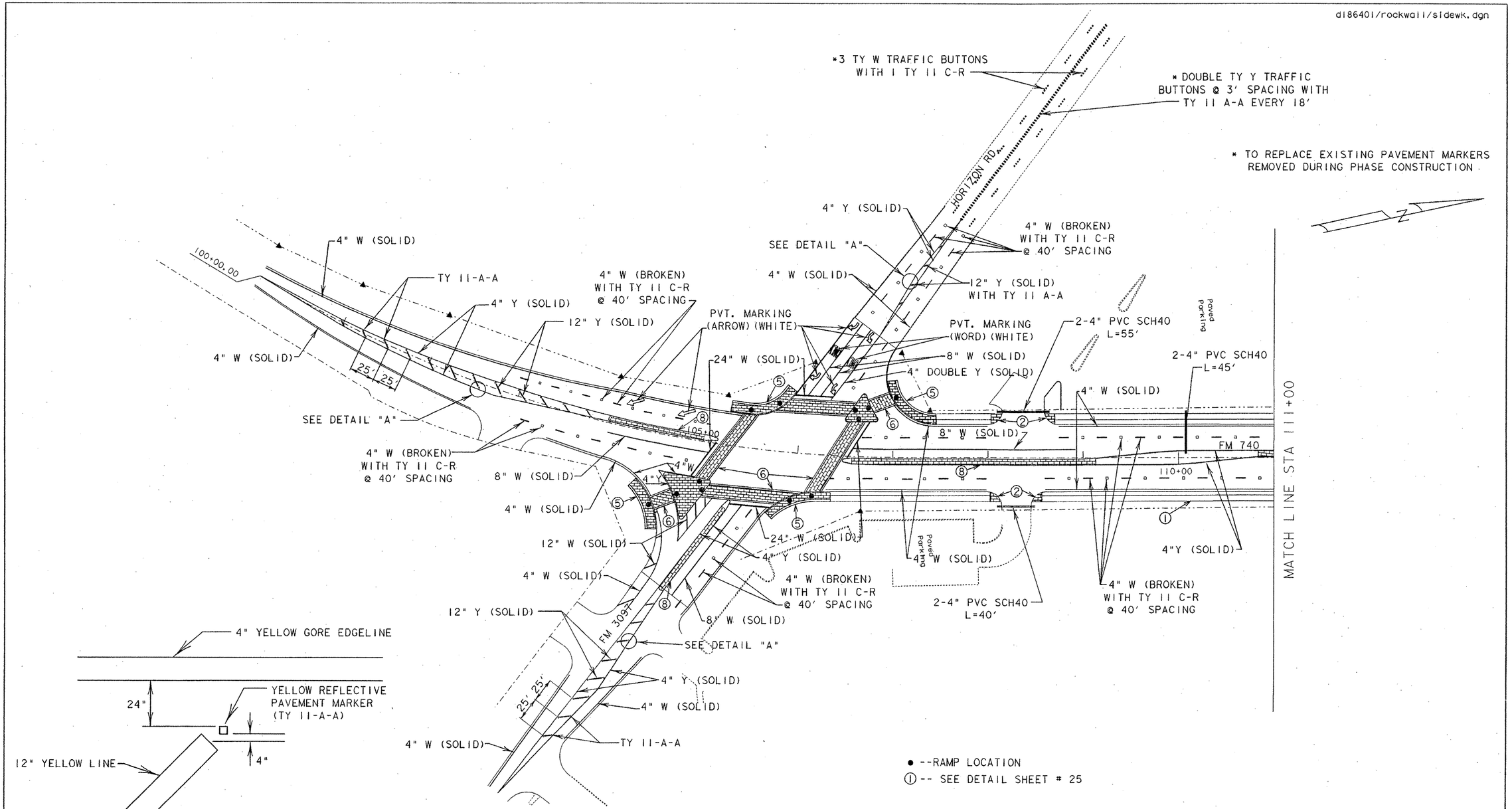
$$$$DATE$$$$

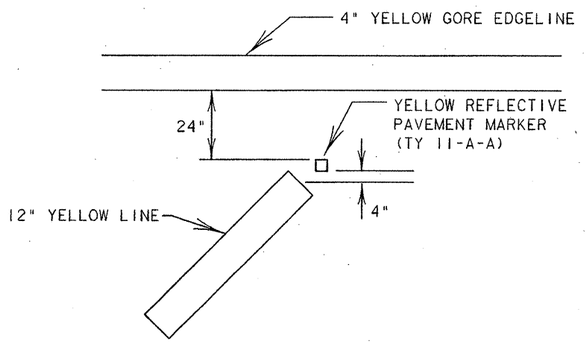
WILLIAM L. HALE
84477
REGISTERED
PROFESSIONAL ENGINEER
STATE OF TEXAS
3/17/97

G.X. WETZIG
80322
REGISTERED
PROFESSIONAL ENGINEER
STATE OF TEXAS
G.X. Wetzig
5/31/96

DRAINAGE SHEET
SHEET 3 OF 3

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	STP 96 (830) MM		2/A
STATE	STATE DISTRICT	COUNTY	
TEXAS	DALLAS	ROCKWALL	
CONT.	SECT.	JOB	HIGHWAY NO.
1014	03	041	FM 740





DETAIL "A"

● --RAMP LOCATION

ⓘ -- SEE DETAIL SHEET # 25

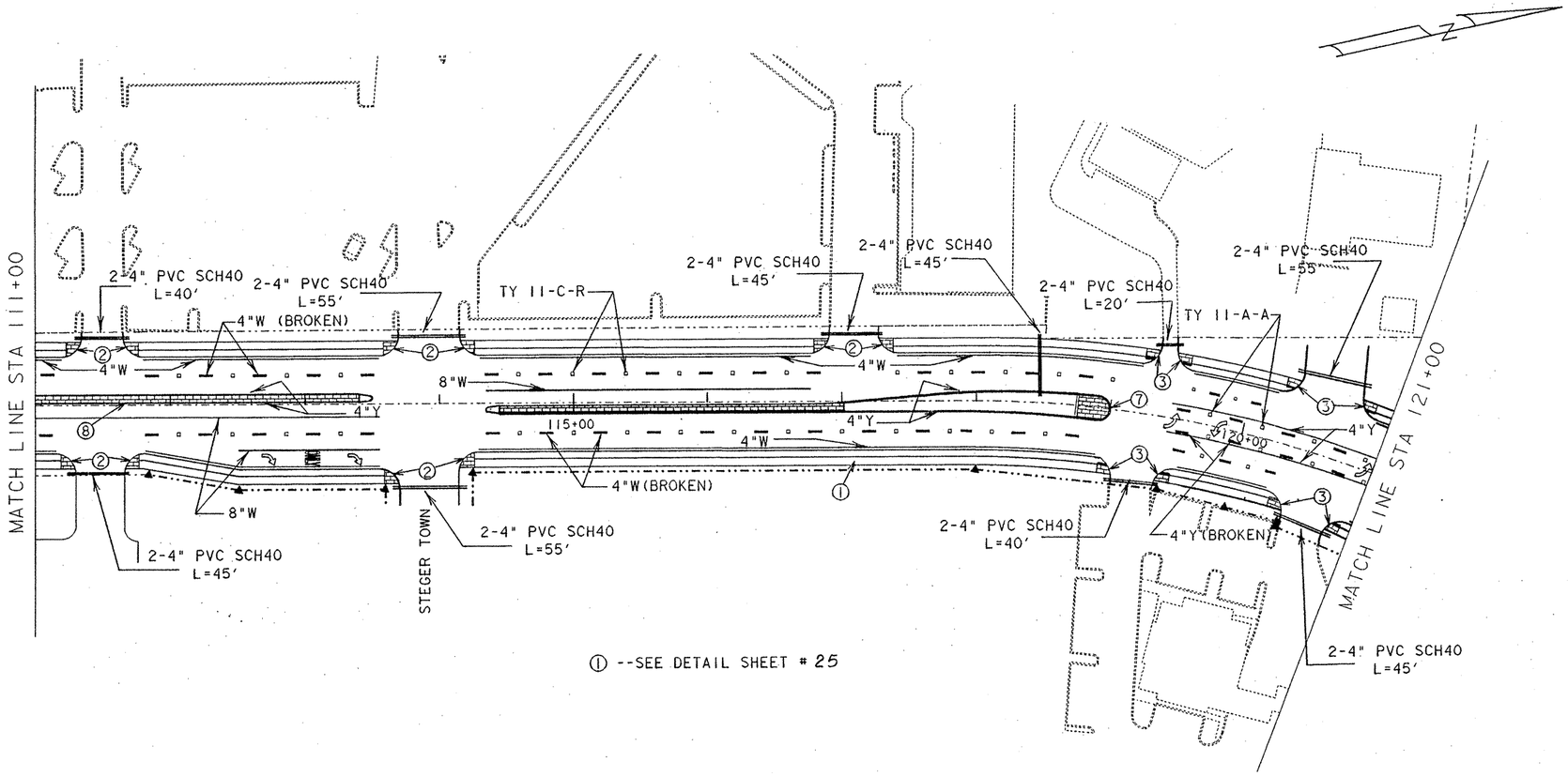
STATE OF TEXAS
G. K. WETZEL
80322
REGISTERED PROFESSIONAL ENGINEER
G. K. Wetzel
5-29-96

STRIPING, SIDEWALKS, CROSSWALKS & IRRIGATION DETAILS

SHEET 1 OF 3

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	STP 96(830)MM		22
STATE	STATE DISTRICT	COUNTY	
TEXAS	DALLAS	ROCKWALL	
CONTROL	SECTION	JOB	HIGHWAY NO.
1014	03	041	FM 740

$$$$date$$$$



① --SEE DETAIL SHEET # 25

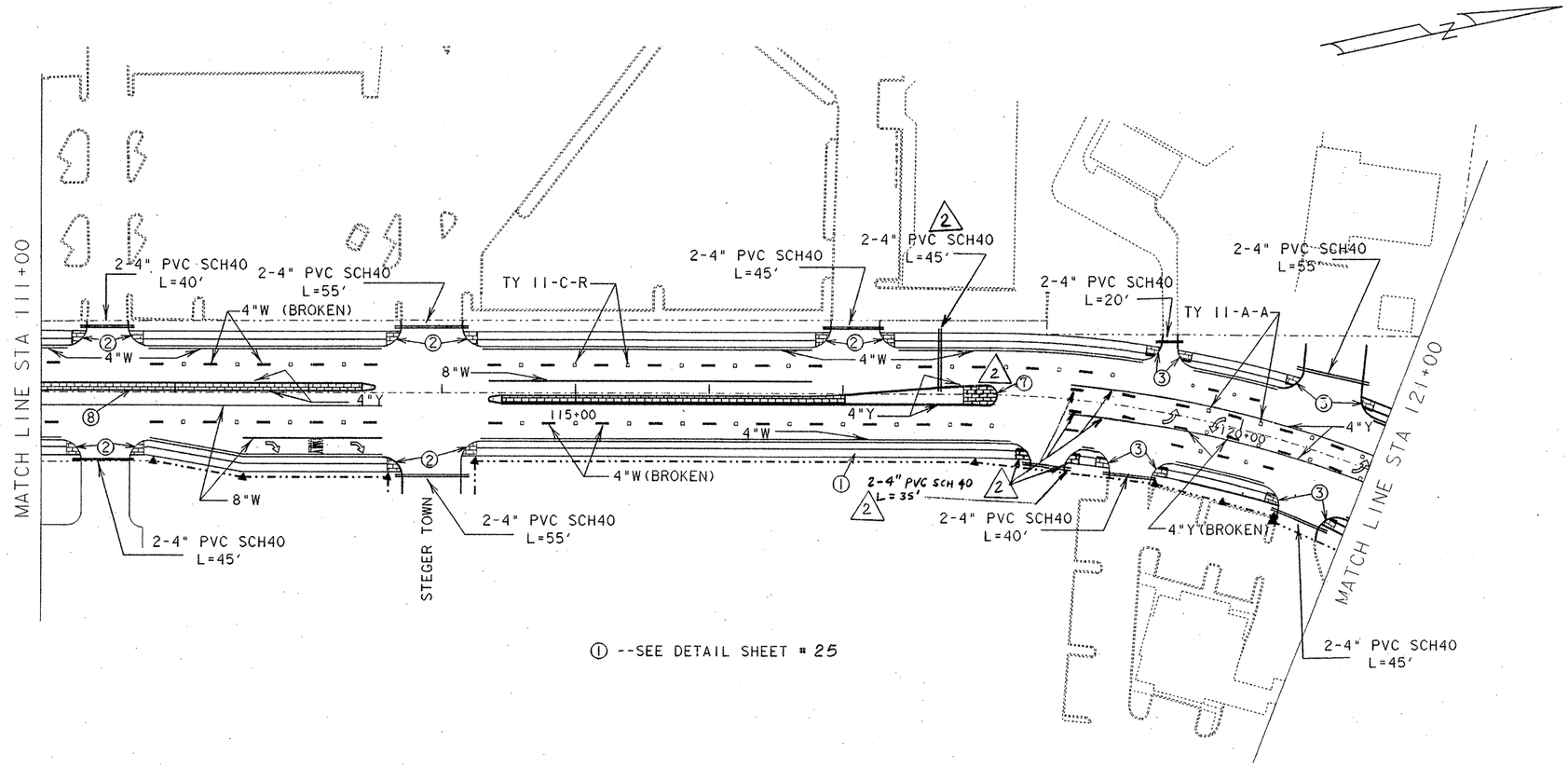
G. K. WETZIG
80322
REGISTERED
PROFESSIONAL ENGINEER
STATE OF TEXAS

G. K. Wetzig
5/3/96

STRIPING, SIDEWALKS, CROSSWALKS & IRRIGATION DETAILS

SHEET 2 OF 3

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	STP 96(830)MM		23
STATE	STATE DISTRICT	COUNTY	
TEXAS	DALLAS	ROCKWALL	
CONTROL	SECTION	JOB	HIGHWAY NO.
1014	03	041	FM 740



① --SEE DETAIL SHEET # 25

△2 SEE CHANGE ORDER NO. 2.

STATE OF TEXAS — WILLIAM L. HALE — 94817 — REGISTERED PROFESSIONAL ENGINEER
3/17/97

STATE OF TEXAS — G. K. WETZIG — 80322 — LICENSED PROFESSIONAL ENGINEER
G. K. Wetzig 5/3/96

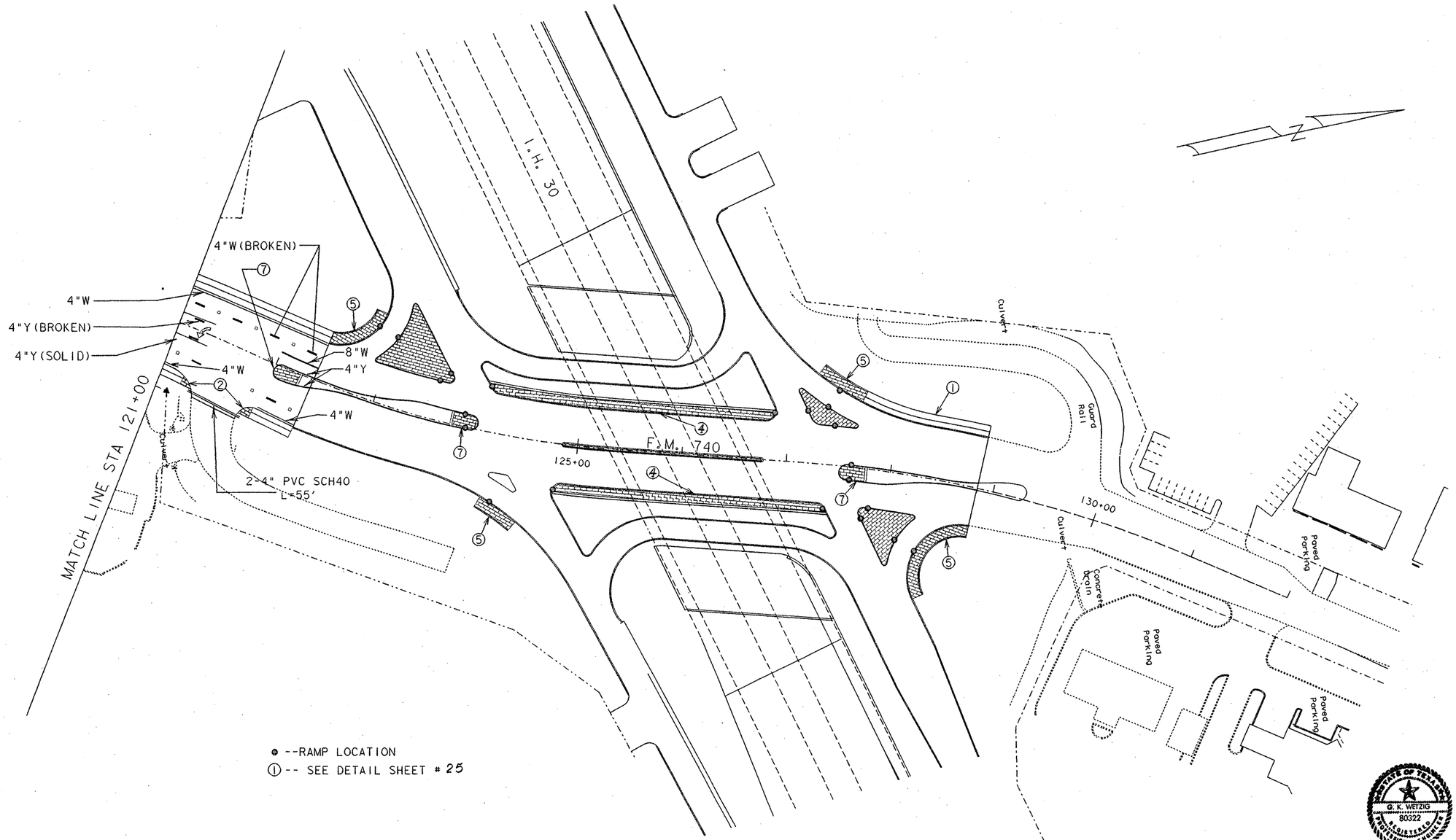
STRIPING, SIDEWALKS, CROSSWALKS & IRRIGATION DETAILS

SHEET 2 OF 3

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	STP 96(830)MM		23A
STATE	STATE DISTRICT	COUNTY	
TEXAS	DALLAS	ROCKWALL	
CONTROL	SECTION	JOB	HIGHWAY NO.
1014	03	041	FM 740

02-MAY-1996

d186401/rockwall/sidewk3.dgn



● --RAMP LOCATION
① -- SEE DETAIL SHEET # 25

STATE OF TEXAS
G. K. WETZIG
80322
REGISTERED
PROFESSIONAL ENGINEER
5/3/96

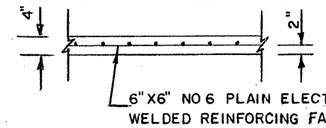
STRIPING, SIDEWALKS, CROSSWALKS & IRRIGATION DETAILS

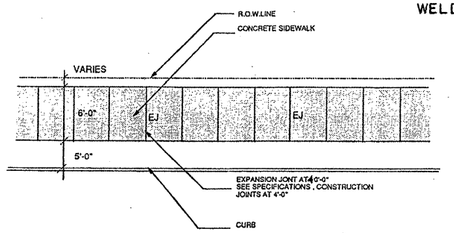
SHEET 3 OF 3

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	STP 96(830)MM		24
STATE	STATE DISTRICT	COUNTY	
TEXAS	DALLAS	ROCKWALL	
CONTROL	SECTION	JOB	HIGHWAY NO.
1014	03	041	FM 740

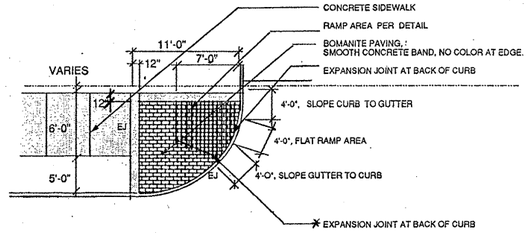
02-MAY-1996

4407



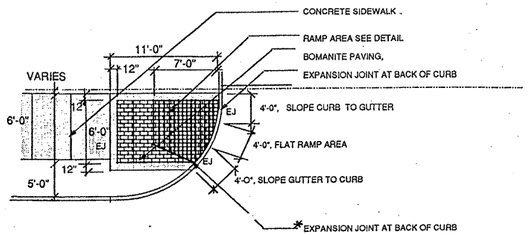


1 SIDEWALK DETAILS
N.T.S.



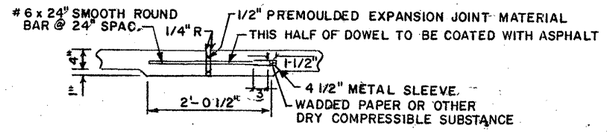
2 SIDEWALK DETAILS, DRIVE RAMP
N.T.S.

NOTE
BOMANITE PAVING TO BE RUNNING BOND USED BRICK FORM WITH DARK BROWN RED COLOR. COLOR SAMPLE FOR APPROVAL TO BE PROVIDED TO STATE DOT AND CITY OF ROCKWALL.

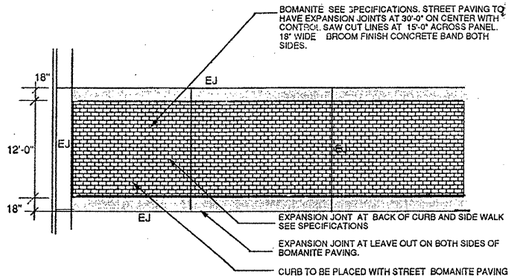


3 SIDEWALK DETAILS, DRIVE RAMP
N.T.S.

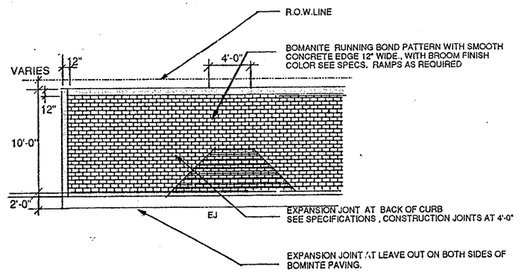
* 1/2" PREMOLDED EXPANSION JOINT MATERIAL



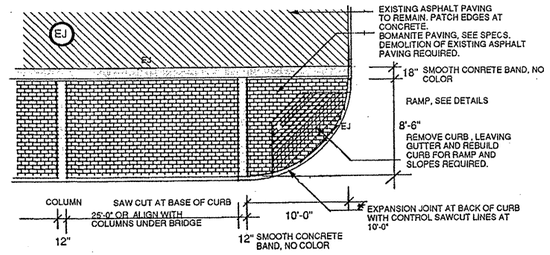
SIDEWALK EXPANSION JOINT DETAIL



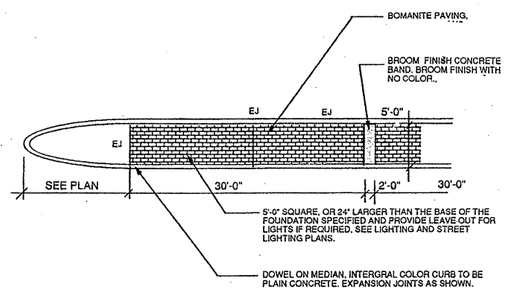
6 STREET CROSSWALK
N.T.S.



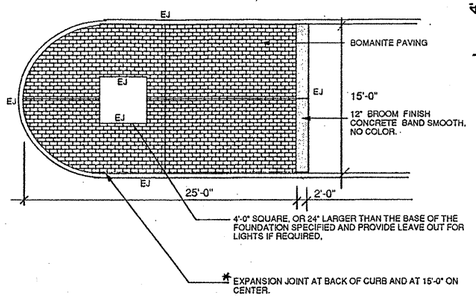
5 STREET INTERSECTION WALK
N.T.S.



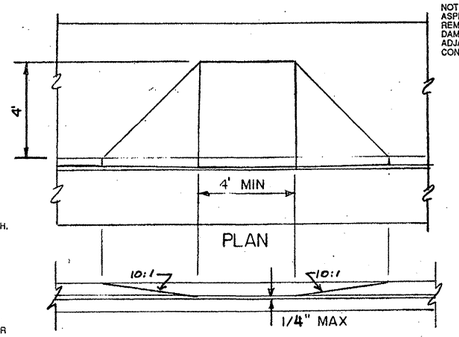
4 PAVING AT ASPHALT ISLANDS
N.T.S.



8 MEDIAN PAVING AT NOSE,
N.T.S.



7 MEDIAN PAVING AT NOSE, NO TURN LANE
N.T.S.



ELEVATION

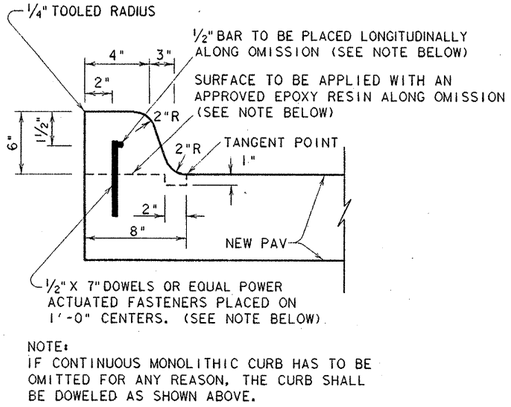
NOTE
ASPHALT REMOVAL TO INCLUDE SAW CUTTING EDGE AND REMOVING ASPHALT. CONTRACTOR TO PATCH AND CLEAN DAMAGED APHALT PAVING ADJACENT TO THE WORK. MATCH GRADES WITH NEW CONCRETE.

RAMP DETAIL

CROSSWALK, RAMPS AND SIDEWALK DETAILS

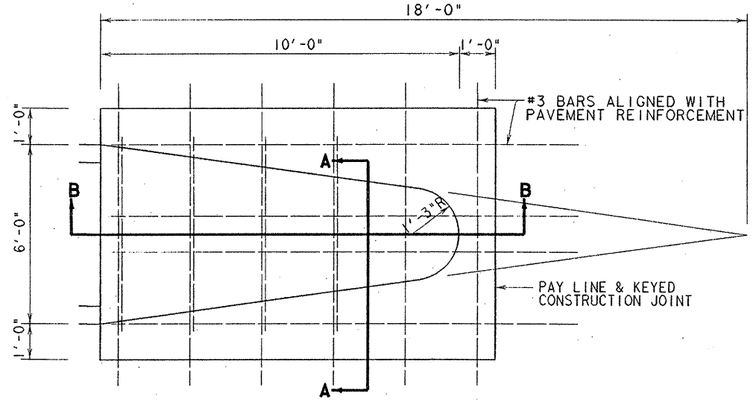
STATE OF TEXAS
G. K. WETZIG
80322
REGISTERED
PROFESSIONAL ENGINEER
G. K. Wetzig
5-29-96

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	STP 96(830)MM		25
STATE	STATE DIST. NO.	COUNTY	
TEXAS	DALLAS	ROCKWALL	
CONTROL	SECTION	JOB	HIGHWAY NO.
1014	03	041	FM 740

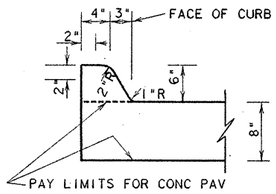


NOTE:
IF CONTINUOUS MONOLITHIC CURB HAS TO BE OMITTED FOR ANY REASON, THE CURB SHALL BE DOWELED AS SHOWN ABOVE.

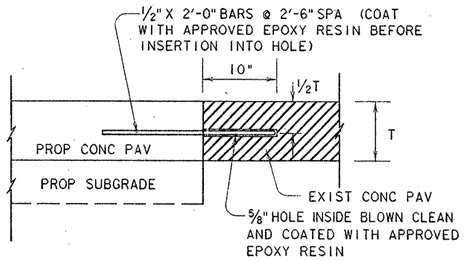
TYPE I DOWEL CURB
(FOR NEW PAVEMENT)



MONOLITHIC MEDIAN NOSE

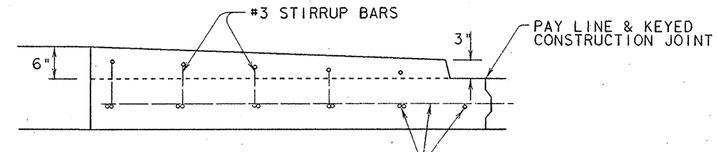


TYPE I CURB



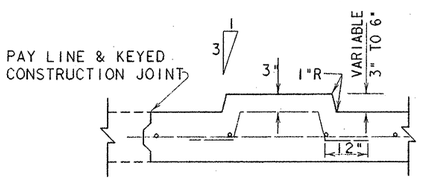
ANCHOR JOINT DETAIL

TO BE USED WHERE PROPOSED CONCRETE PAVEMENT MEETS EXISTING CONCRETE PAVEMENT

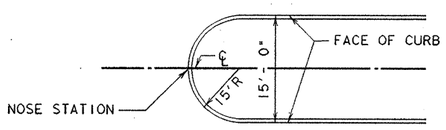


NOTE: MONOLITHIC MEDIAN NOSE & PAVEMENT WITHIN PAY LINES SHALL BE PAID FOR AS CONCRETE PAVEMENT BY THE SQUARE YARD.

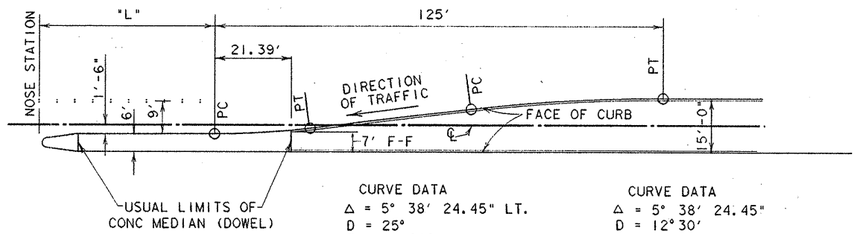
SECTION B-B



SECTION A-A



TYPICAL MEDIAN NOSE



CURVE DATA
Δ = 5° 38' 24.45" LT.
D = 25°
T = 11.2894'
L = 22.5605'

CURVE DATA
Δ = 5° 38' 24.45"
D = 12° 30'
T = 22.6787'
L = 45.1210'

TYPICAL LEFT TURN LANE DETAIL

STATE OF TEXAS
G. K. WETZIG
80322
REGISTERED
PROFESSIONAL ENGINEER
5/3/96

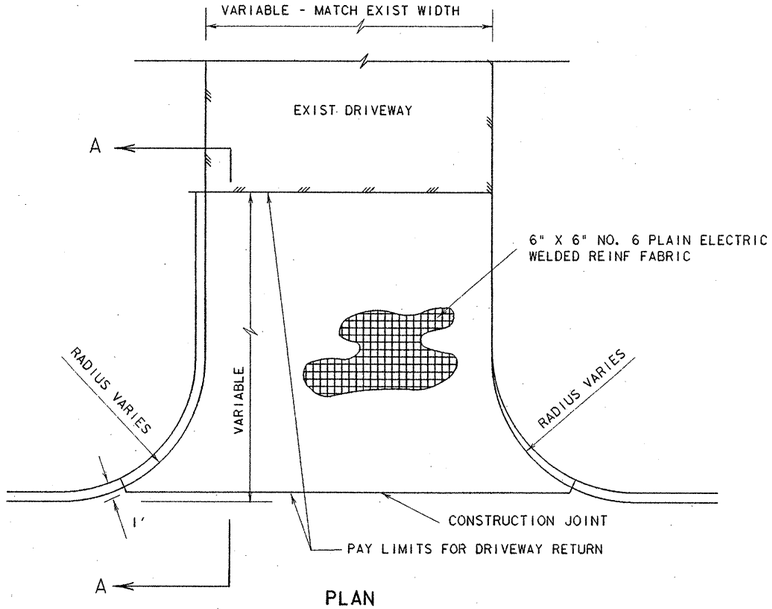
MISCELLANEOUS SHEET
SHEET 1 OF 2

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	STP 96(830)MM		26
STATE	STATE DIST. NO.	COUNTY	
TEXAS	DALLAS	ROCKWALL	
CONT.	SECT.	JOB	HIGHWAY NO.
1014	03	041	FM 740

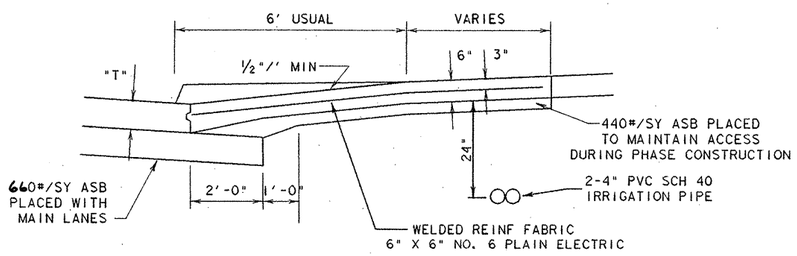
REMOVALS

LEVELS	REFERENCE FILES	HORIZONTAL & VERTIC	ALIGNMENT
DRAINAGE	FM7401.DGN		
	FM740TOPO.DGN		
	911DON.DGN		
	DESIGN FILES		
1	FM740MISC.DGN		

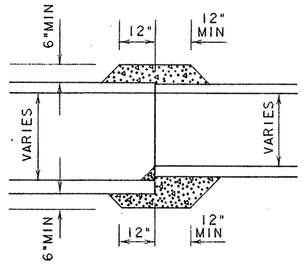
02-MAY-1996



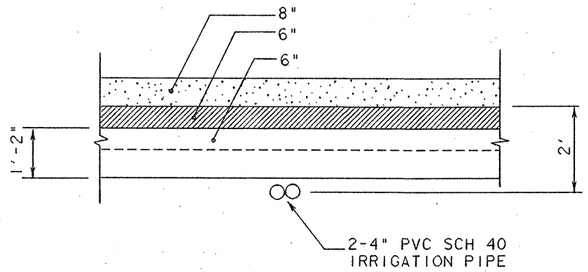
PLAN



SECTION A-A
DRIVEWAY RETURNS



CONCRETE COLLAR
FOR PIPE CONNECTION



IRRIGATION PIPE DETAIL

NOTES:
1. DRIVEWAY LOCATIONS MAY BE SHIFTED AT THE TIME OF CONSTRUCTION AS DIRECTED BY THE ENGINEER TO MATCH EXISTING CONDITIONS.
2. OMIT PAYMENT FOR CURB WITHIN LIMITS OF DRIVEWAY. CURBS ON DRIVEWAYS SHALL BE CONSIDERED SUBSIDIARY TO THE PRICE BID PER SQUARE YARD FOR DRIVEWAY AND WILL NOT BE PAID FOR DIRECTLY.

G.K.Wetzig
5/3/96

MISCELLANEOUS SHEET
SHEET 2 OF 2

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	STP 96(830)MM		27
STATE	STATE DIST. NO.	COUNTY	
TEXAS	DALLAS	ROCKWALL	
CONT.	SECT.	JOB	HIGHWAY NO.
1014	03	041	FM 740

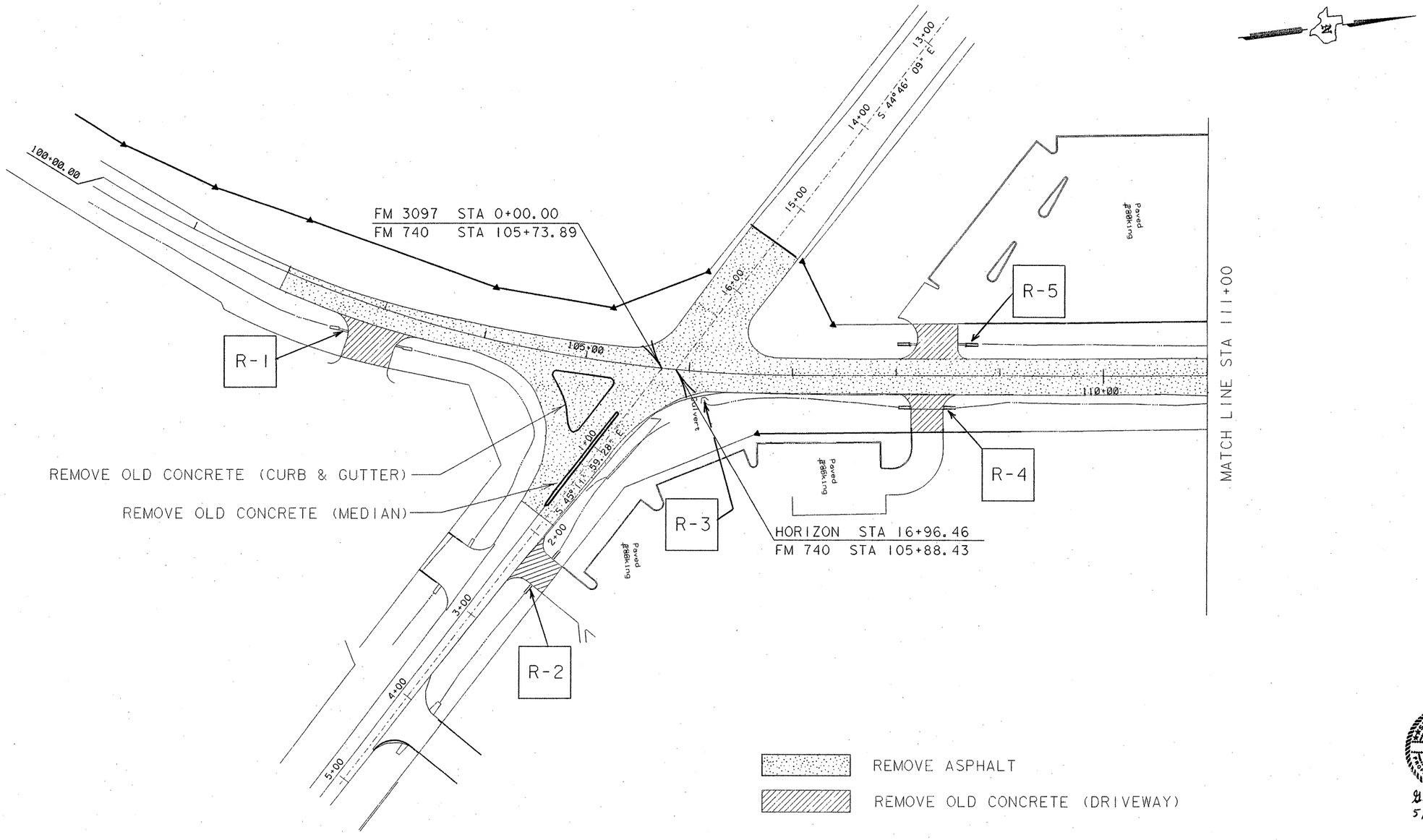
LEVELS

REFERENCE FILES	HORIZONTAL & VERTIC ALIGNMENT	DRAINAGE
FM740.LDGN		
FM740TOPO.DGN		
911DON.DGN		
DESIGN FILES		
FM740MISC.DGN		1

REMOVALS

02-MAY-1996

d186401/rockwall/740reml.dgn



STATE OF TEXAS
G. K. WETZIG
80322
REGISTERED
PROFESSIONAL ENGINEER

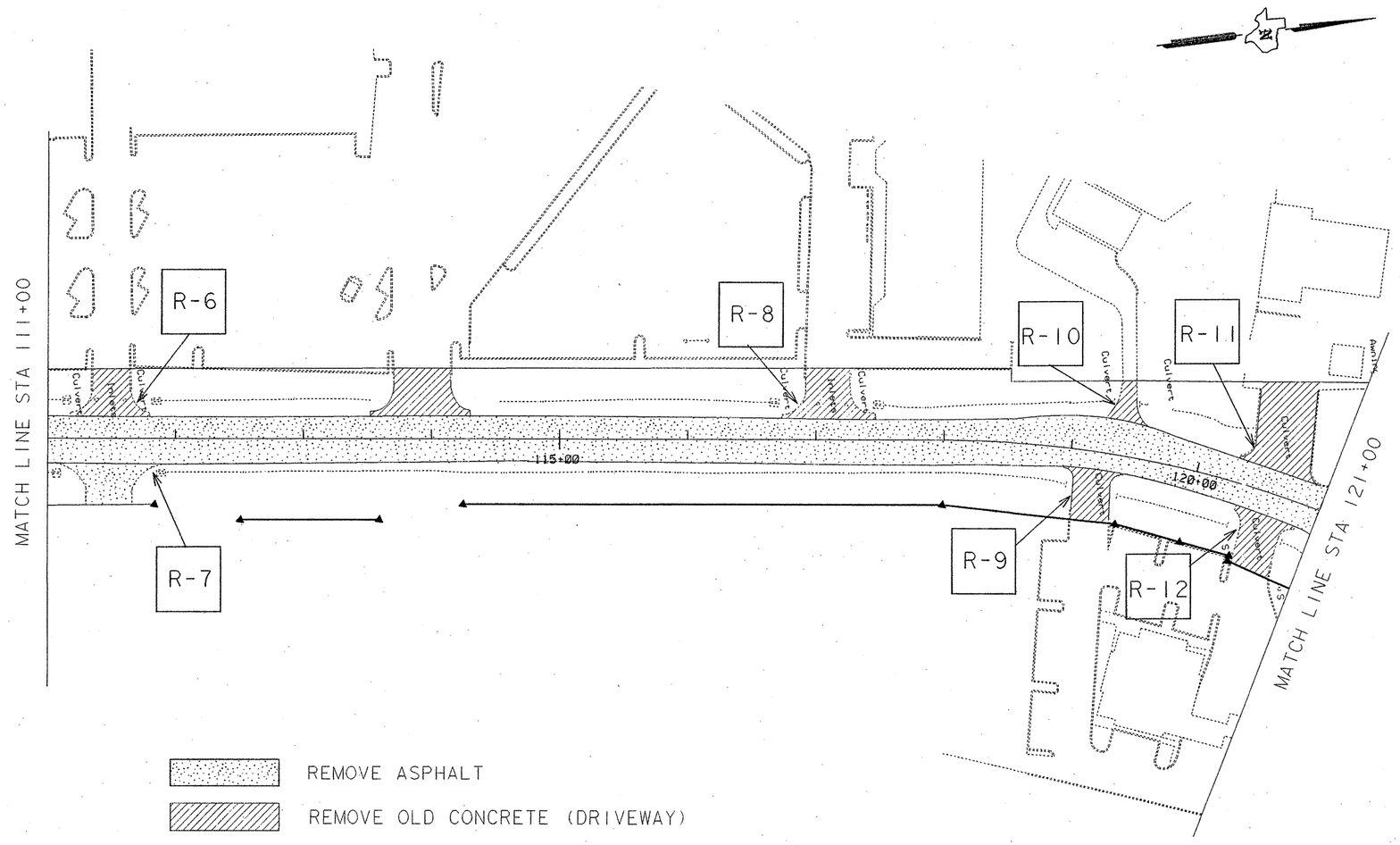
G. K. Wetzig
5/3/96

REMOVAL SHEETS
SHEET 1 OF 3

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	STP 96(830)MM		28
STATE	STATE DISTRICT	COUNTY	
TEXAS	DALLAS	ROCKWALL	
CONTROL	SECTION	JOB	HIGHWAY NO.
1014	03	041	FM 740

02-MAY-1996

4407



REMOVE ASPHALT

REMOVE OLD CONCRETE (DRIVEWAY)

STATE OF TEXAS
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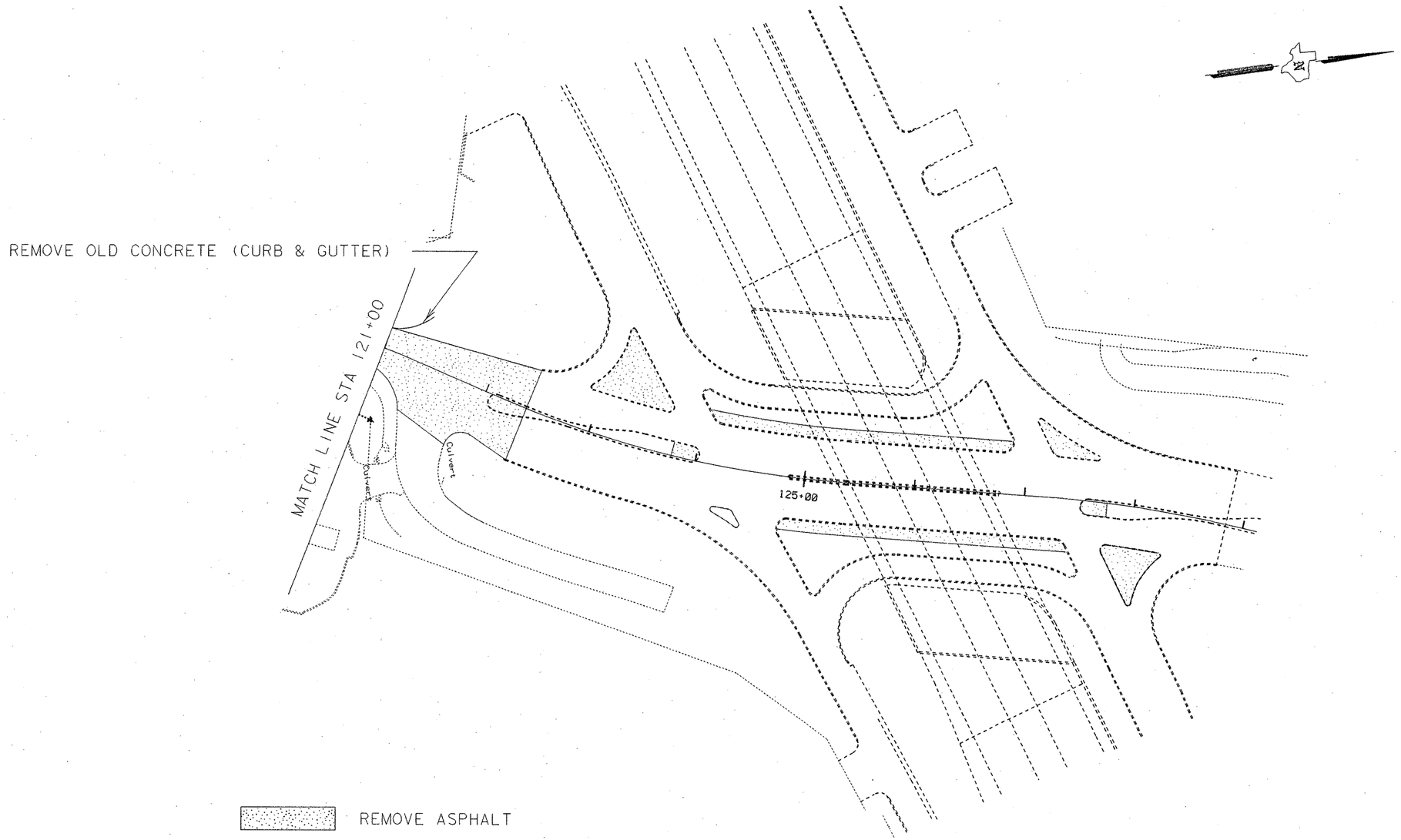
G. K. Wetzig
5/3/96

REMOVAL SHEETS
SHEET 2 OF 3

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.			SHEET NO.
6	STP 96(830)MM			29
STATE	STATE DISTRICT	COUNTY		
TEXAS	DALLAS	ROCKWALL		
CONTROL	SECTION	JOB	HIGHWAY NO.	
1014	03	041	FM 740	

d:8640i/rockwall/740rem3.dgn



STATE OF TEXAS
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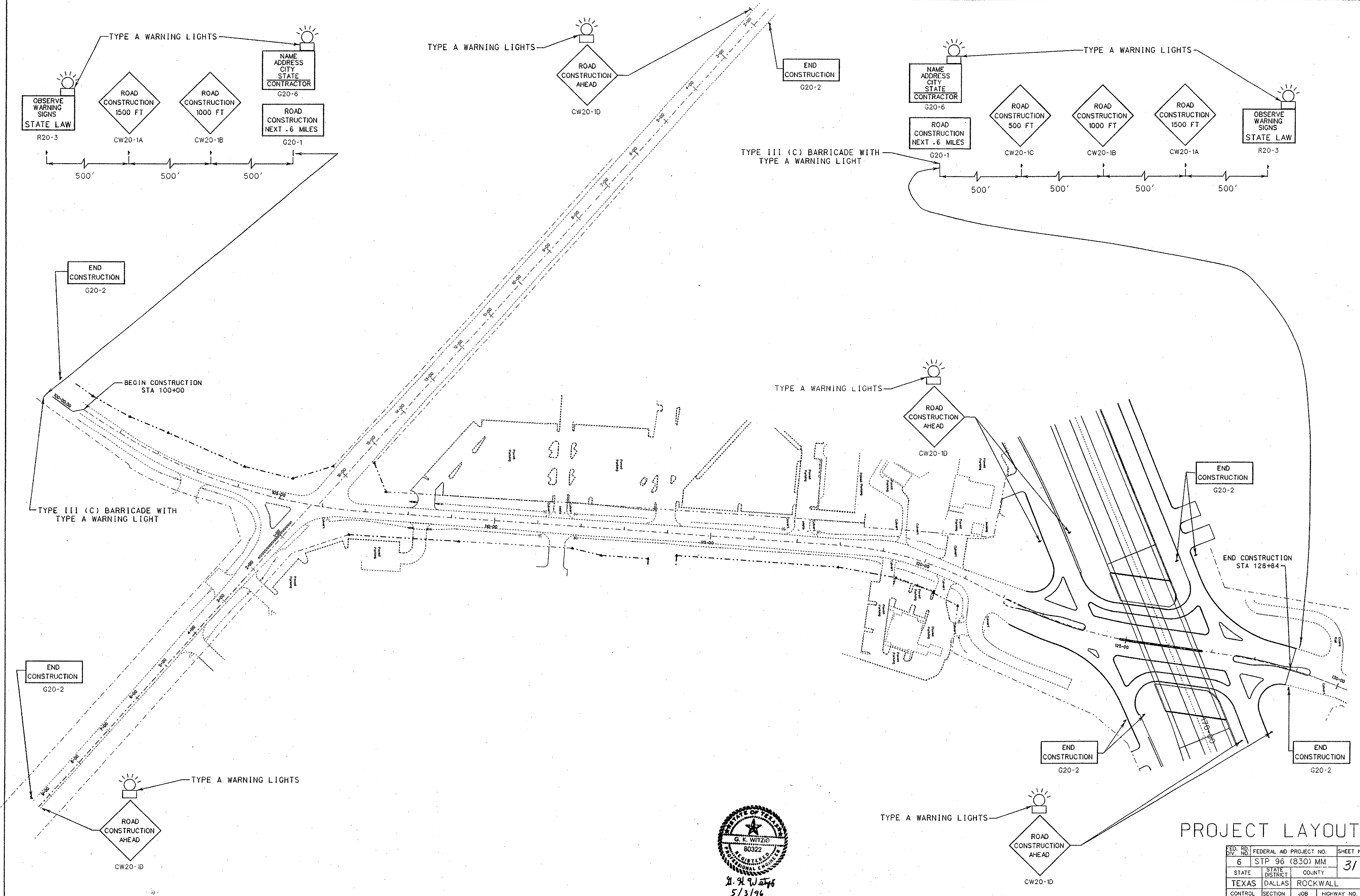
80322
REGISTERED
PROFESSIONAL ENGINEER

G. K. Wetzig
5/3/96

REMOVAL SHEETS
SHEET 3 OF 3

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	STP 96(830)MM		30
STATE	STATE DISTRICT	COUNTY	
TEXAS	DALLAS	ROCKWALL	
CONTROL	SECTION	JOB	HIGHWAY NO.
1014	03	041	FM 740

02-MAY-1996


TYPE A WARNING LIGHTS
OBSERVE WARNING SIGNS STATE LAW
R20-3
ROAD CONSTRUCTION 1500 FT
CW20-1A
ROAD CONSTRUCTION 1000 FT
CW20-1B
NAME ADDRESS CITY STATE CONTRACTOR
G20-6
ROAD CONSTRUCTION NEXT .6 MILES
G20-1
500'
500'
500'
TYPE A WARNING LIGHTS
ROAD CONSTRUCTION AHEAD
CW20-1D
END CONSTRUCTION
G20-2
TYPE A WARNING LIGHTS
NAME ADDRESS CITY STATE CONTRACTOR
G20-6
ROAD CONSTRUCTION NEXT .6 MILES
G20-1
ROAD CONSTRUCTION 500 FT
CW20-1C
ROAD CONSTRUCTION 1000 FT
CW20-1B
ROAD CONSTRUCTION 1500 FT
CW20-1A
OBSERVE WARNING SIGNS STATE LAW
R20-3
TYPE III (C) BARRICADE WITH TYPE A WARNING LIGHT
500'
500'
500'
500'
END CONSTRUCTION
G20-2
BEGIN CONSTRUCTION STA 100+00
TYPE A WARNING LIGHTS
ROAD CONSTRUCTION AHEAD
CW20-1D
END CONSTRUCTION
G20-2
TYPE III (C) BARRICADE WITH TYPE A WARNING LIGHT
END CONSTRUCTION STA 128+84
END CONSTRUCTION
G20-2
END CONSTRUCTION
G20-2
END CONSTRUCTION
G20-2
TYPE A WARNING LIGHTS
ROAD CONSTRUCTION AHEAD
CW20-1D
TYPE A WARNING LIGHTS
ROAD CONSTRUCTION AHEAD
CW20-1D
STATE OF TEXAS G. K. WETZIG 80322 REGISTERED PROFESSIONAL ENGINEER
5/3/96

PROJECT LAYOUT

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	STP 96 (830) MM		31
STATE	STATE DISTRICT	COUNTY	
TEXAS	DALLAS	ROCKWALL	
CONTROL	SECTION	JOB	HIGHWAY NO.
1014	03	041	FM 740

FXT 4411

PHASE I:

1. PLACE CONSTRUCTION PAVEMENT MARKINGS AND MARKERS ELIMINATING MARKINGS THAT CONFLICT AND PLACE CHANNELIZING DEVICES ALONG THE WEST SIDE OF THE ROADWAY AS SHOWN ON SECTION A-A OF THE TCP TYPICAL SECTIONS.

2. REMOVE CURB AND GUTTER AND ACP ISLAND AT THE SOUTHEAST CORNER OF THE INTERSECTION OF FM 740 AND HORIZON.

3. REMOVE CONCRETE MEDIAN ALONG FM 3097 AND REPLACE WITH TEMPORARY ACP TO PROVIDE A DRIVING SURFACE FOR TRAFFIC DURING PHASE II-A. (SEE PHASE II-A OF TCP FOR DETAILS).

4. REMOVE CURB AND GUTTER ALONG THE WEST SIDE ROADWAY EDGE AT STA 120+20.

5. CONSTRUCT MANHOLE, CURB INLETS CI-1 AND CI-2 AND RC PIPE AS SHOWN ON PHASE I OF THE TRAFFIC CONTROL PLAN. (THIS WILL REQUIRE CUT & RESTORE OF THE EXISTING ACP AND TRENCH PROTECTION).

6 CONSTRUCT DETOUR WIDENING ALONG THE WEST SIDE OF THE ROADWAY CONSISTING OF EXCAVATION, EMBANKMENT AND ASPHALTIC CONCRETE PAVEMENT WITH A MAXIMUM SIDE SLOPE OF 3:1. (TEMPORARY RC PIPE MAY BE NEEDED TO SUPPLEMENT EXISTING SIDE ROAD STRUCTURES).

PHASE II-A:

1. PLACE CONSTRUCTION PAVEMENT MARKINGS AND MARKERS ON FM 740, FM 3097 AND HORIZON ROAD AS SHOWN ON PHASE II-A OF THE TRAFFIC CONTROL PLAN AND ELIMINATE EXISTING MARKINGS AND MARKERS THAT CONFLICT.

2. PLACE LOW PROFILE CONCRETE TRAFFIC BARRIER AND DRUMS ALONG FM 740, FM 3097 AND HORIZON ROAD AS SHOWN ON PHASE II-A OF THE TRAFFIC CONTROL PLAN.

3. ROUTE NORTHBOUND FM 740 TRAFFIC TO WEST SIDE OF FM 740 AND CHANNEL HORIZON ROAD AND FM 3097 TRAFFIC AS SHOWN ON PHASE II-A OF THE TRAFFIC CONTROL PLAN. (SEE SECTION B-B OF TCP TYPICAL SECTIONS FOR DETAILS).

4. REMOVE EXISTING SIDE ROAD STRUCTURES, DRIVEWAYS AND ASPHALTIC CONCRETE PAVEMENT AS NEEDED TO CONSTRUCT PHASE II-A.

5. CONSTRUCT CURB INLETS CI-4 AND CI-5 AND TIE INTO EXISTING IH 30 DRAINAGE SYSTEM AS SHOWN ON STORM SEWER DRAINAGE SHEETS.

6. CONSTRUCT PROPOSED CONCRETE PAVEMENT ON THE EAST SIDE OF FM 740 AND THE NORTH SIDE OF FM 3097. (SEE PHASE II-A OF THE TRAFFIC CONTROL PLAN AND SECTION B-B OF THE TRAFFIC CONTROL PLAN TYPICAL SECTIONS).

7. CONSTRUCT THE PROPOSED ASPHALTIC CONCRETE PAVEMENT ON THE EAST SIDE OF FM 740 AND THE NORTH SIDE OF FM 3097. (SEE PHASE II-A OF THE TRAFFIC CONTROL PLAN FOR DETAILS).

PHASE II-B:

1. PLACE ASPHALTIC CONCRETE RAMP DOWN FOR PHASE II-B CONSTRUCTION. (SEE PHASE II-B OF THE TRAFFIC CONTROL PLAN FOR DETAILS).

2. PLACE CONSTRUCTION PAVEMENT MARKINGS AND MARKERS FOR TRAFFIC TRANSITIONS AT THE NORTH END OF THE PROJECT AND AT THE INTERSECTION WITH FM 3097 AND HORIZON ROAD. PLACE CONSTRUCTION PAVEMENT MARKINGS AND MARKERS ON HORIZON ROAD AND THE NEWLY COMPLETED PAVEMENT ON FM 3097. (SEE PHASE II-B OF THE TRAFFIC CONTROL PLAN FOR DETAILS).

3. PLACE LOW PROFILE CONCRETE TRAFFIC BARRIER AND DRUMS ALONG FM 740, HORIZON ROAD AND FM 3097 AS SHOWN ON PHASE II-B OF THE TRAFFIC CONTROL PLAN.

4. CONSTRUCT THE SOUTH SIDE OF THE PROPOSED CONCRETE PAVEMENT AND ASPHALTIC CONCRETE PAVEMENT ON FM 3097 AND THE LEAVE OUT SECTION ON THE NORTH END OF FM 740 AS SHOWN ON PHASE II-B OF THE TRAFFIC CONTROL PLAN.

PHASE III-A:

1. PLACE CONSTRUCTION PAVEMENT MARKINGS AND MARKERS ON EAST SIDE OF FM 740 AND ON HORIZON ROAD ELIMINATING EXISTING PAVEMENT MARKINGS AND MARKERS THAT CONFLICT. (SEE PHASE III-A OF THE TRAFFIC CONTROL PLAN FOR DETAILS).

2. PLACE LOW PROFILE CONCRETE TRAFFIC BARRIER AND DRUMS ALONG FM 740, HORIZON ROAD AND FM 3097 AS SHOWN ON PHASE III-A OF THE TRAFFIC CONTROL PLAN.

3. ROUTE NORTH BOUND AND SOUTHBOUND TRAFFIC TO THE EAST SIDE OF FM 740 AS SHOWN ON PHASE III-A OF THE TRAFFIC CONTROL PLAN AND ON SECTION C-C OF THE TRAFFIC CONTROL PLAN TYPICAL SECTIONS.

4. REMOVE EXISTING SIDE ROAD STRUCTURES, DRIVEWAYS AND ASPHALTIC CONCRETE PAVEMENT AS NEEDED TO CONSTRUCT PHASE III-A.

5. CONSTRUCT PROPOSED CONCRETE PAVEMENT ON THE WEST SIDE OF FM 740 AND THE SOUTH SIDE OF HORIZON ROAD. (SEE PHASE III-A OF THE TRAFFIC CONTROL PLAN AND SECTION C-C OF THE TRAFFIC CONTROL PLAN TYPICAL SECTIONS).

6. CONSTRUCT THE PROPOSED ASPHALTIC CONCRETE PAVEMENT ON THE WEST SIDE OF FM 740.

PHASE III-B:

1. PLACE CONSTRUCTION PAVEMENT MARKINGS AND MARKERS FOR TRAFFIC TRANSITIONS AT THE NORTH END OF THE PROJECT ON FM 740, FM 3097 AND ON HORIZON ROAD, ELIMINATING EXISTING PAVEMENT MARKINGS AND MARKERS THAT CONFLICT. (SEE PHASE III-B OF THE TRAFFIC CONTROL PLAN FOR DETAILS).

2. PLACE LOW PROFILE CONCRETE TRAFFIC BARRIER AND DRUMS ALONG FM 740 AND HORIZON ROAD AS SHOWN ON PHASE III-B OF THE TRAFFIC CONTROL PLAN.

3. CONSTRUCT PROPOSED CONCRETE PAVEMENT AT THE NORTHWEST CORNER OF FM 740 AND HORIZON ROAD AND THE PAVEMENT LEAVE OUT ON FM 740 AT THE NORTH END OF THE PROJECT. (SEE PHASE III-B OF THE TRAFFIC CONTROL PLAN FOR DETAILS).

PHASE IV:

1. PLACE CONSTRUCTION PAVEMENT MARKINGS AN 740 AND ON HORIZON ROAD, ELIMINATING EXISTING PAVEMENT MARKINGS AND MARKERS THAT CONFLICT. (SEE PHASE IV OF THE TRAFFIC CONTROL PLAN FOR DETAILS).

2. PLACE DRUMS ALONG FM 740 AS SHOWN ON PHASE IV OF THE TRAFFIC CONTROL PLAN AND ROUTE SOUTH BOUND TRAFFIC TO THE WEST SIDE OF FM 740.

3. CONSTRUCT MEDIAN PAVEMENT AND MEDIANS AS SHOWN OF PHASE IV OF THE TRAFFIC CONTROL PLAN.

4. PLACE PERMANENT PAVEMENT MARKINGS AND MARKERS AND OPEN REMAINING LANES TO TRAFFIC.

5. FINAL CLEAN-UP.

NOTES:

DRIVEWAY ACCESS IS TO BE MAINTAINED AT ALL TIMES.

ALTERNATING TY "A" WARNING LIGHTS SHALL BE PLACED ON DRUMS IN LANE TAPERS, ALIGNMENT TRANSITIONS OR AS DIRECTED BY THE ENGINEER.

STATE OF TEXAS
G. K. WETZIG
80322
REGISTERED
PROFESSIONAL ENGINEER

G. K. Wetzig
5-29-96

TRAFFIC CONTROL PLAN
SEQUENCE OF CONSTRUCTION

SHEET 1 OF 15

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	STP 96 (830) MM		32
STATE	STATE DISTRICT	COUNTY	
TEXAS	DALLAS	ROCKWALL	
CONTROL	SECTION	JOB	HIGHWAY NO.
1014	03	041	FM 740

EXT 4411

29-MAY-1996

NAME
ADDRESS
CITY
STATE
CONTRACTOR
G20-6

ROAD CONSTRUCTION NEXT .6 MILES
G20-1

END CONSTRUCTION
G20-2

SHOULDER WORK
CW21-5

VP-1R

100+00.00

500'

80' 80' 80' 80' 80' 80' 80'

25'

25'

105+00

ASPHALT WIDENING TO REMAIN FOR PERMANENT CONSTRUCTION FROM STA 100+00 TO STA 102+00

CONST. PAV. MARKINGS 4" WHITE SOLID (REMOV)

ASPHALT DETOUR WIDENING

REMOVE C & G AND ASPHALT ISLAND

REMOVE CONCRETE MEDIAN

DRUMS

1+00

2+00

3+00

4+00

5+00

6+00

FM 3097

12+00

13+00

14+00

15+00

16+00

HORIZON RD.

CUT & RESTORE ASPHALTIC CONCRETE PAVEMENT(8.5 SY) CONSTRUCT PROP. MH-1 (STAGE 1), RC PIPE AND PROP. CI-1.

Paved Parking

VP-1R

Paved Parking

80' 80' 80' 80' 80' 80' 80' 80' 80' 80'

Culvert

Culvert

FM 740

110+00

CONST. PAV. MARKINGS 8" WHITE SOLID (REMOV)

CONST. PAV. MARKINGS 4" WHITE SOLID (REMOV)

CONST. PAV. MARKINGS 4" YELLOW SLD. AND BROK. (REMOV)

ASPHALT DETOUR WIDENING

Paved Parking

CUT & RESTORE ASPHALTIC CONCRETE PAVEMENT (33.7 SY) CONSTRUCT PROP. CI-2 AND RC PIPE. (TRENCH PROTECTION=75 LF)

TEMPORARY PLUG OF EXISTING BOX CULVERT UNTIL REMOVAL IN LATER PHASES

MATCH LINE STA 111+00

REFER TO SHEET 43B FOR FOR SECTION A-A

STATE OF TEXAS
G. K. WETZIG
80322
REGISTERED PROFESSIONAL ENGINEER

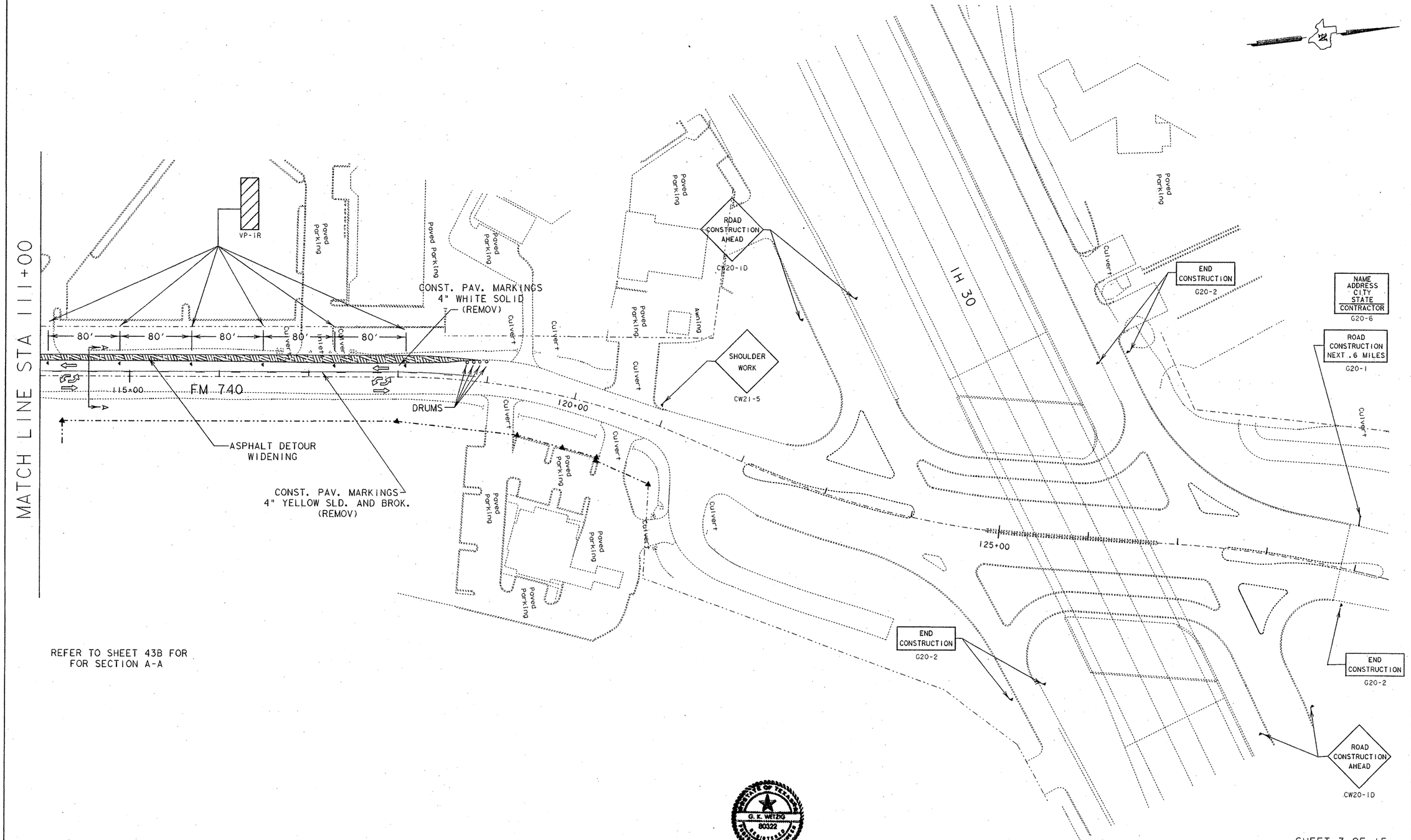
G. K. Wetzig
5-29-96

SHEET 2 OF 15

TRAFFIC CONTROL PLAN
PHASE I

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	STP 96(830)MM		33
STATE	STATE DIST. NO.	COUNTY	
TEXAS	DALLAS	ROCKWALL	
CONT.	SECT.	JOB	HIGHWAY NO.
1014	03	041	FM 740

$$$$date$$$$



REFER TO SHEET 43B FOR
FOR SECTION A-A

G. K. WETZEL
80322
REGISTERED
PROFESSIONAL ENGINEER
STATE OF TEXAS

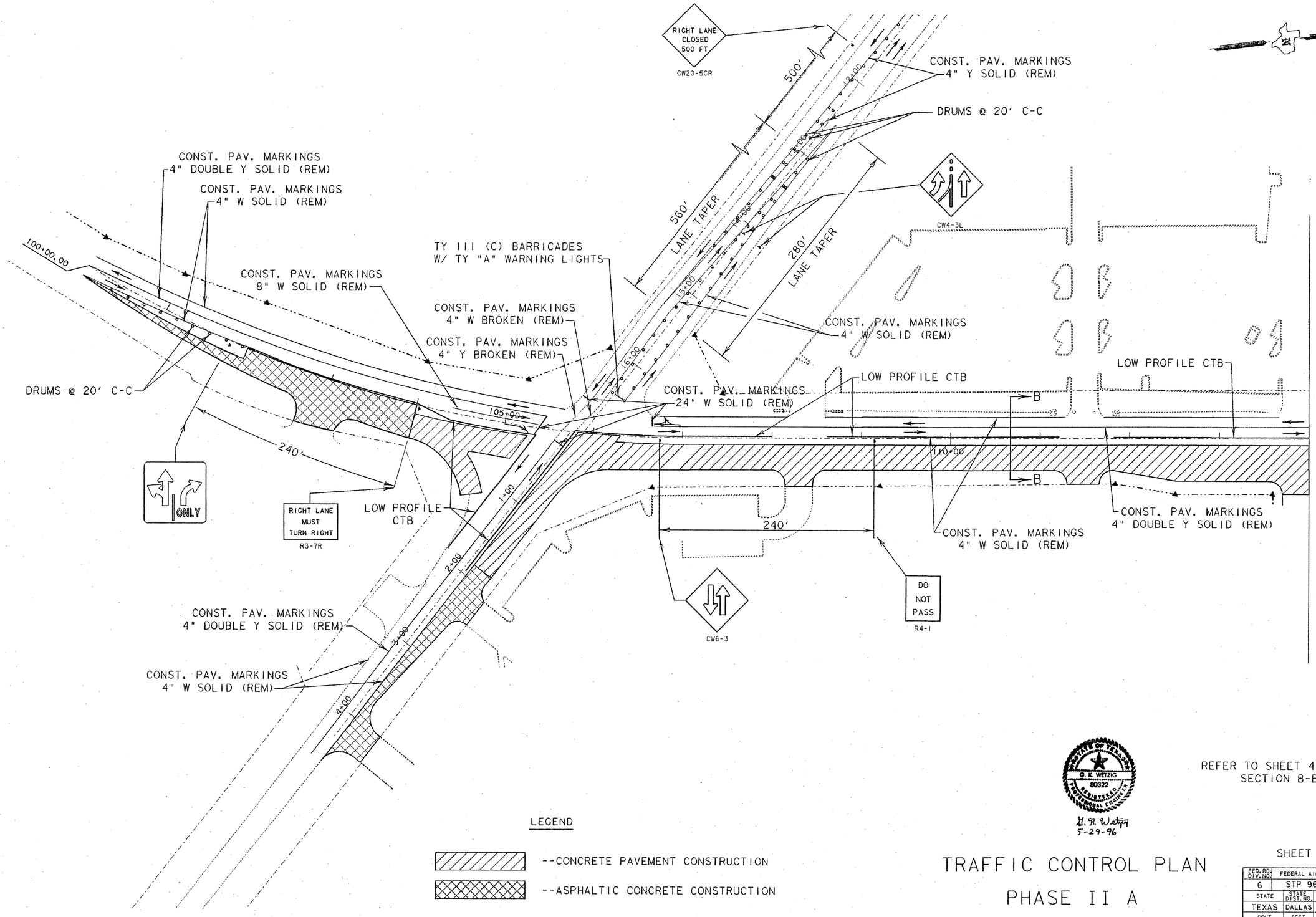
G.K. Wetzel
5-29-96

SHEET 3 OF 15

TRAFFIC CONTROL PLAN
PHASE I

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	STP 96(830)MM		34
STATE	STATE DIST. NO.	COUNTY	
TEXAS	DALLAS	ROCKWALL	
CONT.	SECT.	JOB	HIGHWAY NO.
1014	03	041	FM 740

$$$$$$$$$$$$signspec$$$$$$$$$$



LEGEND

--CONCRETE PAVEMENT CONSTRUCTION

--ASPHALTIC CONCRETE CONSTRUCTION

G. K. WETZIG 80322 REGISTERED PROFESSIONAL ENGINEER
STATE OF TEXAS
G. K. Wetzig
5-29-96

REFER TO SHEET 43B FOR SECTION B-B

TRAFFIC CONTROL PLAN
PHASE II A

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	STP 96(830)MM		35
STATE	STATE DIST. NO.	COUNTY	
TEXAS	DALLAS	ROCKWALL	
CONT.	SECT.	JOB	HIGHWAY NO.
1014	03	041	FM 740

EXT 4407

$$$$date$$$$

MATCH LINE STA 114+00

LOW PROFILE CTB

CW1-4R

DO NOT PASS
R4-1

240'

CW6-3

DRUMS @ 20' C-C

KEEP RIGHT
R4-7A

CW4-1

ELIMINATION OF EXISTING JIGGLE BAR TILES WILL BE CONSIDERED SUBSIDIARY TO THE VARIOUS BID ITEMS

Paved Parking

Culvert

LANE ENDS MERGE LEFT
CW9-2L

Culvert

115+00

B

B

CONST. PAV. MARKINGS
4" W SOLID (REM)

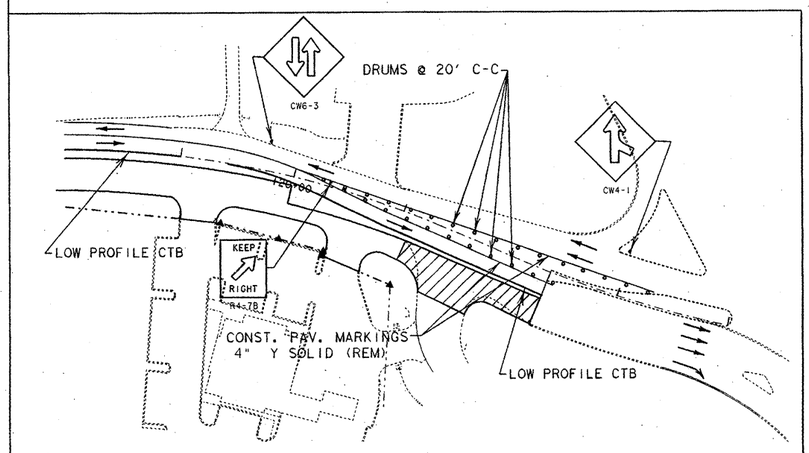
CONST. PAV. MARKINGS
4" DOUBLE Y SOLID (REM)

KEEP RIGHT
R4-7B

CONST. PAV. MARKINGS
4" Y SOLID (REM) WITH
TY II A-A RAISED PVT. MKRS.

CONST. PAV. MARKINGS
4" Y BROKEN (REM)

125+00



UPON COMPLETION OF DRIVEWAY AT STA 119+20, OPEN MEDIAN BARRIER AT THAT LOCATION TO FACILITATE THE COMPLETION OF THE CONCRETE PAVEMENT CONSTRUCTION

REFER TO SHEET 43B FOR SECTION B-B

G. K. WETZIG
80322
REGISTERED
PROFESSIONAL ENGINEER
STATE OF TEXAS

G. K. Wetzig
5-29-96

LEGEND

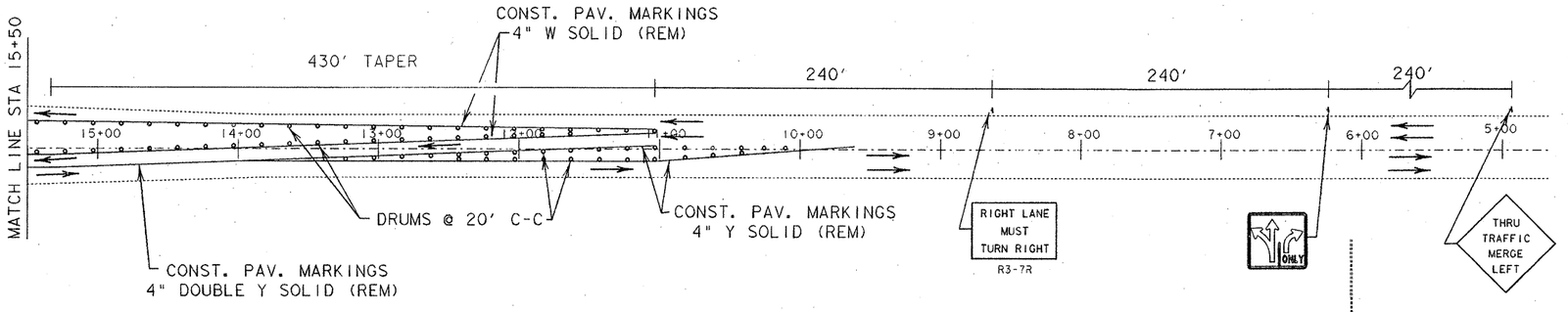
--CONCRETE PAVEMENT CONSTRUCTION

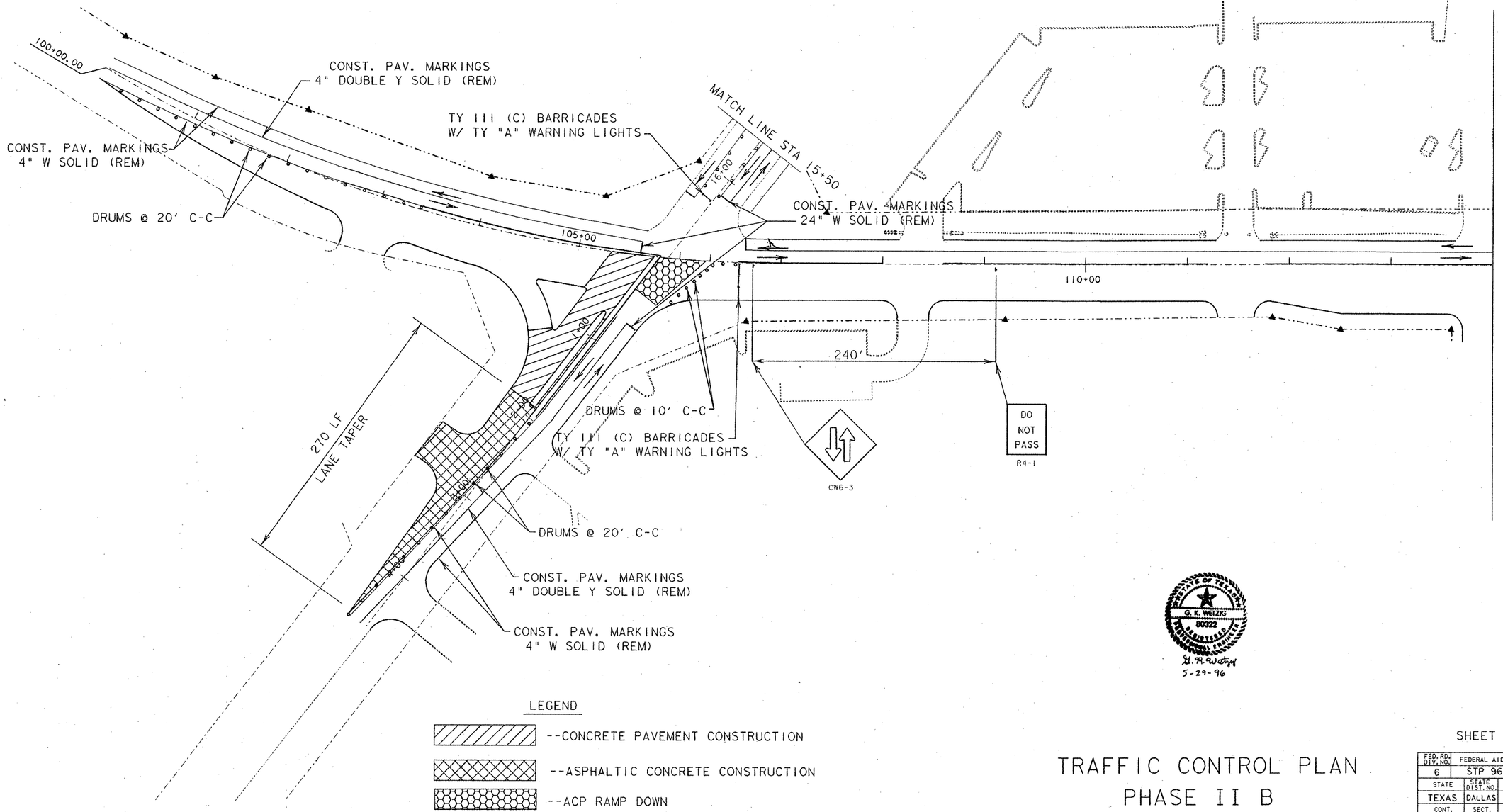
TRAFFIC CONTROL PLAN
PHASE II A

SHEET 5 OF 15

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	STP 96(830)MM		36
STATE	STATE DIST. NO.	COUNTY	
TEXAS	DALLAS	ROCKWALL	
CONT.	SECT.	JOB	HIGHWAY NO.
1014	03	041	FM 740

EXT 4407





LEGEND

--CONCRETE PAVEMENT CONSTRUCTION

--ASPHALTIC CONCRETE CONSTRUCTION

--ACP RAMP DOWN

STATE OF TEXAS
G. K. WETZIG
80322
REGISTERED
PROFESSIONAL
ENGINEER
G. K. Wetzig
5-29-96

TRAFFIC CONTROL PLAN
PHASE II B

SHEET 6 OF 15

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	STP 96(830)MM		37
STATE	STATE DIST. NO.	COUNTY	
TEXAS	DALLAS	ROCKWALL	
CONT.	SECT.	JOB	HIGHWAY NO.
1014	03	041	FM 740

FXT 4407

$$$$date$$$$

MATCH LINE STA 114+00

CONST. PAV. MARKINGS 4" Y SOLID (REM) WITH TY II A-A RAISED PVT. MARKERS IN TRANSITION

ELIMINATION OF EXISTING JIGGLE BAR TILES WILL BE CONSIDERED SUBSIDIARY TO THE VARIOUS BID ITEMS

CONST. PAV. MARKINGS 4" Y BROKEN (REM)

CONST. PAV. MARKINGS 4" W SOLID (REM)

DO NOT PASS
R4-1

CW6-3

ONLY

DRUMS @ 20' C-C

240'

240'

CONST. PAV. MARKINGS 8" W SOLID (REM)

CONST. PAV. MARKINGS 4" Y SOLID (REM)

DRUMS @ 20' C-C

115+00

120+00

CW1-4R

KEEP RIGHT
R4-7B

CW4-1

LANE ENDS MERGE LEFT
CW9-2L

Paved parking

Culvert

Culvert

125+00

LOW PROFILE CTB

PC 8.50' LT OF C STA 116+75

R=650'

PT 15.52' RT OF C STA 118+58

PC 28.45' RT OF C STA 118+39

PT 30.71' RT OF C STA 120+00

R=650'

CONST. PAV. MARKINGS 4" Y SOLID (REM)

LOW PROFILE CTB

TY III(C) BARRICADES W/ TY "A" WARNING LIGHTS WITH

KEEP RIGHT
R4-7A

LEGEND

--CONCRETE PAVEMENT CONSTRUCTION

--ACP RAMP DOWN

STATE OF TEXAS
G. K. WETZIG
80322
REGISTERED PROFESSIONAL ENGINEER

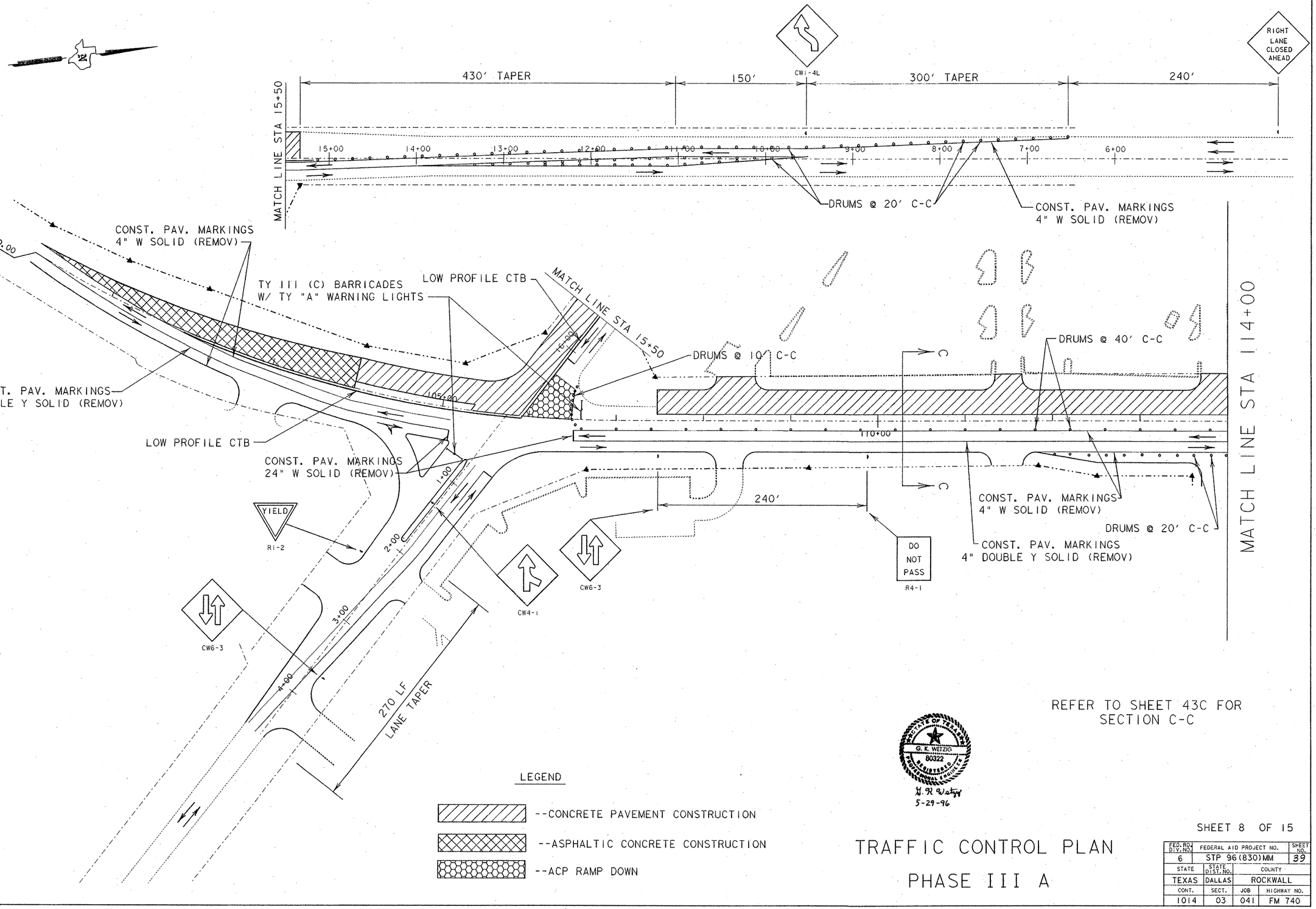
G. K. Wetzig
5-29-96

SHEET 7 OF 15

TRAFFIC CONTROL PLAN
PHASE II B

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	STP 96(830)MM		38
STATE	STATE DIST. NO.	COUNTY	
TEXAS	DALLAS	ROCKWALL	
CONT.	SECT.	JOB	HIGHWAY NO.
1014	03	041	FM 740

EXT 4407



REFER TO SHEET 43C FOR SECTION C-C

LEGEND

--CONCRETE PAVEMENT CONSTRUCTION

--ASPHALTIC CONCRETE CONSTRUCTION

--ACP RAMP DOWN

STATE OF TEXAS
G. K. WETZIG
80322
REGISTERED
PROFESSIONAL ENGINEER

G. K. Wetzig
5-29-96

TRAFFIC CONTROL PLAN
PHASE III A

SHEET 8 OF 15

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	STP 96(830)MM		39
STATE	STATE DIST. NO.	COUNTY	
TEXAS	DALLAS	ROCKWALL	
CONT.	SECT.	JOB	HIGHWAY NO.
1014	03	041	FM 740

EXT 4407

$$$$date$$$$

MATCH LINE STA 114+00

DO NOT PASS
R4-1

240′

240′

CW6-3

CONST. PAV. MARKINGS
4" Y BROKEN (REMOV)

ONLY

DRUMS @ 20′ C-C

LOW PROFILE CTB

CONST. PAV. MARKINGS
4" W SOLID (REMOV)

CONST. PAV. MARKINGS
4" W SOLID (REMOV)

LANE ENDS MERGE LEFT
CW9-2L

RIGHT LANE CLOSED AHEAD
CW20-5DR

115+00

DRUMS @ 40′ C-C

DRUMS @ 10′ C-C

CONST. PAV. MARKINGS
4" DOUBLE Y SOLID (REMOV)

CONST. PAV. MARKINGS
4" W SOLID (REMOV)

CW1-2R

PC 13.60 FT RT OF LC STA 118+74

PT 2.13 FT RT OF LC STA 120+61

R=650′

DRUMS @ 20′ C-C

125+00

CONST. PAV. MARKINGS
4" Y SOLID (REMOV)

TY III(C) BARRICADE
W/ TY "A" WARNING LIGHT
WITH

CW4-1

STATE OF TEXAS
G. K. WETZIG
80322
REGISTERED
PROFESSIONAL ENGINEER

G. K. Wetzig
5-29-96

LEGEND

--CONCRETE PAVEMENT CONSTRUCTION

--ACP RAMP DOWN

REFER TO SHEET 43C FOR
SECTION C-C

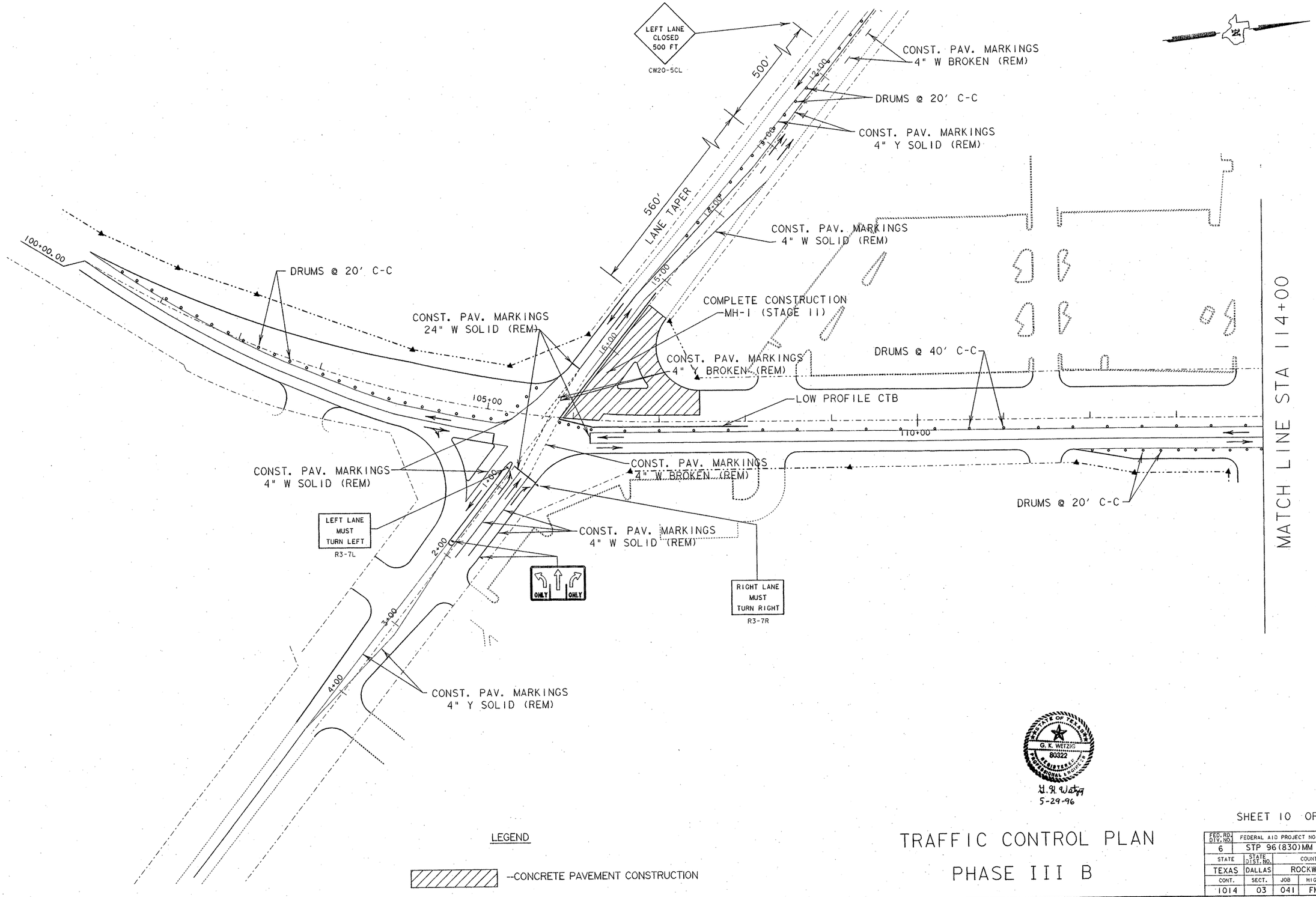
SHEET 9 OF 15

TRAFFIC CONTROL PLAN
PHASE III A

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	STP 96(830)MM		40
STATE	STATE DIST. NO.	COUNTY	
TEXAS	DALLAS	ROCKWALL	
CONT.	SECT.	JOB	HIGHWAY NO.
1014	03	041	FM 740

EXT 4407

$$$$date$$$$



LEGEND

--CONCRETE PAVEMENT CONSTRUCTION

STATE OF TEXAS
G. K. WETZIG
80322
REGISTERED PROFESSIONAL ENGINEER

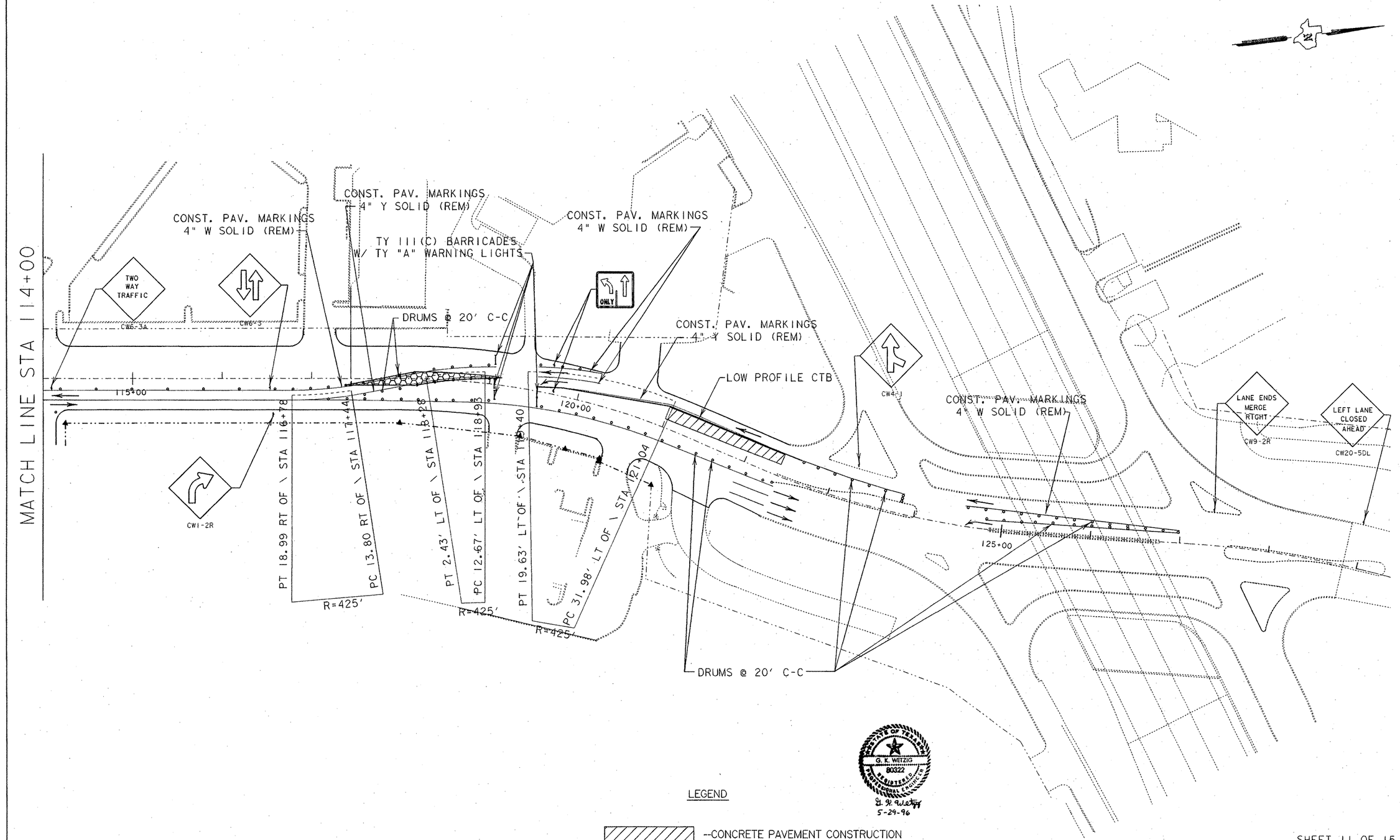
G. K. Wetzig
5-29-96

SHEET 10 OF 15

TRAFFIC CONTROL PLAN
PHASE III B

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	STP 96(830)MM		41
STATE	STATE DIST. NO.	COUNTY	
TEXAS	DALLAS	ROCKWALL	
CONT.	SECT.	JOB	HIGHWAY NO.
1014	03	041	FM 740

EVT 4407



STATE OF TEXAS
G. K. WETZIG
80322
REGISTERED
PROFESSIONAL ENGINEER
G. K. Wetzig
5-29-96

LEGEND

--CONCRETE PAVEMENT CONSTRUCTION

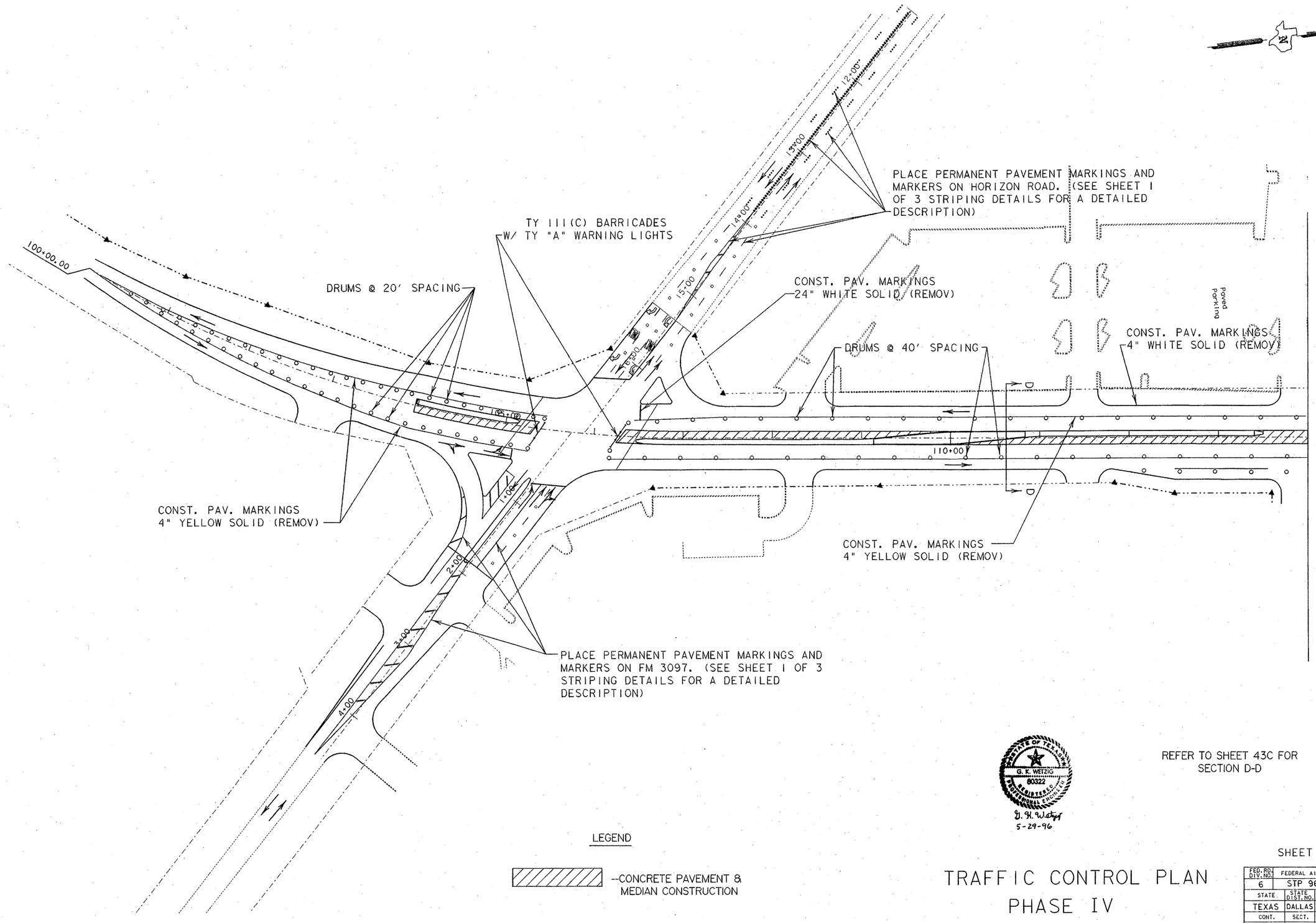
--ACP RAMP DOWN

TRAFFIC CONTROL PLAN
PHASE III B

SHEET 11 OF 15

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	STP 96(830)MM		42
STATE	STATE DIST. NO.	COUNTY	
TEXAS	DALLAS	ROCKWALL	
CONT.	SECT.	JOB	HIGHWAY NO.
1014	03	041	FM 740

FXT 4407



REFER TO SHEET 43C FOR SECTION D-D

G. K. WETZIG
80322
REGISTERED
PROFESSIONAL ENGINEER
STATE OF TEXAS
G. K. Wetzig
5-29-96

LEGEND

--CONCRETE PAVEMENT & MEDIAN CONSTRUCTION

TRAFFIC CONTROL PLAN
PHASE IV

SHEET 12 OF 15

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	STP 96(830)MM		43
STATE	STATE DIST.NO.	COUNTY	
TEXAS	DALLAS	ROCKWALL	
CONT.	SECT.	JOB	HIGHWAY NO.
1014	03	041	FM 740

EXT 4407

$$$$date$$$$

MATCH LINE STA 114+00

DRUMS @ 40' C-C

CONST. PAV. MARKINGS
4" WHITE SOLID (REMOV)

115+00

CONST. PAV. MARKINGS
4" YELLOW SOLID (REMOV)

Paved Parking

Paved Parking

Paved Parking

Paved Parking

Paved Parking

CW4-1

LANE ENDS MERGE RIGHT
CW9-2R

LEFT LANE CLOSED AHEAD
CW20-5DL

125+00

DRUMS @ 20' C-C

STATE OF TEXAS
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REGISTERED PROFESSIONAL ENGINEER

G. K. Wetzig
5-29-96

LEGEND

--CONCRETE PAVEMENT & MEDIAN CONSTRUCTION

REFER TO SHEET 43C FOR SECTION D-D

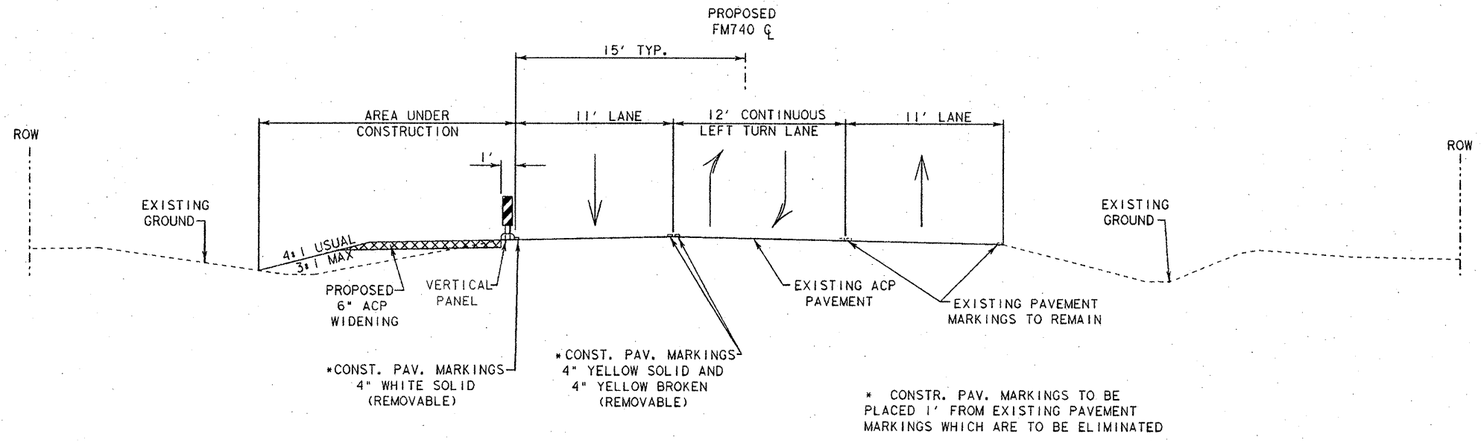
TRAFFIC CONTROL PLAN
PHASE IV

SHEET 13 OF 15

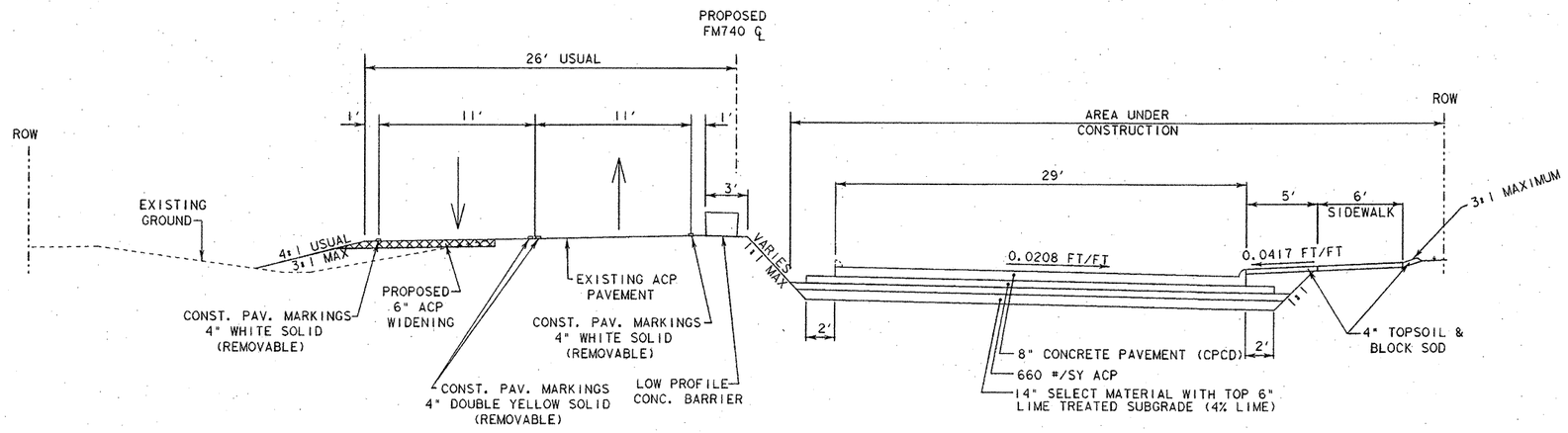
FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	STP 96(830)MM		43A
STATE	STATE DIST. NO.	COUNTY	
TEXAS	DALLAS	ROCKWALL	
CONT.	SECT.	JOB	HIGHWAY NO.
1014	03	041	FM 740

EXT 4407

$$$$date$$$$



PHASE I
SECTION A-A



PHASE II-A
SECTION B-B

STATE OF TEXAS
G. K. WETZIG
80322
REGISTERED
PROFESSIONAL ENGINEER
G. K. Wetzig
5-29-96

TRAFFIC CONTROL PLAN
TYPICAL SECTIONS
SHEET 14 OF 15

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	STP 96 (830) MM		438
STATE	STATE DISTRICT	COUNTY	
TEXAS	DALLAS	ROCKWALL	
CONTROL	SECTION	JOB	HIGHWAY NO.
1014	03	041	FM 740

PHASE III-A

SECTION C-C

PHASE IV
SECTION D-D

G. K. WETZIG
80322

G. K. Wetzig
5-29-96

TRAFFIC CONTROL PLAN
TYPICAL SECTIONS

SHEET 15 OF 15

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.			SHEET NO.
6	STP 96 (830) MM			43C
STATE	STATE DISTRICT	COUNTY		
TEXAS	DALLAS	ROCKWALL		
CONTROL	SECTION	JOB	HIGHWAY NO.	
1014	03	041	FM 740	

SITE DESCRIPTION

PROJECT LIMITS: FROM SOUTH OF FM 3097 TO NORTH OF IH 30

PROJECT DESCRIPTION: FOR THE CONSTRUCTION OF THE WIDENING OF A NON-FREEWAY FACILITY CONSISTING OF GRADING, DRAINAGE, LIME TREATED SUBGRADE, ASPHALT CONCRETE PAVMENT, CONCRETE PAVEMENT, PAVEMENT MARKINGS & SIDEWALKS.

MAJOR SOIL DISTURBING ACTIVITIES: SOIL DISTURBING ACTIVITIES WILL INCLUDE PREPARING THE R.O.W., GRADING, EXCAVATION, AND EMBANKMENT FOR ROADWAYS, REMOVAL OF OLD CONCRETE AND CORRUGATED METAL, EROSION AND SEDIMENT CONTROLS, AND TOPSOIL WORK FOR FINAL PLANTING AND SEEDING.

TOTAL PROJECT AREA: 7.0 ACRES

TOTAL AREA TO BE DISTURBED: 7.0 ACRES

WEIGHTED RUNOFF COEFFICIENT (AFTER CONSTRUCTION): 0.70

EXISTING CONDITION OF SOIL & VEGETATIVE COVER AND % OF EXISTING VEGETATIVE COVER: THE TYPE OF SOIL THAT EXISTS ALONG THE PROJECT AREA ARE A TAN, YELLOWISH BROWN, AND LIGHT GREY CLAYS WITH A TRACE OF CALICHE AND IS COVERED 95% WITH VARIOUS GRASSES WHICH ARE IN GOOD CONDITION.

NAME OF RECEIVING WATERS: THE NORTH END OF THE PROJECT DRAINS INTO THE EXISTING IH 30 STORM SEWER SYSTEM WHICH OUTFALLS INTO AN UNNAMED TRIBUTARY WHICH DRAINS INTO LAKE RAY HUBBARD (TRINITY RIVER) AT STREAM SEGMENT 0820. THE SOUTH END OF THE PROJECT FLOWS INTO THE EXISTING STORM SEWER SYSTEM OF HORIZON ROAD WHICH FLOWS INTO AN UNNAMED TRIBUTARY WHICH FLOWS IN LAKE RAY HUBBARD (TRINITY RIVER) AT STREAM SEGMENT 0820.

EROSION AND SEDIMENT CONTROLS

SOIL STABILIZATION PRACTICES:

- X TEMPORARY SEEDING
- X PERMANENT PLANTING, SODDING, OR SEEDING
- ___ MULCHING
- ___ SOIL RETENTION BLANKET
- ___ BUFFER ZONES
- ___ PRESERVATION OF NATURAL RESOURCES

OTHER: DISTURBED AREAS ON WHICH CONSTRUCTION ACTIVITY HAS CEASED (TEMPORARILY OR PERMANENTLY) SHALL BE STABILIZED WITHIN 14 DAYS UNLESS ACTIVITIES ARE SCHEDULED TO RESUME WITHIN 21 DAYS.

STRUCTURAL PRACTICES:

- X SILT FENCES
- X HAY BALES
- ___ ROCK FILTER DAMS
- ___ DIVERSION, INTERCEPTOR, OR PERIMETER DIKES
- ___ DIVERSION, INTERCEPTOR, OR PERIMETER SWALES
- ___ DIVERSION DIKE AND SWALE COMBINATIONS
- ___ PIPE SLOPE DRAINS
- ___ PAVED FLUMES
- ___ ROCK BEDDING AT CONSTRUCTION EXIT
- ___ TIMBER MATTING AT CONSTRUCTION EXIT
- ___ CHANNEL LINERS
- ___ SEDIMENT TRAPS
- ___ SEDIMENT BASINS
- ___ STORM INLET SEDIMENT TRAP
- ___ STONE OUTLET STRUCTURES
- X CURBS AND GUTTERS
- X STORM SEWERS
- ___ VELOCITY CONTROL DEVICES

OTHER:

NARRATIVE - SEQUENCE OF CONSTRUCTION (STORM WATER MANAGEMENT) ACTIVITIES:

THE ORDER OF ACTIVITIES WILL BE AS FOLLOWS:

1. INSTALL SEDIMENT CONTROLS AS SHOWN ON SW3P PLANS. THESE SEDIMENT CONTROLS SHOULD BE PLACED PRIOR TO ANY CLEARING, PAVEMENT REMOVAL, EMBANKMENT, AND EXCAVATION ON WORK SITE.

2. INSTALL SILT FENCES AROUND TOPSOIL STOCKPILES AND AT EMBANKMENT AND EXCAVATION AREAS. THE TOPSOIL STOCKPILES WILL BE USED THROUGHOUT THE PROJECT TO STABILIZE AND COVER DISTURBED AREAS.

3. PROVIDE HAY BALES AND SILT FENCES AROUND CURB AND DROP INLETS AS SHOWN ON TH SW3P PLANS. REMOVE AND REPLACE SEDIMENT CONTROL DEVICES AS NEEDED.

4. WHEN CONSTRUCTION ACTIVITIES ARE COMPLETE AND THE SITE IS STABILIZED AND APPROVED BY THE ENGINEER, REMOVE ALL TEMPORARY CONTROLS AND RESEED ANY AREAS DISTURBED BY THEIR REMOVAL.

STORM WATER MANAGEMENT: STORM WATER DRAINAGE WILL BE PROVIDED BY CURB INLETS, EXISTING DROP INLETS. THE STORM SEWER SYSTEM AND DITCHES. THESE SYSTEMS WILL CARRY DRAINAGE WITHIN THE R.O.W. TO THE NEAREST CULVERT OR STREAM. OTHER PERMANENT EROSION CONTROLS INCLUDE A GRADING DESIGN GENERALLY CONSISTING OF SLOPES 4:1 OR FLATTER WITH PERMANENT VEGETATIVE COVER.

OTHER EROSION AND SEDIMENT CONTROLS:

MAINTENANCE: ALL EROSION AND SEDIMENT CONTROLS WILL BE MAINTAINED IN GOOD WORKING ORDER. IF A REPAIR IS NECESSARY, IT WILL BE DONE AT THE EARLIEST DATE POSSIBLE, BUT NO LATER THAN 7 CALENDAR DAYS AFTER THE SURROUNDING EXPOSED GROUND HAS DRIED SUFFICIENTLY TO PREVENT FURTHER DAMAGE FROM HEAVY EQUIPMENT. THE AREAS ADJACENT TO CREEKS AND DRAINAGEWAYS SHALL HAVE PRIORITY.

INSPECTION: AN INSPECTION WILL BE PERFORMED BY A TXDOT INSPECTOR EVERY WEEK AS WELL AS AFTER EVERY HALF INCH OR MORE OF RAIN (AS RECORDED ON A RAIN GAUGE TO BE LOCATED AT THE PROJECT SITE). AN INSPECTION AND MAINTENANCE REPORT WILL BE MADE PER EACH INSPECTION. BASED ON THE INSPECTION RESULTS, THE CONTROLS SHALL BE REVISED PER THE INSPECTION REPORT.

WASTE MATERIALS: ALL WASTE MATERIALS WILL BE COLLECTED AND STORED IN A SECURELY LIDDED METAL DUMPSTER. THE DUMPSTER WILL MEET ALL STATE AND LOCAL CITY SOLID WASTE MANAGEMENT REGULATIONS. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE WILL BE DEPOSITED IN THE DUMPSTER. THE DUMPSTER WILL BE EMPTIED AS NECESSARY OR AS REQUIRED BY LOCAL REGULATION, AND THE TRASH WILL BE HAULED TO A LOCAL DUMP. NO CONSTRUCTION WASTE MATERIAL WILL BE BURIED ON SITE.

HAZARDOUS WASTE (INCLUDING SPILL REPORTING): AT A MINIMUM, ANY PRODUCTS IN THE FOLLOWING CATAGORIES ARE CONSIDERED TO BE HAZARDOUS: PAINTS, ACIDS FOR CLEANING MASONARY SURFACES, CLEANING SOLVENTS, ASPHALT PRODUCTS, CHEMICAL ADDITIVES FOR SOIL STABILIZATION, OR CONCRETE CURING COMPOUNDS AND ADDITIVES. IN THE EVENT OF A SPILL WHICH MAY BE HAZARDOUS, THE SPILL COORDINATOR SHOULD BE CONTACTED IMMEDIATELY.

SANITARY WASTE: ALL SANITARY WASTE WILL BE COLLECTED FROM THE PORTABLE UNITS AS NECESSARY OR AS REQUIRED BY LOCAL REGULATION BY A LICENSED SANITARY WASTE MANAGEMENT CONTRACTOR.

OFFSITE VEHICLE TRACKING:

- X HAUL ROADS DAMPENED FOR DUST CONTROL
- X LOADED HAUL TRUCKS TO BE COVERED WITH TARPAULIN
- X EXCESS DIRT ON ROAD REMOVED DAILY
- ___ STABILIZED CONSTRUCTION ENTRANCE

OTHER:

REMARKS: DISPOSAL AREAS, STOCKPILES, AND HAUL ROADS SHALL BE CONSTRUCTED IN A MANNER THAT WILL MINIMIZE AND CONTROL THE AMOUNT OF SEDIMENT THAT MAY ENTER RECEIVING WATERS. DISPOSAL AREAS SHALL NOT BE LOCATED IN ANY WETLAND, WATERBODY OR STREAMBED.

CONSTRUCTION STAGING AREAS AND VEHICLE MAINTENANCE AREAS SHALL BE CONSTRUCTED BY THE CONTRACTOR IN A MANNER TO MINIMIZE THE RUNOFF OF POLLUTANTS.

STATE OF TEXAS
G. K. WETZIG
80322
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PROFESSIONAL ENGINEER

G. K. Wetzig
5/3/96

TXDOT STORM WATER POLLUTION PREVENTION PLAN (SW3P)

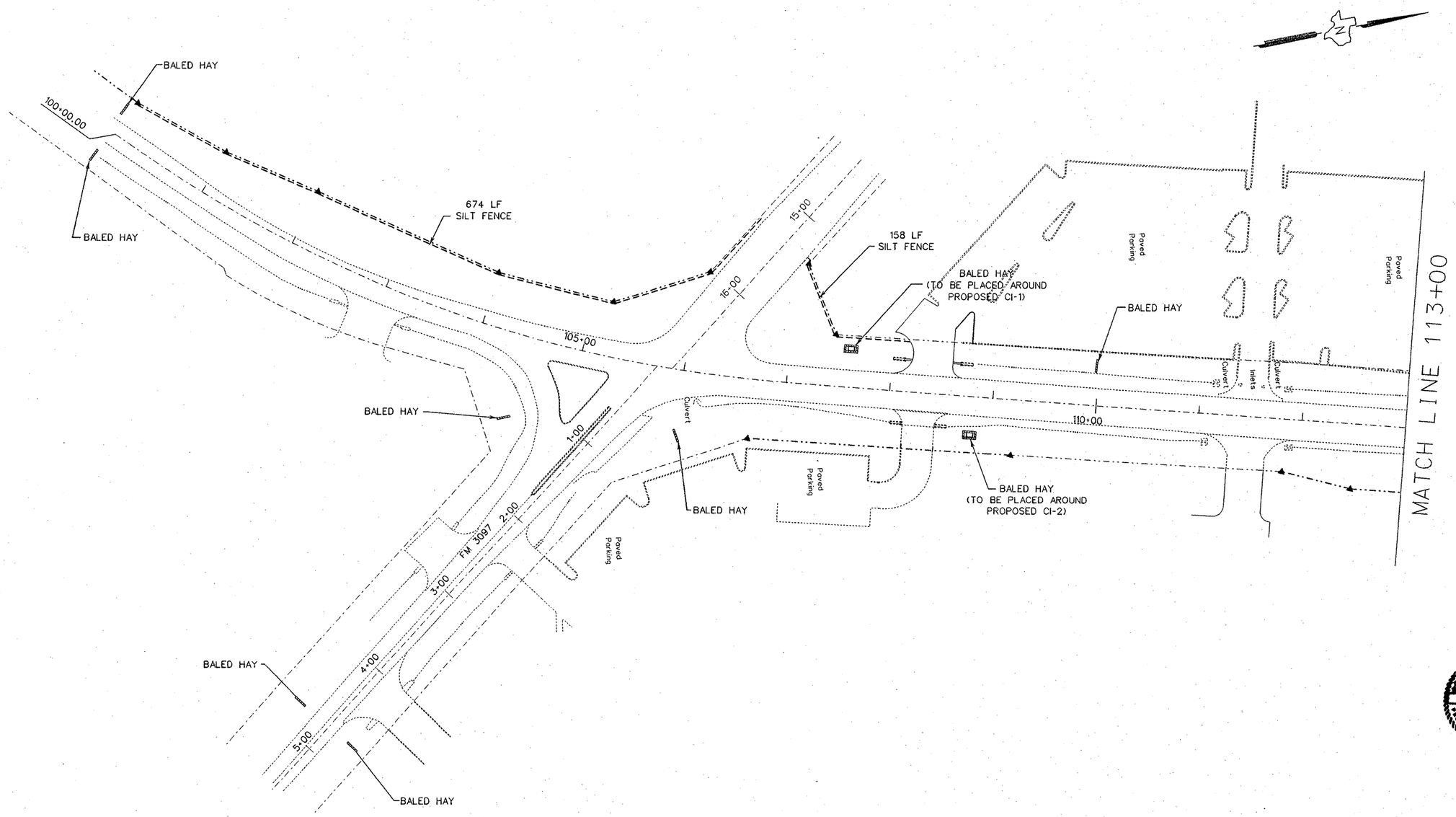
SHEET 1 OF 3

FED.RD. DIV.NO.	PROJECT NO.		SHEET NO.
6	STP 96 (830) MM		44
STATE	STATE DISTRICT	COUNTY	
TEXAS	DALLAS	ROCKWALL	
CONT.	SECT.	JOB	HIGHWAY NO.
1014	03	041	FM 740

EXT 4411

SW3P.DGN

$$$$$$$$$$$$dgnspec$$$$$$$$$$$$



STATE OF TEXAS
G. K. WITZIG
80322
REGISTERED
PROFESSIONAL ENGINEER

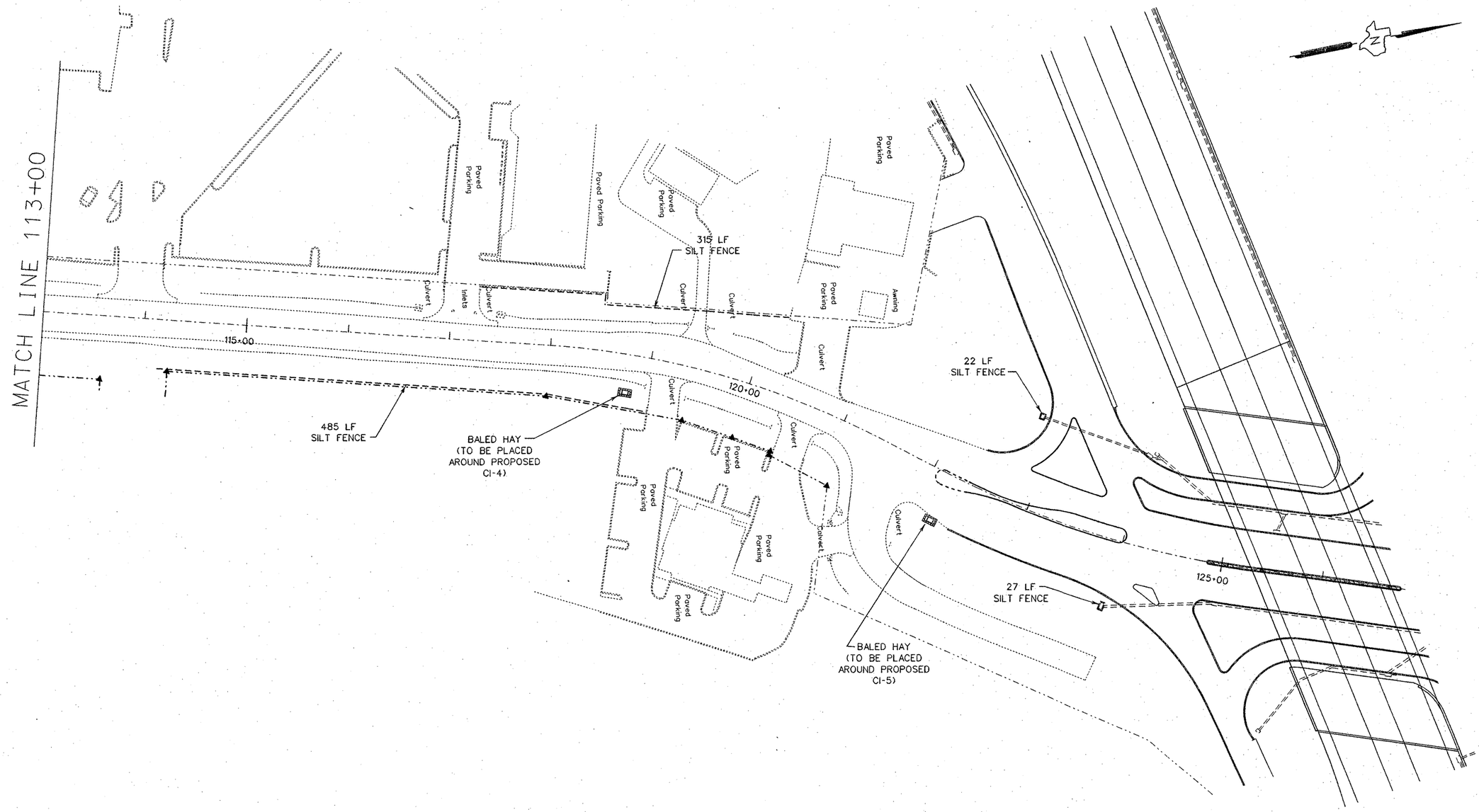
G. K. Witzig
5/3/96

SW3P PLAN SHEETS

SHEET 2 OF 3

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	STP 96 (830) MM		45
STATE	STATE DISTRICT	COUNTY	
TEXAS	DALLAS	ROCKWALL	
CONTROL	SECTION	JOB	HIGHWAY NO.
1014	03	041	FM 740

$$$$date$$$$



STATE OF TEXAS
G. K. WETZIG
80322
REGISTERED
PROFESSIONAL ENGINEER

G. K. Wetzig
5/3/96

SW3P PLAN SHEETS
SHEET 3 OF 3

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	STP 96 (830) MM		46
STATE	STATE DISTRICT	COUNTY	
TEXAS	DALLAS	ROCKWALL	
CONTROL	SECTION	JOB	HIGHWAY NO.
1014	03	041	FM 740

SUMMARY OF SMALL SIGNS

SHEET NO.	SIGN NO.	SIGN TYPE	SIGN TEXT	SIGN DIMENSIONS	REFLECTIVE SHEETING	PLYWOOD TYPE A	**ALUMINUM TYPE A	TYPE OF MOUNT																	
								Type 1	Type 2	A	A-1	B	C	D-1	D-2	D-3	D-4	D-5	D-6	F	F (MOD)	F (SPL)		MP	MW
RIDGE ROAD (FM 740) AND FM 3097																									
	1	R10-12	LEFT TURN YIELD ON GREEN (BALL)	30" X 36"	A		X				MOUNT ON SPAN WIRE P1-F2														
	2	R10-12	LEFT TURN YIELD ON GREEN (BALL)	30" X 36"	A		X				MOUNT ON SPAN WIRE P2-F3														
	3	R10-12	LEFT TURN YIELD ON GREEN (BALL)	30" X 36"	A		X				MOUNT ON SPAN WIRE P3-F4														
	4	R10-12	LEFT TURN YIELD ON GREEN (BALL)	30" X 36"	A		X				MOUNT ON SPAN WIRE P4-F1														
	5	R3-5R	(RIGHT TURN ARROW) ONLY	30" X 36"	A		X				MOUNT ON SPAN WIRE P2-F3														
	6	D3-1	2800 RIDGE RD 2800	9'-0" X 1'-3"	C		X				MOUNT ON SPAN WIRE P2-F3														
	7	D3-1	FM 3097 - HORIZON RD	8'-6" X 2'-0"	C		X				MOUNT ON SPAN WIRE P3-F4														
	8	D3-1	2800 RIDGE RD 2800	9'-0" X 1'-3"	C		X				MOUNT ON SPAN WIRE P4-F1														
	9	D3-1	HORIZON RD - FM 3097	8'-6" X 2'-0"	C		X				MOUNT ON SPAN WIRE P1-F2														
				TOTAL			**																		

GENERAL NOTES:

SIGN LOCATIONS SHOWN ON THE PLANS ARE DIARGAMATIC. SIGNS WILL BE PLACED IN CONFORMANCE WITH THE 1980 TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS.

THE CONTRACTOR, IN COOPERATION WITH THE ENGINEER WILL STAKE EACH SIGN LOCATION BEFORE TAKING ELEVATIONS FOR FABRICATION OF SIGN POST.

SIGN POST LENGTHS SHALL BE VERIFIED WITH THE ENGINEER BEFORE FABRICATION.

REFLECTIVE SHEETING WILL BE DESIGNATED AS:

TYPE A = ENGINEER GRADE
TYPE B = SUPER ENGINEER GRADE
TYPE C = HIGH SPECIFIC INTENSITY

NOTES:

** ALL ALUMINUM SIGNS ON THIS SHEET SHALL BE CONSIDERED SUBSIDIARY TO ITEM 681.

SUMMARY OF SMALL SIGNS

SHEET 1 OF 1

FEDERAL REGION	STATE	FEDERAL AID PROJECT NO.			HIGHWAY
6	TEXAS	STP 96(830)MM			FM 740
STATE DISTRICT	COUNTY	CONTROL	SECTION	JOB	SHEET
DALLAS	ROCKWALL	1014	03	041	47

CELL NAME: SMLSUM

CONDUIT

CONDUIT TYPE	TOTAL LENGTH
1½"RM	14′
2" PVC	33′
2" RM	4′
3" RM	22′

LUMINAIRE

POLE	TYPE	LUMINAIRE
P1	STRAIN	
P2	WOOD	1
P3	STRAIN	
P4	WOOD	1
TOTAL		2

CONDUIT RUNS

RUN NUMBER	CONDUIT TYPE	NO. 6 BARE	NO. 6 XHHW	NO. 8 XHHW	NO. 12 XHHW	7 CNDR CABLE	DET. CABLE	LENGTH OF RUN
1	OH					2		61′
2	OH					2		20′
3	OH					1		38′
4	OH					1		70′
5	OH					1		16′
6	OH							34′
7	OH			3				55′
8	OH			3		1		20′
9	OH			3		1		24′
10	OH			3		1		60′
11	OH			3		2		16′
12	OH			3		2		34′
13	2"RM	1	2	6				4′
14*	3"RM			6		4		22′
15	2"PVC	1	2	6				33′
16	1½"RM	1		3				7′
17	1½"RM	1		3				7′

* CONDUIT TO BE ATTACHED TO THE BOTTOM OF THE CONTROLLER CABINET

CABLE TERMINATION CHART

CNDR. COLOR	CABLE 1 FROM SPAN P1-P2 TO CNTRL. 7 CNDR.	CABLE 2 FROM SPAN P2-P3 TO CNTRL. 7 CNDR.	CABLE 3 FROM SPAN P3-P4 TO CNTRL. 7 CNDR.	CABLE 4 FROM SPAN P4-P1 TO CNTRL. 7 CNDR.
BLACK	SH 3 ~~Y~~	SH 5 ~~Y~~	SH 7 ~~Y~~	SH 1 ~~Y~~
WHITE	SIGNAL COMMON	SIGNAL COMMON	SIGNAL COMMON	SIGNAL COMMON
RED	SH 3,4 R	SH 5,6 R	SH 7,8 R	SH 1,2 R
GREEN	SH 3,4 G	SH 5,6 G	SH 7,8 G	SH 1,2 G
ORANGE	SH 3,4 Y	SH 5,6 Y	SH 7,8 Y	SH 1,2 Y
BLUE	SH 3 ~~G~~	SH 5 ~~G~~	SH 7 ~~G~~	SH 1 ~~G~~
WHITE/ BLACK	SPARE	SPARE	SPARE	SPARE

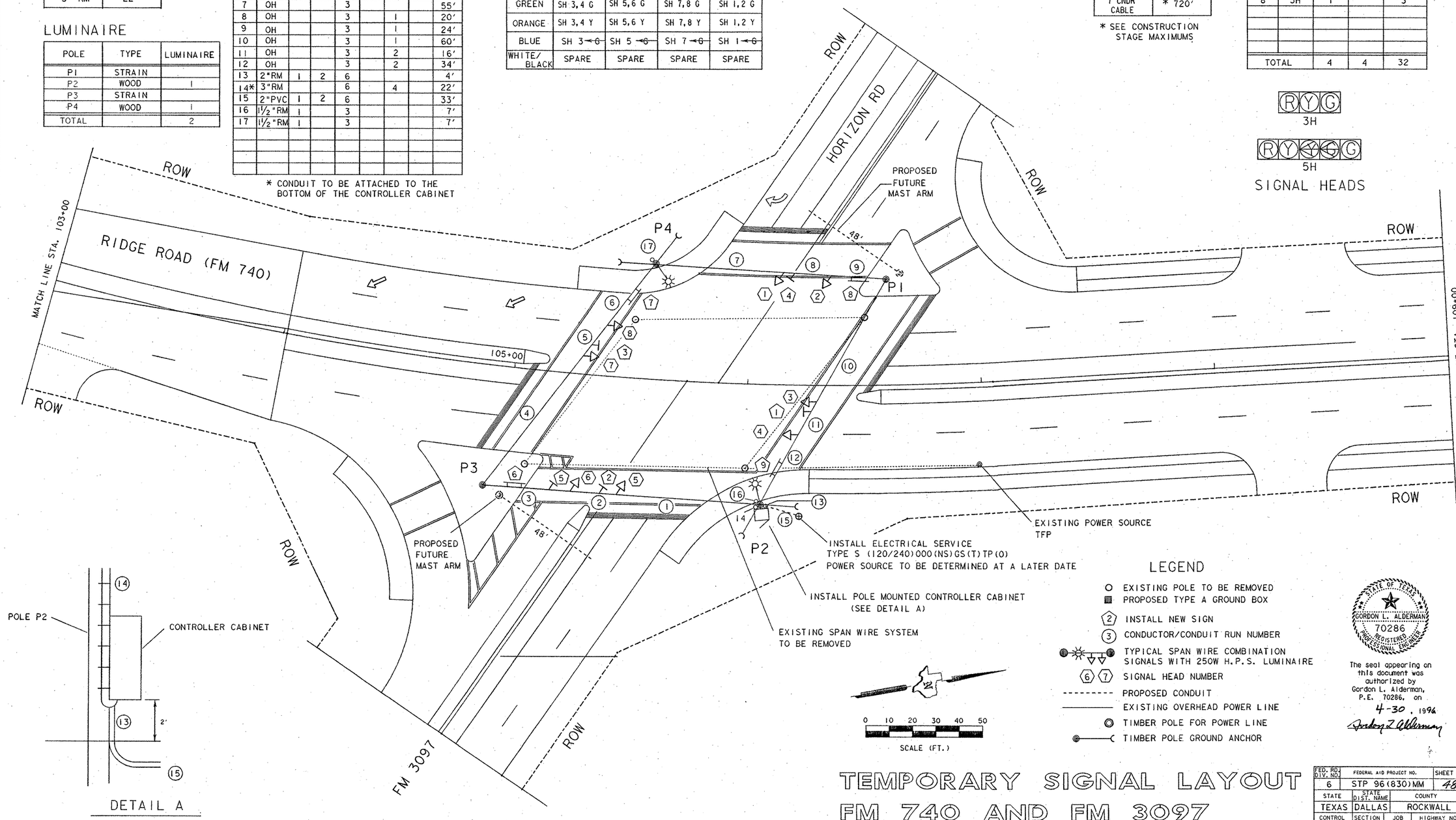
CNDR/CABLE SUMMARY

CONDUCTOR TYPE	TOTAL LENGTH (LF)
NO. 6 XHHW	74′
NO. 6 BARE	37′
NO. 8 XHHW	1023′
7 CNDR CABLE	* 720′

* SEE CONSTRUCTION STAGE MAXIMUMS

HEAD NO.	TYPE	BACK PLATE 3 SEC	BACK PLATE 5 SEC	12" VEH SECTION
1	5H		1	5
2	3H	1		3
3	5H		1	5
4	3H	1		3
5	5H		1	5
6	3H	1		3
7	5H		1	5
8	3H	1		3
TOTAL		4	4	32

SIGNAL HEADS



DETAIL A

LEGEND

- EXISTING POLE TO BE REMOVED
- PROPOSED TYPE A GROUND BOX
- (2) INSTALL NEW SIGN
- (3) CONDUCTOR/CONDUIT RUN NUMBER
- TYPICAL SPAN WIRE COMBINATION SIGNALS WITH 250W H.P.S. LUMINAIRE
- (6) (7) SIGNAL HEAD NUMBER
- PROPOSED CONDUIT
- EXISTING OVERHEAD POWER LINE
- TIMBER POLE FOR POWER LINE
- TIMBER POLE GROUND ANCHOR

0 10 20 30 40 50
SCALE (FT.)

STATE OF TEXAS
GORDON L. ALDERMAN
70286
REGISTERED PROFESSIONAL ENGINEER

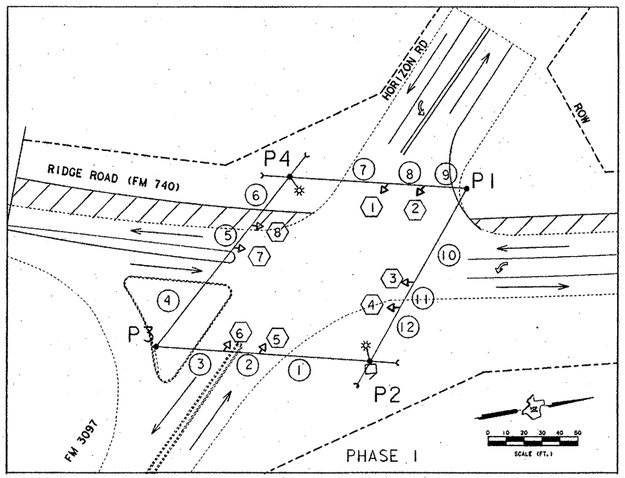
The seal appearing on this document was authorized by Gordon L. Alderman, P.E. 70286, on 4-30, 1996

Gordon L Alderman

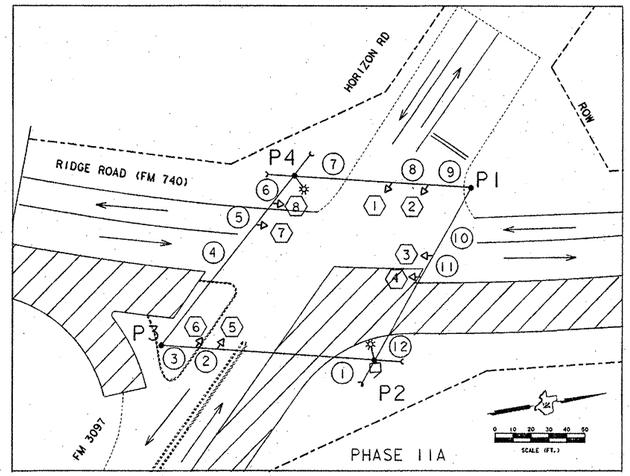
TEMPORARY SIGNAL LAYOUT
FM 740 AND FM 3097

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	STP 96(830)MM		48
STATE	STATE DIST. NAME	COUNTY	
TEXAS	DALLAS	ROCKWALL	
CONTROL	SECTION	JOB	HIGHWAY NO.
1014	03	041	FM 740

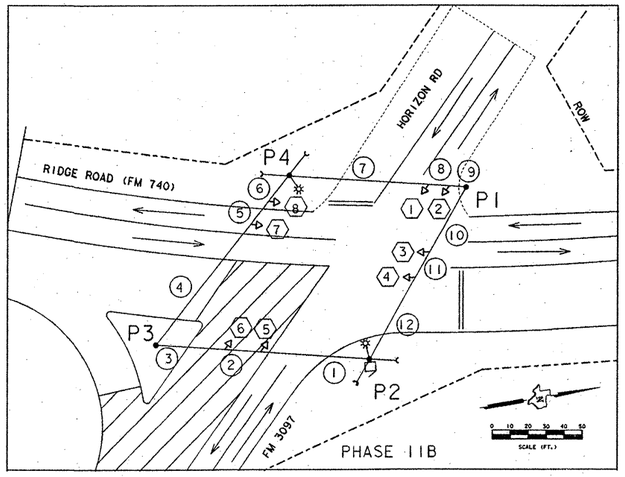
$$$$date$$$$



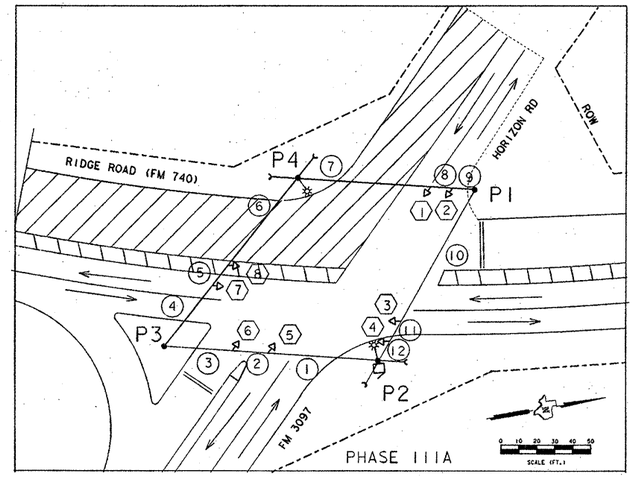
RUN AND LENGTH											
①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫
61′	20′	38′	70′	16′	34′	55′	20′	24′	60′	16′	34′
119′			120′			99′			110′		



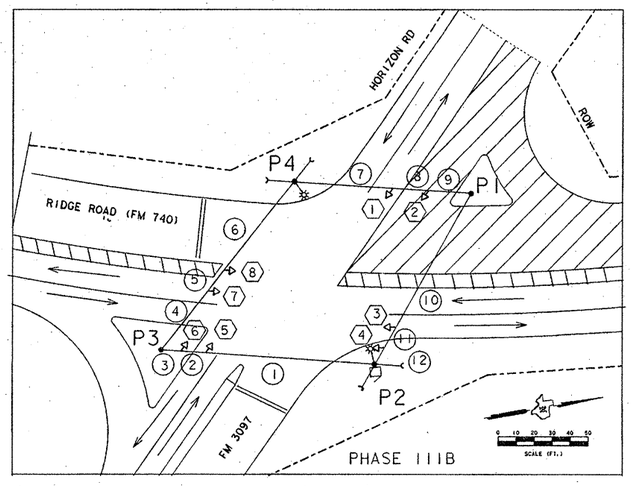
RUN AND LENGTH											
①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫
88′	12′	19′	86′	16′	18′	55′	20′	24′	43′	14′	53′
119′			120′			99′			110′		



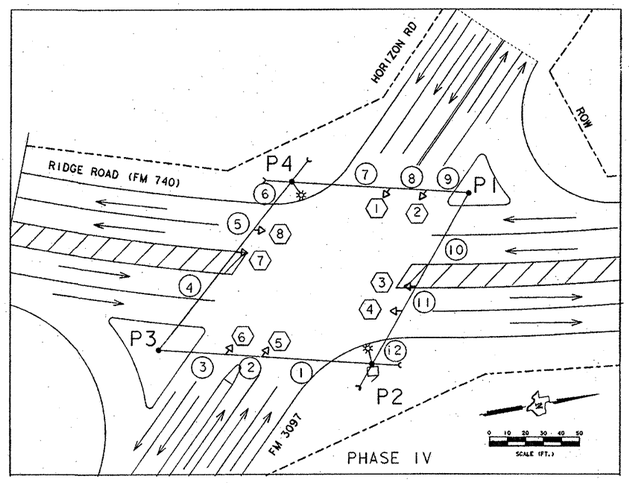
RUN AND LENGTH											
①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫
61′	20′	38′	86′	16′	18′	55′	20′	24′	43′	14′	53′
119′			120′			99′			110′		



RUN AND LENGTH											
①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫
61′	20′	38′	43′	14′	63′	74′	12′	13′	84′	13′	13′
119′			120′			99′			110′		



RUN AND LENGTH											
①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫
93′	14′	12′	43′	14′	63′	55′	20′	24′	84′	13′	13′
119′			120′			99′			110′		



RUN AND LENGTH											
①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫
61′	20′	38′	70′	16′	34′	55′	20′	24′	60′	16′	34′
119′			120′			99′			110′		

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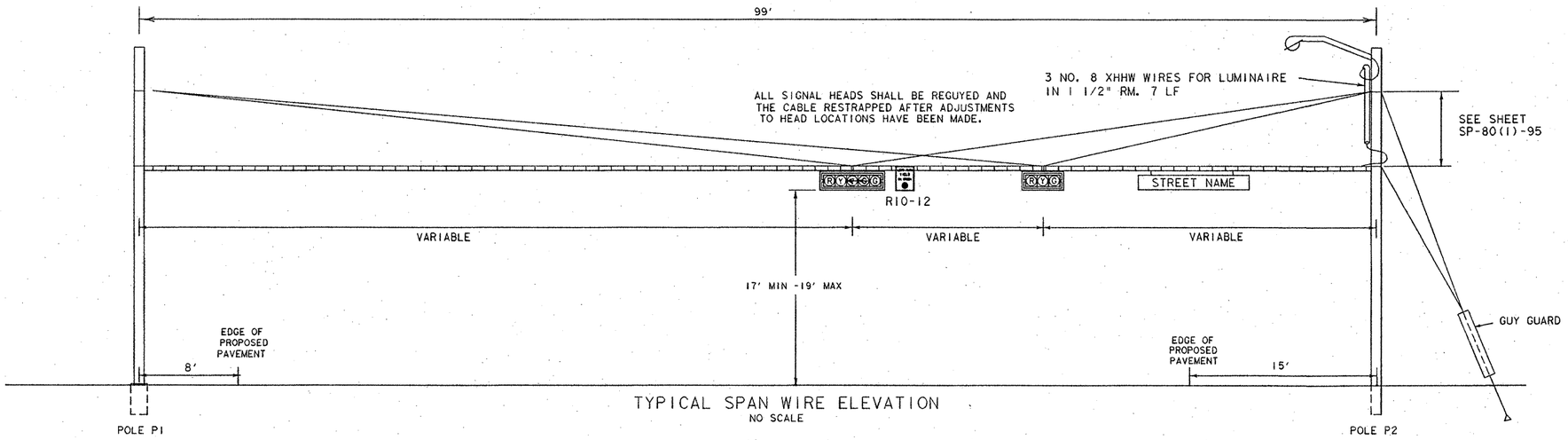
Gordon L Alderman

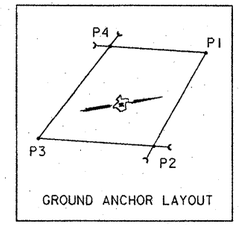
CONSTRUCTION PHASING
SIGNAL HEAD PLACEMENT

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	STP 96(830)MM		19
STATE	STATE DIST. NAME	COUNTY	
TEXAS	DALLAS	ROCKWALL	
CONTROL	SECTION	JOB	HIGHWAY NO.
1014	03	041	FM 740

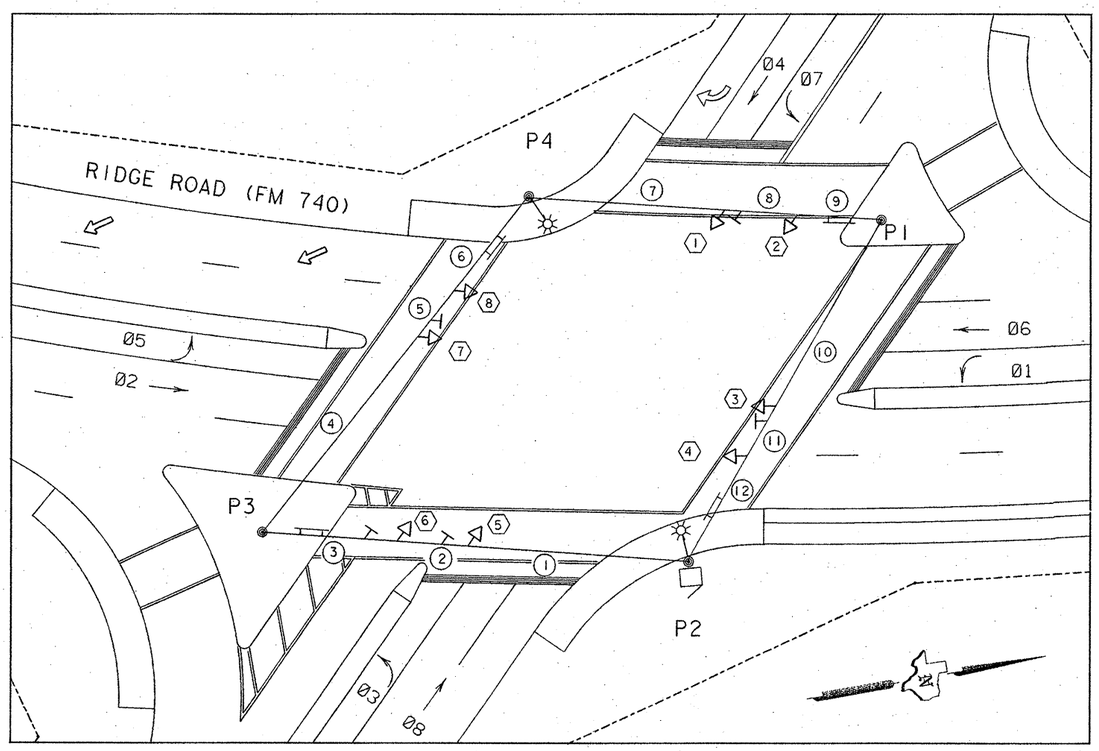
$$$$date$$$$



TYPICAL SPAN WIRE ELEVATION
NO SCALE



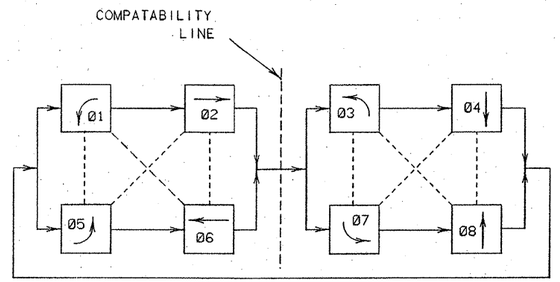
GROUND ANCHOR LAYOUT



NO SCALE

SIGNAL HEAD PLACEMENT

POLE NUMBER	FINAL STAGE RUN NUMBER (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	TOTAL SPAN DISTANCE
P1 TO P2										60'	16'	34'	110'
P2 TO P3	61'	20'	38'										119'
P3 TO P4				70'	16'	34'							120'
P4 TO P1							55'	20'	24'				99'
CONSTRUCTION STAGE MAX.	93'	20'	38'	86'	16'	63'	74'	20'	24'	84'	16'	53'	



PHASE SEQUENCE
EIGHT PHASE
NEMA CONTROLLER

STATE OF TEXAS
GORDON L. ALDERMAN
70286
REGISTERED PROFESSIONAL ENGINEER

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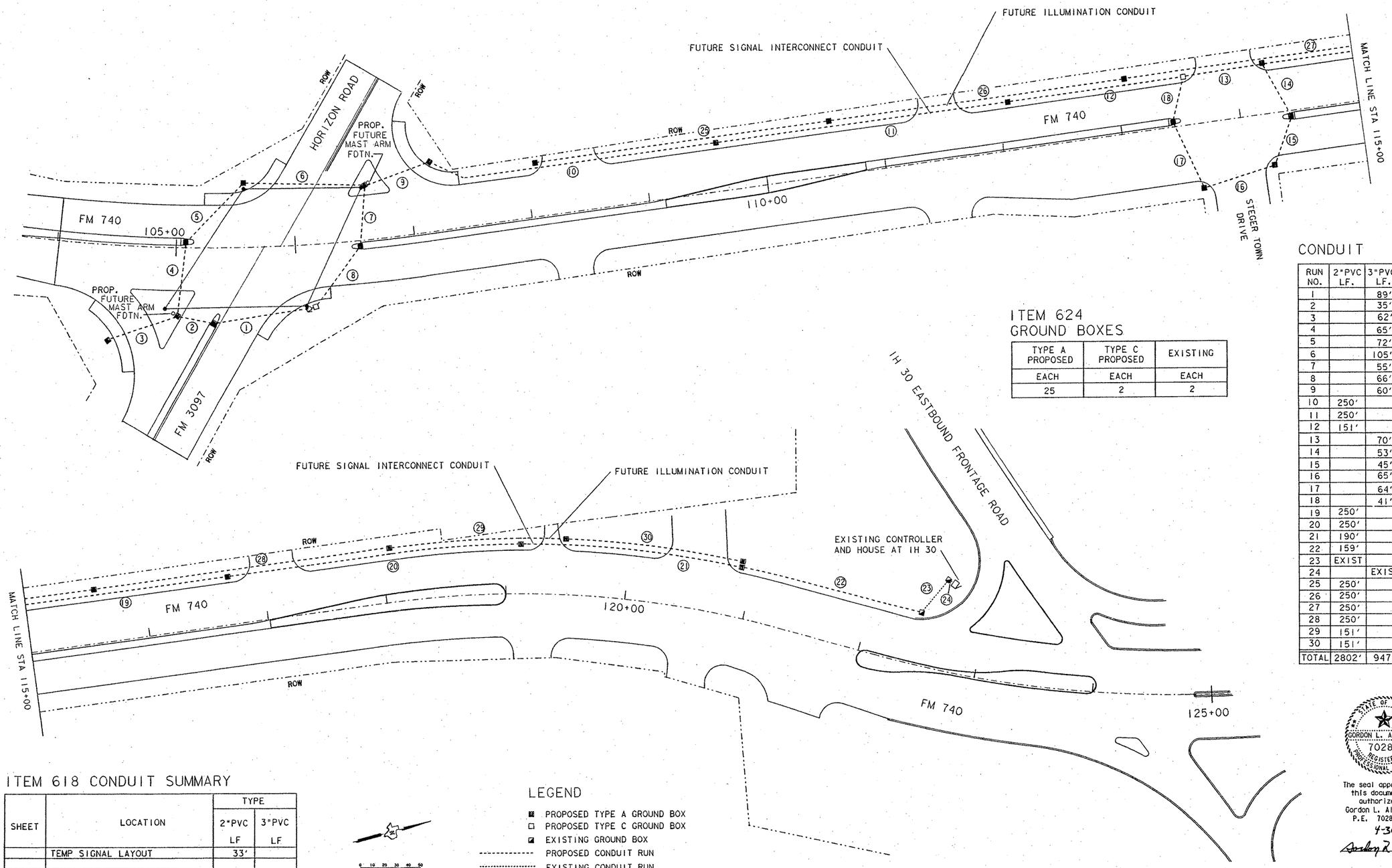
Gordon L Alderman

TYPICAL SPAN WIRE ELEVATION AND SIGNAL HEAD PLACEMENT

FED.RD. DIV.NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
6	TEXAS	STP 96(830)MM			FM 740
STATE DIST.NO.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
DAL	ROCKWALL	1014	03	041	50



ITEM 624 GROUND BOXES

TYPE A PROPOSED	TYPE C PROPOSED	EXISTING
EACH	EACH	EACH
25	2	2

CONDUIT

RUN NO.	2"PVC LF.	3"PVC LF.
1		89'
2		35'
3		62'
4		65'
5		72'
6		105'
7		55'
8		66'
9		60'
10	250'	
11	250'	
12	151'	
13		70'
14		53'
15		45'
16		65'
17		64'
18		41'
19	250'	
20	250'	
21	190'	
22	159'	
23	EXIST	
24		EXIST
25	250'	
26	250'	
27	250'	
28	250'	
29	151'	
30	151'	
TOTAL	2802'	947'

ITEM 618 CONDUIT SUMMARY

SHEET	LOCATION	TYPE 2"PVC LF	TYPE 3"PVC LF
	TEMP SIGNAL LAYOUT	33'	
	PERMANENT TRAFFIC SIGNAL AND LIGHTING CONDUIT	2802'	947'
	PROJECT TOTALS	2835'	947'

SCALE (FT.) 0 10 20 30 40 50

LEGEND

- PROPOSED TYPE A GROUND BOX
- PROPOSED TYPE C GROUND BOX
- EXISTING GROUND BOX
- PROPOSED CONDUIT RUN
- EXISTING CONDUIT RUN
- (8) CONDUIT RUN NUMBER

STATE OF TEXAS
GORDON L. ALDERMAN
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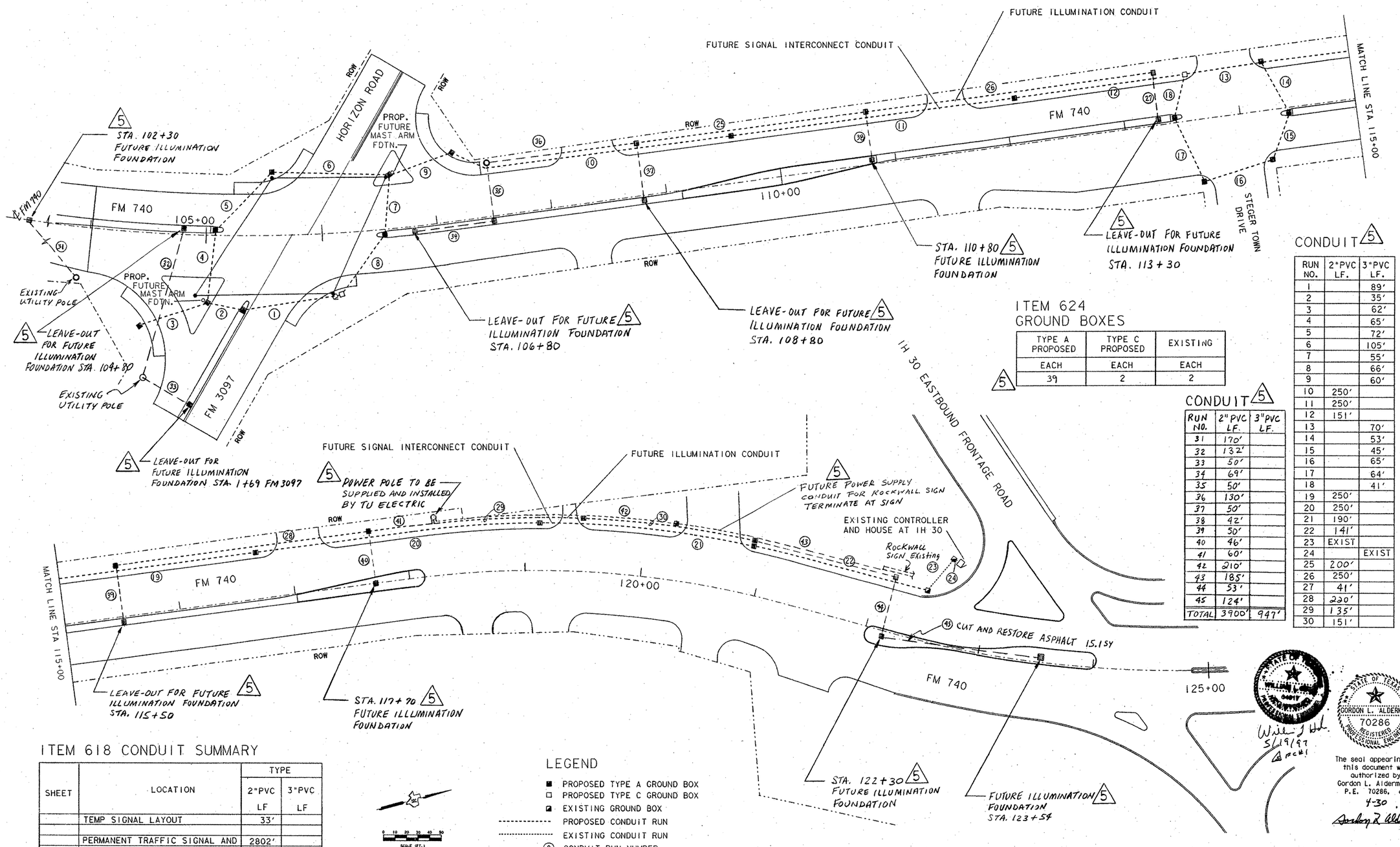
PERMANENT TRAFFIC SIGNAL AND LIGHTING CONDUIT LAYOUT FM 740

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	STP 96(830)MM		51
STATE	STATE DIST.NO.	COUNTY	
TEXAS	DAL	ROCKWALL	
CONT.	SECT.	JOB	HIGHWAY NO.
1014	03	041	FM 740

EXT 6239

5 SEE CHANGE ORDER NO. 5



5 CONDUIT

RUN NO.	2"PVC LF.	3"PVC LF.
1		89'
2		35'
3		62'
4		65'
5		72'
6		105'
7		55'
8		66'
9		60'
10	250'	
11	250'	
12	151'	
13		70'
14		53'
15		45'
16		65'
17		64'
18		41'
19	250'	
20	250'	
21	190'	
22	141'	
23	EXIST	
24		EXIST
25	200'	
26	250'	
27	41'	
28	220'	
29	135'	
30	151'	

ITEM 624 GROUND BOXES

5

TYPE A PROPOSED	TYPE C PROPOSED	EXISTING
EACH	EACH	EACH
39	2	2

5 CONDUIT

RUN NO.	2"PVC LF.	3"PVC LF.
31	170'	
32	132'	
33	50'	
34	69'	
35	50'	
36	130'	
37	50'	
38	42'	
39	50'	
40	46'	
41	60'	
42	210'	
43	185'	
44	53'	
45	124'	
TOTAL	3900'	947'

ITEM 618 CONDUIT SUMMARY

SHEET	LOCATION	TYPE 2"PVC LF	TYPE 3"PVC LF
	TEMP SIGNAL LAYOUT	33'	
	PERMANENT TRAFFIC SIGNAL AND LIGHTING CONDUIT	2802'	947'
	PROJECT TOTALS	2835'	947'

SCALE 1"=1

LEGEND

- PROPOSED TYPE A GROUND BOX
- PROPOSED TYPE C GROUND BOX
- EXISTING GROUND BOX
- PROPOSED CONDUIT RUN
- EXISTING CONDUIT RUN
- (8) CONDUIT RUN NUMBER

STATE OF TEXAS GORDON L. ALDERMAN 70286 REGISTERED PROFESSIONAL ENGINEER

5/19/97 PCH1

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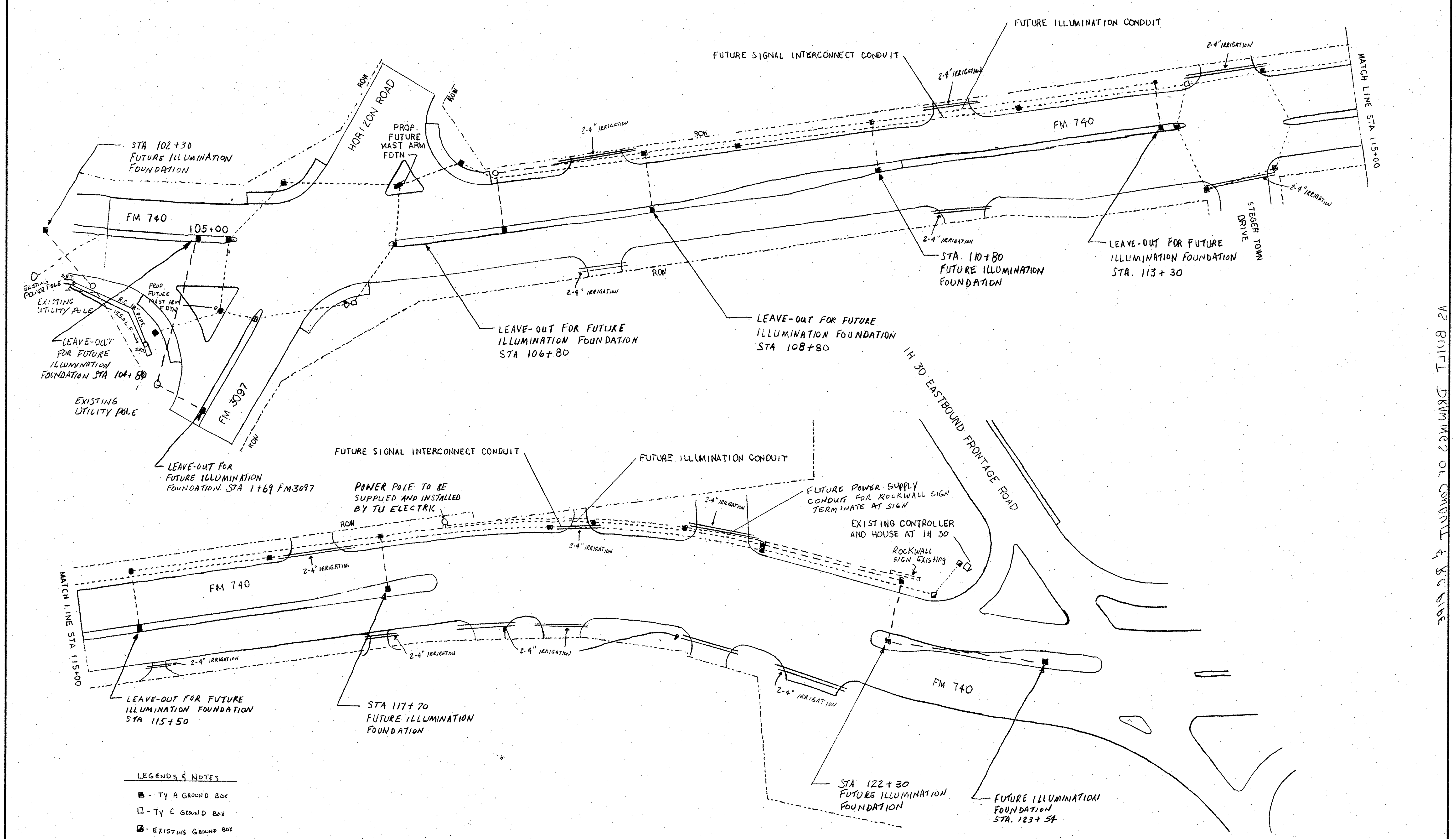
PERMANENT TRAFFIC SIGNAL AND LIGHTING CONDUIT LAYOUT FM 740

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	STP 96(830)MM		5/A
STATE	STATE DIST.NO.	COUNTY	
TEXAS	DAL	ROCKWALL	
CONT.	SECT.	JOB	HIGHWAY NO.
1014	03	041	FM 740

EXT. 6230


FUTURE ILLUMINATION CONDUIT
FUTURE SIGNAL INTERCONNECT CONDUIT
2-4" IRRIGATION
MATCH LINE STA 115+00
FM 740
ROW
HORIZON ROAD
PROP. FUTURE MAST ARM FDTN
STA 102+30 FUTURE ILLUMINATION FOUNDATION
105+00
EXISTING POWER POLE
EXISTING UTILITY POLE
LEAVE-OUT FOR FUTURE ILLUMINATION FOUNDATION STA 104+80
EXISTING UTILITY POLE
FM 3097
LEAVE-OUT FOR FUTURE ILLUMINATION FOUNDATION STA 1+69 FM3097
LEAVE-OUT FOR FUTURE ILLUMINATION FOUNDATION STA 106+80
LEAVE-OUT FOR FUTURE ILLUMINATION FOUNDATION STA 108+80
STA. 110+80 FUTURE ILLUMINATION FOUNDATION
LEAVE-OUT FOR FUTURE ILLUMINATION FOUNDATION STA. 113+30
STEGER TOWN DRIVE
IH 30 EASTBOUND FRONTAGE ROAD
POWER POLE TO BE SUPPLIED AND INSTALLED BY TU ELECTRIC
FUTURE POWER SUPPLY CONDUIT FOR ROCKWALL SIGN TERMINATE AT SIGN
EXISTING CONTROLLER AND HOUSE AT IH 30
ROCKWALL SIGN EXISTING
LEAVE-OUT FOR FUTURE ILLUMINATION FOUNDATION STA 115+50
STA 117+70 FUTURE ILLUMINATION FOUNDATION
STA 122+30 FUTURE ILLUMINATION FOUNDATION
FUTURE ILLUMINATION FOUNDATION STA. 123+54
AS BUILT DRAWINGS OF CONDUIT & P.C. PIPE

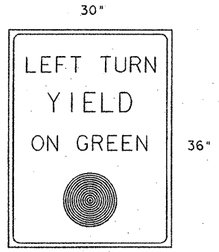
LEGENDS & NOTES

- Ty A GROUND BOX
- Ty C GROUND BOX
- EXISTING GROUND BOX

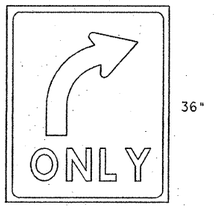
* ALL CONDUIT IS BETWEEN 9.0' AND 12.0' BEHIND BACK OF CURB ALSO AT LEAST 18" DEEP.

* ALL CONDUIT THAT RUNS UNDERNEATH DRIVEWAY IS MARKED WITH AN "X" ON TOP OF CURB.

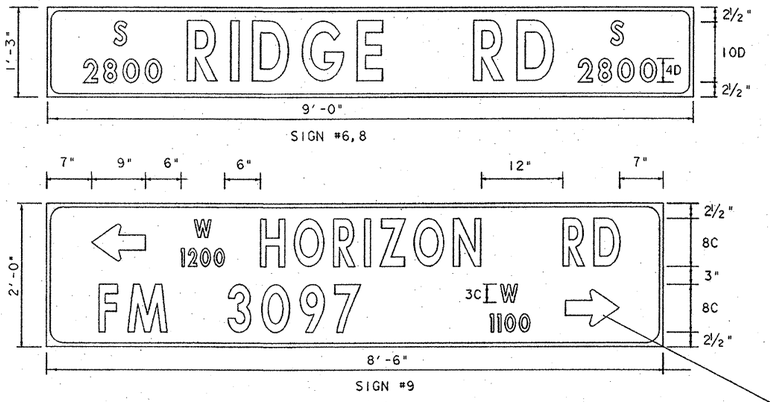
FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	STP 96(830)MM		51B
STATE	DIST.	COUNTY	
TEXAS	DALLAS	ROCKWALL	
CONT.	SECT.	JOB	HIGHWAY NO.
1014	03	041	FM 740



R10-12
SIGN #1, 2, 3, 4



R3-5R
SIGN #5



LEGEND

LETTERS-	WHITE
BORDER-	WHITE
BACKGROUND-	GREEN REFLECTIVE

GENERAL NOTES:

ALPHABETS AND LATERAL SPACING BETWEEN LETTERS AND NUMERALS SHALL CONFORM WITH THE FEDERAL HIGHWAY ADMINISTRATION'S "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS" LATEST ADDITION AND ANY APPROVED CHANGES THERETO. LATERAL SPACING OF TEXT SHALL BE SUCH AS TO PROVIDE A BALANCED APPEARANCE.
SIGN BACKGROUNDS SHALL BE OF FLAT SURFACE REFLECTIVE SHEETING CONFORMING WITH THE SPECIFICATIONS (TYPE C).
THE SIGN BLANKS SHALL BE ONE PIECE SHEET ALUMINUM ALLOY 0.080 INCHES THICK CONFORMING WITH THE ITEM "ALUMINUM SIGNS (TYPE A)".

STATE OF TEXAS
GORDON L. ALDERMAN
70286
REGISTERED PROFESSIONAL ENGINEER

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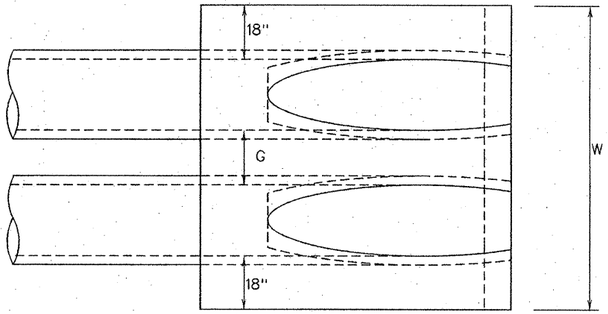
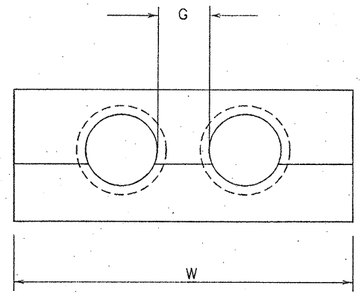
SIGN DETAILS
FM 740 AND FM 3097

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	STP 96(830)MM		52
STATE	STATE DIST. NAME	COUNTY	
TEXAS	DALLAS	ROCKWALL	
CONTROL	SECTION	JOB	HIGHWAY NO.
1014	03	041	FM 740

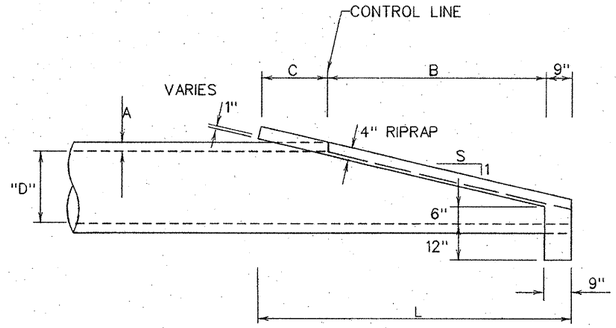
$$$$date$$$$



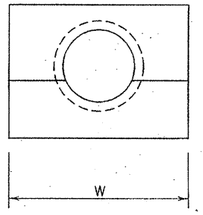
TOP VIEW
MULTIPLE PIPES



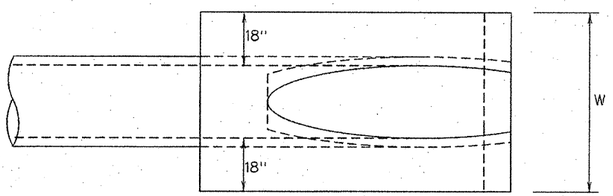
END VIEW
MULTIPLE PIPES



SIDE VIEW
SINGLE OR MULTIPLE PIPES



END VIEW
SINGLE PIPE



TOP VIEW
SINGLE PIPE

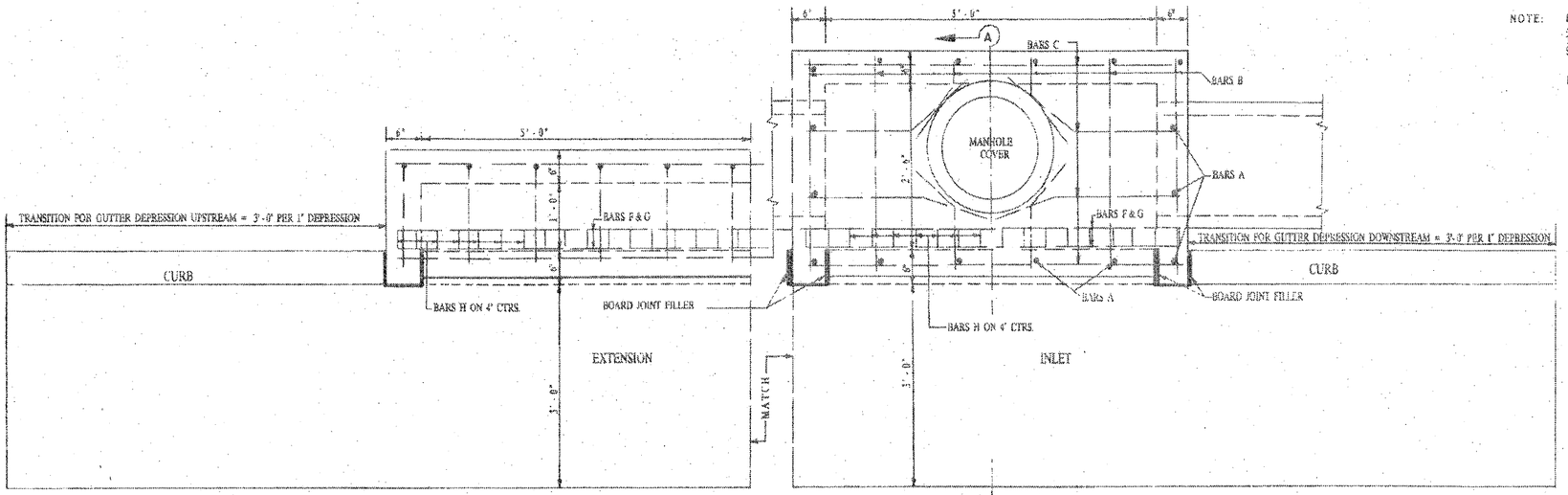
NO PIPES	SIZE (IN)	OUTSIDE DIA (IN)	SLOPE	DIMENSIONS (IN)						RIPRAP CY
				A	B	C	L	G	W	
1	18	22 ½	3:1	2 ¼"	36"	24"	69"	----	54"	0.44
2	"	"	"	"	"	"	"	14"	86"	0.72
3	"	"	"	"	"	"	"	14"	118 "	1.01
1	"	"	4:1	"	48"	33"	90"	----	54"	0.52
2	"	"	"	"	"	"	"	14"	86"	0.87
3	"	"	"	"	"	"	"	14"	118 "	1.21
1	"	"	5:1	"	60"	39"	108"	----	54"	0.60
2	"	"	"	"	"	"	"	14"	86"	0.99
3	"	"	"	"	"	"	"	14"	118 "	1.39
1	"	"	6:1	"	72"	48"	129"	----	54"	0.68
2	"	"	"	"	"	"	"	14"	86"	1.13
3	"	"	"	"	"	"	"	14"	118 "	1.59
1	21	26	3:1	2 ½"	45"	24"	78"	----	57"	0.49
2	"	"	"	"	"	"	"	15"	93"	0.84
3	"	"	"	"	"	"	"	15"	129 "	1.18
1	"	"	4:1	"	60"	33"	102"	----	57"	0.59
2	"	"	"	"	"	"	"	15"	93"	1.01
3	"	"	"	"	"	"	"	15"	129 "	1.44
1	"	"	5:1	"	75"	39"	123"	----	57"	0.67
2	"	"	"	"	"	"	"	15"	93"	1.16
3	"	"	"	"	"	"	"	15"	129 "	1.65
1	"	"	6:1	"	90"	48"	147"	----	57"	0.77
2	"	"	"	"	"	"	"	15"	93"	1.34
3	"	"	"	"	"	"	"	15"	129 "	1.90
1	24	30	3:1	3'	54"	24"	87"	----	60"	0.54
2	"	"	"	"	"	"	"	17"	101 "	0.97
3	"	"	"	"	"	"	"	17"	142 "	1.40
1	"	"	4:1	"	72"	33"	114"	----	60"	0.65
2	"	"	"	"	"	"	"	17"	101 "	1.18
3	"	"	"	"	"	"	"	17"	142 "	1.71
1	"	"	5:1	"	90"	39"	138"	----	60"	0.75
2	"	"	"	"	"	"	"	17"	101 "	1.36
3	"	"	"	"	"	"	"	17"	142 "	1.98
1	"	"	6:1	"	108"	48"	165"	----	60"	0.86
2	"	"	"	"	"	"	"	17"	101 "	1.57
3	"	"	"	"	"	"	"	17"	142 "	2.28
1	27	33½	3:1	3 ¼"	63"	24"	96"	----	63"	0.59
2	"	"	"	"	"	"	"	18 ½"	108.5 "	1.10
3	"	"	"	"	"	"	"	18 ½"	154 "	1.61
1	"	"	4:1	"	84"	33"	126"	----	63"	0.72
2	"	"	"	"	"	"	"	18 ½"	108.5 "	1.35
3	"	"	"	"	"	"	"	18 ½"	154 "	1.98
1	"	"	5:1	"	105"	39"	153"	----	63"	0.83
2	"	"	"	"	"	"	"	18 ½"	108.5 "	1.57
3	"	"	"	"	"	"	"	18 ½"	154 "	2.31
1	"	"	6:1	"	126"	48"	183"	----	63"	0.96
2	"	"	"	"	"	"	"	18 ½"	108.5 "	1.81
3	"	"	"	"	"	"	"	18 ½"	154 "	2.67
1	30	37	3:1	3 ½"	72"	24"	105"	----	66"	0.65
2	"	"	"	"	"	"	"	20"	116 "	1.25
3	"	"	"	"	"	"	"	20"	166 "	1.85
1	"	"	4:1	"	96"	33"	138"	----	66"	0.79
2	"	"	"	"	"	"	"	20"	116 "	1.53
3	"	"	"	"	"	"	"	20"	166 "	2.28
1	"	"	5:1	"	120"	39"	168"	----	66"	0.91
2	"	"	"	"	"	"	"	20"	116 "	1.79
3	"	"	"	"	"	"	"	20"	166 "	2.66
1	"	"	6:1	"	144"	48"	201"	----	66"	1.05
2	"	"	"	"	"	"	"	20"	116 "	2.07
3	"	"	"	"	"	"	"	20"	166 "	3.09
1	33	40½	3:1	3 ¾"	81"	24"	114"	----	69"	0.70
* 2	"	"	"	"	"	"	"	21½"	123.5 "	1.40
* 3	"	"	"	"	"	"	"	21½"	178 "	2.09
1	"	"	4:1	"	108"	33"	150"	----	69"	0.86
* 2	"	"	"	"	"	"	"	21½"	123.5 "	1.73
* 3	"	"	"	"	"	"	"	21½"	178 "	2.59
1	"	"	5:1	"	135"	39"	183"	----	69"	1.00
* 2	"	"	"	"	"	"	"	21½"	123.5 "	2.02
* 3	"	"	"	"	"	"	"	21½"	178 "	3.05
1	"	"	6:1	"	162"	48"	219"	----	69"	1.15
* 2	"	"	"	"	"	"	"	21½"	123.5 "	2.35
* 3	"	"	"	"	"	"	"	21½"	178 "	3.54

REFER TO CD-SPR FOR DETAILS NOT SHOWN
* MULTIPLE PIPES GREATER THAN 30" DIAMETER REQUIRE SAFETY PIPE RUNNERS

SAFETY END TREATMENT
DALLAS DISTRICT STANDARD

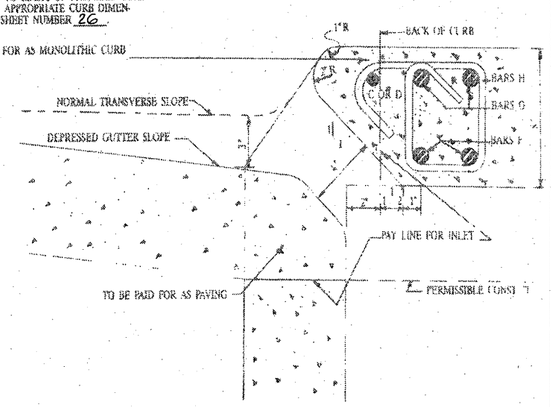
FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	STP 96 (830) MM		53
STATE	STATE DISTRICT	COUNTY	
TEXAS	DALLAS	ROCKWALL	
CONTROL	SECTION	JOB	HIGHWAY NO.
1014	03	041	FM 740

EXT 4411

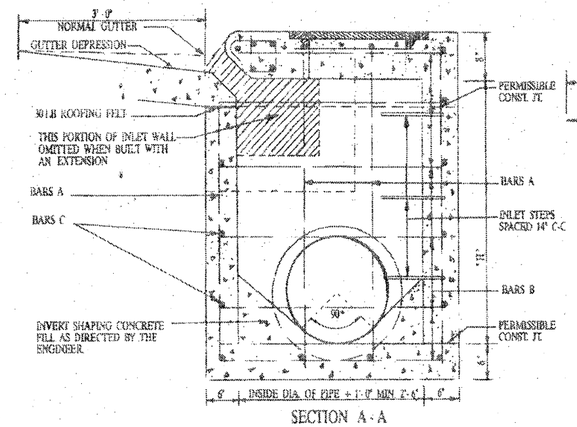


PLAN
SCALE 1" = 1'

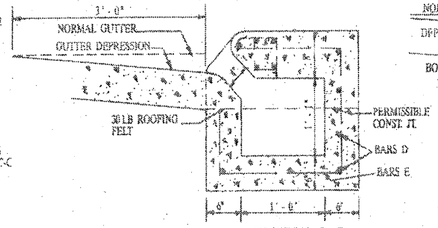
NOTE: DIMENSIONS FOR CURB SECTIONS VARY ACCORDING TO LIMITS OF PROPOSED CURB TYPES. FOR APPROPRIATE CURB DIMENSIONS, SEE SHEET NUMBER 26.



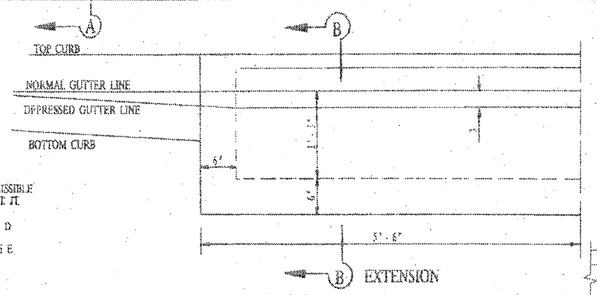
THROAT DETAIL
SCALE: 3" = 1'

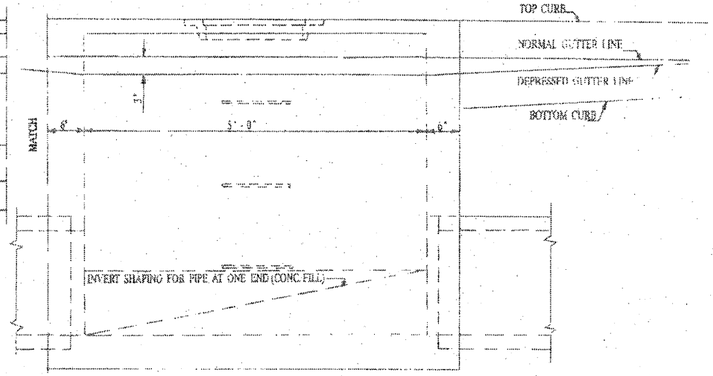


SECTION A - A
SCALE 1" = 1'



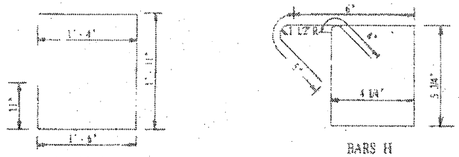
SECTION B - B
SCALE 1" = 1'

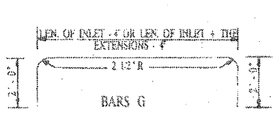


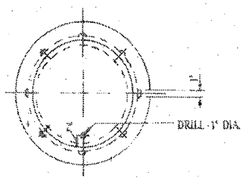


INLET

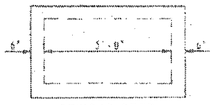
ELEVATION
SCALE : 1" = 1'



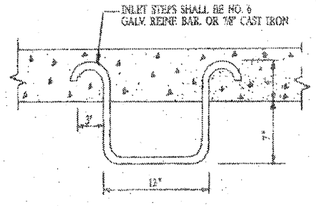




PLAN

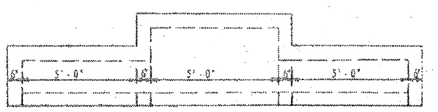


REGULAR INLET



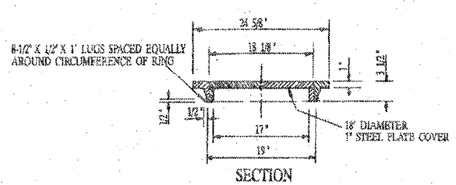
DETAIL
OF INLET STEPS

INLET WITH ONE EXTENSION



INLET WITH TWO EXTENSIONS

PLAN OF INLET AND EXTENSIONS



SECTION

18" C.I. MANHOLE RING & STEEL PLATE COVER
TY A

GENERAL NOTES:

1. ALL CONCRETE SHALL BE CLASS A. ALL EXPOSED CORNERS SHALL BE CHAMFERED 3/4".
2. CAST IRON STEPS, SPACED 14" AND LOCATED AS DIRECTED BY THE ENGINEER, SHALL BE PROVIDED AND INSTALLED IN ALL INLETS WHERE THE DEPTH EXCEEDS 4'-0".
3. PAYMENT OF CURB INLETS AND EXTENSIONS THERETO AS SHOWN ON THE PLANS WILL BE MADE AT THE UNIT PRICE BID FOR "INLET (COMPLETE) (TYPE I)", "INLET EXTENSION".
4. DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTERS OF BARS.
5. SEE SHEET NO. ____ FOR INLET SUMMARY OF CONCRETE AND REINFORCING STEEL.

CURB INLET TYPE I DETAILS

TxDOT
DISTRICT 18 STANDARD

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	STP 9G(830)MM		54
STATE	STATE DIST. NO.	COUNTY	
TEXAS	18	ROCKWALL	
CONTROL	SECTION	JOB	HIGHWAY NO.
1014	03	041	FM 740

SHEET 1 OF 2 7/93

KEN 4412

CONCRETE TO BE DEDUCTED FOR PIPES

Pipe Size	Conc. C.Y.
15"	0.04
18"	0.05
21"	0.07
24"	0.09
27"	0.11
30"	0.14
33"	0.17
36"	0.19
42"	0.26
48"	0.34
54"	0.43

REINFORCING STEEL AND CONCRETE IN TYPE I - 5FT. INLETS

INLET SIZE		STEEL																								TOTALS	
		BARS A				BARS A'				BARS B				BARS C				BARS F				BARS G				BARS H				Reinf. Steel Lbs.	Conc. Cl. A C.Y.*
H	W	No.	Size	Length	Weight	No.	Size	Length	Weight	No.	Size	Length	Weight	No.	Size	Length	Weight	No.	Size	Length	Weight	No.	Size	Length	Weight	No.	Size	Length	Weight		
3.0	2.5	12	4	3'-10"	31	4	4	2'-6"	7	18	4	3'-2"	38	13	4	5'-8"	49	2	7	5'-8"	23	2	6	9'-8"	29	18	3	2'-7"	17	194	1.64
3.5	2.5	12	4	4'-4"	35	4	4	3'-0"	8	18	4	3'-2"	38	13	4	5'-8"	49	2	7	5'-8"	23	2	6	9'-8"	29	18	3	2'-7"	17	199	1.80
4.0	2.5	12	4	4'-10"	39	4	4	3'-6"	9	20	4	3'-2"	42	15	4	5'-8"	57	2	7	5'-8"	23	2	6	9'-8"	29	18	3	2'-7"	17	216	1.96
4.5	2.5	12	4	5'-4"	43	4	4	4'-0"	11	20	4	3'-2"	42	15	4	5'-8"	57	2	7	5'-8"	23	2	6	9'-8"	29	18	3	2'-7"	17	222	2.11
5.0	2.5	12	4	5'-10"	47	4	4	4'-6"	12	22	4	3'-2"	47	17	4	5'-8"	64	2	7	5'-8"	23	2	6	9'-8"	29	18	3	2'-7"	17	239	2.27
5.5	2.5	12	4	6'-4"	51	4	4	5'-0"	13	22	4	3'-2"	47	17	4	5'-8"	64	2	7	5'-8"	23	2	6	9'-8"	29	18	3	2'-7"	17	244	2.42
6.0	2.5	12	4	6'-10"	55	4	4	5'-6"	15	24	4	3'-2"	51	19	4	5'-8"	72	2	7	5'-8"	23	2	6	9'-8"	29	18	3	2'-7"	17	262	2.59
6.5	2.5	12	4	7'-4"	59	4	4	6'-0"	16	24	4	3'-2"	51	19	4	5'-8"	72	2	7	5'-8"	23	2	6	9'-8"	29	18	3	2'-7"	17	267	2.74
8.0	2.5	12	4	8'-10"	71	4	4	7'-6"	20	28	4	3'-2"	59	23	4	5'-8"	87	2	7	6'-8"	23	2	6	9'-8"	29	18	3	2'-7"	17	306	3.22
8.5	2.5	12	4	9'-4"	75	4	4	8'-0"	21	28	4	3'-2"	59	23	4	5'-8"	87	2	7	5'-8"	23	2	6	9'-8"	29	18	3	2'-7"	17	311	3.37
10.0	2.5	12	4	10'-10"	87	4	4	9'-6"	25	32	4	3'-2"	68	27	4	5'-8"	102	2	7	5'-8"	23	2	6	9'-8"	29	18	3	2'-7"	17	351	3.84
10.5	2.5	12	4	11'-4"	91	4	4	10'-0"	27	32	4	3'-2"	68	27	4	5'-8"	102	2	7	5'-8"	23	2	6	9'-8"	29	18	3	2'-7"	17	357	4.00
4.0	3.0	12	4	4'-10"	39	4	4	3'-6"	9	20	4	3'-8"	49	15	4	5'-8"	57	2	7	5'-8"	23	2	6	9'-8"	29	18	3	2'-7"	17	223	2.18
4.5	3.5	14	4	5'-4"	50	4	4	4'-0"	11	20	4	4'-2"	56	17	4	5'-8"	64	2	7	5'-8"	23	2	6	9'-8"	29	18	3	2'-7"	17	250	2.54
5.5	3.5	14	4	6'-4"	59	4	4	5'-0"	13	22	4	4'-2"	61	19	4	5'-8"	72	2	7	5'-8"	23	2	6	9'-8"	29	18	3	2'-7"	17	274	2.89
7.5	4.0	16	4	8'-4"	89	4	4	7'-0"	19	26	4	4'-8"	81	25	4	5'-8"	95	2	7	5'-8"	23	2	6	9'-8"	29	18	3	2'-7"	17	353	3.87
10.0	5.0	18	4	10'-10"	130	4	4	9'-6"	25	32	4	5'-8"	121	33	4	5'-8"	125	2	7	5'-8"	23	2	6	9'-8"	29	18	3	2'-7"	17	470	5.42
7.5	5.0	18	4	8'-4"	100	4	4	7'-0"	19	26	4	5'-8"	98	29	4	5'-8"	110	2	7	5'-8"	23	2	6	9'-8"	29	18	3	2'-7"	17	406	4.09

NOTE: On inlets with extensions, Bars F & G shall run continuous thru inlet and extensions.
Where two or more extensions are together, Bars D shall run continuous thru the extensions.
** Does not include quantity for invert shaping.*

REINFORCING STEEL AND CONCRETE IN EXTENSIONS

5'-0" EXTN. No.	STEEL																TOTALS	
	BARS D				BARS E				BARS F				BARS G				BARS H				REINF STEEL LBS.	CL. A CONC. C.Y.*
	No.	Size	Length	Weight	No.	Size	Length	Weight	No.	Size	Length	Weight	No.	Size	Length	Weight	No.	Size	Length	Weight		
1	8	4	5'-8"	30	6	4	5'-4"	21	2	7	5'-6"	23	2	6	5'-6"	17	16	3	2'-7"	6	107	0.53
2	8	4	11'-2"	60	12	4	5'-4"	43	2	7	11'-0"	46	2	6	11'-0"	33	33	3	2'-7"	32	213	1.06
3	Reinf. Steel is as shown for 1 Extension and as shown for 2 Extensions																				320	1.59

** Length to be added to the length as shown in the above table for Ty. I - 5'-0" Inlets.*

GENERAL NOTES:

Reinforcing Steel and Concrete tables shown above are for information only. These tables are to be used with Inlet Type I, with 3" & 5" normal curb height and 8" concrete pavement.

CONC. AND REINF STEEL TABLES FOR INLET TYPE I

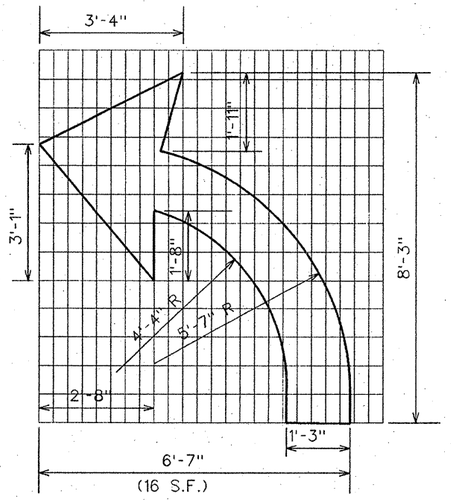
TxDOT
DISTRICT 18 STANDARD

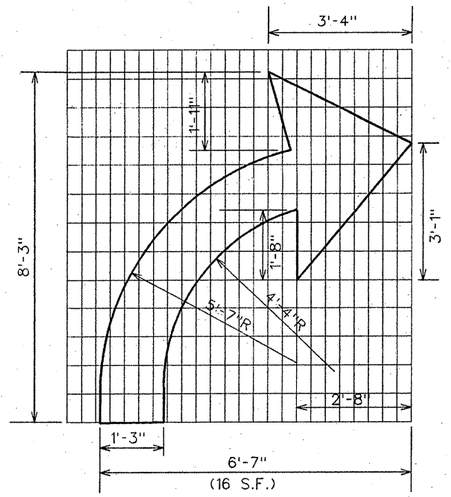
FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	STP 96(830)MM		55
STATE	STATE DIST. NO.	COUNTY	
TEXAS	18	ROCKWALL	
CONT.	SECT.	JOB	HIGHWAY NO.
1014	03	041	FM 740

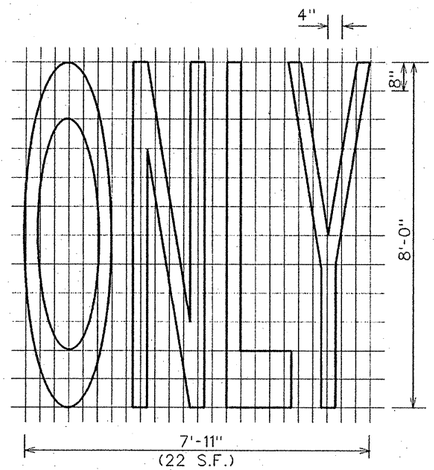
SHEET 2 of 2

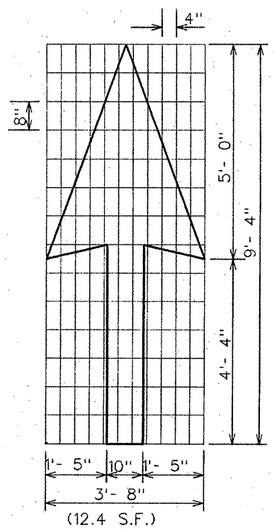
2/92

Ken 4412









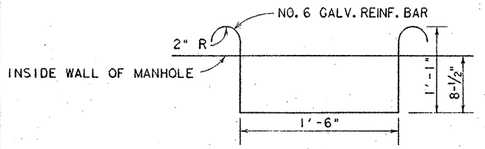
NOTES: PAVEMENT MARKINGS SHALL BE FORMED BY USING MATERIALS SPECIFIED ELSEWHERE IN PLANS AND ARE TO BE USED AT LOCATIONS SHOWN ON THE PLAN SHEETS AND/OR AS DIRECTED BY THE ENGINEER. "WORD" AND "ARROW" COMBINATIONS ARE TO BE AS SHOWN ON PAV. MARKING SHEETS AND SHALL BE CENTERED IN TRAFFIC LANES.

PAVEMENT MARKINGS
(WORDS AND ARROWS)
DALLAS DISTRICT STANDARD

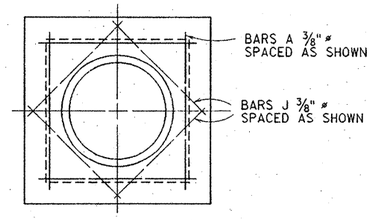
FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.			SHEET NO.
6	STP 96 (830) MM			56
STATE	STATE DISTRICT	COUNTY		
TEXAS	DALLAS	ROCKWALL		
CONTROL	SECTION	JOB	HIGHWAY NO.	
1014	03	041	FM 740	

EXT 4411

$$date$$$$

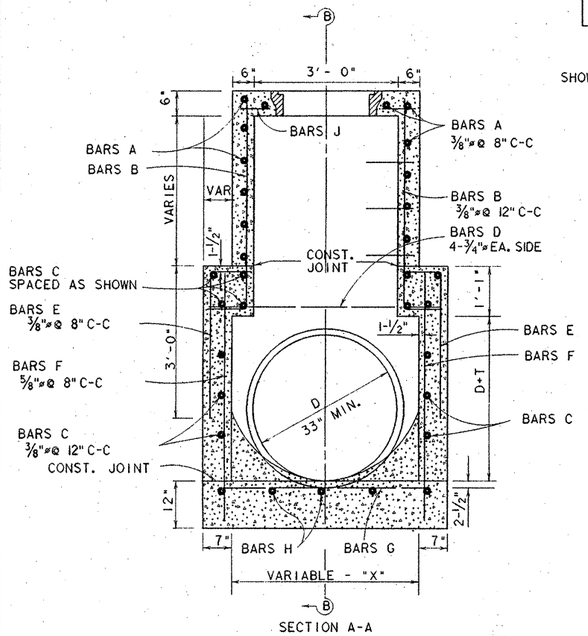


DETAIL OF MANHOLE STEP



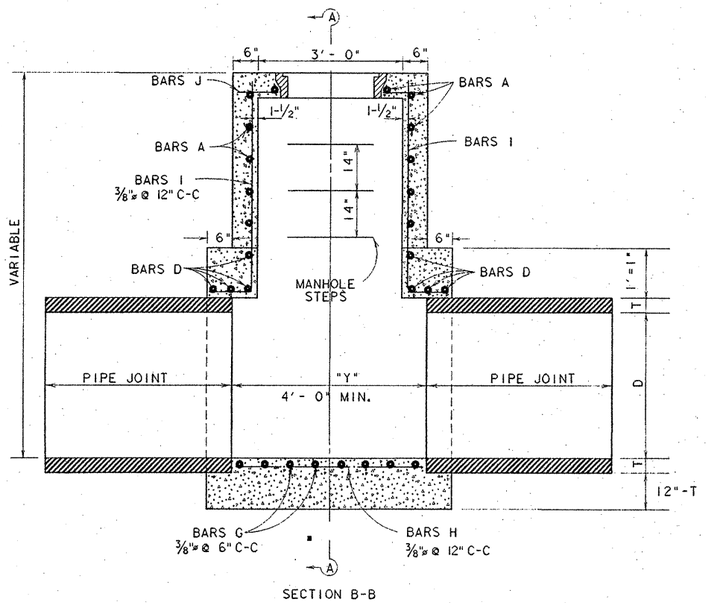
PLAN *

SHOWING REINFORCING STEEL IN MANHOLE TOP



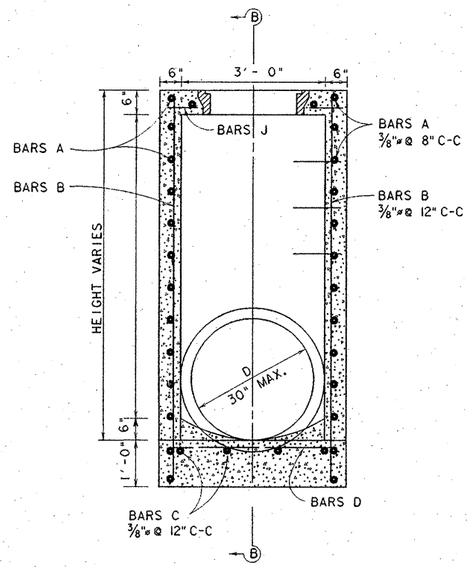
SECTION A-A

TYPE I & II MANHOLES:
PROVIDE 3/4" PREMOLDED EXPANSION JOINT, SEALED WITH RUBBER COMPOUND AROUND MANHOLE TOP WHEN IN PAVEMENT.

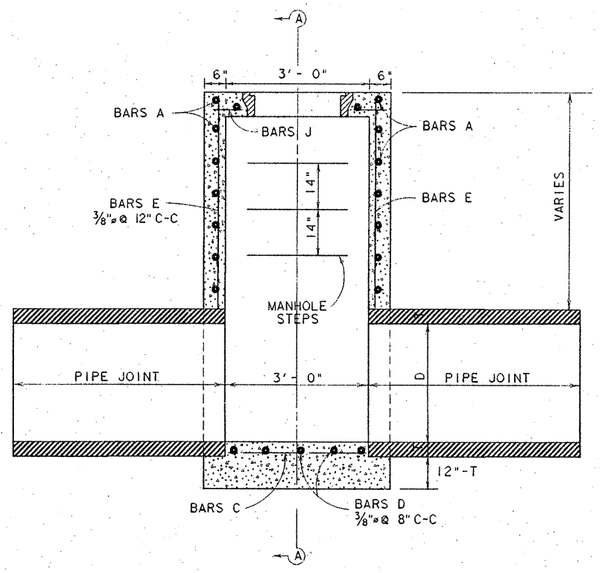


SECTION B-B

TYPE I MANHOLE



SECTION A-A

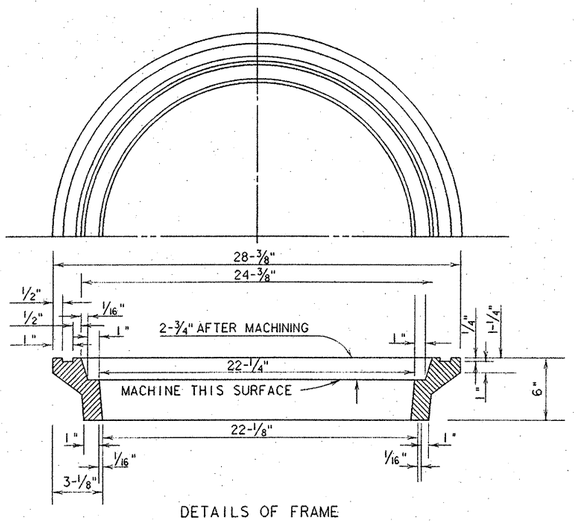


SECTION B-B

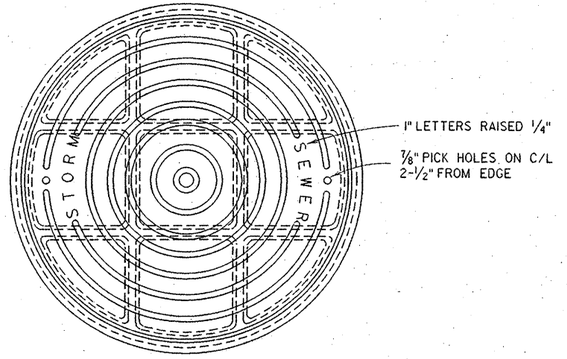
* TYPE II MANHOLE TOP SAME AS PLAN FOR TYPE I MANHOLE TOP

TYPE II MANHOLE

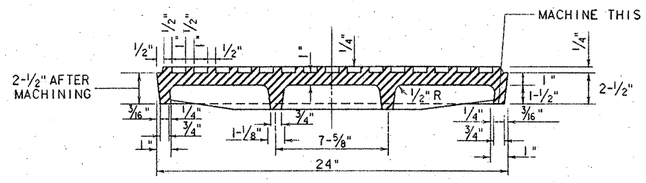
NOTE: FRAME AND COVER TO BE OF GRAY CAST IRON CONFORMING TO A.S.T.M. SPEC. A-48 FOR CLASS 30 CAST IRON.



DETAILS OF FRAME



TOP PLAN OF COVER



SECTION OF COVER

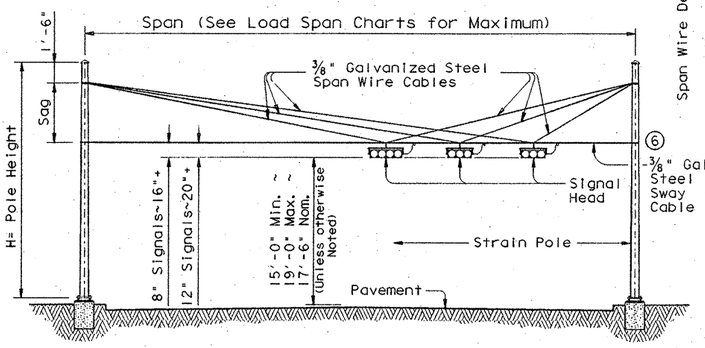
DALLAS DISTRICT STANDARD

MANHOLE DETAILS TYPE I & II MANHOLE FRAME & COVER

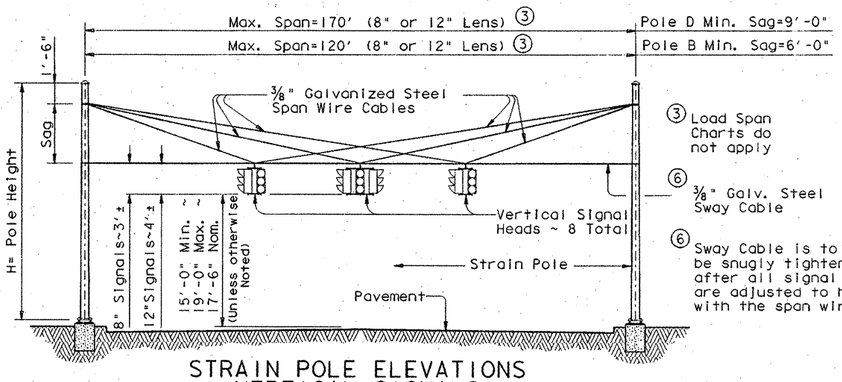
FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	STP 96(830)MM		57
STATE	STATE DIST. NO.	COUNTY	
TEXAS	DAL	ROCKWALL	
CONT.	SECT.	JOB	HIGHWAY NO.
1014	03	041	FM 740

STRAIN POLE DESCRIPTION	Pole Type	Foundation Type	Maximum Permissible Span Wire Load (lbs.)
26' Pole	A	36-A	5200
30' Pole	B	36-A	4600
30' Pole with Lum.	B	36-A	4400
30' Pole with 20' Mast Arm	C	36-B	5600
30' Pole with 24' Mast Arm	C	36-B	5500
30' Pole with 28' Mast Arm	C	36-B	5300
30' Pole with 32' Mast Arm	C	36-B	5100
30' Pole with 36' Mast Arm	C	36-B	4800
30' Pole with 20' Mast Arm & Lum.	C	36-B	5300
30' Pole with 24' Mast Arm & Lum.	C	36-B	5200
30' Pole with 28' Mast Arm & Lum.	C	36-B	5000
30' Pole with 32' Mast Arm & Lum.	C	36-B	4800
30' Pole with 36' Mast Arm & Lum.	C	36-B	4500
34' Pole	D	36-B	5600
34' Pole with Lum.	D	36-B	5400

② Numbers on charts indicate the number of signal heads on the span. The total span wire design load is based on one 5-section head and one or more additional 3-section head(s). Design wind pressures on cables are assumed as 1.0 lb/ft. Weight of span wire cables (one per signal head) is assumed as 0.65 lb/ft which includes an allowance for conductor cables and miscellaneous hardware. The effect of the sway cable on load distribution is ignored as it is assumed to break at design wind conditions. When a pole supports 2 spans, the span wire design loads for both spans should be added vectorially to determine the design load for that pole.



STRAIN POLE ELEVATIONS HORIZONTAL SIGNALS



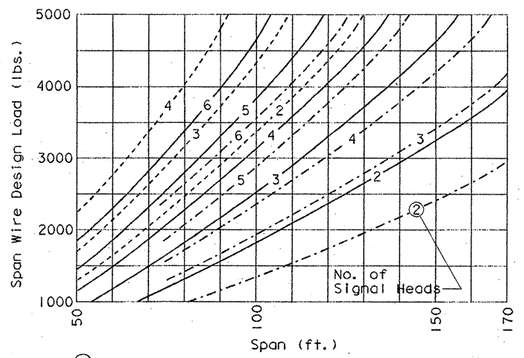
STRAIN POLE ELEVATIONS VERTICAL SIGNALS

(Most arms are not used with vertical signals)

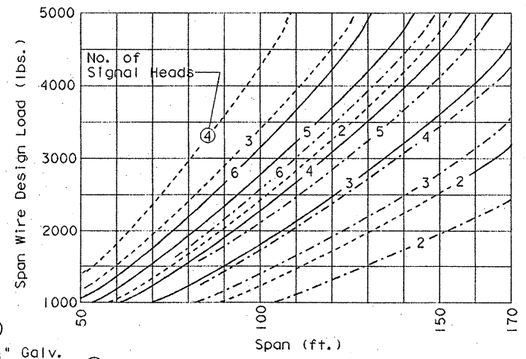
③ Load Span Charts do not apply

⑥ 3/8" Galv. Steel Sway Cable

⑥ Sway Cable is to be snugly tightened after all signal heads are adjusted to height with the span wires.



② SIGNALS WITH 12-INCH LENS



② SIGNALS WITH 8-INCH LENS

Signal Head Type	Wt. Per Head	Wind Area ◆
5-Section, 12" Lens	125 lbs	9.6 sq. ft.
5-Section, 8" Lens	70 lbs	4.8 sq. ft.
3-Section, 12" Lens	75 lbs	5.64 sq. ft.
3-Section, 8" Lens	45 lbs	3.0 sq. ft.

◆ Effective projected design wind area (actual area times drag coefficient)

---------- Sag = 4'-6" (26' or 30' Pole)
———— Sag = 8'-0" (30' or 34' Pole)
-.-.-.-.-.- Sag = 11'-6" (34' Pole)

SHIPPING PARTS LIST

Poles (Without Traffic Signal Arm)

Pole Type	Strain poles with Luminaire: Ship each pole with the following hardware attached: handhole at base, pole cap, 2 clamp-on simplex and 1 pipe plug.			Strain poles without Luminaire: Ship each pole with the following hardware attached: handhole at base, pole cap and 1 pipe plug.		
	Description	Designation	Quantity	Description	Designation	Quantity
A				26' Strain Pole	SP 26 A-80	
B	30' Strain Pole	SPL 30 B-80		30' Strain Pole	SP 30 B-80	2*
D	34' Strain Pole	SPL 34 D-80		34' Strain Pole	SP 34 D-80	

Poles (With Traffic Signal Arm)

Pole Type	Strain poles with Luminaire: Ship each pole with the following hardware attached: handhole at base, pole cap, clamp-on simplex and 3 pipe plugs.			Strain poles without Luminaire: Ship each pole with the following hardware attached: handhole at base, pole cap and 3 pipe plugs.		
	Description	Designation	Quantity	Description	Designation	Quantity
C	30' SPw/TS Arm	SPL 30 C-80		30' SPw/TS Arm	SP 30 C-80	

Traffic Signal Arms (For Type C poles)

Nominal Arm Length	Type I Arm (1 Signal): Ship each Type I Arm with the following hardware attached: 2 CGB Connectors, 1 clamp with bolts and washers		Type II Arm (2 Signals): Ship each Type II Arm with the following hardware attached: ① 1 Bracket Assembly, 3 CGB Connectors and 1 clamp with bolts and washers		Type III Arm (3 Signals): Ship each Type III Arm with the following hardware attached: ① 2 Bracket Assemblies, 4 CGB Connectors and 1 clamp with bolts and washers	
ft.	Designation	Quantity	Designation	Quantity	Designation	Quantity
20	20I-80					
24	24I-80		24II-80			
28	28I-80		28II-80			
32			32II-80		32III-80	
36			36II-80		36III-80	

Anchor Bolt Assemblies (1 per pole)

Templates may be removed for shipment.

Anchor Bolt Diameter	Anchor Bolt Length	Quantity
1 3/4"	3'-10"	2
2"	4'-3"	

Each Anchor Bolt Assembly consists of the following: Top and Bottom templates, 4 anchor bolts, 8 nuts, 8 flat washers, 4 lock washers and 4 nut anchor devices (Type 2) per Standard Drawing "TS-FD".

Luminaire Arms

Nominal Arm Length	Quantity
8' Arm	

① Supply Option "A" unless otherwise noted. See Sheet "DMA-80"

* FURNISHED BY STATE

MODIFIED 3/16" AND 5/16" GALVANIZED STEEL SPAN WIRE CABLES TO 3/8" DIA.

DALLAS DISTRICT STANDARD

MATERIALS	
Round Shafts or Polygonal Shafts	ASTM A595 GR A, ASTM A570 GR50, ASTM A607 GR50, ASTM A572 GR50 or A36M50
Plates ⑦	ASTM A36 OR A572 GR50 OR A595 OR A36M50
Steel Cable	ASTM A475, 7 Wire, Utilities Grade

⑦ Any of the materials listed for plates may be used where the drawings do not specify a particular ASTM designation.

Pole Type	ROUND POLES D_B	D_T	⑤ thk	H	POLYGONAL POLES D_B	D_T	⑤ thk	H
	in.	in.	in.	ft.	in.	in.	in.	ft.
A	12.5	8.9	.239	26	13.0	9.0	.239	26
B	13.5	9.3	.239	30	14.0	9.0	.239	30
C	15.5	11.3	.239	30	16.0	11.0	.239	30
D	15.5	10.7	.239	34	16.0	11.0	.239	34

D_B = Pole Base O.D. D_T = Pole Top O.D. H = Pole Height

⑤ Thickness shown are minimum, thicker materials may be used.

STANDARD PLANS
TEXAS DEPARTMENT OF TRANSPORTATION
Traffic Operations Division

TRAFFIC SIGNAL SUPPORT STRUCTURES STRAIN POLE ASSEMBLIES (80 MPH WIND ZONE)

SHEET 1 OF 2 SP-80(1)-95 (DAL)

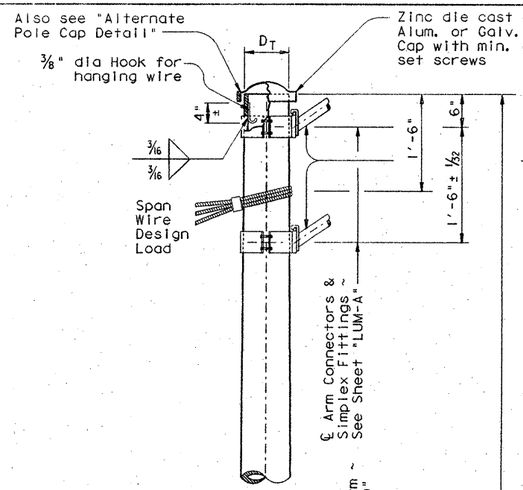
ORIG DRAN DATED: August 1995	DN: MS	CK: JSY	DW: MME	CK: JSY	REQ NO.:
REVISIONS	STATE DISTRICT: DAL	FEDERAL REGION: 6	FEDERAL AID PROJECT NO.: STP 96(830)MM		SHEET: 58
	COUNTY: ROCKWALL		CONTROL: 1014	SECTION: 03	JOB: 041
					HIGHWAY: FM740

120A

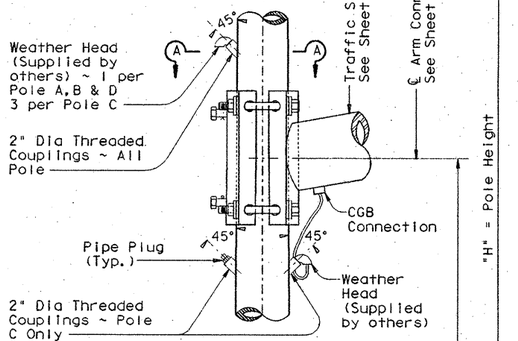
ACC: d48hplqr/usr/d4825l7

LEVELS DISPLAYED
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48
49 50 51 52 53 54 55 56 57 58 59 60 61 62 63

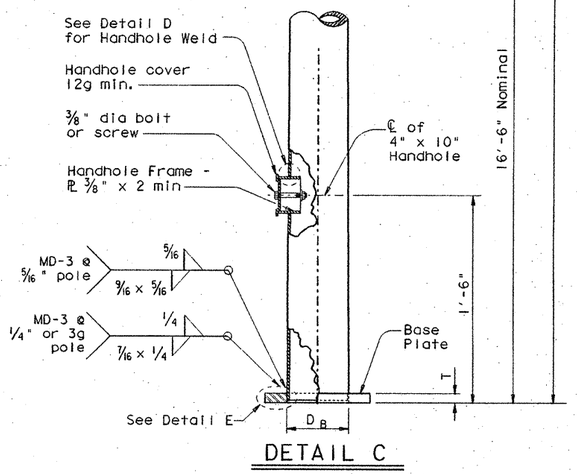
LV=1.2 for English 1.3 for Metric



DETAIL A

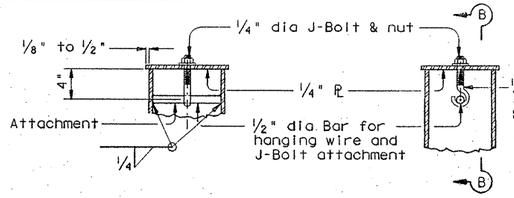


DETAIL B



DETAIL C

POLE ELEVATION



SECTION B-B

ALTERNATE POLE CAP DETAIL

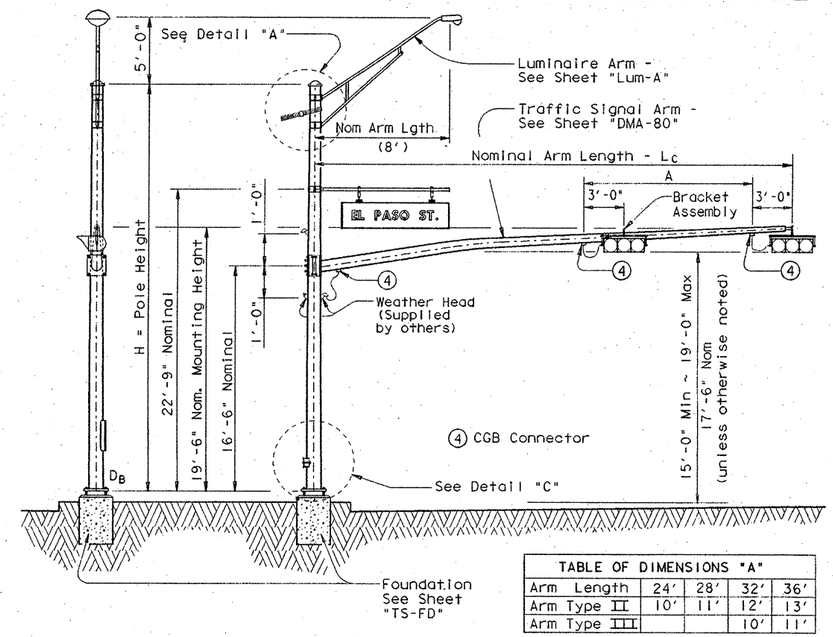
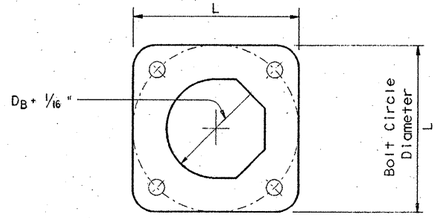


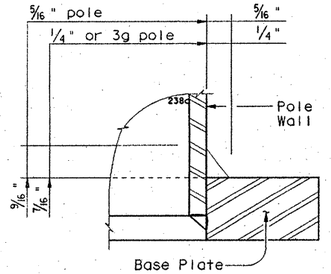
TABLE OF DIMENSIONS "A"				
Arm Length	24'	28'	32'	36'
Arm Type II	10'	11'	12'	13'
Arm Type III			10'	11'

STRUCTURE ASSEMBLY

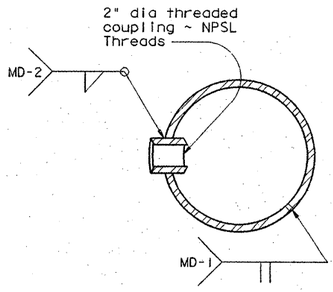


BASE PLATE PLAN

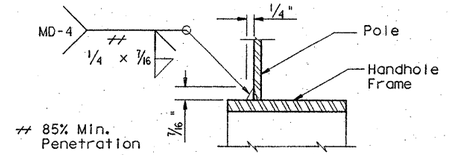
Foundation Type	Anchor Bolt Diameter	Bolt Hole Diameter	Bolt Circle Diameter	Base PL Dim. L x T
36-A	1 3/4"	2"	19"	19" x 1 3/4"
36-B	2"	2 1/4"	21"	21" x 2"



DETAIL E



SECTION A-A



DETAIL D

GENERAL NOTES:

Design conforms to 1994 AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals and Interim Specifications thereto. Design Wind Speed equals 80 mph plus a 1.3 gust factor. The maximum permissible span wire design loads tabulated are calculated at a stress load of 1.4 times the basic allowable stress. A simultaneous wind on the pole, mast arm, and luminaire is also included.

See standard sheet "DMA-80" for details of clamp-on traffic signal arms, sheet "MA-C" for traffic signal arm connection details, sheet "LUM-A" for luminaire arm and connection details, and sheet "TS-FD" for anchor bolt and foundation details.

Fabrication shall be in accordance with the Specifications and with the details, dimensions, and weld procedures shown herein. Weld references call for preapproved weld procedures which the Fabricator must obtain prior to fabrication. Materials, fabrication tolerances, and shipping practices shall meet the requirements of this sheet and the Specifications.

Unless otherwise noted, all parts shall be galvanized in accordance with the Specifications.

Special design require submission of shop drawings in accordance with the item "Steel Structures".

STANDARD PLANS
TEXAS DEPARTMENT OF TRANSPORTATION
Traffic Operations Division

TRAFFIC SIGNAL SUPPORT STRUCTURES STRAIN POLE ASSEMBLIES (80 MPH WIND ZONE)

SHEET 2 OF 2 SP-80(2)-95 (DAL)

ORIG. DRAW DATE: August 1995	DW: MS	CK: JSY	DW: MME	CK: JSY	MIC NO.:
REVISIONS	STATE DISTRICT	FEDERAL REGION	FEDERAL AID PROJECT NO.		SHEET
	DAL	6	STP 96(830)MM		59
	COUNTY		CONTROL	SECTION	JOB	H.C.(SHEET)
	ROCKWALL		1014	03	041	FM740

1208

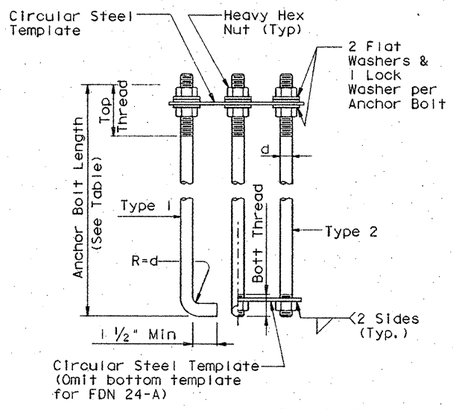
FOUNDATION DESIGN TABLE

FDN TYPE	DRILLED SHAFT DIA	REINFORCING STEEL		DRILLED SHAFT LENGTH-ft (4), (5), (6) TEXAS CONE PENTROMETER N blows/ft			ANCHOR BOLT DESIGN (1)				FOUNDATION DESIGN LOAD (2)		TYPICAL APPLICATION
		VERT BARS	SPIRAL & PITCH	10	15	40	ANCHOR BOLT DIA	Fy (ksi)	BOLT CIR DIA	ANCHOR TYPE	MOMENT K-ft	SHEAR Kips	
24-A	24"	4-#5	#2 at 12"	5.7	5.3	4.5	¾"	36	12 ¾"	1	10	1	Pedestal pole, pedestal mounted controller.
30-A	30"	8-#9	#3 at 6"	11.3	10.3	8.0	1 ½"	55	17"	2	87	3	Mast arm assembly. (see Selection Table)
36-A	36"	10-#9	#3 at 6"	13.2	12.0	9.4	1 ¾"	55	19"	2	131	5	Mast arm assembly. (see Selection Table) 30' strain pole with or without luminaire.
36-B	36"	12-#9	#3 at 6"	15.2	13.6	10.4	2"	55	21"	2	190	7	Mast arm assembly. (see Selection Table) Strain pole taller than 30' & strain pole with mast arm
42-A	42"	14-#9	#3 at 6"	17.4	15.6	11.9	2 ¼"	55	23"	2	271	9	Mast arm assembly. (see Selection Table)

FOUNDATION SELECTION TABLE FOR STANDARD MAST ARM PLUS ILSN SUPPORT ASSEMBLIES (ft)

		FDN 30-A	FDN 36-A	FDN 36-B	FDN 42-A
80 MPH DESIGN WIND SPEED	MAX SINGLE ARM LENGTH	36'	48'		
	MAXIMUM DOUBLE ARM LENGTH COMBINATIONS	24' X 24'			
		28' X 28'			
		32' X 28'	32' X 32'		
			36' X 36'		
			40' X 36'		
			44' X 28'	44' X 36'	
100 MPH DESIGN WIND SPEED	MAX SINGLE ARM LENGTH	24'	36'	44'	
	MAXIMUM DOUBLE ARM LENGTH COMBINATIONS		24' X 24'		
			28' X 28'		
			32' X 24'	32' X 32'	
				36' X 36'	
				40' x24'	40' X 36'
					44' x 36'

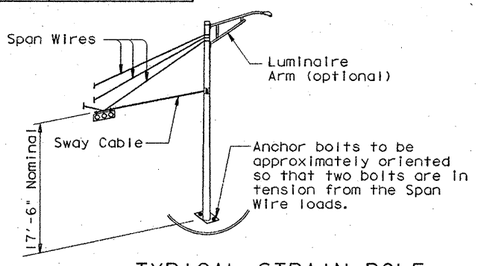
EXAMPLE:
1. For 80mph design wind speed, foundation 30-A can support up to a 32' arm with another arm up to 28'
2. For 100mph design wind speed, foundation 36-A can support a single 36' mast arm.



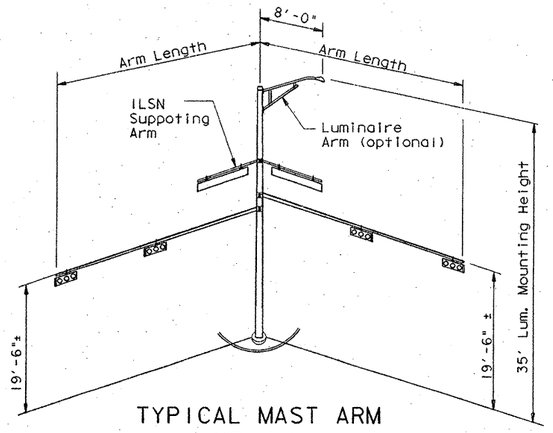
HOOKED ANCHOR (TYPE 1) | NUT ANCHOR (TYPE 2)

ANCHOR BOLT ASSEMBLY

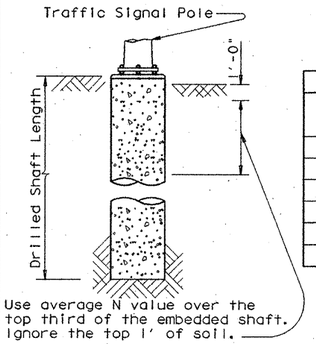
INSTALLATION PROCEDURE:
Threads of anchor bolts shall be coated with pipe joint compound prior to installation of upper nuts when erecting pole. After pole is plumbed and in permanent alignment, the exposed threads of painted bolts shall be cleaned and an additional coating of zinc-rich paint applied to seal the bolt thread-nut joint.



TYPICAL STRAIN POLE ASSEMBLY



TYPICAL MAST ARM ASSEMBLY

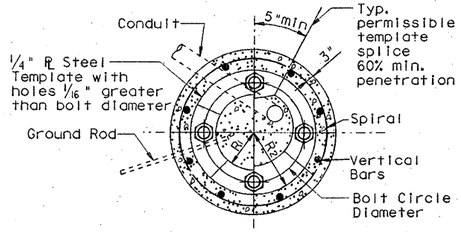


NOTES:
(1) Anchor bolt design develops the foundation capacity given under Foundation Design Loads.
(2) Foundation Design Loads are the allowable moments and shears at the base of the structure.
(3) Foundations may be listed seperately or grouped according to similarity of location and type. Quantities are for the Contractor's information only.
(4) Field Pentrometer readings at a depth of approximately 3 to 5 feet may be used to adjust shaft lengths.
(5) If rock is encountered, the Drilled Shaft shall extend a minimum of two diameters into solid rock.
(6) Decimal lengths in Design Table are to allow interpolation for other pentrometer values. Round to nearest foot for entry into Summary Table.

ANCHOR BOLT & TEMPLATE SIZES

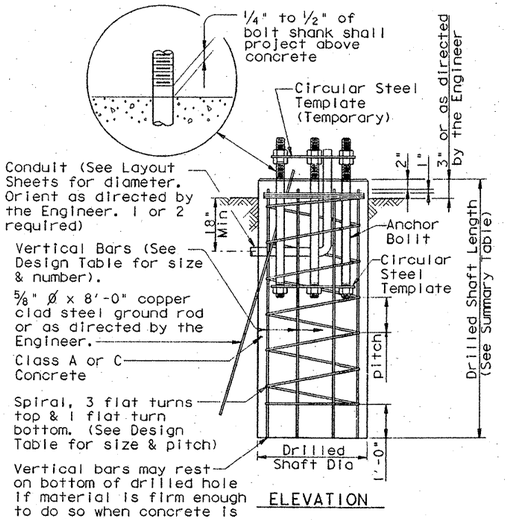
BOLT DIA IN.	(7) BOLT LENGTH	TOP THREAD	BOTT THREAD	BOLT CIRCLE	R2	R1
¾"	1'-6"	3"	—	12 ¾"	7 ⅛"	5 ⅝"
1 ½"	3'-4"	6"	2"	17"	10"	7"
1 ¾"	3'-10"	7"	2 ¼"	19"	11 ¼"	7 ¾"
2"	4'-3"	8"	2 ½"	21"	12 ½"	8 ½"
2 ¼"	4'-9"	9"	3"	23"	13 ¾"	9 ¼"

(7) Min dimensions given, longer bolts are acceptable.



R1 may equal R2 if plate is welded of 3 or more segments.

TOP VIEW



ELEVATION

FOUNDATION DETAILS

FOUNDATION SUMMARY TABLE (3)

LOCATION IDENTIFICATION	AVG. N blow /ft.	FDN TYPE	NO. ea.	DRILLED SHAFT LENGTH (6) (FEET) 24-A	30-A	36-A	36-B	42-A
FM 740 AND FM 3097								
P-1	10	36A	1			13		
P-3	10	36A	1			13		
TOTAL DRILLED SHAFT LENGTHS						26		

GENERAL NOTES:
Design conforms to 1994 AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals and Interim revisions thereto.
Reinforcing steel shall conform to Item 440.
Concrete shall be Class A or C.
Threads for anchor bolts and nuts shall be rolled or cut threads of unified national coarse thread series except for A193B7 bolts which shall have 8 pitch thread series. Bolts and nuts shall have Class 2A and 2B fit tolerances. Galvanized nuts shall be tapped after galvanizing.
Anchor bolts that are 1" in diameter or less shall conform to ASTM A36. Anchor bolts larger than 1" in diameter shall conform to Special Specification A36M55 or ASTM A193B7 or A687. Galvanize or coat with zinc-rich paint a minimum of the upper 14 inches of all anchor bolts unless otherwise noted. Nuts for anchor bolts shall conform to ASTM A563 Gr A or better heavy hex. Exposed nuts shall be galvanized or coated with zinc-rich paint. Washers shall be galvanized. Templates and embeded nuts need not be galvanised.

LEVELS DISPLAYED
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48
49 50 51 52 53 54 55 56 57 58 59 60 61 62 63

ACC: d48hpl1a:/usr/d482517
LV=1.2 for English 1.3 for Metric

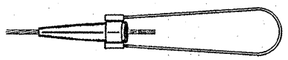
STANDARD PLANS
TEXAS DEPARTMENT OF TRANSPORTATION
Traffic Operations Division

TRAFFIC SIGNAL POLE FOUNDATION

TS-FD-95

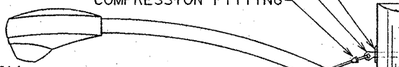
ORIG DRAN DATE: August 1995	Drn: MS	Ck1: JSY	Drn: MAO/MMF	Ck2: JSY	REC NO.:
REVISIONS	STATE DISTRICT	FEDERAL REGION	FEDERAL AID PROJECT NO.		SHEET
	DAL	6	STP 96(830)MM		60
	COUNTY		CONTROL	SECTION	JOB	HIGHWAY
	ROCKWALL		1014	03	041	FM740

128



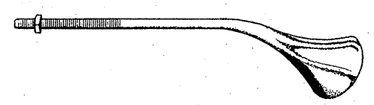
COMPRESSION FITTING

SOURCES:
RELIABLE ELECTRIC NO. 5264
FARGO NO. OR EQUAL



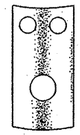
LUMINAIRE ARM

SOURCES:
CROUSE HINDS NO. 106-R82
JOSLYN NO. J75100B OR EQUAL



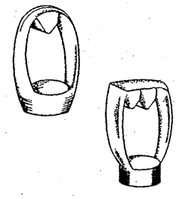
THIMBLEYE BOLT (Angle Type)

SOURCES:
JOSLYN NO. J80 SERIES
McGRAW EDISON DG4F OR EQUAL



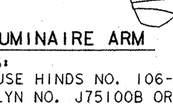
LIFT PLATE

SOURCES:
JOSLYN J7886
McGRAW EDISON DG4M-2 OR EQUAL



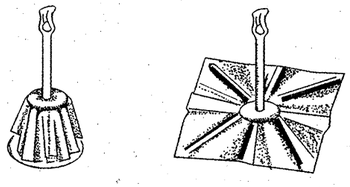
EYE NUTS (Twineye & tripleye)

SOURCES:
JOSLYN NO. J12593
McGRAW EDISON DGISE OR EQUAL



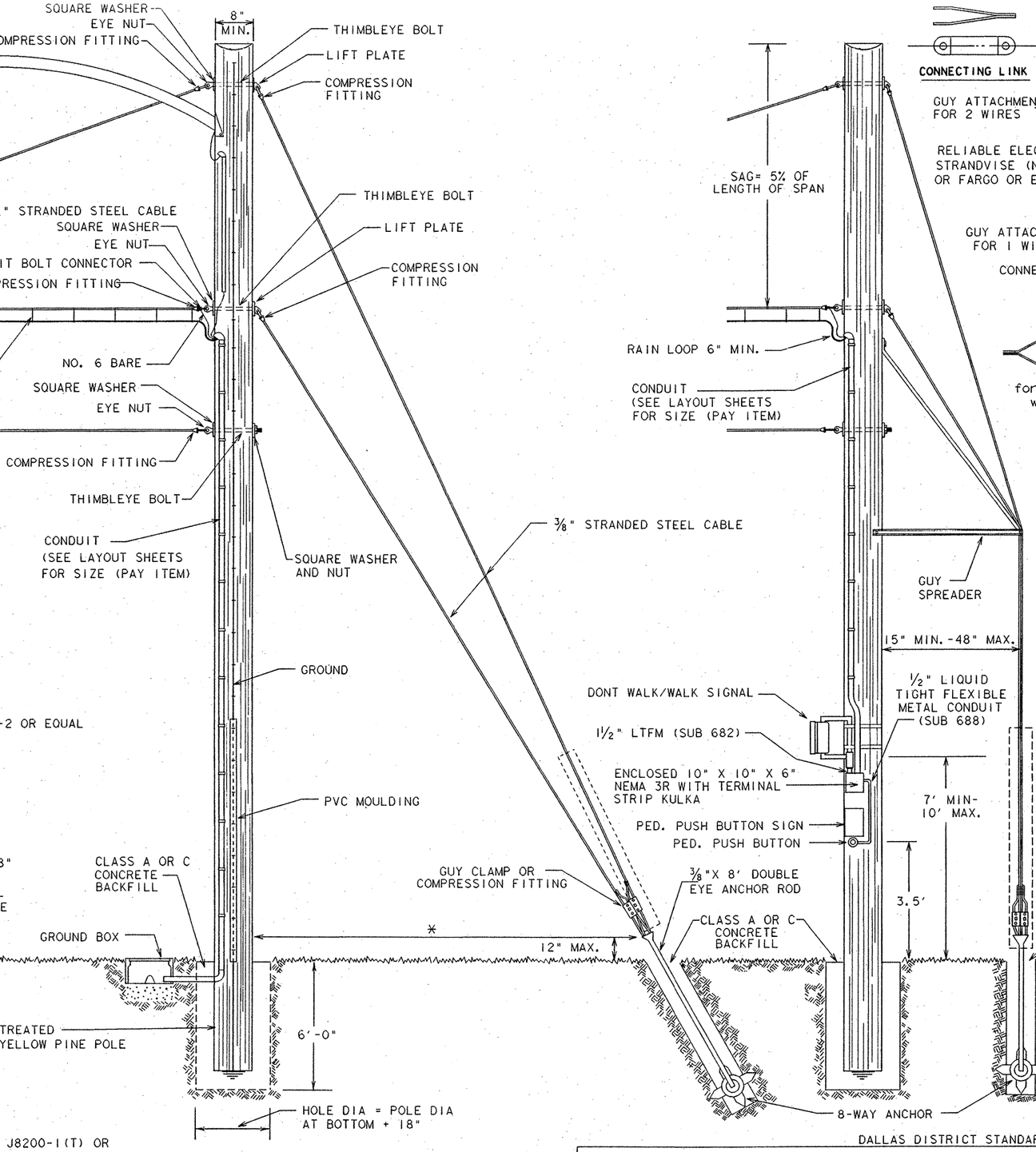
GUY CLAMP (3-Bolt)

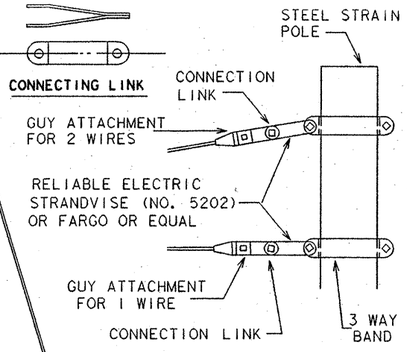
6" HEAVY GUY CLAMP WITH 3-5/8" BOLTS OR RELIABLE ELECTRIC STRANDVISE WITH FLEXIBLE BAIL (NO. 5264) OR FARGO STRANDVISE OR EQUAL



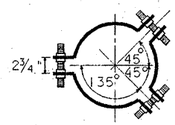
8-WAY ANCHOR

SOURCES:
8-WAY ANCHOR -JOSLYN NO. J8200-1(T) OR
6-WAY ANCHOR-McGRAW EDISON DA6E1 OR EQUAL





GUY ATTACHMENT



3-WAY BAND

SPAN CABLE ATTACHMENT DETAILS FOR STEEL STRAIN POLES

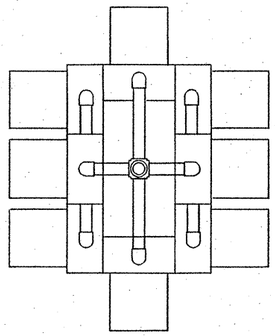
* ANCHORS SHOULD BE LOCATED SO THAT THE DISTANCE BETWEEN THE ANCHOR AND THE POLE BUTT IS EQUAL TO THE DISTANCE FROM THE GROUND TO THE POINT OF GUY ATTACHMENT. IN NO CASE SHOULD THE DISTANCE FROM THE ANCHOR TO THE POLE BUTT BE LESS THAN 1/3 OF THE DISTANCE FROM THE GROUND TO THE POINT OF GUY ATTACHMENT.

DALLAS DISTRICT STANDARD

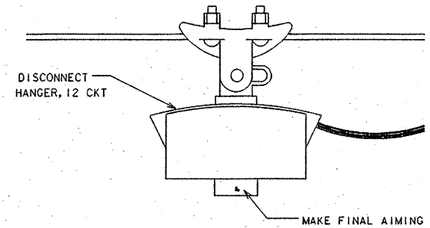
CONSTRUCTION DETAILS FOR SPAN WIRE MOUNTED SIGNALS

FED.RD. DIV.NO.	PROJECT NO.		SHEET NO.
6	STP 96 (830) MM		61
STATE	STATE DIST.NO.	COUNTY	
TEXAS	DALLAS	ROCKWALL	
CONT.	SECT.	JOB	HIGHWAY NO.
1014	03	041	FM 740

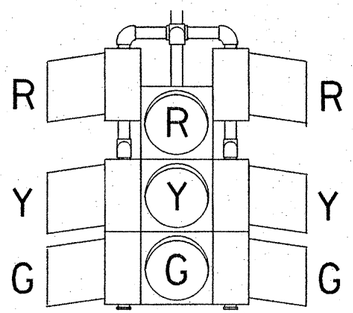
6239



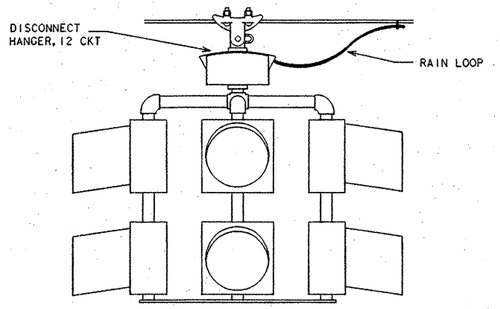
TOP



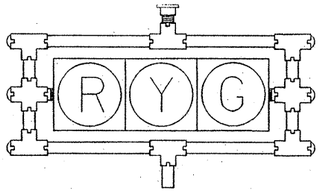
DISCONNECT HANGER MODIFICATION



SIDES

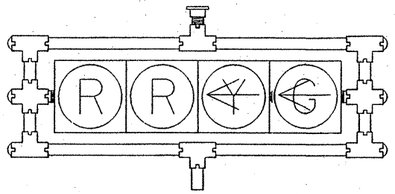


TYPICAL FLASHING BEACON INSTALLATION



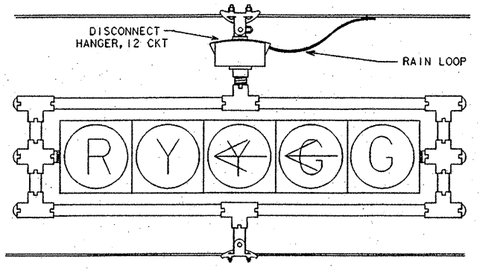
SH 3H

TYPICAL SPAN WIRE HORIZONTAL MOUNT INSTALLATION



SH 4H

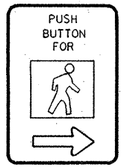
TYPICAL SPAN WIRE HORIZONTAL MOUNT INSTALLATION



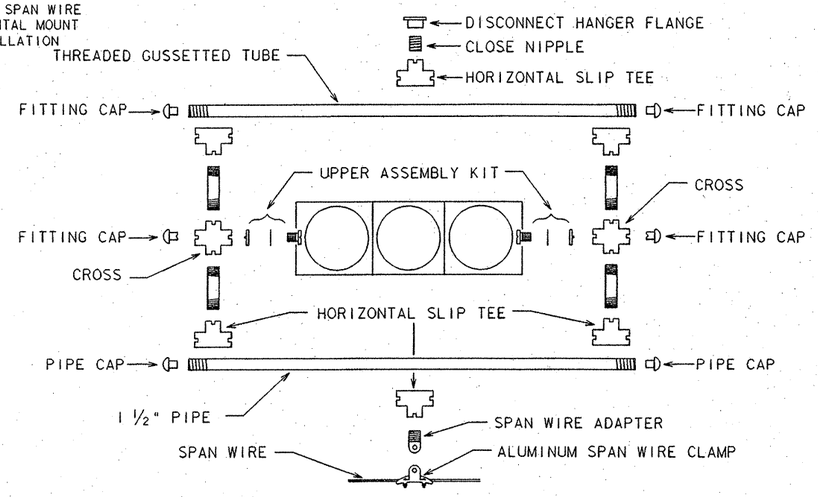
SH 5H

TYPICAL SPAN WIRE HORIZONTAL MOUNT INSTALLATION

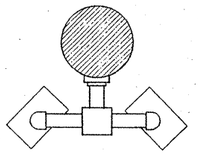
SIGN R10-4bR
SIGN R10-4bL
9"X12"



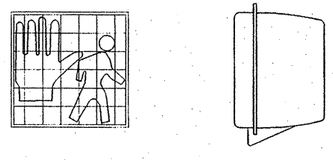
PEDESTRIAN PUSHBUTTON SIGN DETAILS



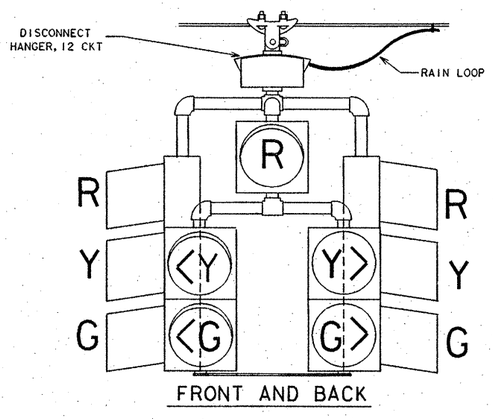
BOTTOM TETHERED, SPAN WIRE SIGNAL HARDWARE ASSEMBLY
(BACK PANEL NOT SHOWN)



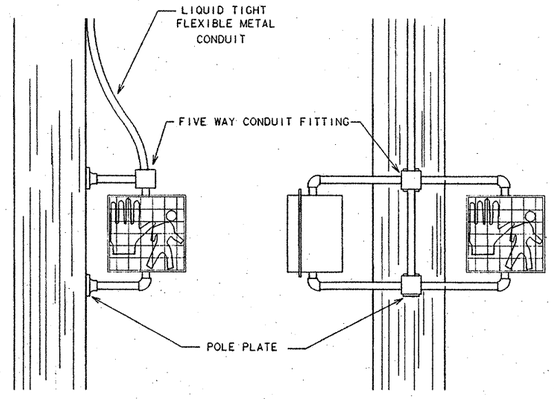
SH 143C
PLAN VIEW



"EGGCRATE" VISOR PEDESTRIAN SIGNAL WITH ONE-PIECE REFLECTOR



FRONT AND BACK



SH 152A
ONE-WAY
ADJUSTABLE FACE SIGNAL FOR WOOD POLE MOUNTING

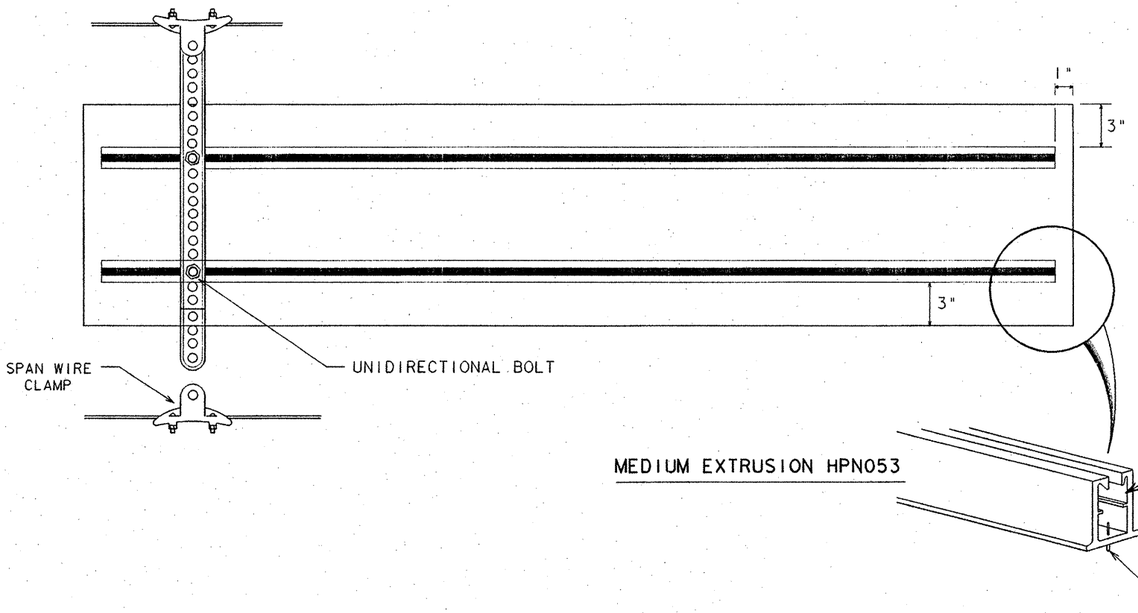
SH 143C
TWO-WAY
ADJUSTABLE FACE SIGNAL FOR WOOD POLE MOUNTING

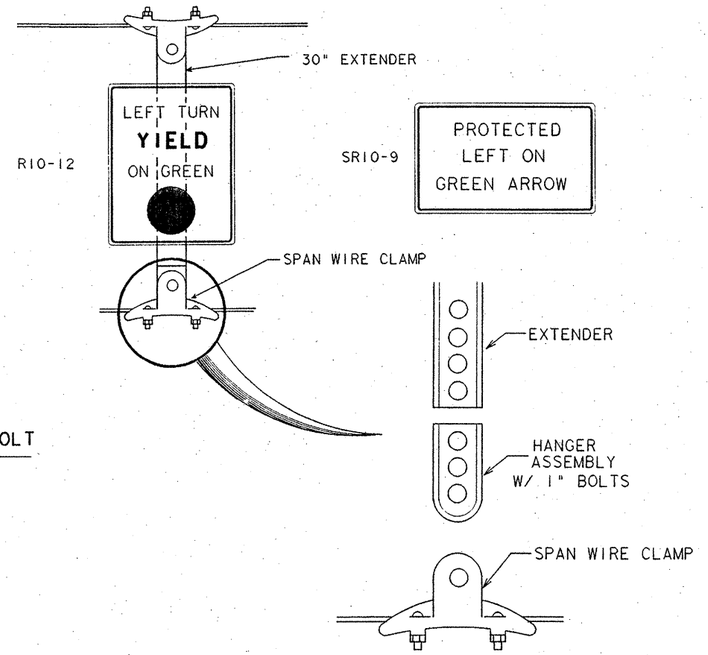
SIGNALS HEADS FOR SPAN WIRE INSTALLATION

DALLAS DISTRICT STANDARD

FED. RD. DIV. NO.	PROJECT NO.		SHEET NO.
6	STP 96(830)MM		62
STATE	STATE DIST. NO.	COUNTY	
TEXAS	DALLAS	ROCKWALL	
CONT.	SECT.	JOB	HIGHWAY NO.
1014	03	041	FM 740

6230

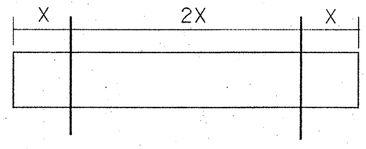




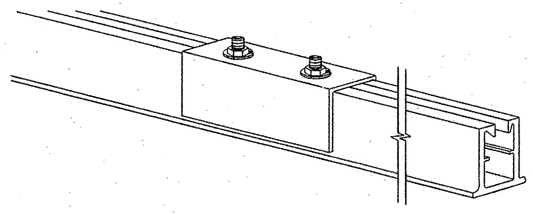
HANGER ASSEMBLY DETAILS

NOTES: 1. FOR SIGNS LESS THAN 5'-0" ONE VERTICAL SUPPORT IS REQUIRED PER SIGN. TWO VERTICAL SUPPORTS SHALL BE USED FOR SIGNS LONGER THAN 5'-0"

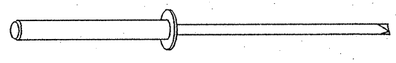
2. FOR STREET NAME SIGNS, EXTRUDED ALUMINUM SHALL BE MOUNTED FOR HORIZONTAL SUPPORT AS SHOWN.



SIGN LENGTH	X
5'-6"-6'-0"	1'-6"
6'-6"-7'-0"	1'-9"
7'-6"-8'-0"	2'-0"
8'-6"-9'-0"	2'-3"
9'-6"-10'-0"	2'-6"
10'-6"-11'-0"	2'-9"
11'-6"-12'-0"	3'-0"
12'-6"-13'-0"	3'-3"



5" ALUMINUM COUPLING
6061-T6



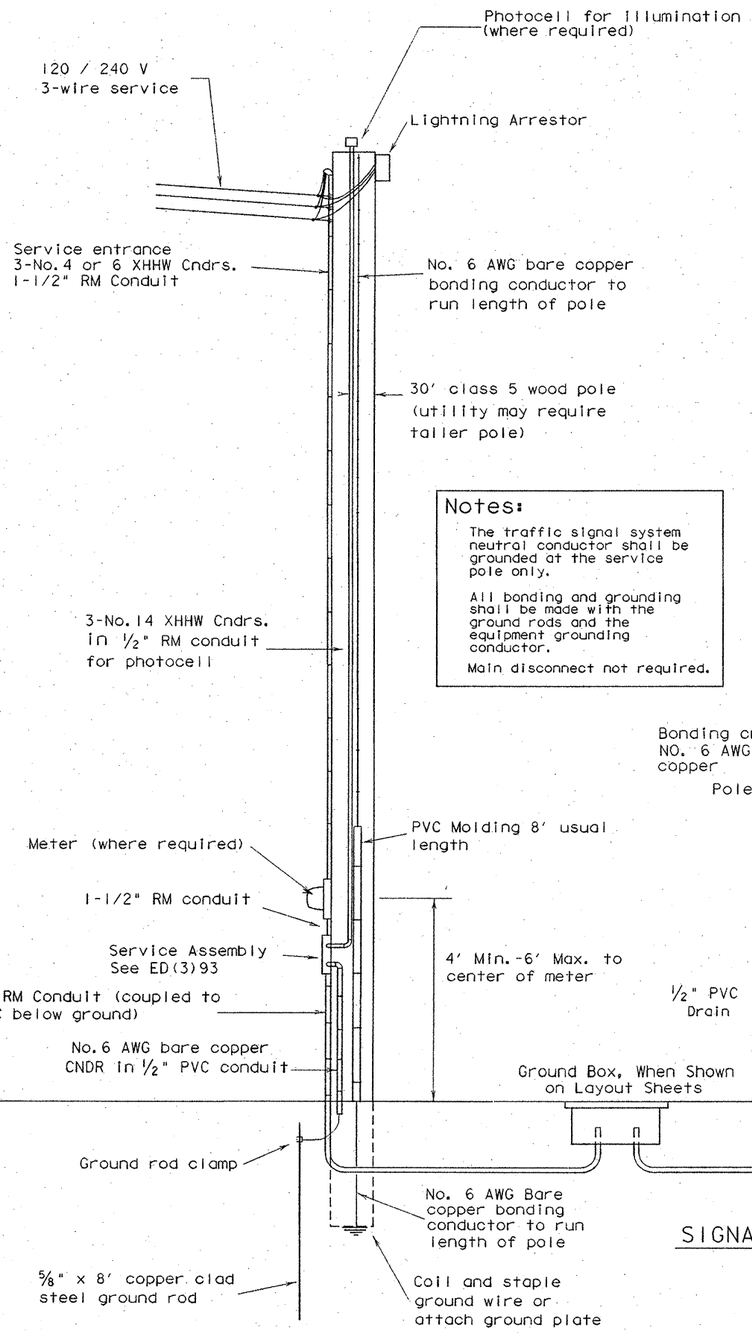
ALUMINUM RIVET

NOTE: ALUMINUM RIVETS SHALL BE USED TO ATTACH THE SIGN TO THE EXTRUDED ALUMINUM. SPACINGS OF RIVETS SHALL BE 6" O.C.

DALLAS DISTRICT STANDARD

SIGNS FOR SPAN WIRE INSTALLATION

FED. RD. DIV. NO.	PROJECT NO.		SHEET NO.
6	STP 96(830)MM 63		
STATE	STATE DIST. NO.	COUNTY	
TEXAS	DALLAS	ROCKWALL	
CONT.	SECT.	JOB	HIGHWAY NO.
1014	03	041	FM 740



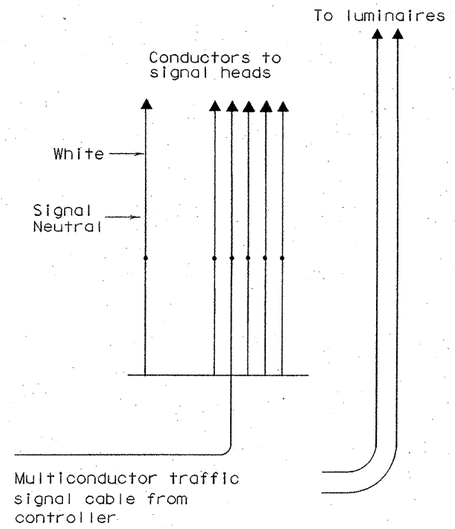
SERVICE POLE

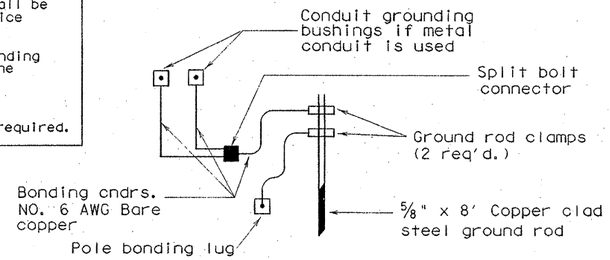
Notes:

The traffic signal system neutral conductor shall be grounded at the service pole only.

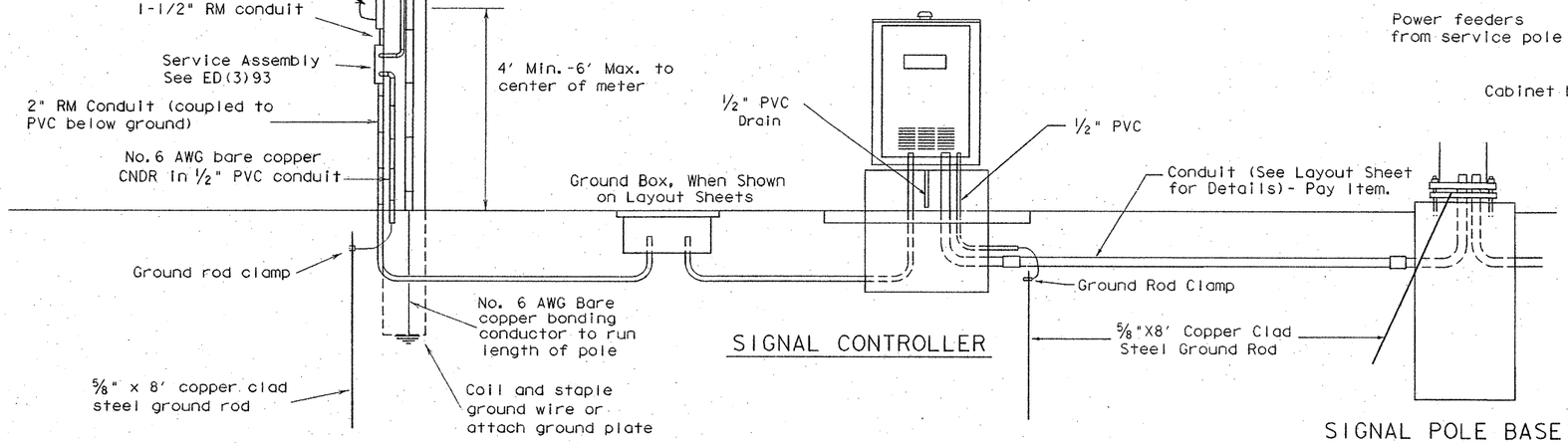
All bonding and grounding shall be made with the ground rods and the equipment grounding conductor.

Main disconnect not required.



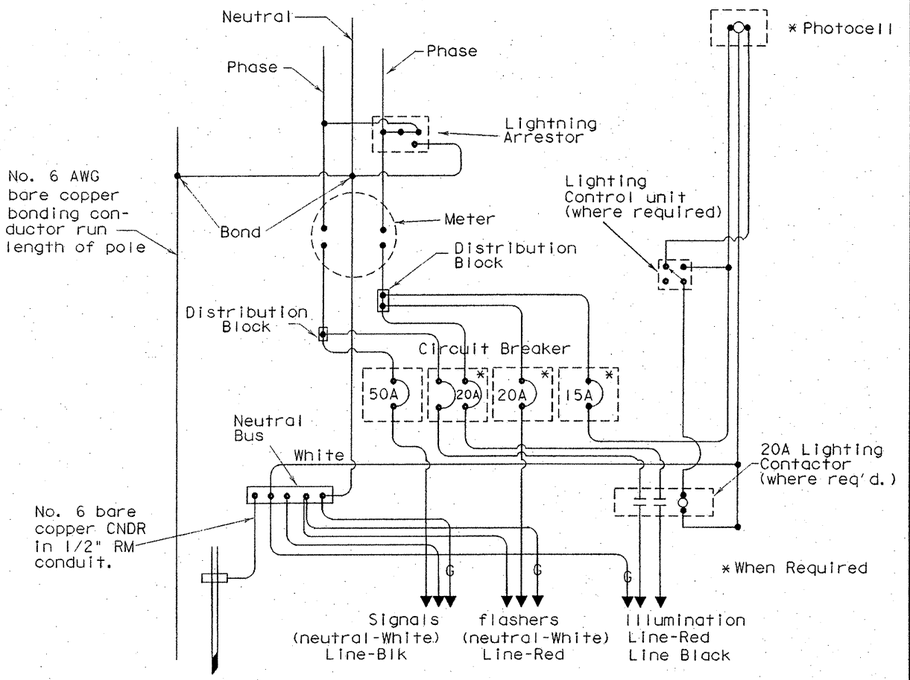


CONNECTION AT STEEL POLE BASE

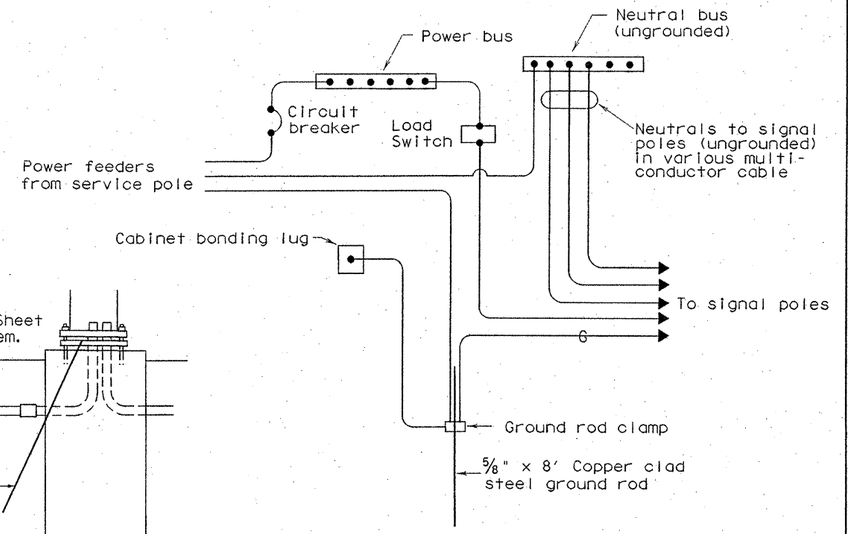


SIGNAL CONTROLLER

SIGNAL POLE BASE



CONNECTIONS AT SERVICE SCHEMATIC TY S
120/240 VOLT - THREE WIRE



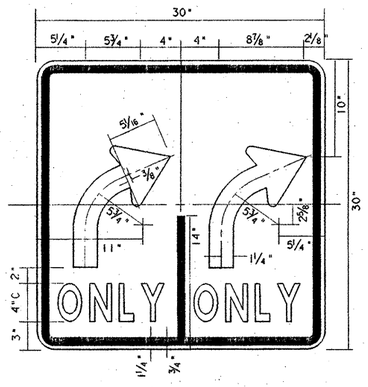
CONNECTIONS AT SIGNAL CONTROLLERS

DALLAS DISTRICT STANDARD

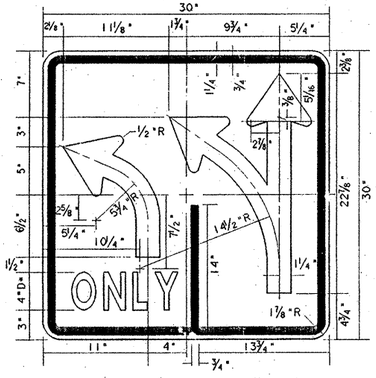
FED.RD. DIV. NO.	PROJECT NO.		SHEET NO.
6	STP 96(830)MM		64
STATE	STATE DIST. NO.	COUNTY	
TEXAS	DALLAS	ROCKWALL	
CONT.	SECT.	JOB	H'GHWAY NO.
1014	03	041	FM 740

Elec. Serv. Ty. S(120/240)000(NS)GS(T)TP(O)

SERVICE POLE DETAILS

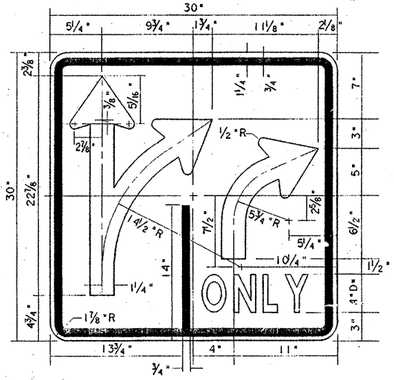


R3-8RR
30"x 30"

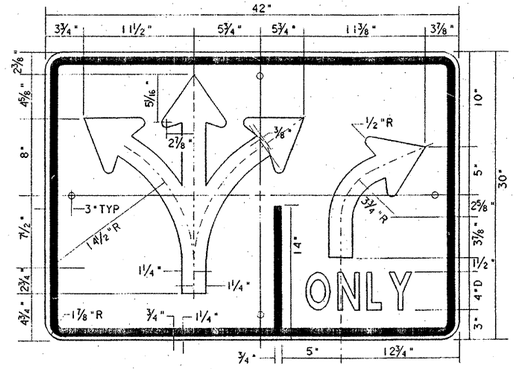


* SPACING REDUCED 50%

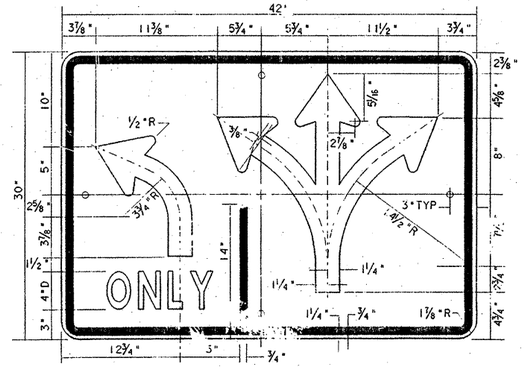
R3-8L
30"x 30"



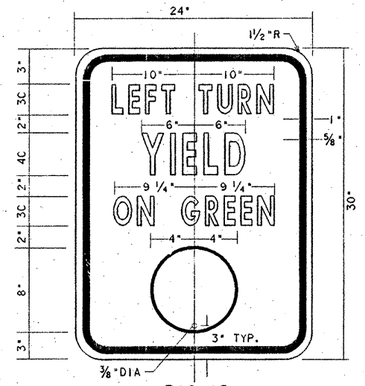
R3-8R
30"x 30"



R3-8R(SPL)
42"x 30"

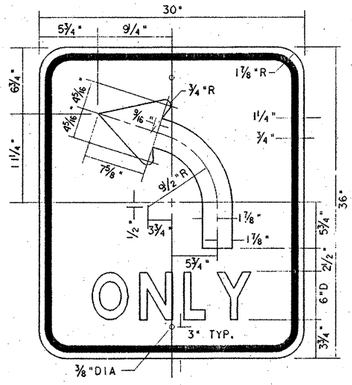


R3-8L(SPL)
42"x 30"

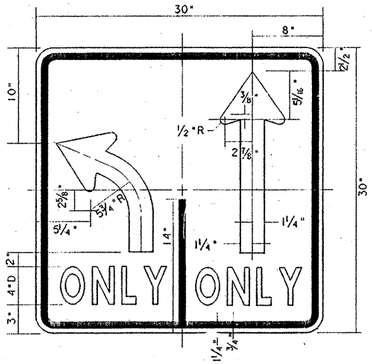


R10-12
24"x 30"

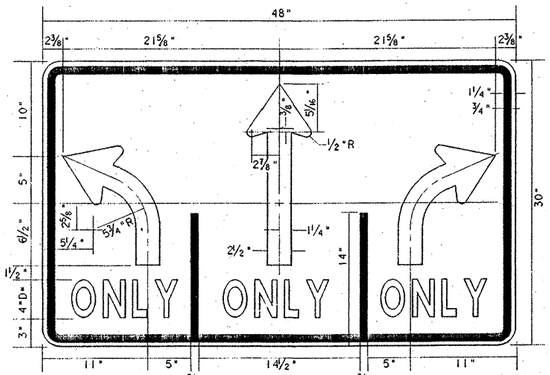
LEGEND BLACK (NON-REFLECTIVE)
BACKGROUND WHITE (REFLECTIVE)
CIRCULAR GREEN (REFLECTIVE)



R3-5L
R3-5R(RT. ARROW)
30"x 36"

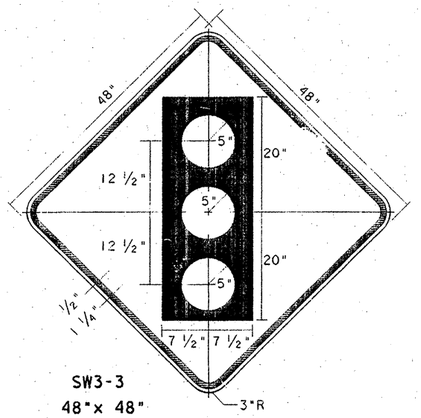


R3-8LS
30"x 30"



*SPACING REDUCED 50%

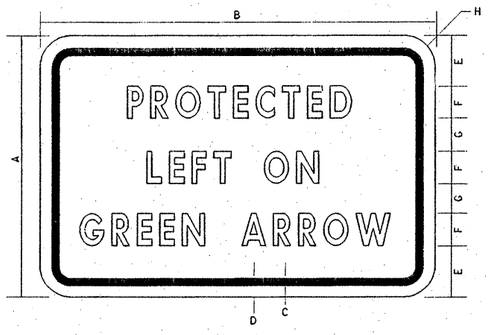
R3-8RSL
48"x 30"



SW3-3
48"x 48"

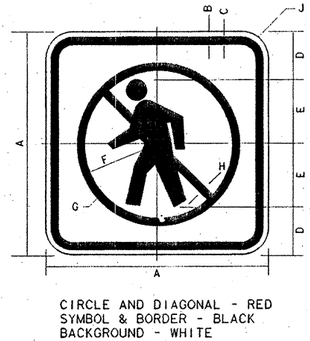
COLORS

SYMBOL & LEGEND- BLACK (NON-REFL.)
TOP CIRCLE - RED (REFL.)
BOTTOM CIRCLE - GREEN (REFL.)
BACKGROUND - YELLOW (REFL.)
TYPE C REFLECTIVE SHEETING

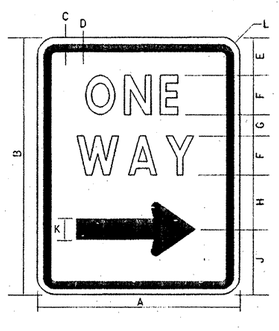


SIGN NO.	SIGN	DIMENSIONS (INCHES)							
		A	B	C	D	E	F	G	H
R10-9	STD.	12	18	3/8	3/4	2	2 C	1	1 1/2
SR10-9S	EXPWY.	18	30	3/8	3/4	3	3 C	1 1/2	1 1/2
SR10-9	FRWY.	24	36	5/8	1	4	4C*	2	1 1/2

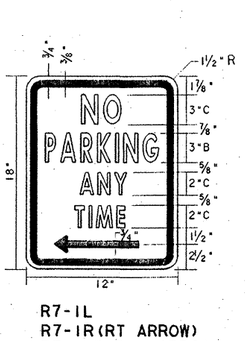
* - REDUCE SPACING 40%



SIGN NO.	SIGN	DIMENSIONS (INCHES)									
		A	B	C	D	E	F	G	H	J	
R9-3a	STD.	18	1	5/8	3 1/2	5 1/2	6 3/8	7 1/8	1 1/2	1 1/2	
ER9-3a	EXPWY.	24	1	5/8	4 1/2	7 1/2	8 1/2	10 1/2	2	1 1/2	
FR9-3a	FRWY.	30	1 1/4	3/4	5 3/4	9 1/4	10 5/8	13 3/8	2 1/2	1 7/8	



SIGN NO.	SIGN	DIMENSIONS (INCHES)											
		A	B	C	D	E	F	G	H	J	K	L	
R6-2	STD.	18	24	1	5/8	3	6D	1 7/8	6 1/16	7 1/16	3	1 1/2	
SR6-2	SPEC.	24	30	1	5/8	3	6D	1 7/8	6 1/16	7 1/16	3	1 1/2	



R7-1L
R7-1R(RT ARROW)
R7-1LR(DBL ARROW)
12"x 18"

GENERAL NOTES:

ALPHABETS AND LATERAL SPACING BETWEEN LETTERS AND NUMERALS SHALL CONFORM WITH THE FEDERAL HIGHWAY ADMINISTRATION'S "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS", LATEST EDITION AND ANY APPROVED CHANGES THERETO. LATERAL SPACING OF TEXT SHALL BE SUCH AS TO PROVIDE A BALANCED APPEARANCE.

SIGN BACKGROUNDS SHALL BE OF FLAT SURFACE REFLECTIVE SHEETING CONFORMING WITH THE SPECIFICATIONS (TYPE A) UNLESS OTHERWISE SPECIFIED IN THE PLANS.

SIGN LEGENDS SHALL BE APPLIED BY THE SCREENING PROCESS.

THE SIGN BLANKS SHALL BE ONE PIECE 5/8 INCH THICK PLYWOOD (TYPE A) CONFORMING TO THE SPECIFICATIONS UNLESS ATTACHED TO SIGNAL POLES.

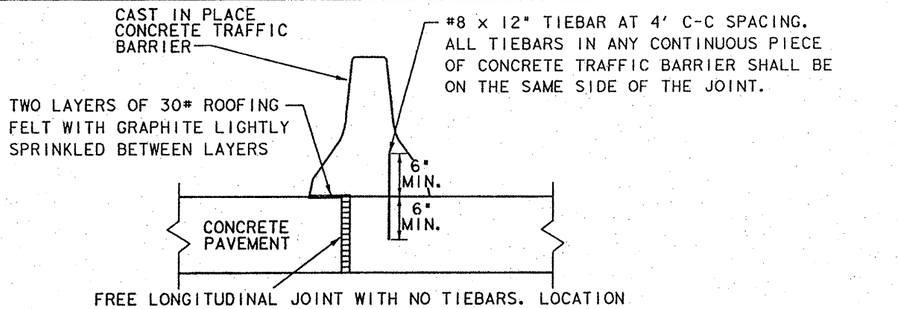
THE SIGN BLANKS SHALL BE ONE PIECE SHEET ALUMINUM ALLOY 0.080 INCH THICK CONFORMING TO THE ITEM "ALUMINUM SIGNS (TYPE A)" WHEN ATTACHED TO SIGNAL POLES.

SIGNS

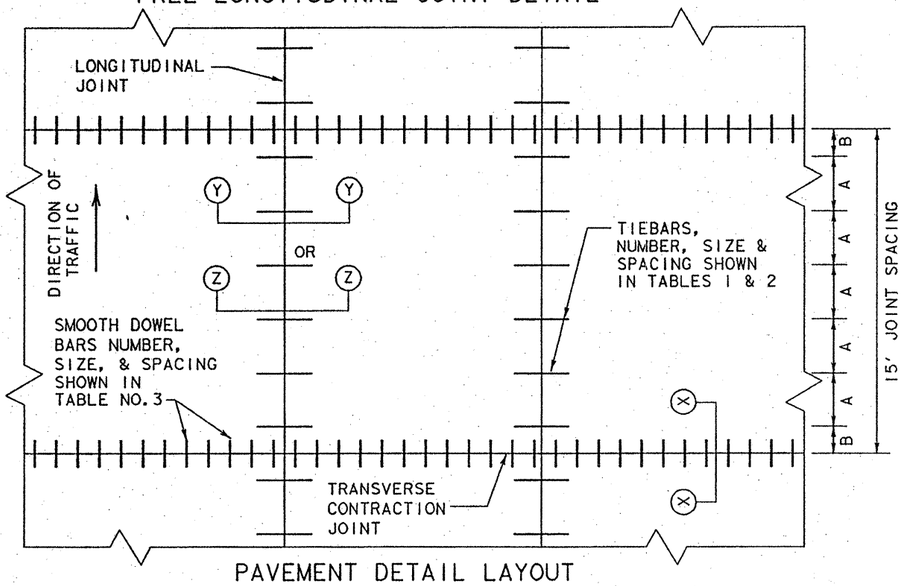
DALLAS DISTRICT STANDARD

FED. RD. DIV. NO.	PROJECT NO.		SHEET NO.
6	STP 96(830)MM		65
STATE	STATE DIST.	COUNTY	
TEXAS	DALLAS	ROCKWALL	
CONT.	SECT.	JOB	HIGHWAY NO.
1014	03	041	FM 740

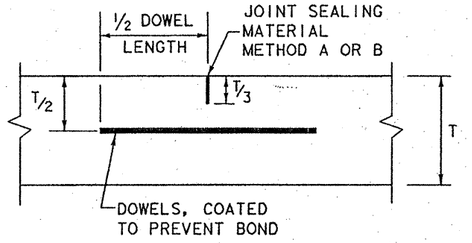
6239



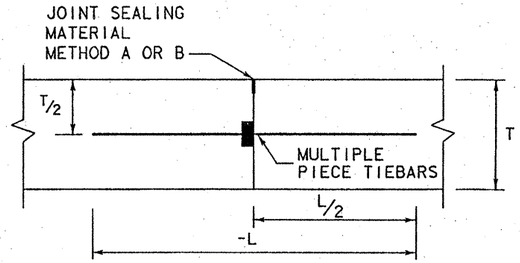
FREE LONGITUDINAL JOINT DETAIL



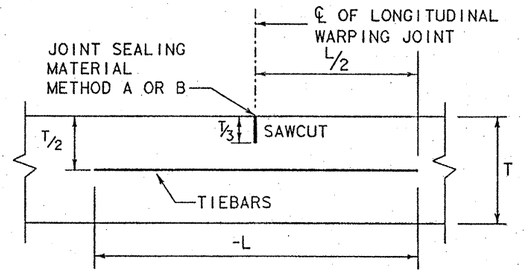
PAVEMENT DETAIL LAYOUT



TRANSVERSE CONTRACTION JOINT
SECTION X-X



LONGITUDINAL CONSTRUCTION JOINT
SECTION Y-Y



LONGITUDINAL WARPING JOINT
SECTION Z-Z

GENERAL NOTES

1. CONCRETE SLABS WIDER THAN 100' WITHOUT A FREE JOINT, ARE NOT COVERED BY THIS STANDARD.
2. FOR FURTHER INFORMATION REGARDING THE PLACEMENT OF CONCRETE AND LOAD TRANSFER DEVICES REFER TO THE GOVERNING SPECIFICATIONS FOR "CONCRETE PAVEMENT" AND "REINFORCING STEEL."
3. DETAILS FOR PAVEMENT WIDTH, PAVEMENT THICKNESS, AND CROWN CROSS SLOPE SHALL BE AS SHOWN ELSEWHERE IN THE PLANS.
4. THE DETAIL FOR THE JOINT SEALANT AND RESERVOIR WILL BE SHOWN IN CONCRETE PAVEMENT DETAIL, JOINT SEALANT STANDARD (JS-94).
5. PAVEMENT WIDTHS IN EXCESS OF 16' SHALL BE PROVIDED WITH A LONGITUDINAL JOINT (SECTION Z-Z OR Y-Y). THESE JOINTS SHALL BE LOCATED WITHIN 6" OF THE LANE LINES UNLESS SHOWN ELSEWHERE ON THE PLANS.
6. THE JOINT BETWEEN OUTSIDE LANE AND SHOULDER SHALL BE A LONGITUDINAL WARPING JOINT (SECTION Z-Z) UNLESS OTHERWISE SHOWN IN THE PLANS.
7. THE SPACING BETWEEN TRANSVERSE JOINTS SHALL BE 15 FEET UNLESS OTHERWISE SHOWN IN THE PLANS.
8. WHERE A MONOLITHIC CURB IS SPECIFIED, THE JOINT IN THE CURB SHALL COINCIDE WITH PAVEMENT JOINTS AND MAY BE FORMED BY ANY MEANS APPROVED BY THE ENGINEER.
9. TRANSVERSE CONSTRUCTION JOINTS MAY BE FORMED BY USE OF METAL OR WOOD FORMS EQUAL IN DEPTH TO THE NOMINAL DEPTH OF THE PAVEMENT, OR BY METHODS APPROVED BY THE ENGINEER.
10. THE ENGINEER WILL ADJUST THE REQUIRED NUMBER OF TIEBARS FOR SLABS SHORTER OR LONGER THAN 15'. SPACING "B" WILL BE ADJUSTED TO MAINTAIN A MINIMUM CLEARANCE OF 2" BETWEEN THE TIEBAR AND THE DOWEL BARS AT THE TRANSVERSE JOINT AND THE "A" SPACING WILL REMAIN AS REQUIRED FOR THE PAVEMENT SLAB WIDTH.
11. MULTIPLE PIECE TIEBARS SHALL BE USED AT LONGITUDINAL CONSTRUCTION JOINTS UNLESS OTHERWISE SPECIFIED IN THE PLANS.
12. THE SAW CUT FOR LONGITUDINAL WARPING AND THE TRANSVERSE CONSTRUCTION JOINTS MAY BE ONE FOURTH THE SLAB THICKNESS WHEN CRUSHED LIMESTONE IS USED AS THE COARSE AGGREGATE.

TABLE NO. 1 TIEBARS REQUIRED FOR LONGITUDINAL JOINT JOINTS FOR EACH 15' SLAB

ASTM A-616 OR A-615 (GRADE 60) STRAIGHT OR MULIPLE PIECE REINFORCING TIEBARS		CONCRETE SLAB THICKNESS	DISTANCE FROM THE LONGITUDINAL JOINT TO THE NEAREST LONGITUDINAL FREE EDGE			
			< OR =16'	< OR =24'	< OR =34'	< OR =50'
BAR LENGTH, "L" INCHES	BAR SIZE	"T" INCHES	REQUIRED NO. OF BARS	REQUIRED NO. OF BARS	REQUIRED NO. OF BARS	REQUIRED NO. OF BARS
42	#5 (5/8")	8	5	5	6	9
		9	5	5	7	10
		10	5	5	7	11
		11	5	6	8	12
		12	5	6	9	13
		13	5	7	9	13
		14	6	7	10	NA
		15	6	8	11	NA
50	#6 (3/4")	8	5	5	5	6
		9	5	5	5	7
		10	5	5	5	8
		11	5	5	6	8
		12	5	5	6	9
		13	5	5	7	10
		14	5	5	7	10
		15	5	6	8	11

THE DISTANCE TO THE FREE EDGE WILL BE DETERMINED BY THE ENGINEER AND THE DISTANCE WILL BE BASED ON THE NOMINAL WIDTHS OF THE LANES AND SHOULDERS PLUS ANY TIED RAMPS OR CONNECTING ROADWAYS.

TABLE NO. 2 TIEBAR SPACINGS

SPACING REQUIREMENT FOR 15' SLAB FOR REQUIRED NUMBER OF BARS

REQUIRED NO. OF BARS	REGUALR SPACING "A" INCHES	FIRST AT JOINT "B" INCHES
5	36	18
6	30	15
7	25	15
8	21	16.5
9	18	18
10	16	18
11	15	15
12	13	18.5
13	12	18

TABLE NO. 3 DOWELS REQUIEMENTS

T, IN.	DOWELS (SMOOTH BARS)	
	SIZE AND LENGTH	AVERAGE SPACING (INCHES)
8	1" X 18"	12
9	1 1/8" X 18"	12
10	1 1/4" X 18"	12
11	1 3/8" X 18"	12
12	1 1/2" X 18"	12
13	1 5/8" X 18"	12
14	1 3/4" X 18"	12
15	1 7/8" X 18"	12

LEVELS DISPLAYED 1 3 4
ACC: /USC/0481303
FILE: CPCD94.DGN

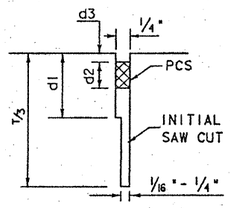
Texas Department of Transportation
Design Division (Pavement)

CONCRETE PAVEMENT DETAILS
CONTRACTION DESIGN
T-8 THROUGH 15 INCHES
CPCD-94

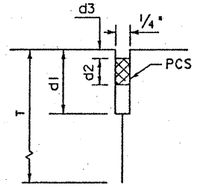
ORIG DRAFT DATE: SEPT. 1994	DW: LJB	CK: LJB	DW: BGD	CK: CLG	MES NO.: R0000
MODIFICATIONS					

STATE DISTRICT	FEDERAL REGION	FEDERAL AID PROJECT #	SHEET
18	6	STP 96(830)MM	66

COUNTY	CONTROL	SECTION	JOB	HIGHWAY
ROCKWALL	6014	03	041	FM740

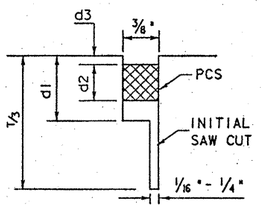


SAWED
LONGITUDINAL JOINT

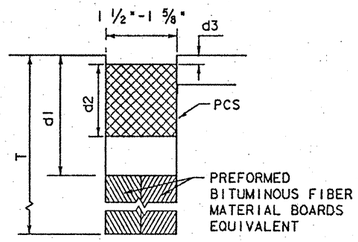


LONGITUDINAL
CONSTRUCTION JOINT

LONGITUDINAL JOINT SEALS



SAWED
CONTRACTION JOINT



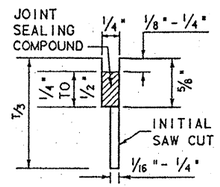
FORMED
FORMED EXPANSION JOINT

TRANSVERSE JOINT SEALS

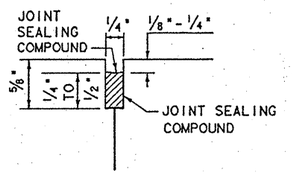
METHOD A: PREFORMED COMPRESSION SEALS (PCS)
(CLASS 6 PREFORMED JOINT SEALANT)

GENERAL NOTES FOR METHOD "A"

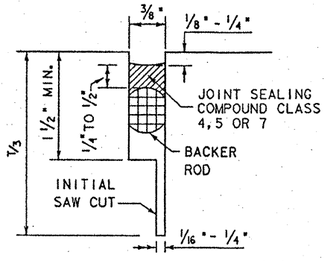
1. UNLESS OTHERWISE SHOWN IN THE PLANS, EITHER METHOD "A" OR METHOD "B" MAY BE USED.
2. THE LOCATION OF JOINTS SHALL BE AS SHOWN ELSEWHERE IN THE PLANS.
3. DIMENSIONS d1, d2, AND d3 SHALL BE IN ACCORDANCE WITH THE PREFORMED COMPRESSION SEAL MANUFACTURES RECOMMENDATION.
4. THE JOINT RESERVOIR FOR SEALANT SHALL BE SAWED UNLESS OTHERWISE SHOWN ON THE PLANS FOR THE LONGITUDINAL AND TRANSVERSE CONSTRUCTION AND THE TWO SAWED JOINTS.
5. THE JOINTS SHALL BE CLEANED IN ACCORDANCE WITH THE ITEM 438 AND PRIOR TO BEGINNING OPERATIONS, THE CONTRACTOR SHALL SUBMIT A STATEMENT FROM THE SEALANT MANUFACTURER SHOWING THE RECOMMENDED EQUIPMENT AND INSTALLATION PROCEDURES TO BE USED.
6. THE SAW CUT FOR THE LONGITUDINAL JOINT SHALL BE ONE FOURTH OF THE SLAB THICKNESS WHEN CRUSHED LIMESTONE IS USED AS THE COARSE AGGREGATE.



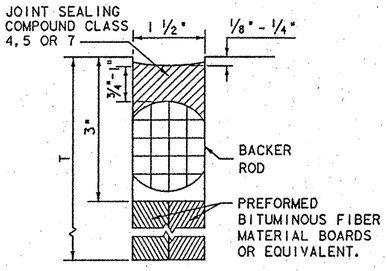
SAWED
LONGITUDINAL JOINT



LONGITUDINAL OR TRANSVERSE
CONSTRUCTION JOINT



TRANSVERSE SAWED
CONTRACTION JOINT



TRANSVERSE FORMED
EXPANSION JOINT

METHOD B: JOINT SEALING COMPOUND

GENERAL NOTES FOR METHOD "B"

1. UNLESS OTHERWISE SHOWN IN THE PLANS, EITHER METHOD "A" OR METHOD "B" MAY BE USED.
2. THE LOCATION OF JOINTS SHALL BE AS SHOWN ELSEWHERE IN THE PLANS.
3. THE ENGINEER SHALL SELECT A TARGET PLACEMENT THICKNESS FOR THE SEALANT DETAILS WHICH SHOW RANGES IN THICKNESS. THE TARGET THICKNESS WILL NORMALLY BE THE MIDPOINT OF THE RANGE.
4. THE JOINT RESERVOIR FOR SEALANT SHALL BE SAWED UNLESS OTHERWISE SHOWN ON THE PLANS FOR THE LONGITUDINAL AND TRANSVERSE CONSTRUCTION AND THE TWO SAWED JOINTS.
5. THE JOINTS SHALL BE CLEANED IN ACCORDANCE WITH THE ITEM 438 AND PRIOR TO BEGINNING OPERATIONS, THE CONTRACTOR SHALL SUBMIT A STATEMENT FROM THE SEALANT MANUFACTURER SHOWING THE RECOMMENDED EQUIPMENT AND INSTALLATION PROCEDURES TO BE USED.
6. THE SAW CUT FOR THE LONGITUDINAL JOINT SHALL BE ONE FOURTH THE SLAB THICKNESS WHEN CRUSHED LIMESTONE IS USED AS THE COARSE AGGREGATE.

ACC: /USC/d481303
FILE: JS94.DGN
LEVELS DISPLAYED

Texas Department of Transportation
Design Division (Pavement)

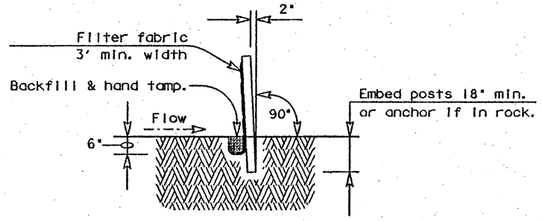
CONCRETE PAVING DETAILS
JOINT SEALS

JS-94

ORIG DRAW DATE: SEPT. 1994	DR: LJB	CK: LJB	DR: BGD	CK: GLC	MSG NO.: R0000
MODIFICATIONS					

STATE DISTRICT	FEDERAL REGION	FEDERAL AID PROJECT #	SHEET
18	6	STP 96(830)MM	67

COUNTY	CONTROL	SECTION	JOB	HIGHWAY
Rockwall	1014	03	041	FM 740



SECTION A-A

SEDIMENT CONTROL FENCE USAGE GUIDELINES

A sediment control fence may be constructed near the downstream perimeter of a disturbed area along a contour to intercept sediment from overland runoff. A 2 year storm frequency may be used to calculate the flow rate to be filtered.

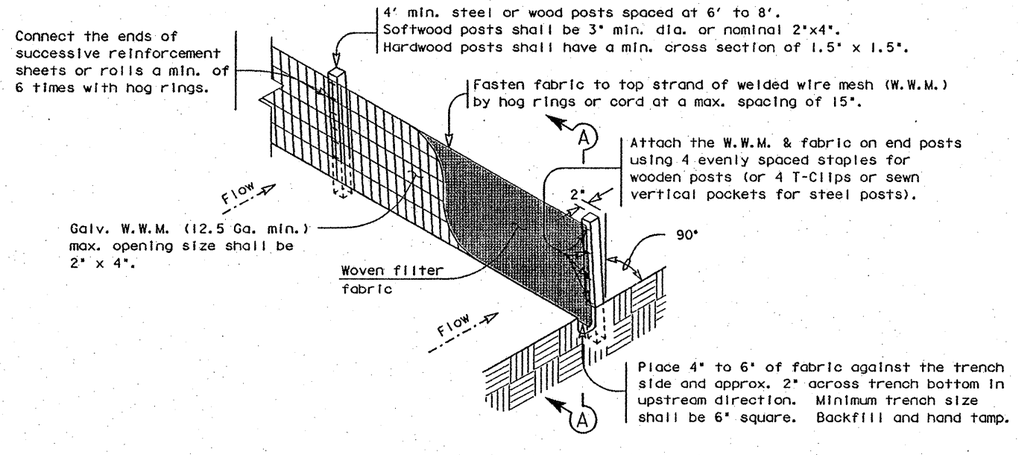
Sediment control fence should be sized to filter a max. flow through rate of 100 GPM/FT^2. Sediment control fence is not recommended to control erosion from a drainage area larger than 2 acres.

PLAN SHEET LEGEND

Sediment Control Fence —— SCF ——

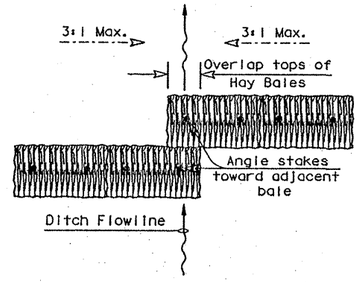
GENERAL NOTES

1. The guidelines shown hereon are suggestions only and may be modified by the Engineer.

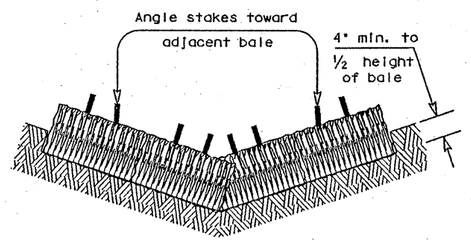


TEMPORARY SEDIMENT CONTROL FENCE

SCF



PLAN VIEW



PROFILE VIEW

PLANS SHEET LEGEND

Baled Hay —— BH ——

BALED HAY USAGE GUIDELINES

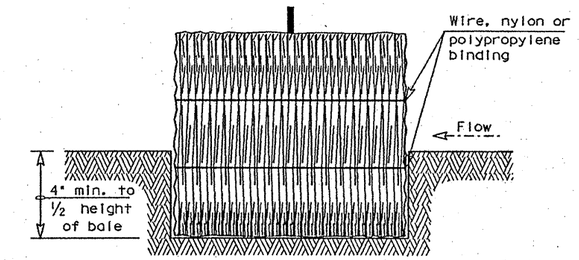
A Baled Hay installation may be constructed near the downstream perimeter of a disturbed area along a contour to intercept sediment from overland runoff. A two year storm frequency may be used to calculate the flow rate to be filtered. The installation should be sized to filter a maximum flow thru rate of 5 GPM/FT^2 of cross sectional area. Baled hay may be used at the following locations:

1. Where the runoff approaching the baled hay flows over disturbed soil for less than 100'. If the slope of the disturbed soil exceeds 10%, the length of slope upstream the baled hay should be less than 50'.
2. Where the installation will be required for less than 3 months.
3. Where the contributing drainage area is less than ½ acre.

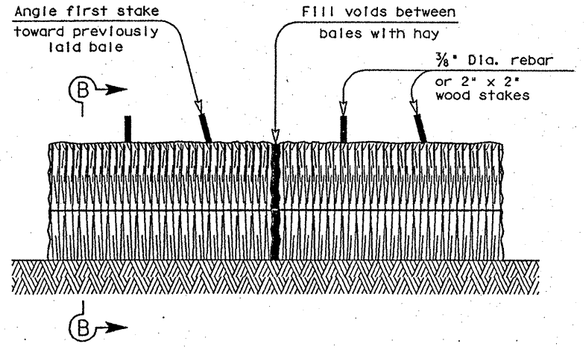
For Baled Hay installations in small ditches, the additional following considerations apply:

1. The ditch sideslopes should be graded as flat as possible to maximize the drainage flowrate thru the hay.
2. The ditch should be graded large enough to contain the overtopping drainage when sediment has filled to the top of the baled hay.

Bales should be replaced usually every 2 months or more often during wet weather when loss of structural integrity is accelerated.



SECTION B-B



BALED HAY FOR EROSION CONTROL

BH

GENERAL NOTES

1. Hay bales shall be a minimum of 30" in length and weigh a minimum of 50 Lbs.
2. Hay bales shall be bound by either wire or nylon or polypropylene string. The bales shall be composed entirely of vegetable matter.
3. Hay bales shall be embedded in the soil a minimum of 4" and where possible ½ the height of the bale.
4. Hay bales shall be placed in a row with ends tightly abutting the adjacent bales. The bales shall be placed with bindings parallel to the ground.
5. Hay bales shall be securely anchored in place with ⅜" Dia. rebar or 2" x 2" wood stakes, driven through the bales. The first stake shall be angled towards the previously laid bale to force the bales together.
6. The guidelines shown hereon are suggestions only and may be modified by the Engineer.

TEXAS DEPARTMENT OF TRANSPORTATION

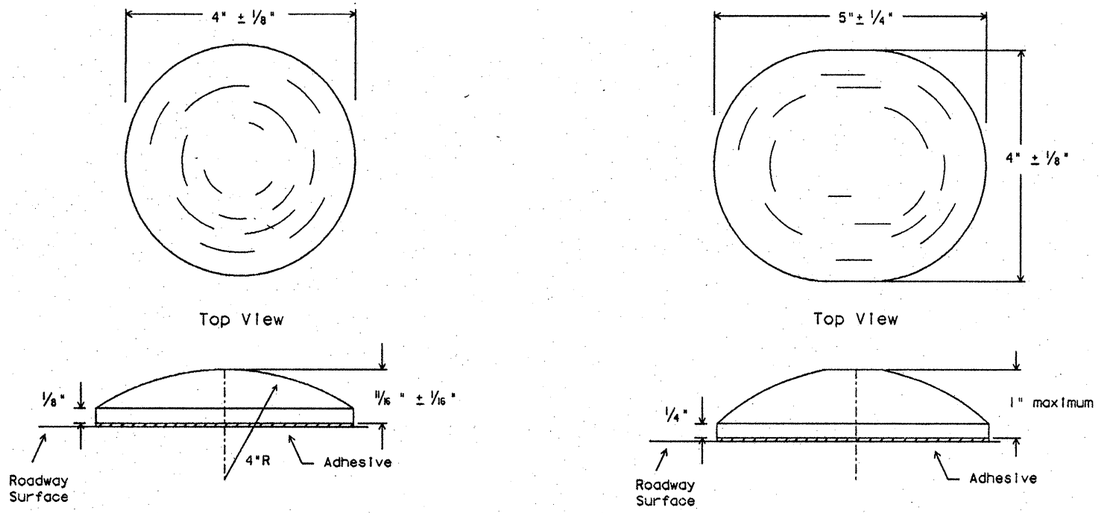
TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES

FENCE & BALED HAY

EC(1)-93

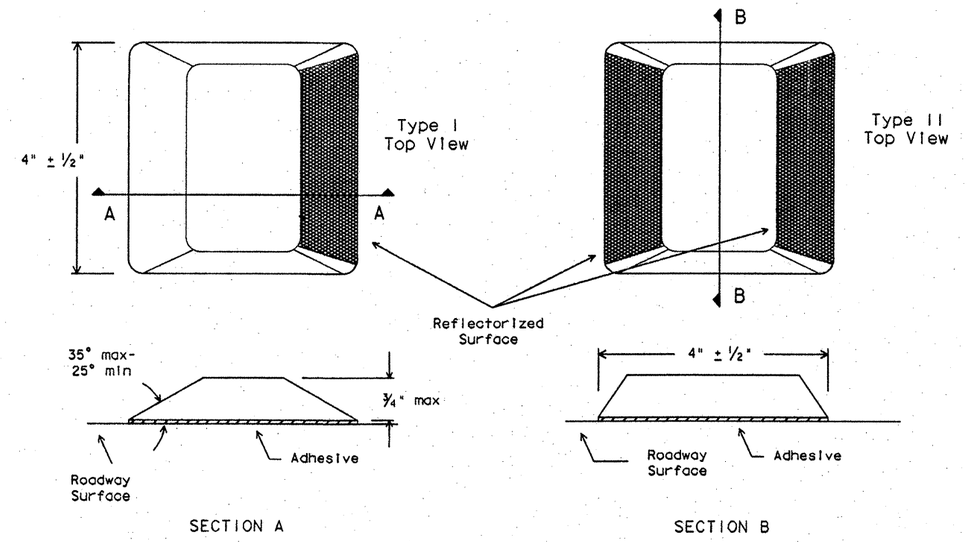
MODIFICATIONS	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.			SHEET NO.
	6	TEXAS	STP 96(830)MM			68
	STATE DIST. NO.	COUNTY	CONT.	SECT.	JOB	HIGHWAY NO.
	18	ROCKWALL	1014	03	041	FM 740

HIGHWAY DESIGN DIVISION (D-8)

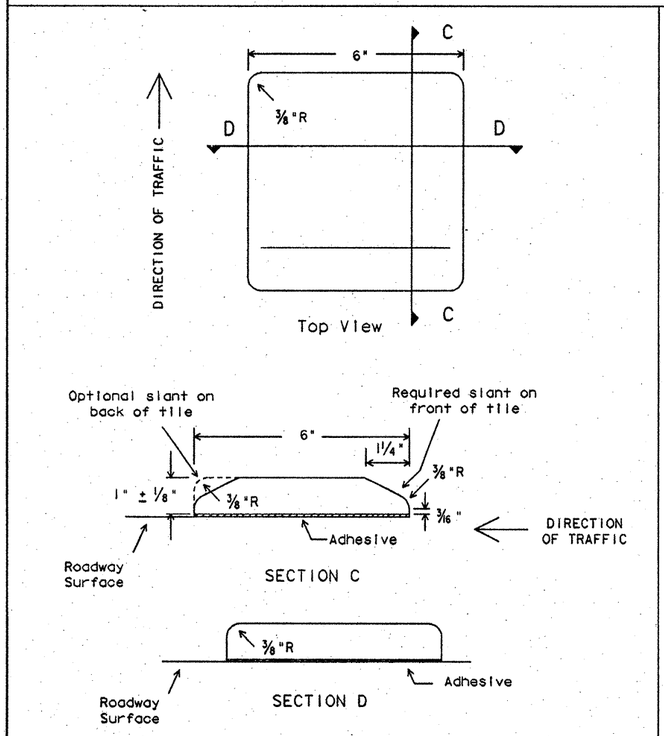


TRAFFIC BUTTONS
(NON-REFLECTORIZED)

NOTE: Minimum area of markers shall be not less than 12.5 square inches.
Either shape may be used but the same shape shall be used through out the project.

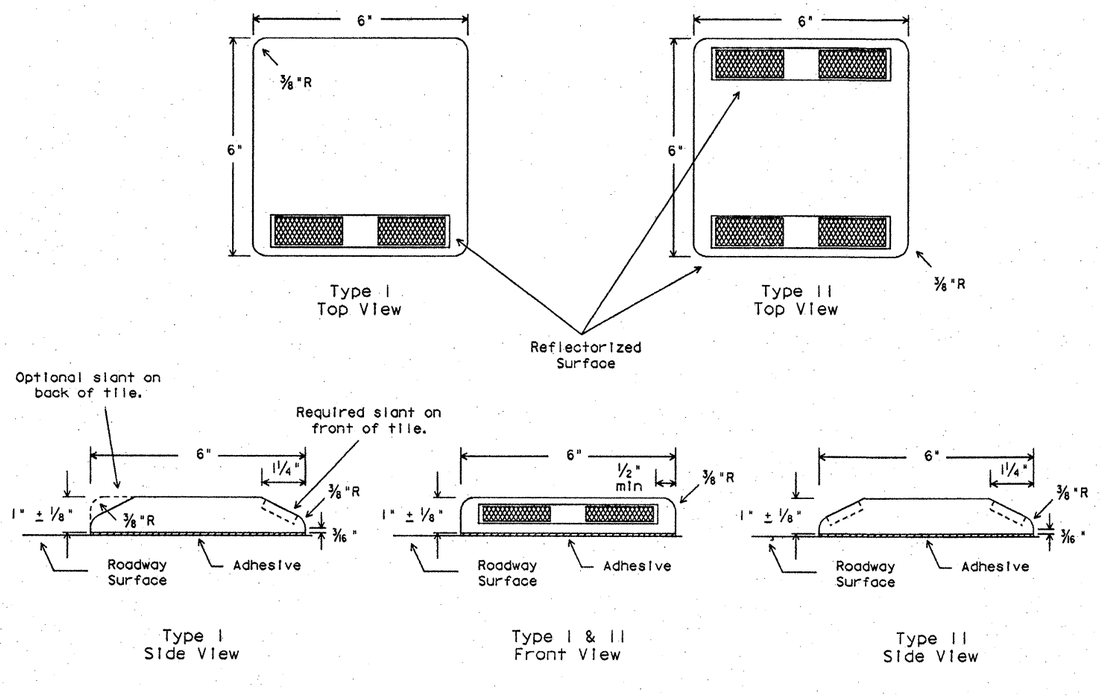


RAISED PAVEMENT MARKERS
(REFLECTORIZED)



JIGGLE BAR TILES
(NON-REFLECTORIZED)

"Jiggle Bars" consist of a number of Jiggle Bar Tiles placed in a linear configuration.



JIGGLE BAR TILES
(REFLECTORIZED)

SPECIFICATION REFERENCE TABLE	
MATERIALS AND TEST SPECIFICATIONS (D-9)	
JIGGLE BAR TILE	D-9-4100
PAVEMENT MARKERS (REFLECTORIZED)	D-9-4200
TRAFFIC BUTTONS	D-9-4300
BITUMINOUS ADHESIVE	D-9-6130

GENERAL NOTES:

RAISED PAVEMENT MARKERS (RPMs) MAY CONSIST OF TRAFFIC BUTTONS, PAVEMENT MARKERS AND/OR JIGGLE BAR TILES. PAVEMENT SURFACE SHALL BE PREPARED AND CLEANED SUBJECT TO APPROVAL OF THE ENGINEER BEFORE ADHESIVE AND RPMs ARE PLACED.

JIGGLE BARS SHALL BE ORIENTED PERPENDICULAR TO ROADWAY. JIGGLE BARS SHALL ALSO BE PLACED AT SUCH OTHER LOCATIONS AS SHOWN IN PLANS OR AS DIRECTED BY THE ENGINEER.

MARKERS, BUTTONS AND JIGGLE BAR TILES SHOWN ARE FOR ILLUSTRATION PURPOSES ONLY AND NOT INTENDED TO SPECIFY ANY PARTICULAR PRODUCT. ALL PAVEMENT MARKERS PROVIDED SHALL BE OF THE SAME MANUFACTURER.

ALL DIMENSIONS ARE ± 1/8 " UNLESS OTHERWISE NOTED.

STANDARD PLANS
TEXAS DEPARTMENT OF TRANSPORTATION

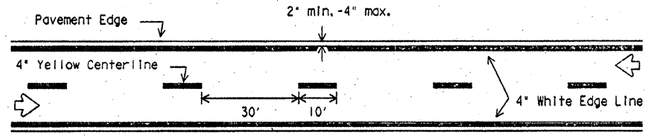
RAISED PAVEMENT MARKERS REFLECTIVE PAVEMENT MARKERS, TRAFFIC BUTTONS & JIGGLE BAR TILE

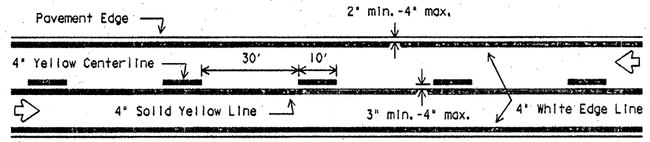
RPM(1)-92

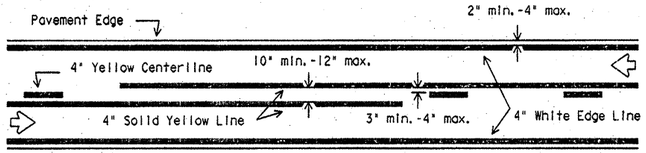
ORIGINAL DRAWING DATE: 1-81		STATE DISTRICT	FEDERAL REGION	FEDERAL AID PROJECT		SHEET
DN.: LR	REVISIONS 2-82 7-86 4-92	18	6	STP 96(830) MM		69
CK.:	7-85 10-86	COUNTY		CONTROL	SECTION	JOB	HIGHWAY
DW.: DN	11-85 12-90	ROCKWALL		1014	03	041	FM 740
CK.:							21A

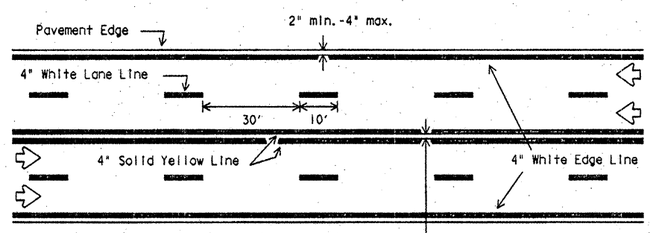
Division of Maintenance and Operations

TWO LANE TWO-WAY ROADWAY

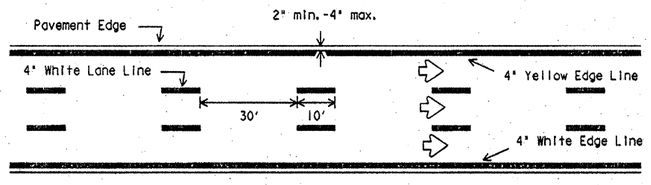




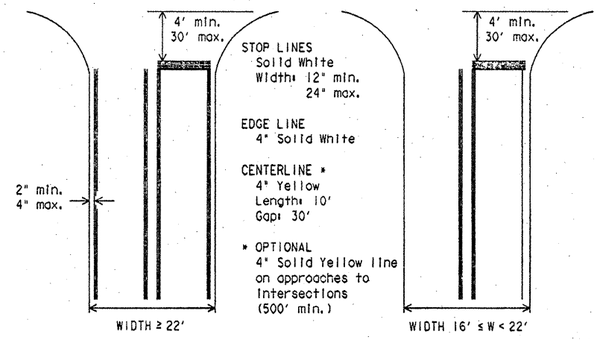




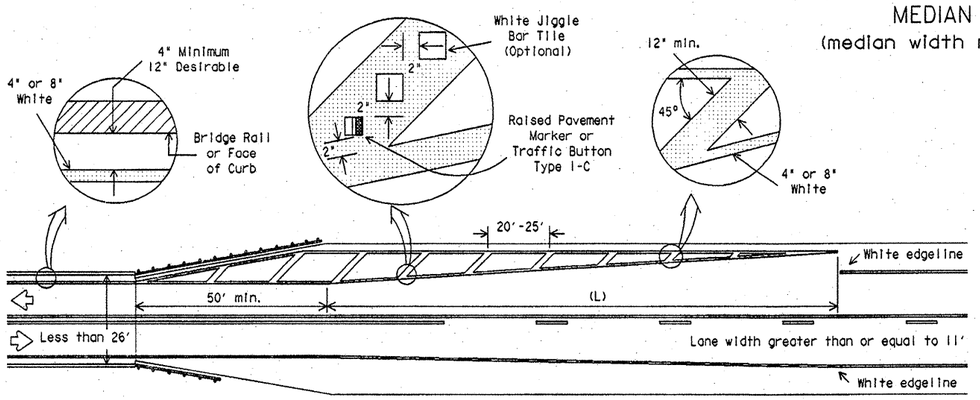
CENTERLINE AND LANE LINES
FOUR LANE TWO-WAY ROADWAY



EDGE LINE AND LANE LINES
ONE-WAY ROADWAY



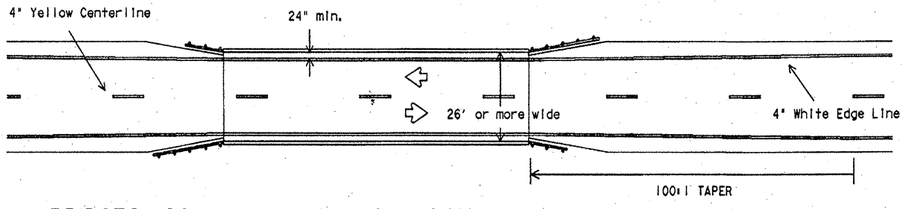
GUIDE FOR PLACEMENT OF STOP LINES,
EDGE LINE & CENTERLINE



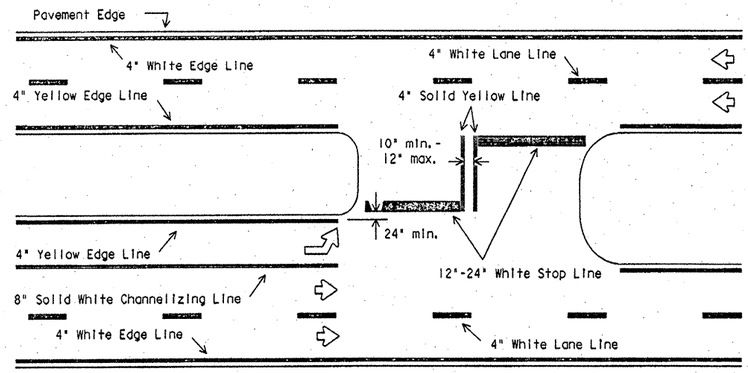
NOTES:

1. No-passing zone on bridge approach is optional but if used, it shall be a minimum 500 feet long.
2. 12 inch crosshatching is optional. See plan quantities.
3. For taper length (L) see Table I.

NARROW BRIDGES (less than 26')
TWO LANE TWO-WAY ROADWAY



BRIDGES (26' or greater in width)
TWO LANE TWO-WAY ROADWAY



FOUR LANE DIVIDED ROADWAY INTERSECTIONS
MEDIAN WIDTH GREATER THAN 30 FEET
(median width measured between crossover stop lines)

TABLE I
TYPICAL TAPER LENGTH (L)

Posted Speed *	Formula	Minimum Desirable Taper Lengths ** 10' Offset	11' Offset	12' Offset
30	$L=\frac{WS^2}{60}$	150'	165'	180'
35		205'	225'	245'
40		265'	295'	320'
45	L=WS	450'	495'	540'
50		500'	550'	600'
55		550'	605'	660'
60		600'	660'	720'
65		650'	715'	780'

* 85th Percentile Speed may be used on roads where traffic speeds normally exceed the posted speed limit.
** Taper lengths have been rounded.
L=Length of Taper (FT.) W=Width of Offset (FT.)
S=Posted Speed (MPH)

STANDARD PLANS
TEXAS DEPARTMENT OF TRANSPORTATION
Traffic Operations Division

TYPICAL STANDARD PAVEMENT MARKINGS

PM(1)-95

ORIG DRAW DATE: NOV. 1978	DW: LR	CK:	DW: DN	CK:	NEG NO.:
REVISIONS: 2-82 7-92; 11-85 8-95; 7-86; 4-92	STATE DISTRICT: 18	FEDERAL REGION: 6	FEDERAL AID PROJECT: STP 96(830)MM		SHEET: 70
	COUNTY: ROCKWALL	CONTROL: 1019	SECTION: 03	JOB: 041	HIGHWAY: FM 740

DN: LR
CK: CW
DW: DN
CK: MT

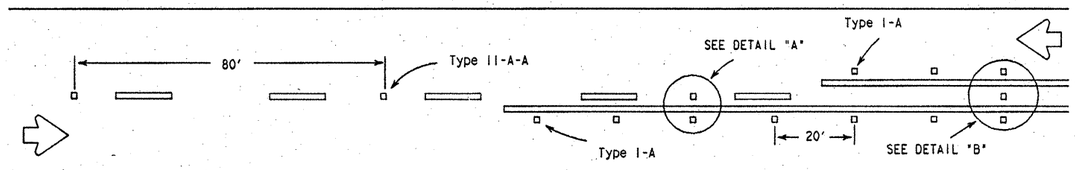
DATE:
ACC: d58hplc. /d580504
FILE:

LEVELS DISPLAYED
1 2 3

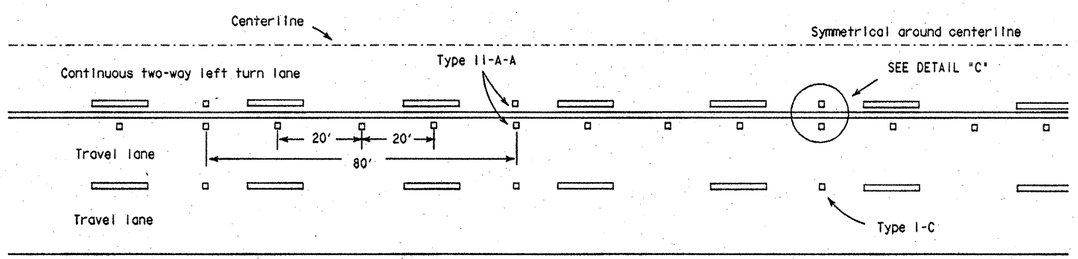
Raised pavement markers supplement painted lines

CENTERLINE & NO-PASSING LINES FOR TWO LANE TWO-WAY HIGHWAYS

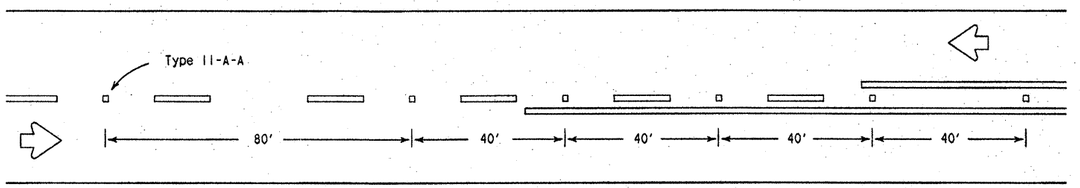
Raised pavement markers as vehicle positioning guides



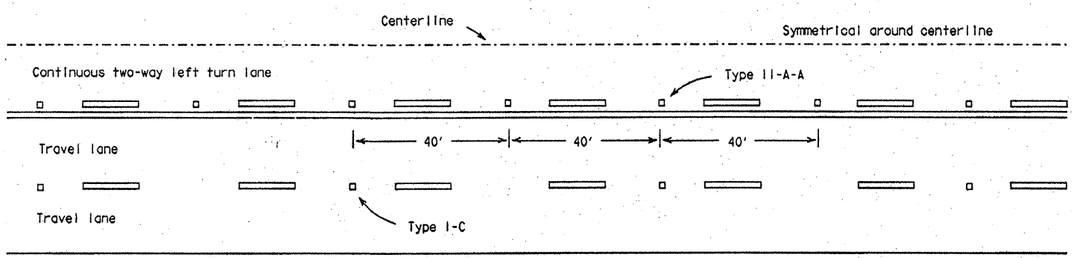
(FOR ROADWAYS 24 FEET OR WIDER)



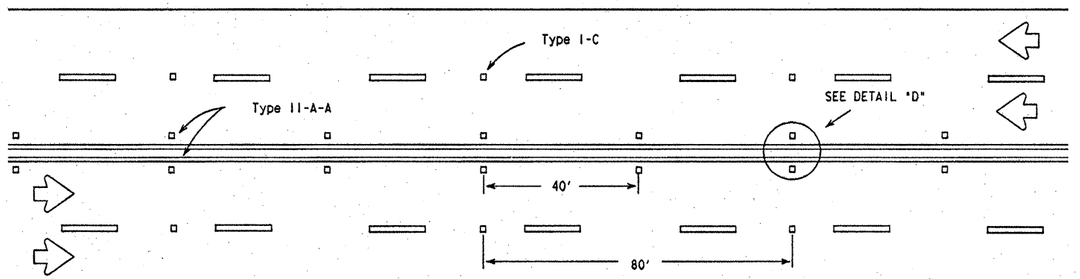
TWO-WAY LEFT TURN LANE



(FOR ALL ROADWAYS)

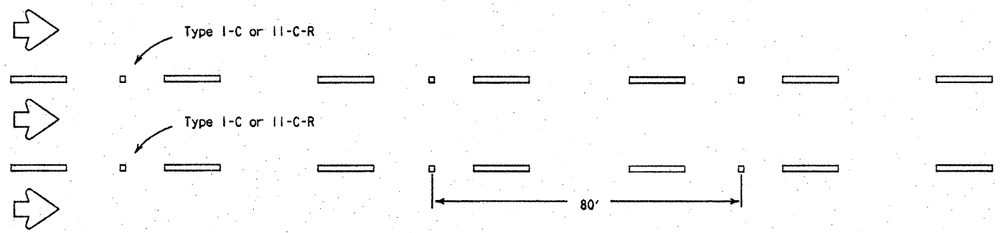


TWO-WAY LEFT TURN LANE



CENTERLINE & LANE LINES FOR FOUR LANE TWO-WAY HIGHWAYS

Raised pavement marker Type I-C, clear face toward normal traffic, shall be placed on 80-foot centers.



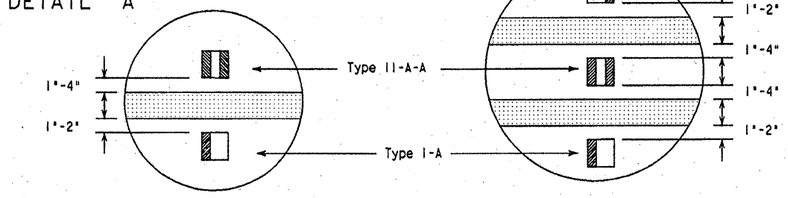
LANE LINES FOR ONE-WAY ROADWAY

Raised pavement markers Type II-C-R, clear face toward normal traffic and red face toward wrong-way traffic, shall be spaced on 80-foot centers.

As required by the Engineer or shown elsewhere in the plans, Type II-C-R markers shall be placed on 40-foot centers for the below listed conditions:

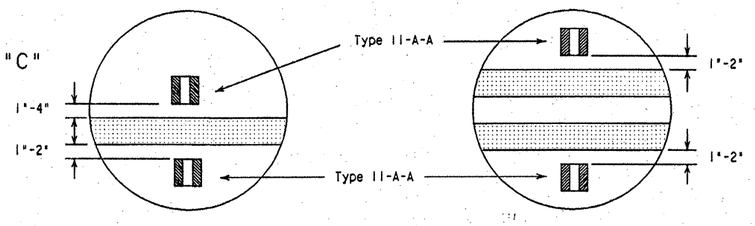
1. Vertical curves with grades over 2 percent and less than 1000 feet long,
2. horizontal curves,
3. or continously illuminated sections.

DETAIL "A"



DETAIL "B"

DETAIL "C"



DETAIL "D"

GENERAL NOTES:

All raised pavement markers placed in broken lines shall be placed in line with and midway between the stripes.

First and last raised pavement markers in a no-passing line are to be located adjacent to either the midpoint of the gap of the centerline marking or the midpoint of the broken line of the centerline marking.

On concrete pavements the raised pavement markers should be placed to one side of the longitudinal joints.

STANDARD PLANS
TEXAS DEPARTMENT OF TRANSPORTATION

TYPICAL STANDARD PAVEMENT MARKINGS WITH RAISED PAVEMENT MARKERS

PM(2)-92

ORIGINAL DRAWING DATE: 4-77		REVISIONS		STATE DISTRICT	FEDERAL REGION	FEDERAL AID PROJECT				SHEET
DW.:- LR	2-82	10-86		18	6	STP 96(830)MM				71
CK.:-	11-85	4-92		COUNTY		CONTROL	SECTION	JOB	HIGHWAY	
DW.:- DN	7-86			ROCKWALL		1019	03	0011	FM 740	
CK.:-										228

Division of Maintenance and Operations

GENERAL NOTES

1. MINOR OPERATION is defined as those activities that will require traffic control devices to warn or direct traffic during daytime conditions. At the end of each work day, all traffic control devices should be removed from the view of motorists and no unusual conditions or potential hazards should exist that require advance warning.
2. MAJOR OPERATION is defined as those activities that may effect traffic during daytime and nighttime conditions. Work activities on high speed, high volume roadways may also be considered a major operation.
3. Additional details may be provided in the plans concerning sign size, type of channelization devices, sequence of work details, and required measures needed to control traffic during changes in the sequence of work.
4. All distance and spacing shown on the TCP Standards are approximate.
5. All traffic control devices used during nighttime shall be reflectorized, illuminated from within or externally illuminated.
6. Additional information for fabrication, erection and usage of the following traffic control devices is found in the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) and Barricade and Construction (BC) Standards:

BARRICADES	BC(2) and BC(3)
CONES	BC(3)
DELINEATION	WZ (BD)
DRUMS	BC(3)
PAVEMENT MARKINGS	BC(8) and BC(9) WZ (STPM) or TCP(7-1) if applicable
SIGNS	BC(4), BC(5), BC(6), BC(7)

SIGNS

1. Selection of sign size should be based on Table I.
2. Flashing warning lights, channelizing devices and/or flags may be required to call attention to the advance warning signs.
3. The words UTILITY, SIGNAL, BRIDGE, LIGHTING, SIGN, STREET of RAMP may be substituted for ROAD in all signs where applicable.
4. Advisory speed plaques, if used in conjunction with warning signs, speeds shall be determined in the field by the Engineer.
5. Regulatory signs shall be mounted at 5 foot minimum mounting height for rural areas and 7 foot minimum mounting height for urban areas.
6. Warning signs may be mounted on three types of supports at the minimum mounting heights as stated on BC(4):

Portable	(1 foot)
Temporary	(3 feet)
Fixed	(5 feet rural, 7 feet urban)

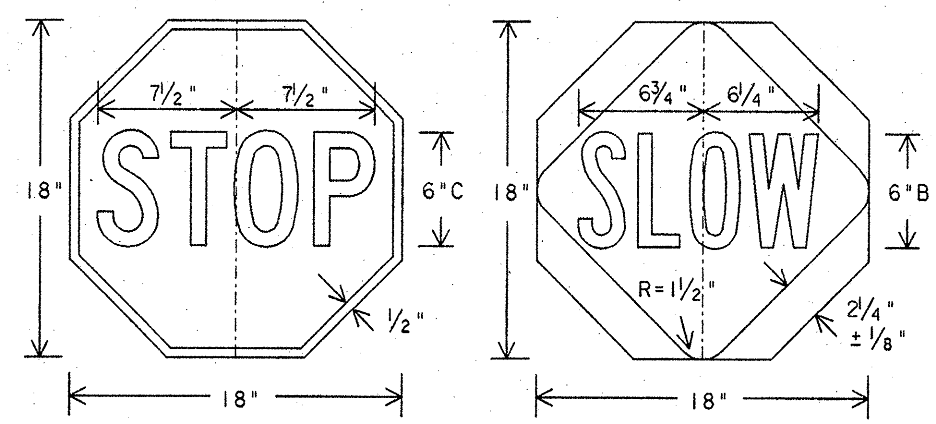
The illustrated sign spacing (X) and distance message (500 FT, 1000 FT, 1500 FT) are based on 55 mph 85th percentile speed with distance rounded to the nearest 500 feet. For slower speeds or minor operations, the word "AHEAD" may be used in lieu of the distance message.

CHANNELIZING DEVICES

1. The maximum spacing between channelizing devices in a taper should be approximately equal in feet to the speed limit (S).
2. When channelizing devices are used to direct traffic across existing lane line or edge lines the spacing between channelizing devices shall be reduced by as much as 50%.
3. Channelizing device spacing should be reduced when placed on curves, hills or next to potential hazards. At least three channelizing devices should be in view at all times.
4. Lane closure taper length is equal to "L". Shifting taper length is equal to "1/2 L" Shoulder closure taper length is equal to "1/2 L".
5. Tapers downstream from the work area are optional and when used should be 50'-100' long.
6. Tapers shall be 50 feet minimum length when placed downstream of a flagger, YIELD sign or STOP sign.
7. The selection of channelizing devices should be based on degree of hazard associated with the work area. The selection priority of channelizing devices, in the order of increasing hazard recognition are:
   - portable mounted delineators
   - 28" cones
   - 36" or more tubular cones
   - portable mounted vertical panels
   - 36" cones
   - Type I Barricade
   - Type II Barricade
   - plastic drums
   - MBGF, fixed or barrel mounted concrete traffic barrier
8. Flashing arrow panels used on two-way, two-lane roadways should flash in the caution mode.

FLAGGER CONTROL

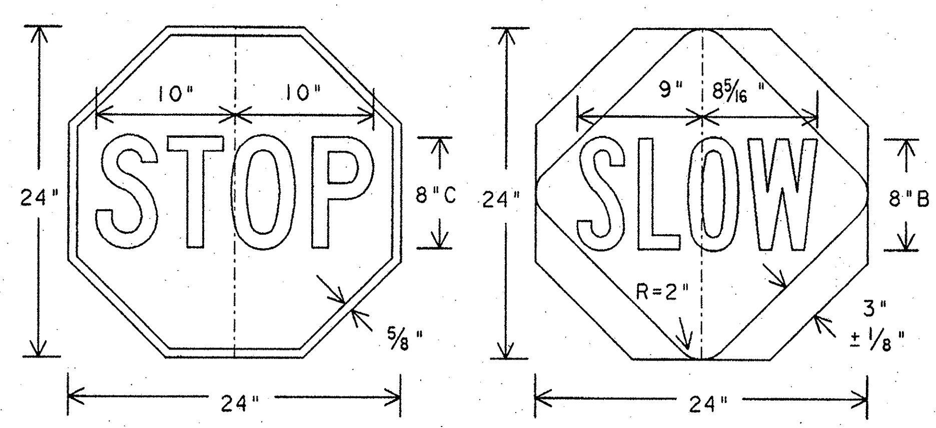
1. Flagger shall wear orange safety vests. Flaggers should wear saftey hats to provide a professional image to the motorist and to protect the head from flying ojects.
2. STOP/SLOW paddles shall be used as the primary method to control traffic by flaggers. The STOP/SLOW paddle minimum size is 18" x 18". Paddles may be attached to a 60 inch staff for easier handling. The larger size (24" x 24") should be attached to a 60 inch staff.
3. Flags are only used to control traffic for emergency situations and the STOP/SLOW paddles are not available.
4. Flaggers may carry hand held air horns to alert workers of an emergency condition.
5. For one lane two-way traffic control, one or more flaggers should be used where traffic density, road conditions or motorists' sight distance justify their use. If flaggers are used, the taper should be reduced to 50 feet minimum. When flaggers are used to control traffic, the FLAGGER symbol sign (FCW20-7a) shall be used. When flaggers are used, the BE PREPARED TO STOP sign (FCW21-8) should be used. Proper spacing between signs should be maintained.
6. When flaggers are used to draw attention to traffic control devices, the FLAGGER symbol sign should be used. Proper spacing should be maintained.
7. When more than one flagger is used, a chief flagger should be assigned the responsibility of making decisions concerning traffic control.



Background - Red
Legend & Border - White

Background - Orange
Legend & Border - Black

18" STOP-SLOW PADDLE



Background - Red
Legend & Border - White

Background - Orange
Legend & Border - Black

24" STOP-SLOW PADDLE

WORKER SAFETY

1. Workers exposed to traffic should wear orange safety vests.
2. Work vehicles within 30 feet of the traveled way should have strobe lights or rotating beacons in use.
3. When work vehicles are used to shadow the work area, the vehicle should be parked 30 feet of more from the work area, transmission in gear (or set in PARK) emergency brake set on, and front wheels turned away from work area.
4. Inactive work vehicles, including workers' private vehicles, should, be parked away from the work area and as close to the right-of-way line as possible.

Table I

TYPICAL CONSTRUCTION WARNING SIGN SIZE [1,5,6] AND SPACING

Roadway Classification	Posted Speed	Sign Spacing ▲	Major Construction Or Major Maintenance Approach Warning Signs — CW 20n Series And CW 22-1 Sign		Minor Construction Or Minor Maintenance Approach Warning Signs — CW 21 Series		Other Warning Signs
	MPH	Ft. (Apprx.)	Standard Inches	Minimum[4] Inches	Standard Inches[7]	Minimum[4] Inches[7]	Standard Inches[7]
Conven.	30	80	48X48	36X36	30X30 or 36X36	24X24 or 30X30	30X30 or 36X36
↓	35	120	↓	↓	↓	↓	↓
↓	40	160	↓	↓	↓	↓	↓
↓	45	240	↓	Use Standard Size	↓	Use Standard Size	↓
↓	50	320	↓		↓		↓
↓	55	500[2]	↓		↓		↓
Exp or Frwy	55	500[3]	↓		48X48 *	48X48 *	48X48 *
	65	750[3]	↓		↓	↓	↓

▲ Minimum distance from work area to First Advance Warning sign and/or distance between each additional sign.

* Smaller sign sizes may be used where sign designs have not been included in the "Standard Highway Sign Design for Texas" publication.

General Notes:

1. Special or larger size signs may be used as may be necessary.
2. Distance between signs should be increased as required to have 1500' advance warning.
3. Distance between signs should be increased as required to have 1/2 mile or more advance warning.
4. For use only on secondary roads or city streets where speeds are low.
5. Only diamond shaped warning signs are indicated.
6. See sign listing in TMUTCD, Appendix A for complete list of all available sign design sizes.
7. Where two sizes are listed, see sign listing in TMUTCD, Appendix A for proper size.

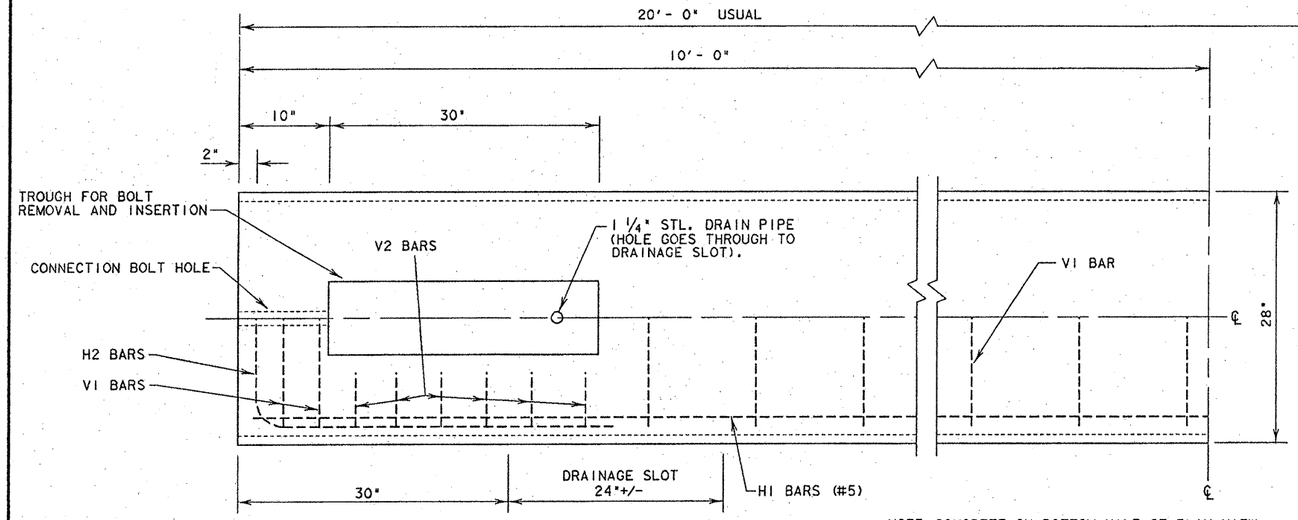
STANDARD PLANS
TEXAS DEPARTMENT OF TRANSPORTATION
Traffic Operations Division

TRAFFIC CONTROL PLAN

TCP NOTES-95

ORIG DRAW DATE: FEB. 1994	DN: - LR/MT	CK: -	DW: - DN	CK: - MT	NEG NO.:
REVISIONS	STATE DISTRICT	FEDERAL REGION	FEDERAL AID PROJECT		SHEET
8-95	18	6	STP 96(830)MM		81
	COUNTY		CONTROL	SECTION / JOB	HIGHWAY
	ROCKWALL		1014	03 / 041	FM 740

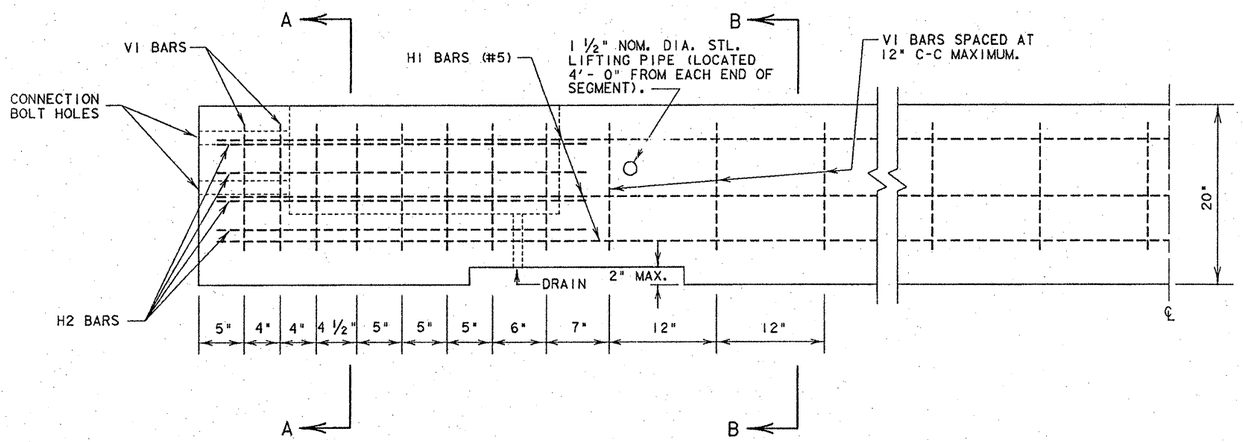
DN: LK CK: CW DW: DN CK: MT
ar/d580504
DATE:
ACC: d58nplc
FILE:



NOTE: CONCRETE ON BOTTOM HALF OF PLAN VIEW IS REMOVED IN ORDER TO SHOW DETAILS

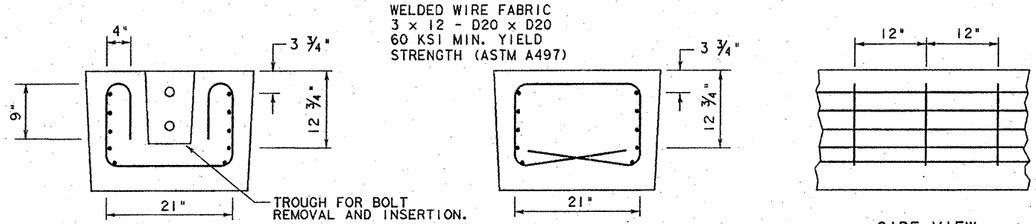
PLAN VIEW - TYPE I

(SYMMETRICAL ABOUT CENTER LINES)



ELEVATION - TYPE I

(SYMMETRICAL ABOUT CENTER LINES)



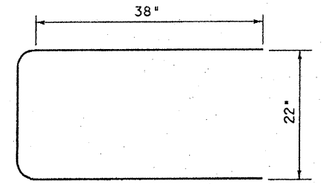
SECTION A-A

SECTION B-B

SIDE VIEW

NOTE: THIS FABRIC OPTION CAN BE USED IN PLACE OF V1, V2 AND H1 BARS. THE H2 BARS SPECIFIED ARE STILL REQUIRED.

WELDED WIRE FABRIC OPTIONAL REINFORCING

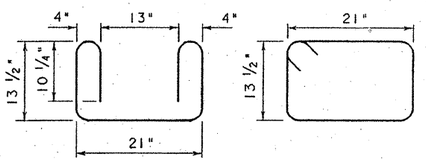


H2 BAR (#5)

(GRADE 60 MIN.)

NOTE: H2 REBAR IS TO BE BENT AT A 3" RADIUS.

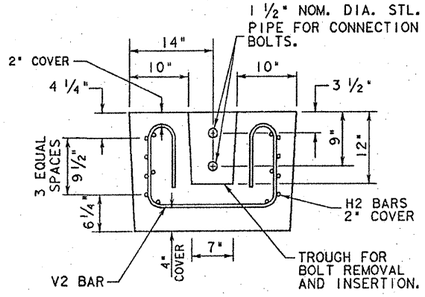
NOTE: ALL BENDING OF SHEAR REBAR IS AT A 2" RADIUS, UNLESS SPECIFIED OTHERWISE.



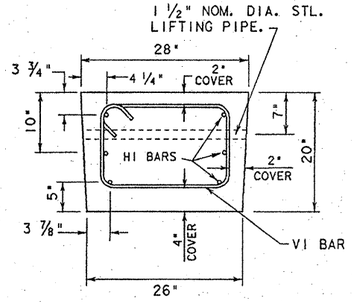
V2 BAR (#4)

V1 BAR (#4)

REINFORCING STEEL DETAILS



SECTION A-A



SECTION B-B

CONNECTION BOLT

FOR CONTRACTORS INFORMATION ONLY

(TYPE I) APPROX. QUANTITIES	20 FT. SECTION	
CONCRETE	CY	2.6
REINFORCING STEEL	LBS	330
TOTAL BARRIER WT.	LBS	11000

GENERAL NOTES

1. BARRIER LENGTH SHALL BE 20 FEET (+/- 1 INCH) UNLESS OTHERWISE SPECIFIED IN THE PLANS.
2. ALL CONCRETE, REINFORCEMENT, ANCHOR BOLTS, BLOCKING, ETC., AS SHOWN ARE CONSIDERED AS PART OF THE BARRIER FOR PAYMENT.
3. ALL CONCRETE SHALL BE CLASS A, C, OR H, UNLESS OTHERWISE SPECIFIED.
4. ALL REINFORCING STEEL SHALL BE GRADE 40, UNLESS OTHERWISE SPECIFIED.
5. CHAMFER ALL EDGES 3/4 INCH, AS DIRECTED BY THE ENGINEER.
6. STEEL PIPE SHALL BE HOT DIP GALVANIZED IN CONFORMANCE TO ASTM DESIGNATION A123. BOLTS, NUTS AND WASHERS SHALL BE HOT-DIP GALVANIZED TO ASTM DESIGNATION A153.
7. BOLTS SHALL CONFORM TO ASTM A36. NUTS SHALL CONFORM TO A307 REQUIREMENTS AND SHALL BE TAPPED OR CHASED AFTER GALVANIZING. BOLTS AND NUTS SHALL HAVE CLASS 2A AND 2B FIT TOLERANCES.
8. THE BARRIER SHOULD BE LIGHT IN COLOR AND SHOULD BE SUPPLEMENTED BY DELINEATION AS DETAILED ELSEWHERE IN THE PLANS.

TEXAS DEPARTMENT OF TRANSPORTATION

LOW PROFILE CONCRETE BARRIER

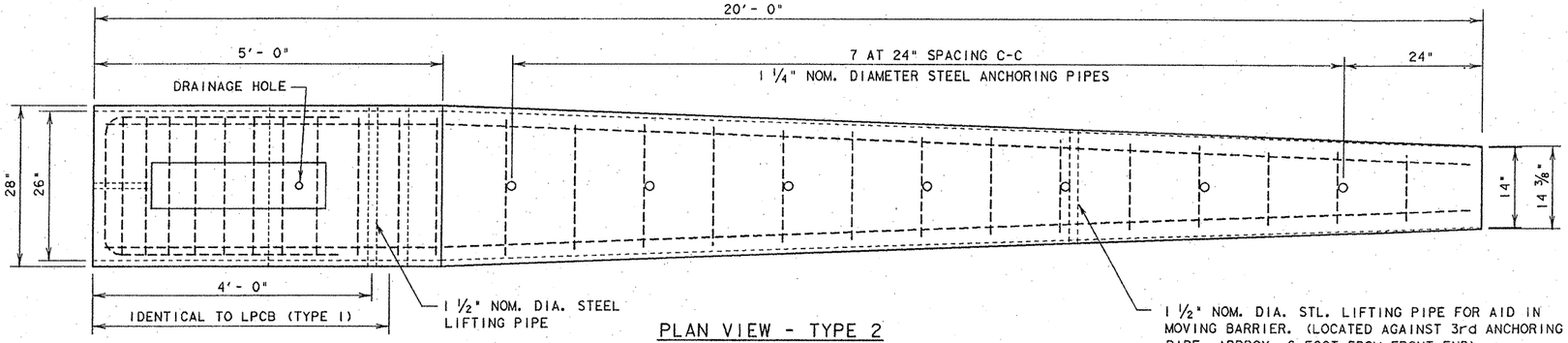
(PORTABLE AND PRECAST)

LPCB(1)-92

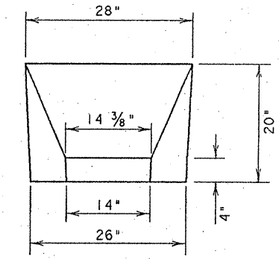
SHEET 1 OF 2

MODIFICATIONS	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
	6	TEXAS	STP 96(830)MM	82
	STATE DIST. NO.	COUNTY	CONT. / SECT. / JOB / HIGHWAY NO.	
	18	ROCKWALL	1014 / 03 / 04	FM740

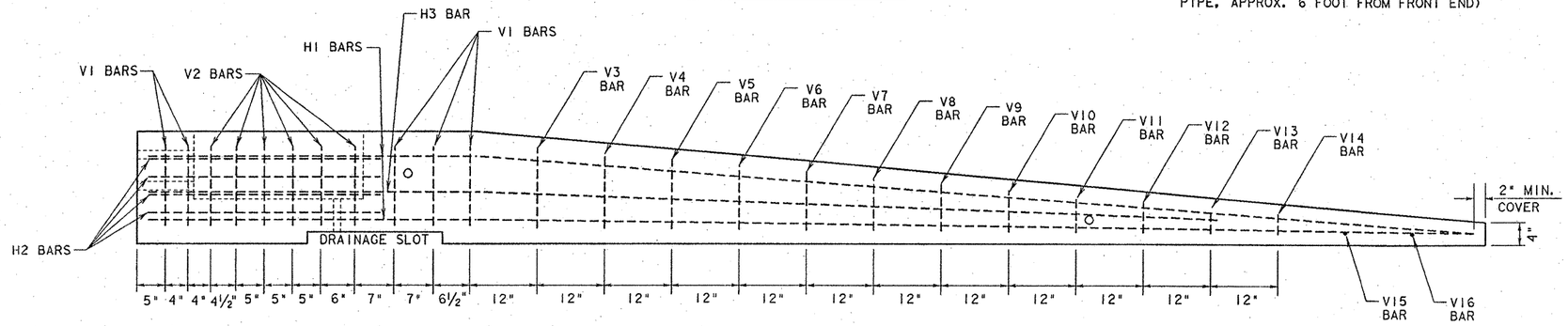
HIGHWAY DESIGN DIVISION (D-8)



PLAN VIEW - TYPE 2



APPROACH VIEW

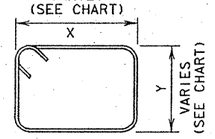


ELEVATION - TYPE 2

NOTE: ANCHORING PIPES NOT SHOWN IN ELEVATION.

GENERAL NOTES

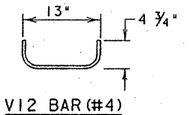
1. TYPE 2 BARRIER SHALL BE USED AS AN END TREATMENT FOR TYPE 1 BARRIER WHEN APPROPRIATE.
2. THE ANCHORAGE PINS ARE ALL THE SAME LENGTH AND ARE INTENDED TO BE DRIVEN FLUSH WITH THE TOP OF THE BARRIER SURFACE.
3. THE BENDS IN THE H3 AND H1 BARS ARE SLIGHT, NO FORMAL BEND IS NECESSARY.
4. TYPE 2 BARRIER MUST BE LIFTED FROM REAR FIRST TO PREVENT CRACKING OF SLOPED SECTION.
5. SEE SHEET 1 OF 2 FOR ADDITIONAL INFORMATION.



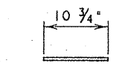
V 3-11 BARS (#4)

BAR (#4)	X (IN.)	Y (IN.)
V3 BAR	20 1/4	14 1/2
V4 BAR	19 1/2	13 1/2
V5 BAR	18 1/2	12 1/4
V6 BAR	17 1/2	11 1/4
V7 BAR	17	10 1/4
V8 BAR	16 1/4	9
V9 BAR	15 1/2	8
V10 BAR	14 1/2	7
V11 BAR	13 3/4	6

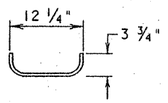
NOTE: ALL BENDING OF SHEAR REBAR IS AT A 2" RADIUS, UNLESS SPECIFIED OTHERWISE.



V12 BAR (#4)

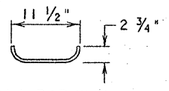


V15 BAR (#4)

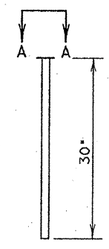


V13 BAR (#4)

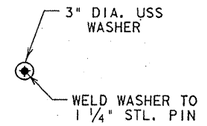
V16 BAR (#4)



V14 BAR (#4)



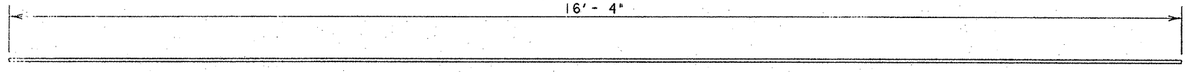
ANCHORING PIN
(1 1/4" DIA., A36 STL.)



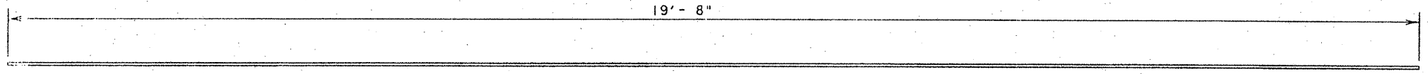
A-A
(HEAD OF ANCHORING PIN)

FOR CONTRACTORS INFORMATION ONLY

(TYPE 2) APPROX. QUANTITIES 20 FT. SECTION		
CONCRETE	CY	1.65
REINFORCING STEEL	LBS	240
TOTAL BARRIER WT.	LBS	7000



H3 BARS (#5)
(GRADE 60)



H1 BARS (#5)
(GRADE 60)

TEXAS DEPARTMENT OF TRANSPORTATION

LOW PROFILE CONCRETE BARRIER

(PORTABLE AND PRECAST)

LPCB(2)-92

SHEET 2 OF 2

MODIFICATIONS	FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
	6	TEXAS	STP 96(630)MM	B3
	STATE DIST. NO.	COUNTY	CONT. SECT. JOB	HIGHWAY
	18	ROCKWALL	1014 03 044	FM740

I. GENERAL REQUIREMENTS FOR ALL ELECTRICAL WORK

Faulty fabrication or poor workmanship in any material, equipment, or installation will be considered justification for rejection. Materials and installation shall comply with the applicable provisions of the National Electrical Code (NEC) and National Electrical Manufacturers Association (NEMA) standards. Where manufacturers provide warranties or guarantees as a customary trade practice, Contractor shall furnish to the State such warranties or guarantees. The location of conductors, conduit, junction boxes, duct cable, ground boxes, and electrical services are diagrammatic only and may be shifted by the Engineer to accommodate local conditions.

Grounding shall be as shown on the plans and in accordance with the NEC. Metallic conduit, lighting poles, and luminaires on bridge structures shall be grounded by connection to the grounding conductor and by installing a ground rod in each ground box or junction box, as shown on the plans, at bridge ends and in each ground box installed for underpass lighting. The grounding jumper shall be bare or, if insulated, shall be green. Ground rods, connectors, and bonding jumpers will not be paid for separately, but will be subsidiary to the various bid items.

II. CONDUIT

A. MATERIALS.

1. Conduit must be UL-approved for the intended use shown on plan sheets. Aluminum conduit will not be permitted unless shown elsewhere on the plans. EMT and IMC will not be permitted unless shown on the plans.
2. Fittings for steel conduit shall be steel or malleable iron, threaded or compression type threadless and rain-tight. Die cast, set screw, indenter or push-on (socks) fittings will not be permitted.
3. Expansion joints for metallic conduit shall be provided with a grounding strap. Expansion joints for metallic conduit shall be Appleton UNYL 50 Series, OZ AX Series, or equal.
4. Junction boxes in rigid metal conduit systems shall be cast iron, hot-dipped galvanized, or cast aluminum (surface-mounted only) unless otherwise shown on the plans.
5. Surface-mounted junction boxes for Rigid Metal conduit 1¼ inches and larger shall have a minimum wall thickness of ⅜ inch. Crouse Type WAB, O-Z Type YS, Adalet Type 3R, or approved equal, with mounting lugs, minimum size 6 inches x 6 inches x 4 inches, or as otherwise required by the NEC, or as shown elsewhere on the plans. For conduit one inch or smaller, surface-mounted boxes may be 4½ inches (min.), round, square, or rectangular, and approximately 3 inches deep, Crouse Hinds Type GRFX, Appleton Type JBOX, two-gang FD, or approved equal, unless otherwise required by the NEC or the plans.
6. For rigid meatal conduit systems flush-mounted junction boxes installed in concrete structures shall be minimum 6 inches x 6 inches x 4 inches, or as required by the NEC. Crouse Hinds Type WGB, O-Z Type YR, or approved equal.
7. Unless otherwise shown elsewhere on the plans, junction boxes in EMT conduit systems shall be made from galvanized sheeting and shall be UL listed as approved for outdoor use. Sheet metal junction boxes shall be sized in accordance with the NEC.
8. Unless otherwise shown elsewhere on the plans, junction boxes in PVC conduit systems shall be PVC, UL listed for outdoor use, and sized in accordance with the NEC.

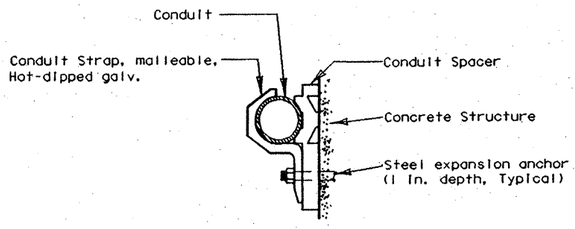
B. CONSTRUCTION METHODS.

1. Continuous runs of conduit in excess of 150 feet attached to structures shall have expansion joints at mid-span or 150 foot intervals. Conduit in structures shall have expansion joints at structure expansion joints or as shown in plans.
2. Conduit hangers or straps shall be spaced at maximum intervals of 5 feet. When shown on the plans, hangers shall be used when hanging conduit from horizontal surfaces (See detail). Conduit spacers shall be used with metal conduit placed on surfaces of concrete structures (See conduit detail).
3. Conduit hangers or straps shall not be attached directly to prestressed concrete beams except as shown in the plans and approved by the Engineer.
4. Conduit placement beneath existing roadways, driveways or sidewalks shall be accomplished by jacking or boring, unless otherwise noted on the plans or directed by the Engineer. The Contractor shall backfill and compact the bore pits to bottom of conduit prior to installing connecting conduit or duct cable, to prevent bending of this connection. Duct cable shall be extended through conduit casings in one continuous length.
5. With approval of the Engineer, conduit placed under new roadways may be trenched in subgrade and backfilled with excavated material. When approved by the Engineer, conduit may be trenched in sub-base but must be backfilled with cement-stabilized base. Conduit placed after base or surfacing operation has begun must be jacked or bored.
6. Open ends of all conduit and raceways shall be fitted with temporary caps or plugs to prevent entry of dirt, debris and rodents during construction.
7. Conduit entry into the top of junction boxes shall be made weathertight using threaded fittings into hubs, or with sealing locknuts inside and out.
8. A bonding jumper shall be installed from grounding bushing to nearest rod, grounding lug, or grounding conductor. At electrical services, bonding jumper shall be AWG Size No. 6. All other jumpers shall be minimum size AWG No. 8. Conduit used as casing under roadways for duct cable need not be grounded if duct extends full length through the casing.
9. Conduit ends shall be sealed with heat shrink boots or tubes with sealant, silicone caulking or shall be sealed by other methods approved by the Engineer. Sealing shall be done after completion of any required pull tests.
10. Where called for on the plans, trenched conduit shall be placed on a 2 inch sand cushion and backfilled with a minimum of 6 inches of additional sand fill.
11. Conduits entering ground boxes shall be placed so that the conduit ends shall be not less than 5 inches nor more than 9 inches from the box cover (See ground box detail).
12. Metal junction boxes shall be bonded to the grounding conductor.

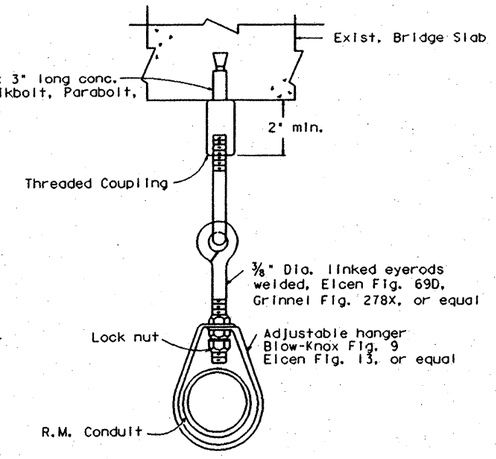
III. ELECTRICAL CONDUCTORS

A. MATERIALS.

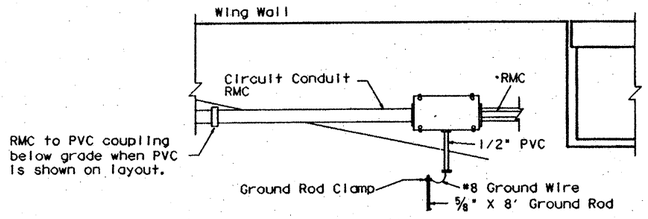
1. Insulated conductors NEC Type XHHW or USE (XLP). Conductors in circuits containing two or more insulated conductors shall be color-coded at each accessible point (i.e., ground boxes, pole bases, junction boxes). Color-coding for No. 10 and smaller shall be by continuous jacket color. Color-coding of electrical conductors No. 8 or larger may be by continuous jacket color or colored tape. Colored tape marker shall consist of a half-lap of tape covering a 6 inch length of conductor.
2. Bonding conductor No. 8 or smaller, tied to ground rods, shall be solid. Connection of bonding conductor to ground rod shall be made using UL listed connectors designed for such purpose.



CONDUIT STRAP DETAIL
(Attachment to concrete surfaces)
(See para. II.B.2)



CONDUIT HANGER DETAIL
(Attachment to horizontal surfaces)
(See II.B.2)



NOTES

1. Conduit shall be 2" RMC for duct cable entry to junction box.
2. Ground rod clamp to be Blackburn GG 5/8H, Weaver W5/8 or equal.
3. Surface mounting shown, for conduit to be placed in structure use flush-mounted box.
4. Bond junction box to grounding conductor.

TYPICAL CONDUIT ENTRY TO BRIDGE STRUCTURE DETAIL

STANDARD PLANS
TEXAS DEPARTMENT OF TRANSPORTATION
Traffic Operations Division

ELECTRICAL DETAILS- CONDUIT, CONDUCTORS

ED(1)-93

ORIG. ISSUE DATE: January 1992	DSN: KB	CK: TB	DW: RS	CK: TB	MSG NO.:
REVISIONS: 5-93, 10-93	STATE DISTRICT: 18	FEDERAL REGION: 6	FEDERAL AID PROJECT: STP 96(830)NM		SHEET: 84
	COUNTY: ROCKWALL	CONTROL: 1014	SECTION: 03	JOB: 041	HIGHWAY: SH740

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B. CONSTRUCTION METHODS.

1. A non-metallic pull rope shall be use in pulling conductor in non-metallic conduit.
2. After conductor is placed in conduit, a pull test will be made on conductors. When any length of conductor cannot be freely pulled the Contractor shall make any needed alterations or repairs at the Contractor's expense.
3. Conductors in illumination poles shall be supported by a J-hook in the top of the pole.
4. A sufficient length of conductor shall be left in ground boxes (610 mm minimum to point of splice, 914 mm minimum when conductor is pulled through with no splice), enclosures, and pole bases (305 mm minimum) for making up connections.
5. Except for overhead wiring, splices shall be made only in junction boxes, ground boxes, pole bases, or electrical enclosures and shall be made with approved compression sleeves or split bolt connectors. Splices shall be insulated with heavy wall heat shrink tubing containing factory applied sealant. Heat shrink sleeves shall lap conductors insulation a minimum of 2 inches on both sides of the splices.
6. When approved by the Engineer, wire nuts may be used for No. 8 and smaller conductors in above-ground junction boxes, but not in pole bases or ground boxes. Wire nuts shall be positioned upright to prevent the accumulation of water.

IV. DUCT CABLE.

A. Duct cable shall be placed by the open trench method, except where otherwise noted, at a minimum depth of 18 inches unless otherwise indicated. Bends in duct cable shall be made in the manner recommended by the manufacturer. Minimum bending radius shall be 15 inches for one inch duct and 18 inches for 1¼" duct. Handling of duct cable reels and installation of duct shall be as recommended by the manufacturer. Duct entering ground boxes shall be placed so that the duct ends are not less than 5 inches or more than 9 inches from the box cover. Duct for duct cable is designed as a conduit system and shall be considered as such in NEC interpretations. Duct shall not be spliced. Ends of duct shall be cut neat and straight and shall be reamed to remove sharp edges.

B. After duct cable has been installed, a pull test will be made on conductors. If conductors cannot be freely pulled, Contractor shall replace or otherwise adjust installation to free up the conductors. Duct cable ends shall be sealed with approved compound or with heat-shrink material after pull test is completed.

C. Where noted on plans, duct cable shall be placed on a 2 inch sand cushion and backfilled with a minimum 6 inches of additional sand.

D. Duct cable shall be encased in conduit when shown on the plans. Duct cable shall be extended through the conduit casing in one continuous length.

V. GROUND BOX.

A. MATERIALS.

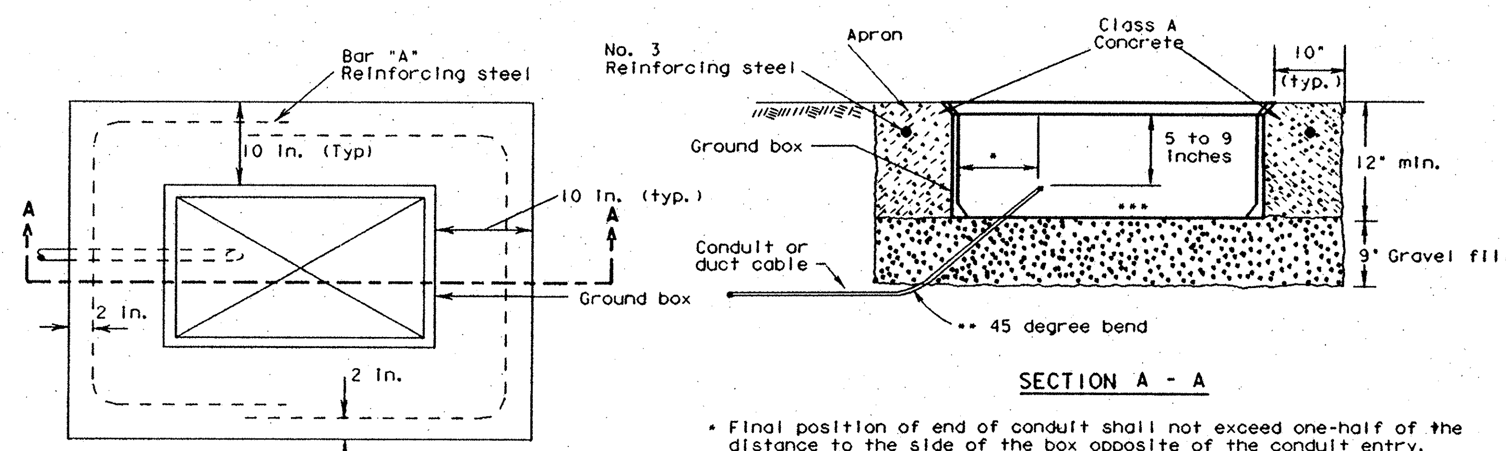
1. Ground boxes shall be concrete or polymer concrete, as required by the descriptive code shown elsewhere.
2. All precast ground boxes and covers shall be permanently marked with manufacturer's name or logo and manufacturer's model number.
3. Covers shall be bolted down. Bolt holes shall be arranged to drain dirt.
4. When steel covers are required, covers shall be provided with a grounding lug with 1/2 - 13 NC female threads on the underside of the cover.
5. Polymer Concrete boxes shall meet the following requirements:
   a. Boxes shall be manufactured from Reinforced Polymer Concrete (RPM) composed of borosilicate glass fiber, a catalyzed polyester resin and an aggregate. Side walls may be fiber reinforced polymer.
   b. Minimum inside dimensions shall be as follows (width x length x depth):

      Type A shall be 11.5 inches x 21 inches x 10 inches, (122311)
      Type B shall be 11.5 inches x 21 inches x 20 inches, (122322)
      Type C shall be 15.25 inches x 28.25 inches x 10 inches, (162911)
      Type D shall be 15.25 inches x 28.25 inches x 20 inches, (162922)
      Type E shall be 11.5 inches x 21 inches x 16 inches, (122317)

   c. Bottom edge of box or extension shall be footed with a minimum 1¼" flange.
   d. Ground boxes shall withstand a test loading of 20,000 lbs. over a 10 inch by 10 inch area centered on the lid and 600 lbs. per sq. ft. applied over the entire side wall. The model of ground box proposed shall have been tested by a laboratory independent of the manufacturer to meet loading requirements. Certification of such tests shall be submitted to the Engineer for approval.
   e. Covers shall be 2 inch (nominal) thick polymer concrete. Cover shall be secured with two ½ inch stainless steel bolts. Bolts shall be captive and shall withstand a minimum of 70 ft-lbs torque and shall have a minimum 750 lbs. straight pull out strength. Covers shall be skid resistant, minimum 0.5 coefficient of friction. Covers shall be interchangeable between manufacturers and shall conform to the dimensions shown below. Cover shall be legibly imprinted with the words "Danger High Vol tage" in minimum 2 inch letters. When required, other cover lettering shall be as shown elsewhere on the plans.

B. CONSTRUCTION METHODS.

1. Steel covers shall be bonded to grounding conductor with a 3 foot jumper.
2. Where indicated on the plans, ground box will be encased in concrete apron as detailed below. Construction of apron including concrete and reinforcing steel shall not be paid for directly but shall be subsidiary to the ground box. Field bending of reinforcing steel will be allowed.
3. A minimum gravel fill of 9 inches shall be placed under each ground box. Gravel shall be coarse aggregate grade No. 1 in accordance with Item 421.
4. The Contractor may cut the necessary conduit holes in box extensions only. Holes must be 18 inches or more below the cover.
5. Concrete for aprons shall be considered miscellaneous concrete for testing purposes.

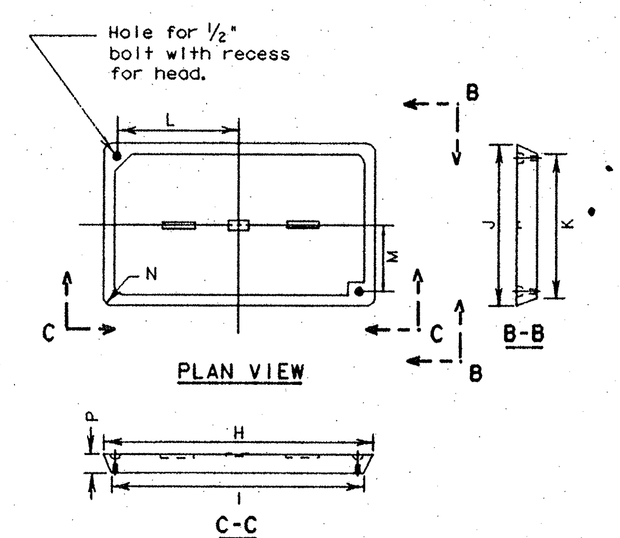


* Final position of end of conduit shall not exceed one-half of the distance to the side of the box opposite of the conduit entry.

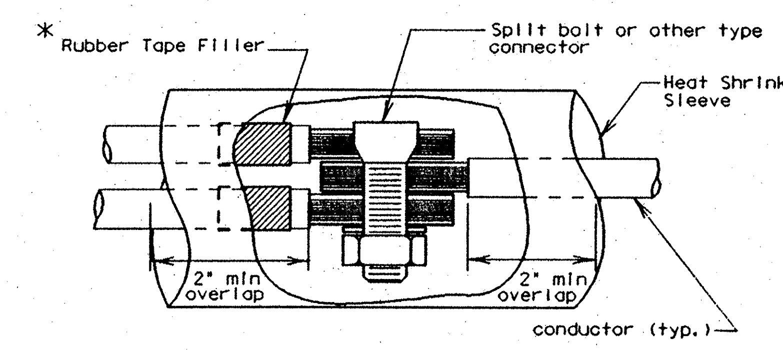
** 90 degree when approved by the Engineer.

*** Place gravel "under" the box, not "in" the box. Gravel should not encroach on the interior volume of the box.

APRON FOR GROUND BOXES
(Where required)



GROUND BOX COVER



SPLICE DETAIL

* Tape filler required where two or more conductors enter one heat shrink tube to ensure watertight splice.

GROUND BOX COVER DIMENSIONS								
BOX	DIMENSIONS (INCHES)							
SIZE (WXL)	H	I	J	K	L	M	N	P
12 in x 23 in	23¾	23	13¾	13½	9⅞	5⅛	1⅜	2
16 in x 29 in	30½	30¼	17½	17¼	13¼	6¾	1⅜	2

STANDARD PLANS
TEXAS DEPARTMENT OF TRANSPORTATION
Traffic Operations Division

ELECTRICAL DETAILS- CONDUCTORS, DUCT CABLE, GROUND BOXES

ED(2)-93

ORIG DRAW DATE: Janurary 1992	DN: KB	CK: TB	DN: RS	CK: TB	REC NO.:	
REVISIONS 5-93 10-93	STATE DISTRICT 18	FEDERAL REGION 6	FEDERAL AID PROJECT STP 96(830) MM			SHEET 85
	COUNTY ROCKWALL		CONTROL 1014	SECTION 03	JOB 041	HIGHWAY FM 740

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ELECTRICAL SERVICES NOTES

Faulty fabrication or poor workmanship in any material, equipment, or installation will be considered justification for rejection. Materials and installation shall comply with the applicable provisions of the National Electrical Code (NEC) and National Electrical Manufacturers Association (NEMA) standards. Where manufacturers provide warranties and guarantees as a customary trade practice, Contractor shall furnish to the State such warranties or guarantees. The location of conductors, conduit, junction boxes, duct cable, ground boxes, and electrical services are diagrammatic only and may be shifted by the Engineer to accommodate local conditions.

All material shall be new and unused. Alternate material equal to or better than those specified may be substituted with the approval of the Engineer. The Contractor shall contact the utility company for metering requirements and any additional requirements and shall comply with all utility company requirements.

All work, materials, services, and incidentals, whether or not specifically shown on the plans, which may be necessary to obtain electrical power and for a complete and proper electrical service installation as shown on the plans, shall be performed, furnished and installed by the Contractor except that the costs involved in extending primary lines to electrical service locations will be paid for under Force Account work. When primary line extensions are required, the Contractor shall consult with the appropriate utility company to determine costs and requirements and shall coordinate the utility company's work as approved by the Engineer.

Lugs on circuit breakers and contactors shall be large enough to accept branch circuit conductors sized as shown on the plans. Where branch circuit conductors are enlarged to reduce voltage drop beyond the capacity of lugs, the lugs shall be changed or distribution blocks shall be installed in the service enclosure to splice branch circuit conductors to the maximum wire size for which the circuit breaker or lighting contactor is rated to accept.

1. Safety switch. Shall be placed ahead of meter, when switch is required. The switch shall be of the heavy duty type, unfused, NEMA 3R enclosure and equipped with a solid neutral (s/n) assembly. Switch shall be UL listed. Switches shall be rated 480 VAC (min.) for 240/480V services and rated 240 VAC (min.) for 120/240V services. The Contractor shall modify switch to allow padlocking in the "on" position.

2. Meter. Where metering is required, utility company will provide the meter base. The Contractor shall install the meter base.

3. Service Assembly Enclosure for Type A, B, and C. Enclosure shall be sized to provide adequate wiring space in accordance with NEC. All external screws shall be type 302 stainless steel. All enclosures shall be fitted with equipment-mounting panels installed inside enclosure on collar studs or tapped bosses. Panels shall be 12-gauge steel or 0.10" thick aluminum, primed and painted white. All enclosure doors shall have stainless steel closure clamps and provisions for padlocking. Conduit entries into the top of enclosures shall have threaded hubs. Enclosure disconnect combination shall be UL listed and rated as service entrance equipment. Two 1/8" drain holes shall be placed in bottom of enclosure at opposite corners. All enclosures shall be permanently labeled "Danger High Voltage" on the front of the door, minimum one inch letters. The service pole descriptive code specifies that the enclosure shall be one of the following types.

   a. GS: Galvanized steel enclosures shall be NEMA 3R-rated, constructed of 14-guage galvanized steel, with *piano hinged door, and drip shield.

   b. SS: Stainless steel enclosure shall be NEMA 3R-rated, with *piano hinged door, constructed of 14-guage, Type 304 stainless steel. All hardware, including hinge pin, shall be stainless steel.

   c. AL: Aluminum enclosures shall be NEMA 3R-rated with *piano hinged door, constructed from 0.08 inch thick aluminum. All hardware, including hinge pin, shall be stainless steel.

   d. NM: Non-metallic enclosures shall conform to NEMA standard for Type 3R enclosures and shall be constructed of molded fiberglass, PVC, or other material approved by the Engineer.

* A two or three point heavy duty hinge with stainless steel hinge pins may be used for load centers when approved by the Engineer.

4. Main Disconnect. Main disconnect device shall be a fusible switch or circuit breaker, as shown on Electrical Service Data Sheet. Switch shall be UL and NEMA-rated Type HD (heavy duty), flange mounted or front mounted in the service assembly enclosure. Switch shall be two pole, rate 240 volts or 480 volts as required. Switch shall have clips for Class R fuses. Circuit breaker shall be UL and NEMA-rated thermal-magnetic circuit breaker, flange-mounted or front mounted in the service assembly enclosure. Breaker shall be two-pole, (one-pole 480V for Ty. B), rated 480 volts or 240 volts as required. Circuit breakers shall have a minimum interrupting rating of 14,000 Amps. Voltage and amperage rating of switches and breakers shall be as shown elsewhere on Electrical Service Data Sheet. Switch and breaker handles shall be capable of padlocking in "On" and in "Off" positions. Main disconnect shall be operable from the outside of the enclosure and shall be interlocked to prevent the service assembly enclosure door from being opened with disconnect in the "On" position. The interlock shall have a manual override such that the main disconnect is capable of being turned "On" with the enclosure door open.

5. Lightning Arrester. Arresters shall be MOV-type secondary surge arresters rated 600 volts for 480V services and 175 volts for 120/240V services and shall meet ANSI, IEEE, UL, and NEMA Standards. Mounting brackets shall be provided for mounting the arresters inside the service assembly enclosures. Lightning arrester leads shall be run as straight and short as practical.

6. Fuse Blocks. Fuse blocks shall be rated 600 volts (min.) and shall accept a 13/32" x 1 1/2 " fuse. Fuse blocks shall be furnished with integral insulated fusepuller and be suitable for mounting to the back panel of the enclosure. Fuse for 120/240 volt service shall be rated 250 volts (min.) and fuses for 480 volt service shall be rated 500 volts (min.). Fuses shall be 3 amp, dual-element (time-delay) fuses.

7. Control Transformer. Control transformer shall be rated 250 sealed VA and a minimum inrush rating of 1200 VA at 30 percent power factor. Voltage rating shall be 480-120 volts.

8. Control Station ("H-O-A" Switch). Control station shall be a maintained-contact, three position selector switch in a NEMA 1 enclosure. Switch shall be rated 600 volts and shall be fitted with "Hand-Off-Auto" legend.

9. Photo Electric Control. Photo electric control shall consist of a photocell, internal lightning arrester and relay mounted inside a weatherproof enclosure with standard 3-prong twist lock photocell plug and receptacle. The enclosure shall be made of poly-acrylic with clear acrylic window. Enclosure chassis shall be molded phenolic plastic. The photocell shall have a polyethylene gasket, and shall have a hermetically sealed cadmium sulfide cell. The arrester shall have an enclosed type expulsion arrester rated 2.0 kV sparkover with 10,000 amps follow-through. Relay shall be time delay type with normally closed contacts. Photo electric control shall be rated 1800 VA, 105-285 volts. Enclosure mounted photocells shall be the same as above except that the photocell shall be mounted inside the enclosure. The enclosure shall have two acrylic windows, or other material approved by the Engineer, one on each side of the enclosure. Each window shall be approximately one inch by 2 inches or as otherwise approved by the Engineer. The photocell shall be mounted in a position to receive light from one window.

   The Contractor shall be responsible for proper operation of the photo-electric control. The Contractor shall move and/or adjust or shield the photocell from stray or ambient nighttime light or shall make any other adjustments required for proper operation. The photocell shall face North when practicable. The photocell shall turn on the illumination system at 1.0 +(-) 0.5 footcandle and turn off the illumination system at two footcandles higher than turn on.

10. Lighting Contactor. Lighting contactor shall be a NEMA lighting contactor, two-pole, electrically held type designed to control high pressure sodium lighting loads, with silver alloy double break contacts rated at 480 volts or 600 volts.

11. Power Distribution Terminal Blocks. Power distribution terminal blocks shall be rated for 600 volts and shall be used for line side connections to branch circuit breakers where more than one circuit breaker is required. Lugs on blocks shall be properly sized for conductors being used. Only on conductor shall be placed under each lug.

12. Neutral/Ground Bus. Neutral/ground bus shall be a factory-made insulated, groundable bus with properly sized lugs for grounding and neutral conductors.

13. Branch Circuit Breakers. Unless otherwise shown on the plans, circuit breakers shall be the molded case thermal-magnetic type. Circuit breaker voltage shall be compatible with their use. Single pole circuit breakers mounted on high voltage (600V min.) insulating fabric shall be used for 480 volt type B service. Circuit breakers shall have a minimum interrupting capacity of 10,000 amps.

14. Circuit Breaker Panelboard. Panelboard shall be a commercial/industrial type with bolt-on branch circuit breakers in a NEMA 3R enclosure. Panelboard for Type C service shall be a MLO (Main Lugs Only) three-wire single phase, S/N panelboard. Panelboards shall be UL-listed and shall meet Federal Specification W-P-115b, Type I, Class I requirements and shall have a minimum of 12 one-pole spaces. Tandem and half-width breakers will not be allowed. Conduit entries into the top of enclosure shall have threaded hubs. Panelboards shall have dead front trim.

15. Load Center. Load center shall be a circuit breaker panelboard rated 120/240 volts three wire, single phase, S/N in NEMA 3R enclosure with main breaker. Load center shall have a minimum rating of 70 amps and shall have space for a minimum of six full size breakers. Tandem and half-width breakers will not be allowed. Load centers shall be UL listed, and shall meet Federal Specification W-P-115c, Type I, Class 2 requirements. Load center shall have a threaded hub conduit entry for conduit entering the top of the enclosure. Load centers shall have dead front trim and shall be rated as service entrance equipment. Load center enclosures shall meet the requirements of Note 3 paragraph a, b, c, or d above. External operating handle shall not be installed. Closure clamps will not be required.

EXPLANATION OF ELECTRICAL SERVICE DESCRIPTIVE CODE

ELEC SERV TY X (XXX/XXX) XXX (XX) XX (X) XX (X)

Schematic Type

Service Voltage (V_1, V_2)

Main Disconnect Amp Rating

SS= Safety switch ahead of meter
NS= No switch ahead of meter and/or no meter required

Enclosure Type
GS= Galvanized steel
SS= Stainless steel
AL= Aluminum
NM= Non-metallic

△1 Photocell Location (when req'd) and Lightning Arrester Location
T= Top of pole
E= Enclosure mounted

Service Support Type
TP= Timber pole
SP= Steel pole
SF= Steel frame
OT= Pole by others or paid for separately
EX= Existing pole
TS= Switch gear to be placed on traffic signal pole
RT= Rectangular structural tubing

O= Overhead service
U= Underground service

Example: ELEC SERV TYD(120/240)070(NS)GS(T)TP(O)

STANDARD PLANS
TEXAS DEPARTMENT OF TRANSPORTATION
Traffic Operations Division

ELECTRICAL DETAILS- ELECTRICAL SERVICES NOTES

ED(3)-93

ORIG DRAW DATE: Janurary 1992	KB	TB	RS	TB	
REVISIONS: 5-93, 10-93	STATE DISTRICT: 18	FEDERAL REGION: 6	FEDERAL AID PROJECT: STP 96(830)MM		SHEET: 86
	COUNTY: ROCKWALL		CONTROL: 1014	SECTION: 03	JOB: 041
					HIGHWAY: FM 740

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II. ROADWAY ILLUMINATION ASSEMBLIES (cont.)

A. General (cont.)

12. Alternate material equal to or better than material specified may be substituted with the approval of the Engineer.

13. Installation of high Strength Bolts. The tightening of nuts on high strength bolts shall be in accordance with the item "Structural Bolting."

14. Roadway Illumination Assembly poles shall be erected plumb and true. Top of foundation shall be struck level and shims used to plumb pole, except that for shoe base poles leveling nuts may be used. Leveling nuts shall not be used under transformer bases. Grout shall not be placed between base plate or flange and the foundation.

15. In each pole, continuous color-coded stranded No. 12 AWG copper Type XHHW or other approved XLP conductors shall be connected to the line side of each ballast.

16. Acorn nuts will not be allowed for attaching pole to transformer base or foundation. Nut covers will not be allowed.

17. Fabrication tolerances shall be as shown on Fabrication Tolerances Table.

B. Transformer Base

1. Transformer base shall be cast from aluminum, ASTM B-108 or B-26 Alloy 356.0-T6, or other material approved by the Engineer, and shall be furnished or with four washers or lugs as recommended by the manufacturer. Transformer base bolt circles (Top and Bottom) shall match bolt circles for poles and foundations shown on RID (3).

2. Transformer base shall be approximately 15-20 inches high and shall have a door approximately 13" x 8" x 9/4" or as otherwise approved by the Engineer. Screw or bolts for attachment of door to base shall be stainless steel. Four machine bolts with four nuts, eight flat washers and four lock washer, galvanized ASTM A-153 Class C or D, or B-695 Class 50, shall be provided with each transformer base for connecting the pole. Bolts shall be ASTM A325 or approved equal. Nuts shall be ASTM A-563 grade DH galvanized. A 1/2-13 NC female threaded grounding lug shall be provided inside the transformer base near the bottom.

3. The X-base shall be made from extruded aluminum channel and aluminum plate. The base breakaway features shall rely on bolt shear and not on bolt torque. Bolt shall have torque controlled break-off hex-head. Bolt shall be Aluminum Association type 2024-T4 aluminum. X-base channel shall be connected with aluminum bolts. Bolt shall be left hand thread and shall not be interchangeable with any other bolt not designed specifically for use with the X-base.

4. All breakaway bases shall meet the breakaway requirements of the AASTHO "Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals," latest edition, and shall have been tested by FHWA-approved methods. All bases shall have been structurally tested to meet or exceed the full designed plastic moment capacity of the pole. Certification of the plastic moment load test and FHWA breakaway requirement test of the model of base being furnished shall be submitted with shop drawings. Shop drawings shall show breakaway base model number and manufacturer's name or logo.

5. Bases shall be stamped, incised or by other approved permanent means, marked to show fabricators name or logo, and model number. Such information shall be placed in a readily seen location, inside or outside the base, but shall not be placed on the door.

6. Doors for transformer bases shall be made of plastic, fiberglass or other non-aluminum material approved by the Engineer. Transformer bases shall be cleaned by grit blast cleaning after heat treatment. Certification by the manufacturer of heat treatment shall be furnished with transformer bases. The certification shall show the metal alloy and temper and that the base meets those requirements, chemical and physical. The certification shall also show the material ASTM specification. Transformer bases shall be cast with a removable tab bar for material testing. Some bars may have been removed by the manufacturer for testing.

C. All Luminaires.

1. The luminaire housing shall be cast or drawn from a non-ferrous alloy and shall be free of cracks and excessive porosity. All nuts, crews, clips, washers and attaching hardware shall be made of stainless steel, steel electro-zinc-plated, minimum thickness 0.0002 inch with olive green drab or yellow chromate conversion coating, steel coasted with an acidic chromate-phosphate-binder system primer, top coated with a polytetrafluoreethylene modified silicon primer, bright metallic in color, meeting the requirements of General Motors automotive specification GM 1644M, or other approved conversion coatings except that brackets may be made from pre-galvanized steel. All threaded surfaces used in the housing shall be lubricated with a silicone grease.

2. The slipfitter shall securely clamp the luminaire to the mast arm. A positive means of vertical adjustments shall be provided. The refractor or lens shall be clear glass. The optic assembly shall be provided with resilient gaskets and so constructed that a positive seal against weather and other contaminants will be maintained. The luminaire shall be designed to permit easy removal of the refractor from the luminaire but shall provide a positive means of preventing an unintentional separation. The latch shall provide a positive means of maintaining closure of the luminaire. The socket shall shall be nickel plated and shall be rigidly attached to a high grade porcelain mogul base which shall extend and enclose the metal shell. A locking means shall be incorporated in the shell of the socket to positively resist the removal of the lamp. Reflectors shall be polished aluminum with Alzak or equal coating and shall not be painted.

3. Mast-arm mounted luminaires shall be provided with a leveling indicator which is clearly visible from the ground. Leveling indicator shall be sensitive to one (1) degree (maximum) changes in position at any point within five (5) degrees (minimum) level position. Unless otherwise directed by the Engineer, mast-arm mounted luminaires will be installed in the level position.

4. Underpass luminaires shall be fused internally. Fuses shall be 10 amp time-delay type.

D. High Pressure Sodium Vapor Luminaires

1. Photometrics

a. The U/P (SPL-CO) (.15KW)S (TY 1) and (TY 2) underpass luminaires shall be 150 watt high pressure sodium, IES TYPE M-C with flat tempered glass lens. The fixtures shall provide a minimum measured intensity of .2 footcandles in a rectangular area measuring 80 feet x 30 feet, when mounted 20 feet above the midpoint of either long side of the surface area

b. The 250-watt mast arm mounted luminaire shall be IES Type semi-cutoff or cutoff and, when mounted 40 feet above the midpoint of either long side of a rectangular area 200 feet by 50 feet, shall provide a measured minimum intensity of 0.2 footcandle at any point on the surface of this area. Light intensities measured in footcandles along a line parallel to and 20 feet in from the long side of the previously defined rectangular area above which the luminaire is mounted shall decrease at a rate not to exceed 0.8 footcandle in any ten foot interval along the aforementioned line from 10 to 70 feet on both sides of the luminaire and shall not be less than 0.6 footcandle at any point along such line.

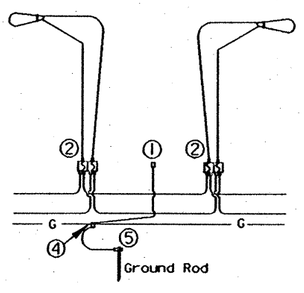
The maximum to minimum horizontal illuminance uniformity ratio shall not exceed 20:1 within the above mentioned rectangular area.

c. The 400-watt mast arm mounted luminaire shall be IES Type semi-cutoff or cutoff and, when mounted 50 feet above the midpoint of either long side of a rectangular area 240 feet by 70 feet, shall provide a measured minimum intensity of 0.2 footcandle at any point on the surface of this area. Light intensities measured in footcandles along a line parallel to and 30 feet in from the long side of the previously defined rectangular area above which the luminaire is mounted shall decrease at a rate not to exceed 0.8 footcandle in any ten foot interval along the aforementioned line from 10 to 90 feet on both sides of the luminaire and shall not be less than 0.6 footcandle at any point along such line.

The maximum to minimum horizontal illuminance uniformity ratio shall not exceed 20:1 within the above mentioned rectangular area.

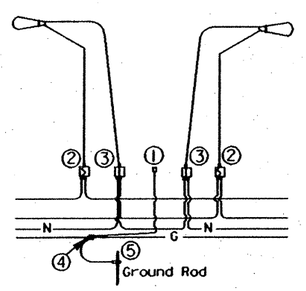
d. The luminaires shall meet the photometric requirements shown above, when energized at 100 percent of rated line voltage. Test will be run with the fixture in the level position as indicated on leveling indicator.

Fabrication Tolerances Table		
Part	Dimension	Tolerance
Pole Asssembly	Shaft length	± 1"
	I.D. of outside piece of slip fitting pieces	+ 1/8 " - 1/16 "
	O.D. of inside piece of slip fitting pieces	+ 1/32 " - 1/8 "
	Shaft diameter: other	+ 3/16 "
	Out of "round"	1/4 "
	Straightness of shaft	± 1/4 " in 10 ft
	Twist in shaft	4° in 50 ft
	Perpendicular to baseplate	1/8 " in 24"
	Pole centered on baseplate	± 1/4 "
	Location of Attachments	± 1/4 "
Arm Assembly	Arm Length	± 3"
	Arm Rise	± 1 3/4 " in 10 ft
	Arm Diameter	± 3/16 "
	Overall length or width	± 1/4 "
	Thickness	+ 1/4 " - 1/16 "
	Deviation from flat	1/8 " in 12"
	Spacing between holes	± 3/32 "
	Anchor bolt hole size	± 1/16 "
Anchor Bolt	Length	+ 1" - 1/4 "
	Threaded length	+ 1 1/2 " - 1/8 "
	Galvanized length (if required)	+ 8" - 1/4 "
Miscellaneous	Bolt hole spacing	± 1/16 "
	Strut location in truss arms	± 1 1/2 "



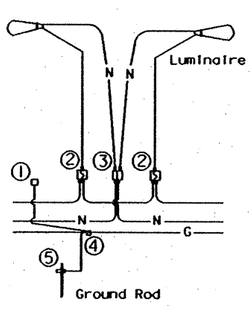
FOR THREE-WIRE CIRCUIT-CENTER GROUNDED

LUMINAIRES SERVED AT 480V ON 240/480 VOLT SERVICE OR LUMINAIRES SERVED AT 240V FOR FOR 120/240 VOLT SERVICE.



FOUR-WIRE CIRCUIT-CENTER GROUNDED

LUMINAIRES SERVED AT 240V (240/480 VOLT SERVICE)



THREE WIRE CIRCUIT-OUTSIDE GROUNDED

LUMINAIRES SERVED AT 480V ON 480 VOLT 2 WIRE SERVICE OR LUMINAIRES SERVED AT 240V ON 240 VOLT 2 WIRE SERVICE.

NOTES:

(1) Pole Bonding Connector Blackburn TTC3 or Weaver TGC3 or equal.

(2) Fused Connector- Homac Flood Seal Series, Bussman HEB Series, Gould GEB Series, or equal. All fuses shall be time-delay types, 10 Amp (Littlefuse FLQ, Bussman FNQ or equal).

* (3) Un-fused Connector- Homac Flood Seal Series, Bussman HEB Series, Gould GEB Series, or equal. Dummy / Neutral fuse shall be Bussman NTS-R-30 or equal.

(4) Split Bolt or other connector.

(5) Ground Rod Clamp - Blackburn GG58H, Burndy GKP635, or equal.

*For Transformer Base Poles. On Shoe Base Poles omit un-fused connector for neutral conductor.

STANDARD PLANS
TEXAS DEPARTMENT OF TRANSPORTATION
Traffic Operations Division

ROADWAY ILLUMINATION DETAILS

RID(2)-93

ORIG. ISSUE DATE: January 1992	DN: RB	CK: TB	DW: RS	CK: TB	REV. NO.
REVISIONS: 5-93, 10-93	DISTRICT	COUNTY	FEDERAL AID PROJECT		SHEET
	18	6	STP 96(830) MM		87
	COUNTY		CONTROL	SECT NO	JOB
	ROCKWALL		1014	03	041

II. ROADWAY ILLUMINATION ASSEMBLIES (cont.)

D. High pressure Sodium Vapor Luminaires (cont.)

2. Ballasts

a. All ballasts shall be isolated-winding lag-type* magnetic regulators designed to operate high pressure sodium lamps unless otherwise shown on the plans.

b. When the circuit voltage indicated on the plans is applied, the ballast input wattage during fluctuations of the test voltage of +10 and -10 percent shall not exceed the following:

Nominal Lamp Rating, Watts	Maximum Wattage Input
150	220
250	440
400	552

c. During fluctuation of the test voltage of +10 and -10 percent, the lamp wattage fluctuation shall not exceed a total of 20 percent and ballast shall maintain lamp wattage within the following limits:

Nominal Lamp Watts	Minimum Lamp Watts	Maximum Lamp Watts
150	110	190
250	175	370
400	280	475

d. The power factor of any ballast when tested at the circuit voltage indicated in the plans shall be not less than 90 percent.

e. The electronic starting aid shall provide a starting pulse with an amplitude of 2500 volts minimum, 4000 volts maximum. The pulse width shall be a minimum of 0.8 microseconds at 2250 volts. The pulse shall occur when the open-circuit voltage is equal to or greater than 90 percent of peak open-circuit voltage. Pulse repetition rate shall be a minimum of one per cycle and pulse current shall be a minimum of 0.18 amperes. Electronic starting aids for mast-arm mounted poles shall be replaceable without the use of tools. The starting aid shall discontinue to pulse when the lamp starts.

f. Luminaires will be tested for satisfactory operation of the starter board under open-circuit (lamp-out) condition for a minimum of 72 hours. Any failures of starter boards will be considered grounds for rejection of the model starter board being supplied.

g. Ballasts shall permanently and clearly indicate the following: lamp type, catalog number, voltage rating, connection diagram, and manufacturer. Capacitors in all luminaires shall be non-PCB type.

3. Lamps

a. All lamps shall be new and shall be of recent manufacture.

b. High pressure sodium vapor lamps in the wattage range of 200 to 400 watts inclusive shall have a lamp voltage not greater than 108 volts when tested after thirty minutes burn-in. 150 watt lamps shall be rated for 55 volts.

c. All lamps shall have nickel plated mogul bases.

4. Testing

a. Ballasts and luminaires will be tested using a lamp furnished for the same project.

b. Luminaires, ballasts, and lamps will be sampled and tested in accordance with the TXDOT Materials and Test Division's Manual of Testing Procedures.

III. ROADWAY ILLUMINATION ASSEMBLY FOUNDATIONS

A. Foundations will be paid for under the item "Foundations for Signs, Traffic Signals and Roadway Illumination Assemblies", unless otherwise shown on the plans. Top 6 inches of foundation shall be formed and struck level.

B. Anchor bolts for all poles, except CTB-mounted poles, shall be A-36M55 Anchor Bolts. Anchor bolts for CTB mounted poles shall be steel, ASTM A-325 or A-321 threaded rod. Nuts for CTB anchor bolts shall be ASTM A-563 Grade D heavy hex, galvanized. The top 8 inches of all anchor bolts shall be galvanized per ASTM A-153. Anchor bolts in foundations shall be 1 1/4 inches x 30 inches for mounting heights 40 feet and greater, 1 inch x 30 inches for mounting heights less than 40 feet.* Anchor bolts shall have top end threaded not less than 5 inches and furnished with galvanized hex nuts, flat and lock washers and template. The lower end of the bolt shall be threaded and furnished with nut and template. When bolts with rolled threads are furnished, bolt body need not be full size. See CTB and SSCB details for anchor bolts in concrete traffic barriers. Anchor bolts and nuts shall have Class 2A and 2B fit. Nuts shall be tapped and chased after galvanizing.

C. Concrete shall be Class A or C.

D. A minimum of two conduits shall be installed in each foundation. See lighting layout sheets for locations of foundations with more than two conduits. Any unused conduits in foundations shall be capped on both ends.

E. Unless otherwise dimensioned on the plans, breakaway roadway illumination assemblies should be located as shown in the placement table. Non-breakaway illumination assemblies should be protected from vehicular impact (i.e. 2 ft behind guard rail or mounted atop traffic barrier) or located outside the clear zone, except that 2.5 ft from curb face is minimum desired for light poles on city streets, 45 mph or less, see design guidelines for further information.

* Except that anchor bolts shall be 1 inch x 30 inches for all X-base poles.

Breakaway Pole Placement, see Para. III. E.	
Roadway Functional Classification	** Pole Offset (distance to transformer base, tolerance + 6 in)
Freeway mainlanes (roadways with full control of access)	15 ft (minimum and typical) from lane edge
All curbed, 45 mph or less design speed	2.5 ft minimum (15 ft desirable) from curb face
All others	10 ft minimum* (15 ft desirable) from lane edge

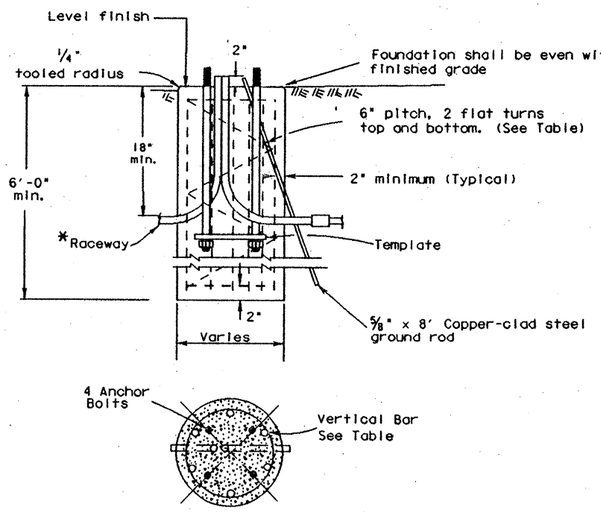
*or as close to ROW line as is practical

**all breakaway poles should have 2/5 of the luminaire mounting height behind the pole for "falling area" to prevent encroachment on other travel lanes. See design guidelines.

BOLT CIRCLES AND ANCHOR BOLTS				
MOUNTING HEIGHT	POLE BASE PLATE	BOLT CIRCLE		BOLT SIZE
		SHOE BASE	*T-BASE	
LESS THAN 40 ft	13 in	13 in	14 in	1 IN. x 30 IN.
40 ft OR GREATER	15 in	15 in	17 1/4 in	** 1 1/4 IN. x 30 IN.

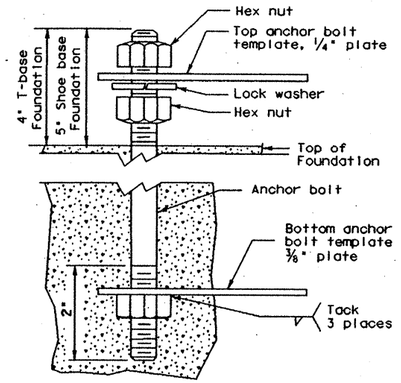
* AND X-BASE
** 1" FOR X-BASE

FOUNDATIONS				
FND. TYPE	DRILL SHAFT		REINFORCING	
	DIA.	LENGTH	BAR	SPIRAL
A	30 in	6 ft	6-#4	#2
B	30 in	8 ft	6-#5	#2
C	30 in	10 ft	6-#6	#3



FOUNDATION DETAIL

* Min. 2" Dia. for duct cable, 18" radius bends. For conductor in conduit system, same size as system conduit with standard radius bends.



ANCHOR BOLT DETAIL

STANDARD PLANS
TEXAS DEPARTMENT OF TRANSPORTATION
Traffic Operations Division

ROADWAY ILLUMINATION DETAILS

RID(3)-93

ORIG. DRAWN DATE: January 1992	DW: KB	CK: TB	DW: RS	CK: TB	REV. NO.:
REVISIONS: 5-93, 10-93, 2-94	STATE DISTRICT: 18	FEDERAL REGION: 6	FEDERAL AID PROJECT: STP 96(830)MM		SHEET: 88
	COUNTY: ROCKWALL	CONTROL: 1014	SECTION: 03	JOB: 041	HIGHWAY: FM740