

Introduced by _____

First Reading _____

Second Reading _____

Ordinance No. _____

Council Bill No. B 123-13

AN ORDINANCE

authorizing a sidewalk improvements agreement with the Missouri Highways and Transportation Commission relating to the North Providence Road pedway project from Business Loop 70 to Vandiver Drive; and fixing the time when this ordinance shall become effective.

BE IT ORDAINED BY THE COUNCIL OF THE CITY OF COLUMBIA, MISSOURI, AS FOLLOWS:

SECTION 1. The City Manager is hereby authorized to execute a sidewalk improvements agreement with the Missouri Highways and Transportation Commission relating to the North Providence Road pedway project from Business Loop 70 to Vandiver Drive. The form and content of the agreement shall be substantially as set forth in "Attachment A" attached hereto and made a part hereof as fully as if set forth herein verbatim.

SECTION 2. This ordinance shall be in full force and effect from and after its passage.

PASSED this _____ day of _____, 2013.

ATTEST:

City Clerk

Mayor and Presiding Officer

APPROVED AS TO FORM:

City Counselor

CCO Form: MT17
Approved: 12/07 (BDG)
Revised: 02/11 (ASB)
Modified:

**MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
SIDEWALK IMPROVEMENTS AGREEMENT**

THIS AGREEMENT is made and entered into by and between the Missouri Highways and Transportation Commission (hereinafter, "Commission"), whose address is P.O. Box 270, 105 W. Capitol, Jefferson City, Missouri 65102, and the City of Columbia, Missouri (hereinafter, "City"), whose address is 701 East Broadway, P.O. Box 6015, Columbia, Missouri 65205.

WITNESSETH:

WHEREAS, the Commission owns and operates, as part of the State Highway System, Route 163 (Providence Road) located within the City limits in Boone County; and

WHEREAS, the City is desirous of performing certain tasks related to the installation and maintenance of sidewalk improvements within the City limits.

NOW, THEREFORE, in consideration of the mutual covenants, promises and representations contained in this Agreement, the parties agree as follows:

(1) PROPOSAL: The City proposes and the Commission will allow the installation, including maintenance, of sidewalk improvements on Commission right-of-way as provided in this Agreement.

(2) LOCATION: The general location of the sidewalk improvements to be installed and maintained pursuant to this Agreement is along the east side of Route 163 (Providence Rd.) from Business Loop 70 to Vandiver Drive, between stations 9+70.00 to station 35+24.13 as shown on attached exhibit "A".

(3) COSTS: All costs associated with the construction of the proposed sidewalk improvements, including, but not limited to, signing, traffic signals, and traffic control during construction, will be borne entirely by the City, with no cost incurred by the Commission.

(4) PLANS: The City shall have detailed plans prepared at no cost to the Commission, which are to be submitted to the Commission's District Engineer for the Commission's review and approval. The Commission's District Engineer, in his/her sole discretion, may require modifications to the plans prior to approving the plans.

(5) TRAFFIC CONTROL DEVICES: All pavement marking, signs, and

traffic signals installed with the proposed improvements shall be in accordance with the latest revision of the *Manual on Uniform Traffic Control Devices for Streets and Highways*.

(6) RELOCATION: The City shall secure the removal, relocation or adjustment of any public or private utilities located on private easements or public right-of way, if the construction of the herein contemplated improvements so required, without cost to the Commission.

(7) INSPECTION: The City will allow inspection of the construction and maintenance activities of the herein contemplated improvements by the Commission's District Engineer, or his authorized representative, at any time and shall take no attempts to prevent said inspection. Within thirty (30) days following notice by the City to the Commission that construction is complete, the Commission will inspect the work to determine that it is acceptable. The sidewalk improvements will not be placed in operation until the Commission authorizes.

(8) INDEMNIFICATION:

(A) To the extent allowed or imposed by law, the City shall defend, indemnify and hold harmless the Commission, including its members and department employees, from any claim or liability whether based on a claim for damages to real or personal property or to a person for any matter relating to or arising out of the City's wrongful or negligent performance of its obligations under this Agreement.

(B) The City will require any contractor procured by the City to work under this Agreement:

(1) To obtain a no cost permit from the Commission's district engineer prior to working on the Commission's right-of-way, which shall be signed by an authorized contractor representative (a permit from the Commission's district engineer will not be required for work outside of the Commission's right-of-way); and

(2) To carry commercial general liability insurance and commercial automobile liability insurance from a company authorized to issue insurance in Missouri, and to name the Commission, and the Missouri Department of Transportation and its employees, as additional named insured in amounts sufficient to cover the sovereign immunity limits for Missouri public entities (\$500,000 per claimant and \$3,000,000 per occurrence) as calculated by the Missouri Department of Insurance, Financial Institutions and Professional Registration, and published annually in the Missouri Register pursuant to Section 537.610, RSMo.

(C) In no event shall the language of this Agreement constitute or be construed as a waiver or limitation for either party's rights or defenses with regard to each party's applicable sovereign, governmental, or official immunities and

protections as provided by federal and state constitution or law.

(9) OWNERSHIP AND MAINTENANCE: All improvements made pursuant to this Agreement within the state-owned right-of-way shall become the Commission's property. The City, at its sole cost and expense, is responsible for maintaining all sidewalks constructed or installed pursuant to this Agreement in fully operational, safe and aesthetically acceptable condition. All future alterations, modifications, or maintenance of the sidewalk improvements will be the responsibility of the City. Maintenance by the City will include, but is not limited to, crack repair, patching holes, removing litter, debris, trash, and leaves, and removal of snow and ice (through methods approved by the Commission). All sidewalks constructed pursuant to this Agreement shall be maintained in a condition safe for use of the sidewalks by the general public at all times. If the City fails to maintain the sidewalks in a safe condition, the Commission may cancel this Agreement and remove the sidewalks from Commission right of way or the Commission may maintain the sidewalks at the City's cost and expense.

(10) PERMITS: Before beginning work, the City shall secure from the Commission's District Engineer a permit for the proposed improvement. The City shall comply with any additional conditions placed on the permit by the Commission.

(11) BOND: The City shall secure sufficient bond, as determined by the Commission's District Engineer or his authorized representative, for the construction of the proposed improvement on Commission right-of-way.

(12) CONSTRUCTION OF IMPROVEMENTS: All construction of the proposed improvements shall be according to the latest editions of the Missouri Highways and Transportation Commission's *Standard Specifications for Highway Construction*, Standard Plans for Highway Construction, and the Missouri Department of Transportation's *Approved Products List for Traffic Signals and Highway Lighting*.

(13) AMENDMENTS: Any change in this Agreement, whether by modification or supplementation, must be accomplished by a formal contract amendment signed and approved by the duly authorized representative of the City and the Commission.

(14) ASSIGNMENT: The City shall not assign, transfer or delegate any interest in this Agreement without the prior written consent of the Commission.

(15) AUDIT OF RECORDS: The City must maintain all records relating to this Agreement, including but not limited to invoices, payrolls, etc. These records must be available at all reasonable times at no charge to the Commission and/or its designees or representatives during the period of this Agreement and any extension thereof, and for three (3) years from the date of final payment made under this Agreement.

(16) CANCELLATION: The Commission may cancel this Agreement at any time for a material breach of contractual obligations or for convenience by providing the City with written notice of cancellation. Should the Commission exercise its right to cancel the contract for such reasons, cancellation will become effective upon the date specified in the notice of cancellation sent to the City.

(17) LAW OF MISSOURI TO GOVERN: This Agreement shall be construed according to the laws of the state of Missouri. The City shall comply with all local, state and federal laws and regulations relating to the performance of this Agreement.

(18) MISSOURI NONDISCRIMINATION CLAUSE: The City shall comply with all state and federal statutes applicable to City relating to nondiscrimination, including, but not limited to, Chapter 213, RSMo; Title VI and Title VII of the Civil Rights Act of 1964 as amended (42 U.S.C. Sections 2000d and 2000e, *et seq.*); and with any provision of the "Americans with Disabilities Act" (42 U.S.C. Section 12101, *et seq.*).

(19) VENUE: It is agreed by the parties that any action at law, suit in equity, or other judicial proceeding to enforce or construe this Agreement, or regarding its alleged breach, shall be instituted only in the Circuit Court of Cole County, Missouri.

(20) SECTION HEADINGS: All section headings contained in this Agreement are for the convenience of reference only and are not intended to define or limit the scope of any provision of this Agreement.

(21) SOLE BENEFICIARY: This Agreement is made for the sole benefit of the parties hereto and nothing in this Agreement shall be construed to give any rights or benefits to anyone other than the Commission and the City.

(22) NO INTEREST: By constructing and maintaining the sidewalk improvements on Commission right of way, the City gains no interest in Commission right-of-way whatsoever. The Commission shall not be obligated to keep the constructed improvements in place if the Commission, in its sole discretion, determines removal or modification of the improvements is in the best interests of the state highway system. In the event the Commission decides to remove the improvements, the City shall not be entitled to a refund of the funds expended by the City pursuant to this Agreement.

(23) AUTHORITY TO EXECUTE: The signers of this Agreement warrant that they are acting officially and properly on behalf of their respective institutions and have been duly authorized, directed and empowered to execute this Agreement.

(24) VOLUNTARY NATURE OF AGREEMENT: Each party to this

Agreement warrants and certifies that it enters into this transaction and executes this Agreement freely and voluntarily and without being in a state of duress or under threats or coercion.

(25) ENTIRE AGREEMENT: This Agreement represents the entire understanding between the parties regarding this subject and supersedes all prior written or oral communications between the parties regarding this subject.

(26) DURATION: Unless otherwise terminated pursuant to (9) or (16), above, or through mutual agreement of the parties, this Agreement shall be in effect for a continuing duration upon execution of this Agreement.

IN WITNESS WHEREOF, the parties have entered into this Agreement on the date last written below.

Executed by the City this ____ day of _____, 20____.

Executed by the Commission this ____ day of _____, 20____.

MISSOURI HIGHWAYS AND
TRANSPORTATION COMMISSION

CITY OF COLUMBIA

By _____

By _____

Title _____

Title Mike Matthes
City Manager

ATTEST:

ATTEST:

Secretary to the Commission

By _____

Title Sheela Amin
City Clerk

Approved as to Form:

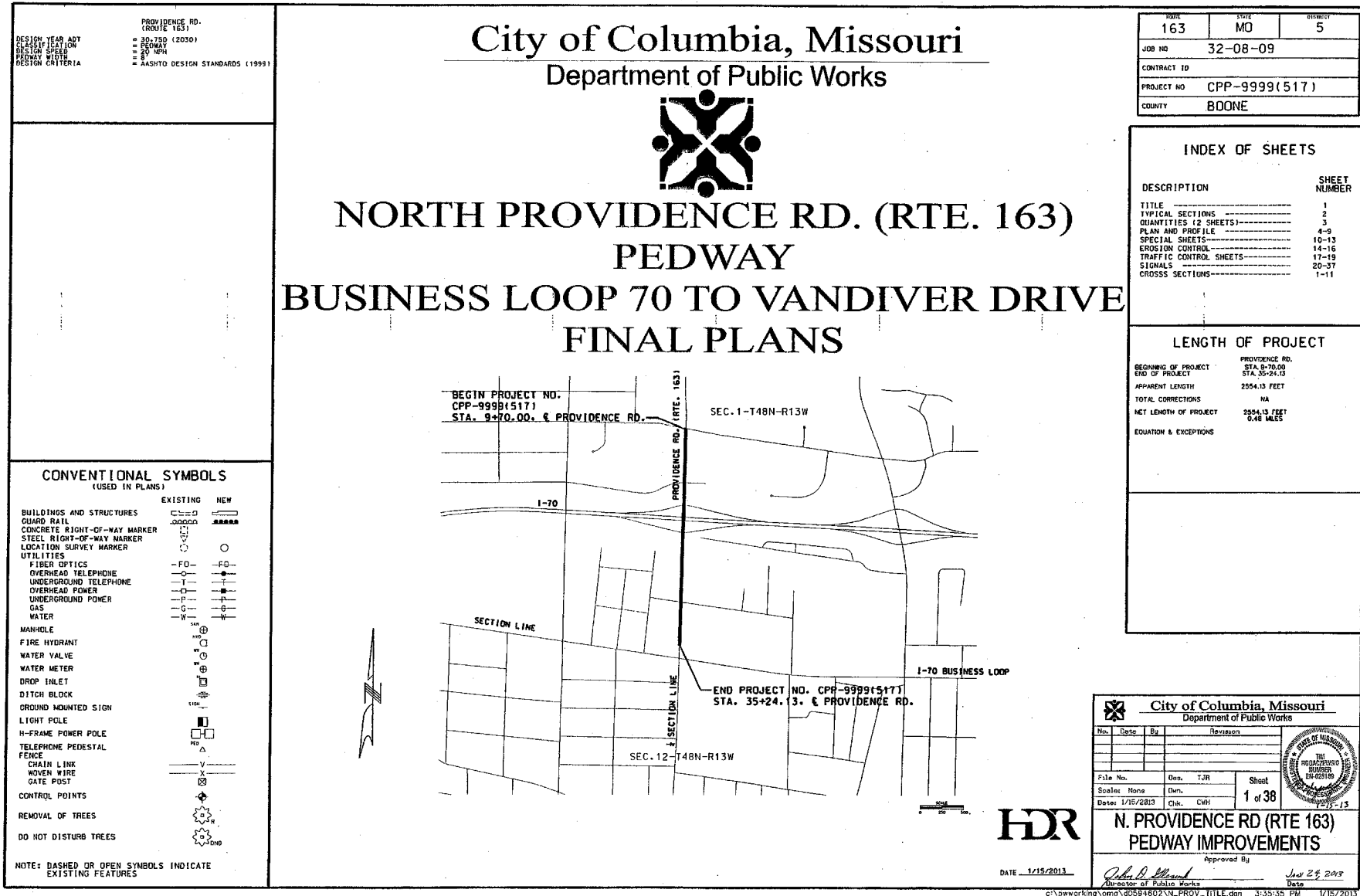
Approved as to Form:

Commission Counsel

Title Nancy Thompson
City Counselor

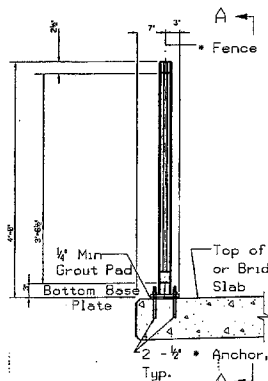
Ordinance Number: _____

EXHIBIT "A"





ZEBRA CROSSWALK MARKING
WHITE TAPE (GROOVED)

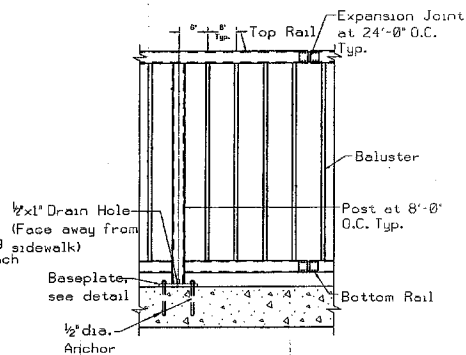


TYPICAL SECTION

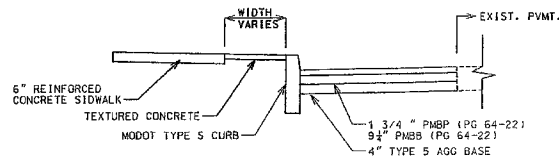
NOTE:

Anchors shall be drilled in place. Exposed portion of anchors, nuts and washers shall be field painted after installation.

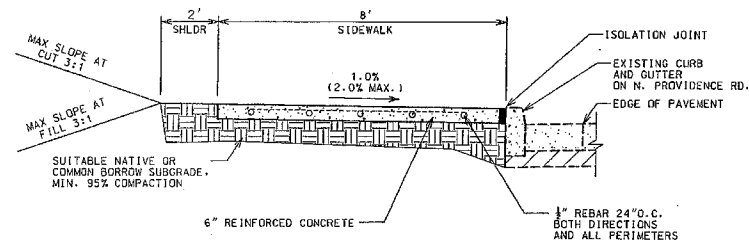
Use 140.01A Steel Pedestrian Fence except as shown



SECTION A-A

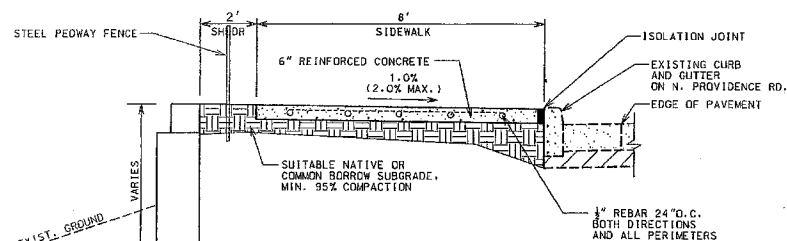


I-70 WB EXIT RAMP



8' NORTH PROVIDENCE SIDEWALK
VANDIVER TO BUSINESS LOOP 70

STA. 10+00.73 TO STA. 16+77.29
STA. 25+32.24 TO STA. 35+24.13



8' NORTH PROVIDENCE SIDEWALK
WITH RETAINING WALL AND HANDRAILS
VANDIVER TO BUSINESS LOOP 70

STA. 16+77.29 TO STA. 17+89.18
STA. 21+95.28 TO STA. 25+32.24
STA. 28+25.00 TO STA. 28+95.00
STA. 29+85.00 TO STA. 30+60.00

ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING STANDARDS:

- CITY OF COLUMBIA STORM SEWER AND STREET STANDARD SPECIFICATIONS.
- MISSOURI STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION
- MISSOURI STANDARD PLANS FOR HIGHWAY CONSTRUCTION
- MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES
- AMERICANS WITH DISABILITIES ACT STANDARDS FOR ACCESSIBLE DESIGN

ASPHALT MATERIALS APPLICATIONS RATES:

PMBP:
BITUMINOUS PAVEMENT MIXTURE = 1.987 TON/C.Y. COMPACTED MIXTURE

PMBB:
BITUMINOUS PAVEMENT MIXTURE = 2.005 TON/C.Y. COMPACTED MIXTURE

TACK COAT = 0.05 GAL./S.Y.

PRIME COAT = 0.35 GAL./S.Y.



CITY OF COLUMBIA			
NON-MOTORIZED TRANSPORTATION IMPROVEMENTS			
NORTH PROVIDENCE (RTE 163) PEDWAY IMPROVEMENTS			
BUSINESS LOOP 70 - VANDIVER DR.			
PROJ. NO. 1	DATE: 10-12-12	SCALE: N.T.S.	
DESIGNED BY: CE-3332 (10/12)	CHECKED BY: JTB		
Sheet 2 of 37		TYPICAL SECTIONS	

CITY OF COLUMBIA

SUMMARY OF QUANTITIES



REMOVAL OF IMPROVEMENTS (1 LUMP SUM)						
SHEET NO.	STATION	STATION	ROADWAY	LOC.	DESCRIPTION	REMARKS
4	9+75	10+00	163	LT	550 SFT RAISED ISLAND	
4	10+25	11+00	163	LT	4' CONCRETE SIDEWALK	
4	11+50	12+50	163	LT	4' CONCRETE SIDEWALK	
4	12+80	13+30	163	LT	4' CONCRETE SIDEWALK	
4	14+40	14+95	163	LT	4' CONCRETE SIDEWALK	
4	16+00	17+80	163	LT	4' CONCRETE SIDEWALK	
5	22+00	29+25	163	LT	4' CONCRETE SIDEWALK	
5	29+80	35+00	163	LT	4' CONCRETE SIDEWALK	
4	18+20	18+30	163	LT	150 SFT RAISED ISLAND	
5	21+50	21+60	163	LT	200 SFT RAISED ISLAND	
4	16+50	17+00	163	LT	150' STEEL HANDRAIL	
5	30+00	30+30	163	LT	30' STEEL HANDRAIL	

EARTHWORK						
STATION	STATION	LOCATION	CLASS A EXCAVATION CYD	EMBANKMENT IN PLACE CYD	COMPACTING EMBANKMENT CYD	COMMENTS
10+00	35+30	163	239	308.5	239	1438 CYD FILL, 239 CYD EXC.
TOTAL			239	308.5	239	EMB+1.25% FILL - CL.A

CURB RAMPS					
SHEET NO.	STATION	LOCATION	CURB RAMPS AREA (SY)	ADJ. WARNING TILES (SFT)	
4	9+25	LT.		33	
4	10+00	LT.		35	
4	10+49.8	LT.	9.4	16.5	
4	10+99.50	LT.	9.4	16.5	
4	11+56.50	LT.	9.4	17.5	
4	12+42.10	LT.	9.4	17.5	
4	12+84.50	LT.	9.4	17.5	
4	13+28.30	LT.	9.4	17.5	
4	14+47.50	LT.	9.4	31.2	
4	14+75	LT.	9.4	31.2	
4	16+08	LT.	15.4	31.2	
4	17+90	LT.	15.2	15.8	
4	18+25	LT.		15.8	
4	18+40	LT.		15.8	
5	21+00	LT.	13.5		
5	21+75	LT.	15.2	15.8	
5	21+12	LT.		15.8	
5	21+50	LT.		31.0	
5	29+30	LT.		21.0	
5	29+80	LT.		21.0	
5	29+05.50	LT.	14.1		
5	29+94.10	LT.	14.1		
TOTAL			178.4	271.2	

PAVEMENT MARKING					
SHEET NO.	ROADWAY	LOCATION/REMARKS	TYPE 2 P.W.T. (GROOVED)	EPoxy HIGH BUILD	REMARKS
4,5	163	LEFT & RIGHT	24"x 10" ZEBRA MID-BLOCK EACH	24" SOLID WHITE GROOVED LF	4" SOLID YELLOW LF
5		NEBRASKA	62	20	120
TOTAL			62	20	120

BITUMINOUS PAVEMENT						
SHEET NO.	STATION	STATION	ROADWAY	LOCATION	1 1/2" PMBP TONS	9 1/2" PMBP TONS
4	21+50	22+47.62	163	LT.	3.5	18.3
4	20+99.10	21+25.00	163	LT.	5.4	28.8
4		18+31.74	1-70 RMP	LT.	2	
					16.5	76.8
						4.0

6" REINFORCED CONCRETE SIDEWALK					
SHEET NO.	STATION	STATION	ROADWAY	LOCATION	6" REINF. CONCRETE SIDEWALK SQ. YD.
4	10+00	10+98.50	163	LT.	78.4
4	11+56.50	12+42.10	163	LT.	75.9
4	12+84.50	13+28.30	163	LT.	39.0
4	13+75	13+85	163	LT.	22.0
4	14+47.50	14+75	163	LT.	21.4
4	15+50	15+60	163	LT.	17.3
5	16+08	18+31.74	163	LT.	174.3
5	21+82	29+05.50	163	LT.	649.9
5,6	29+94.10	35+30	163	LT.	476.5
					1554.7

AGGREGATE BASE					
SHEET NO.	STATION	STATION	ROADWAY	LOCATION	4" TYPE 5 AGG. BASE SQ. YD.
4	10+00	18+31.74	163	LT.	524.9
5	21+00	35+30	163	LT.	1183.1
4	9+50	163	LT.	75	UNDER ISLAND
4	18+50	163	LT.	48	UNDER ISLAND
5	21+50	163	LT.	32	UNDER ISLAND
* - INCLUDES RAMP AREA. TOTAL *					1863.0

CONCRETE MEDIAN STRIPS					
SHEET NO.	STATION	STATION	ROADWAY	LOC.	6" CONC. MEDIAN STRIP SYD
4	9+50	163	LT.		63
4	18+50	163	LT.		23
5	21+50	163	LT.		20
TOTAL					106

9" PCP PAVEMENT					
SHEET NO.	STATION	STATION	ROADWAY	LOC.	9" PCP SYD
4	9+50	163	LT.		75
4	18+50	163	LT.		48
5	21+50	163	LT.		32
TOTAL					155

7" CONCRETE APPROACH PAVEMENT					
SHEET NO.	STATION	STATION	ROADWAY	LOC.	9" PCP SYD
4	11+00	11+50	163	LT.	44
4	13+00	13+00	163	LT.	44
TOTAL					88

EROSION CONTROL									
SHEET NO.	STATION	STATION	ROADWAY	LOC.	SILT FENCE LF	SED. REM. CYD.	INLET PROT EACH		
12	10+00.00	14+15.00	163	LT.	312	2			
12	14+15.00	18+30.00	163	LT.	352	2			
13	21+75.00	26+10.00	163	LT.	443	2			
13	26+10.00	31+60.00	163	LT.	518	2			
14	31+60.00	35+25.00	163	LT.	365	2			
TOTAL					1990	10	5		

CURB					
SHEET NO.	STATION	STATION	ROADWAY	LOC.	6" CURB LF
4	16+00	18+31.74	163	LT.	274
5	21+00	21+17.37	163	LT.	111
5	21+40.93	22+47.67	163	LT.	148
TOTAL					536

MODIFY EXISTING CONTROLLER FOR PEDESTRIAN PHASE
3 EA.

TIR PROPOSED CONDUIT INTO EXISTING PULL BOX
7 EA.

STEEL PEDESTAL FENCE					
SHEET NO.	STATION	STATION	LOCATION	LF.	
4	16+77	17+89	163 LT.	125	
5	21+55	25+32		338	
5	28+25	28+95		70	
5	29+85	30+60		75	
TOTAL					608

TEXTURED CONCRETE					
SHEET NO.	STATION	STATION	LOCATION	SFT.	
4	17+21	17+89	163 LT.	433	
TOTAL					433



CITY OF COLUMBIA	
NON-MOTORIZED TRANSPORTATION IMPROVEMENTS	
NORTH PROVIDENCE (RTE 163) PEDWAY IMPROVEMENTS	
BUSINESS LOOP 70 - VANDIVER DR.	
PROJ. NO. 1	DATE 10-12-12
DESIGNED BY JMR	CHECKED BY JMR
SHEET 3 OF 37 QUANTITY SHEET	

P.W.T. UNDER ISLAND, 2" OUTSIDE EXISTING CURB

SHEET 1 OF 2

c:\pwworking\omc\d0594602\HT_PEDWAY_28_CTY_01.dgn 4:25:42 PM 1/15/2013

SIGN	SIZE (IN.)	AREA (SQ. FT.)	QTY	TOTAL AREA	QTY RELOC	TOTAL RELOC AREA	DESCRIPTION	SIGN	SIZE (IN.)	AREA (SQ. FT.)	QTY	TOTAL AREA	QTY RELOC	TOTAL RELOC AREA	DESCRIPTION	ITEM NUMBER	TOTAL QTY	DESCRIPTION	
WARNING SIGNS								GUIDE SIGNS											
W01-1L	48X48	16.00					TURN (SYMBOL LEFT ARROW)	W020-5a	48X48	16.00					RIGHT/CENTER/LEFT TWO LANES CLOSED AHEAD	612-20.08		IMPACT ATTENUATOR (8 SAND BARRELS)	
W01-1R	48X48	16.00					TURN (SYMBOL RIGHT ARROW)	W020-6a	48X48	16.00	3	48			RIGHT/CENTER/LEFT LANE CLOSED	612-20.09		IMPACT ATTENUATOR (9 SAND BARRELS)	
W01-2L	48X48	16.00					CURVE (SYMBOL LEFT ARROW)	W020-7a	48X48	16.00					FLAGGER (SYMBOL)	612-20.10		IMPACT ATTENUATOR (10 SAND BARRELS)	
W01-2R	48X48	16.00					CURVE (SYMBOL RIGHT ARROW)	W021-2	36X36	9.00					FRESH OIL	612-20.12		IMPACT ATTENUATOR (12 SAND BARRELS)	
W01-3L	48X48	16.00					REVERSE TURN (SYMBOL LEFT ARROW)	W021-5b	48X48	16.00	2	32			SHOULDER WORK AHEAD	612-20.14		IMPACT ATTENUATOR (14 SAND BARRELS)	
W01-3R	48X48	16.00					REVERSE TURN (SYMBOL RIGHT ARROW)	W022-1	48X48	16.00					BLASTING ZONE AHEAD	612-20.17		IMPACT ATTENUATOR (17 SAND BARRELS)	
W01-4L	48X48	16.00					REVERSE CURVE (SYMBOL LEFT ARROW)	W022-2	42X36	10.50					TURN OFF 2-WAY RADIO AND PHONE	612-20.19		IMPACT ATTENUATOR (19 SAND BARRELS)	
W01-4R	48X48	16.00					REVERSE CURVE (SYMBOL RIGHT ARROW)	W022-3	42X36	10.50					END BLASTING ZONE	612-20.20		REPLACEMENT SAND BARREL	
W01-4BL	48X48	16.00					DOUBLE ARROW REVERSE CURVE (SYMBOL LEFT ARROWS)	W022-6a	21X15	2.19					WET PAINT (ARROW PIVOTS)	612-20.30		IMPACT ATTENUATOR ARRAY (RELOCATION)	
W01-4BR	48X48	16.00					DOUBLE ARROW REVERSE CURVE (SYMBOL RIGHT ARROWS)	SPECIAL	36X36	9.00					FRESH OIL/LOOSE GRAVEL	612-30.00		TRUCK MOUNTED ATTENUATOR (TMA)	
W01-4CL	48X48	16.00					TRIPLE ARROW REVERSE CURVE (SYMBOL LEFT ARROWS)	E05-1	36X48	12.00					GORE EXIT	616-10.09	7	FLAG ASSEMBLY	
W01-4CR	48X48	16.00					TRIPLE ARROW REVERSE CURVE (SYMBOL RIGHT ARROWS)	E05-2	48X36	12.00					EXIT OPEN	616-10.20		CHANNELIZER (DORM-LIKE)	
W01-6	48X24	8.00					HORIZONTAL ARROW (SYMBOL)	E05-2a	48X36	12.00					EXIT CLOSED	616-10.22		CHANNELIZER (CONES)	
W01-6a	72X36	18.00					HORIZONTAL ARROW (SYMBOL ON PERMANENT BARRICADE)	GD20-1	60X24	10.00					ROAD WORK NEXT XX MILES	616-10.24	167	CHANNELIZER (TRIM LINE) WITH LIGHT	
W01-7	36X18	4.50	2	9.0			DOUBLE HEAD HORIZONTAL ARROW (SYMBOL)	GD20-2	48X24	8.00	2	16			END ROAD WORK	616-10.25		CHANNELIZER (TRIM LINE)	
W01-7a	72X36	18.00					DOUBLE HEAD HORIZONTAL ARROW (SYMBOL ON PERMANENT BARRICADE)	GD20-4	36X18	4.50					PILOT CAR FOLLOW ME	616-10.26		CHANNELIZER (VERTICAL PANEL)	
W01-8	18X24	3.00					CHEVRON (SYMBOL)	SPECIAL	42X30	8.75					PLEASE WAIT FOR PILOT CAR	616-10.30		CHANNELIZER (VERTICAL PANEL) WITH LIGHT	
W01-8a	36X48	12.00					CHEVRON (SYMBOL FOR DIVIDED HIGHWAYS)	GD23-1	36X12	3.00					WORK ZONE (PLAQUE)	616-10.31		CHANNELIZER	
W03-1a	48X48	16.00					STOP AHEAD (SYMBOL)	M04-8a	24X18	3.00					END DETOUR	616-10.33		TYPE III MOVABLE BARRICADE	
W03-2a	48X48	16.00					YIELD AHEAD (SYMBOL)	M04-9L	48X36	12.00					DETOUR (LEFT ARROW)	616-10.34		TYPE III MOVABLE BARRICADE WITH LIGHT	
W03-3	48X48	16.00					SIGNAL AHEAD (SYMBOL)	M04-9R	48X36	12.00					DETOUR (RIGHT ARROW)	616-10.40	1	DIRECTION INDICATOR BARRICADE	
W03-4	48X48	16.00					BE PREPARED TO STOP	M04-10L	48X18	6.00					DETOUR (ARROW LEFT)	616-10.47		DIRECTION INDICATOR BARRICADE WITH LIGHT	
W03-5	48X48	16.00					SPEED LIMIT XX AHEAD (SYMBOL)	M04-10R	48X18	6.00					DETOUR (ARROW RIGHT)	616-10.51		FLASHING ARROW PANEL	
W04-1L	48X48	16.00					MERGE (SYMBOL FROM LEFT)	W11-15	30X30	6.25	4	25.00			BIKE/PEO	616-10.52		TYPE III OBJECT MARKER	
W04-1R	48X48	16.00					MERGE (SYMBOL FROM RIGHT)	REGULATORY SIGNS								616-10.53		WARNING LIGHT, TYPE A	
W05-1	48X48	16.00					ROAD/BIDGE/RAMP NARROWS	R1-1	18X18	2.25	2	4.50			STOP	616-10.54		WARNING LIGHT, TYPE B	
W05-3	48X48	16.00					ONE LANE BRIDGE	R1-2	48 TRI.	6.93					YIELD	616-10.95		WARNING LIGHT, TYPE C	
W05-5	48X48	16.00	4	64			NARROW LANES	R1-2a	36X36	9.00					NO UNCOMING TRAFFIC (PLAQUE)	616-10.96	2	STROBE LIGHT	
W06-1	48X48	16.00					DIVIDED HIGHWAY (SYMBOL)	R1-3	20X9	1.25					X-WAY (PLAQUE)	616-10.98		TUBULAR MARKER	
W06-2	48X48	16.00					DIVIDED HIGHWAY END (SYMBOL)	R2-1	36X48	12.00					SPEED LIMIT XX	616-11.00		RADAR SPEED ADVISORY SYSTEM	
W06-3	48X48	16.00					TWO WAY TRAFFIC (SYMBOL)	R3-1	48X48	16.00					NO RIGHT TURN (SYMBOL)	616-11.20		CHANGEABLE MESSAGE SIGN, COMMISSION FURNISHED/RETAINED	
W07-3a	30X24	5.00					NEXT XX MILES (PLAQUE)	R3-2	48X48	16.00					NO LEFT TURN (SYMBOL)	616-11.33		CHANGEABLE MESSAGE SIGN, CONTRACTOR FURNISHED/RETAINED	
W08-1	48X48	16.00					BUMP	R3-3	36X36	9.00					NO TURNS	616-12.00		INSTALLING "DRIVE SMART", 48 IN. X 48 IN. SIGN	
W08-2	48X48	16.00					DIP	R3-4	48X48	16.00					NO U-TURN (SYMBOL)	616-12.00c		INSTALLING "POINT OF PRESENCE" SIGN	
W08-3	48X48	16.00					PAVEMENT ENDS	R3-7L	30X30	6.25					LEFT LANE MUST TURN LEFT	617-36.00c		LAW ENFORCEMENT SERVICES	
W08-4	48X48	16.00					SOFT SHOULDER	R3-7R	30X30	6.25					RIGHT LANE MUST TURN RIGHT	617-36.02a		CONTRACTOR FURNISHED/RETAINED TEMPORARY CONCRETE TRAFFIC BARRIER, TYPE F	
W08-5	48X48	16.00					SLIPPERY WHEN WET (SYMBOL)	R4-1	36X48	12.00					DO NOT PASS	617-40.00		CONTRACTOR FURNISHED/COMMISSION RETAINED TEMPORARY CONCRETE TRAFFIC BARRIER, TYPE F	
W08-6	48X48	16.00					TRUCK CROSSING	R4-7aL	36X48	12.00					PASS WITH CARE	617-50.10		TEMPORARY CONCRETE BARRIER HEIGHT TRANSITION	
W08-6a	48X48	16.00					TRUCK ENTRANCE	R4-7aR	36X48	12.00					KEEP LEFT (HORIZONTAL ARROW)	617-60.00		RELOCATING TEMPORARY CONCRETE TRAFFIC BARRIER	
W08-7	36X36	9.00					LOOSE GRAVEL	R5-1	30X30	6.25					KEEP RIGHT (HORIZONTAL ARROW)	617-70.00		COMMISSION FURNISHED/RETAINED TEMPORARY CONCRETE TRAFFIC BARRIER, TYPE F	
W08-9	48X48	16.00					LOW SHOULDER	R5-1a	36X24	6.00					DO NOT ENTER	620-80.65		COMMISSION FURNISHED/RETAINED PRECAST BARRIER HEIGHT TRANSITION	
W08-9a	48X48	16.00					SHOULDER DROP-OFF	R6-1L	48X18	6.00					WRONG WAY	901-94.00		TEMPORARY RAISED PAVEMENT MARKER	
W08-11	48X48	16.00					UNEVEN LANES	R6-1R	48X18	6.00					ONE WAY ARROW (LEFT)	902-94.00		TEMPORARY LIGHTING	
W08-12	36X36	9.00					NO CENTER STRIPE	R6-2L	24X30	5.00					ONE WAY ARROW (RIGHT)	902-94.01		TEMPORARY TRAFFIC SIGNALS	
W10-1	42 RND.	9.62					RAILROAD CROSSING	R6-2R	24X30	5.00					ONE WAY (RIGHT)			TEMPORARY TRAFFIC SIGNALS AND LIGHTING	
W12-1	24X24	4.00					DOUBLE DOWN ARROW (SYMBOL)	R10-6	24X36	6.00					STOP HERE ON RED (45° ARROW)	SPECIAL		TEMPORARY WARNING FENCE (LF)	
W12-2	48X48	16.00					LOW CLEARANCE (SYMBOL)	R11-2	48X30	10.00					ROAD CLOSED				
W12-2x	24X18	3.00					LOW CLEARANCE (PLAQUE)	R11-3a	60X30	12.50					ROAD CLOSED XX MILES AHEAD LOCAL TRAFFIC ONLY				
W12-3a,b	144X24	24.00					OVERHEAD LOW CLEARANCE (FEET AND INCHES)	R11-4	60X30	12.50					ROAD CLOSED TO THRU TRAFFIC				
SPECIAL	120X60	50.00					LOW CLEARANCE XX FT XX IN. XX MILES AHEAD	S4-4	36X15	3.75					WHEN FLASHING				
SPECIAL	120X60	50.00					WIDTH RESTRICTION XX FT XX IN. XX MILES AHEAD	CONST-3A	60X48	20.00					FINE SIGN				
W013-1	30X30	6.25					ADVISORY SPEED (PLAQUE)	CONST-3X	56X12	4.67					SPEEDING/PASSING (PLATE)				
W016-2	30X24	5.00					XXX FEET (PLAQUE)	MISCELLANEOUS SIGNS											
W016-3	30X24	5.00					X MILE (PLAQUE)												
W020-1	48X48	16.00	2	32			ROAD/BIDGE/RAMP WORK AHEAD												
W020-2	48X48	16.00					DETOUR AHEAD												
W020-3	48X48	16.00					ROAD CLOSED AHEAD												
W020-4	48X48	16.00					ONE LANE ROAD AHEAD												
W020-5	48X48	16.00	2	32			RIGHT/CENTER/LEFT LANE CLOSED AHEAD												
								616-10.05 CONSTRUCTION SIGNS TOTAL								262.5			
								616-10.10 RELOCATED SIGNS TOTAL											

STATE OF MISSISSIPPI

DEPARTMENT OF TRANSPORTATION

MISSISSIPPI HIGHWAY DEPARTMENT

CONSTRUCTION DIVISION

2019

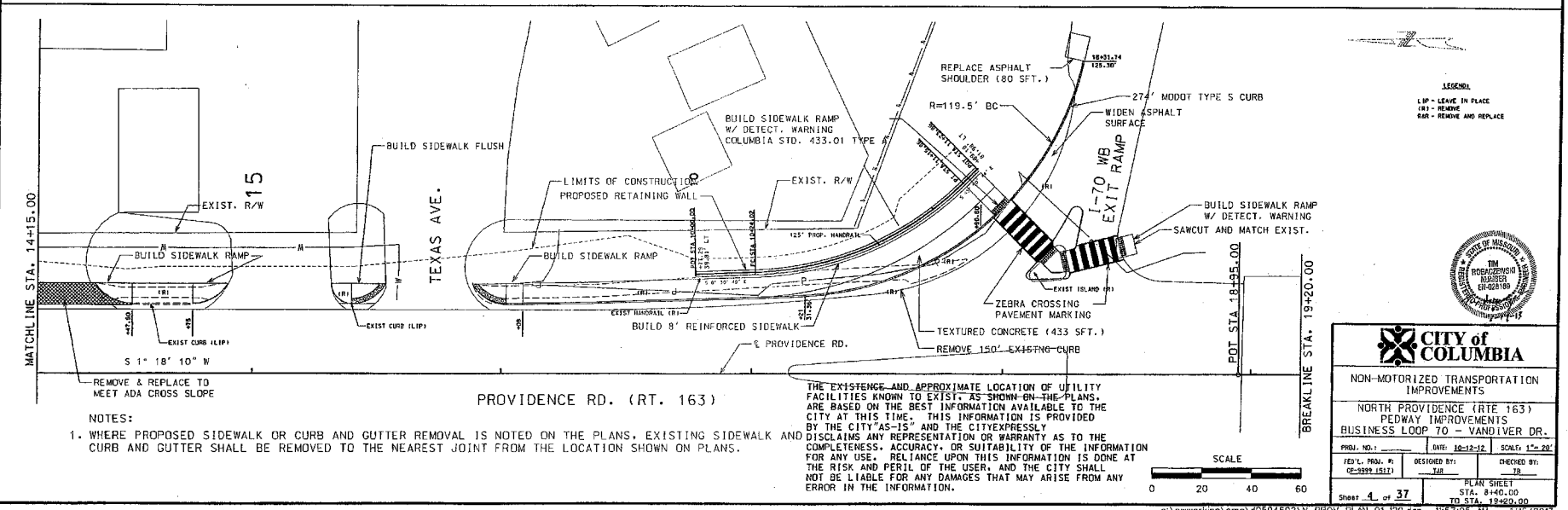
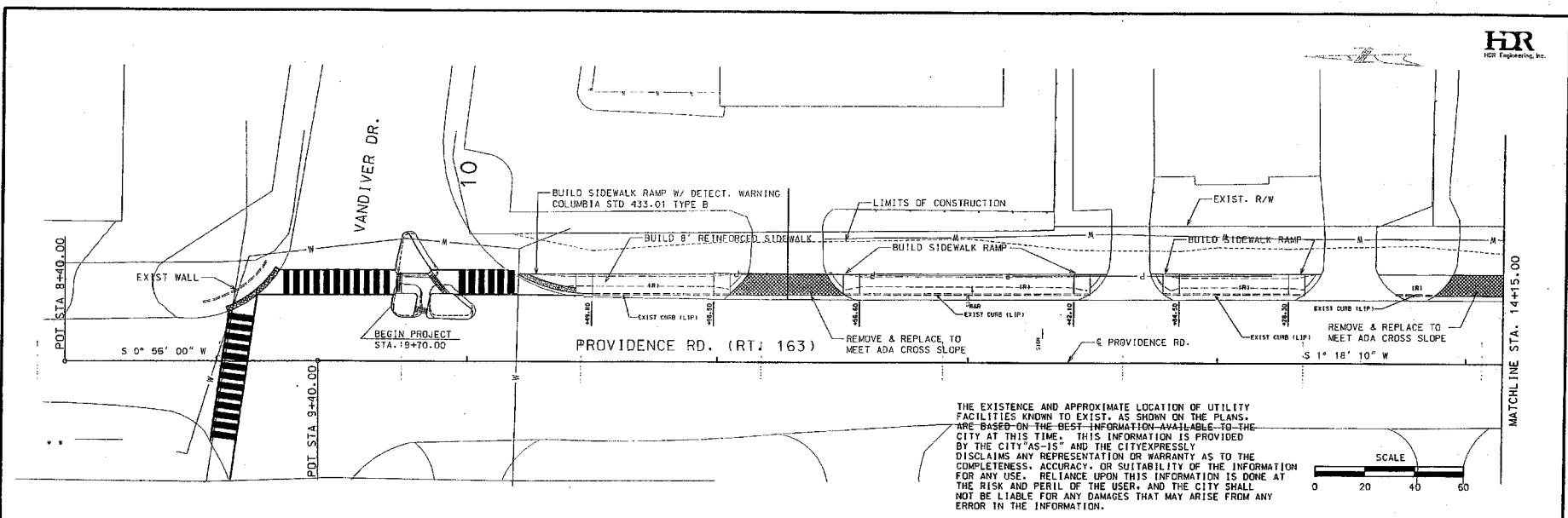
NON-MOTORIZED TRAFFIC IMPROVEMENT

NORTH PROVIDENCE PEDWAY IMPROVEMENT BUSINESS LOOP 70 -

PROJ. NO. 1 DESIGNER: J.E. TUBBS, INC. DATE: 02-28-2019

Sheet 3 of 37

Sheet 2 of 2



NOTES:
1. WHERE PROPOSED SIDEWALK OR CURB AND GUTTER REMOVAL IS NOTED ON THE PLANS, EXISTING SIDEWALK AND CURB AND GUTTER SHALL BE REMOVED TO THE NEAREST JOINT FROM THE LOCATION SHOWN ON PLANS.

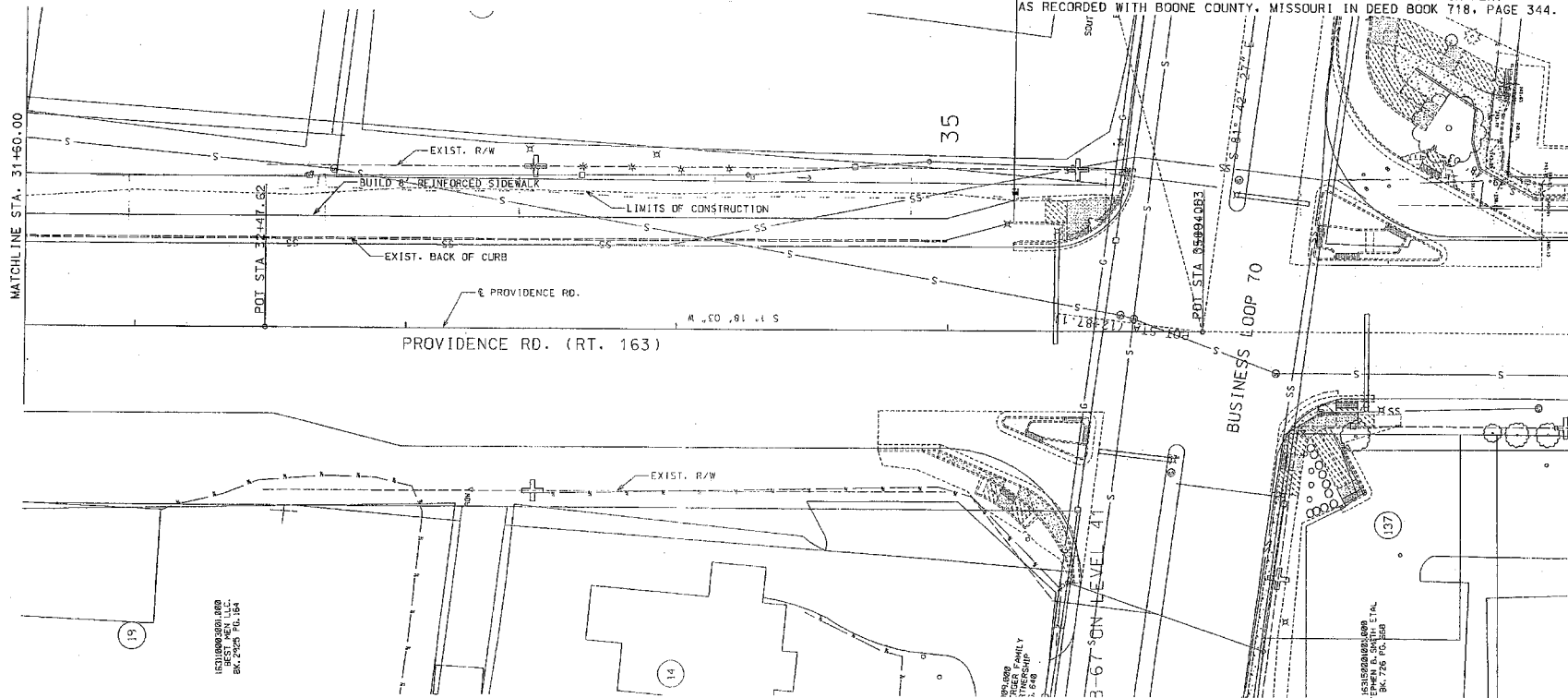
THE EXISTENCE AND APPROXIMATE LOCATION OF UTILITY FACILITIES KNOWN TO EXIST, AS SHOWN ON THE PLANS, ARE BASED ON THE BEST INFORMATION AVAILABLE TO THE CITY AT THIS TIME. THIS INFORMATION IS PROVIDED BY THE CITY "AS-IS" AND THE CITY EXPRESSLY DISCLAIMS ANY REPRESENTATION OR WARRANTY AS TO THE COMPLETENESS, ACCURACY, OR SUITABILITY OF THE INFORMATION FOR ANY USE. RELIANCE UPON THIS INFORMATION IS DONE AT THE RISK AND PERIL OF THE USER, AND THE CITY SHALL NOT BE LIABLE FOR ANY DAMAGES THAT MAY ARISE FROM ANY ERROR IN THE INFORMATION.



CITY OF COLUMBIA
NON-MOTORIZED TRANSPORTATION IMPROVEMENTS
NORTH PROVIDENCE (RTE 163)
PEDWAY IMPROVEMENTS
BUSINESS LOOP 70 - VANDIVER DR.

PROJ. NO. 1	DATE: 10-12-12	SCALE: 1"=20'
DESIGNED BY: JAR	CHECKED BY: JAR	
PLANNED BY: JAR	APPROVED BY: JAR	
SHEET 4 OF 37	PLAN SHEET	
STA. 8+40.00	TO STA. 19+20.00	

MATCH PROJECT PROVIDENCE & BUSINESS LOOP 70
INTERSECTION IMPROVEMENTS
END PROJECT STA. 35+24.13, 48.44' LT., & PROVIDENCE RD.
AT A POINT APPROX. 293.78' EAST & 7.08' SOUTH OF
FOUND IRON PIPE AT THE SW CORNER OF 207 BUSINESS LOOP 70.
PART OF LOTS 15 & 16 OF CELIA J. BARKWELL'S SUBDIVISION PLAT
AS RECORDED WITH BOONE COUNTY, MISSOURI IN DEED BOOK 718, PAGE 344.



LAND CORNER
FOUND IRON PIPE AT THE SOUTHWEST CORNER OF 207 BUSINESS LOOP 70.
PART OF LOT 15 AND 16 OF CELIA J. BARKWELL'S SUBDIVISION PLAT
AS RECORDED WITH BOONE COUNTY, MISSOURI IN DEED BOOK 718, PAGE 344.

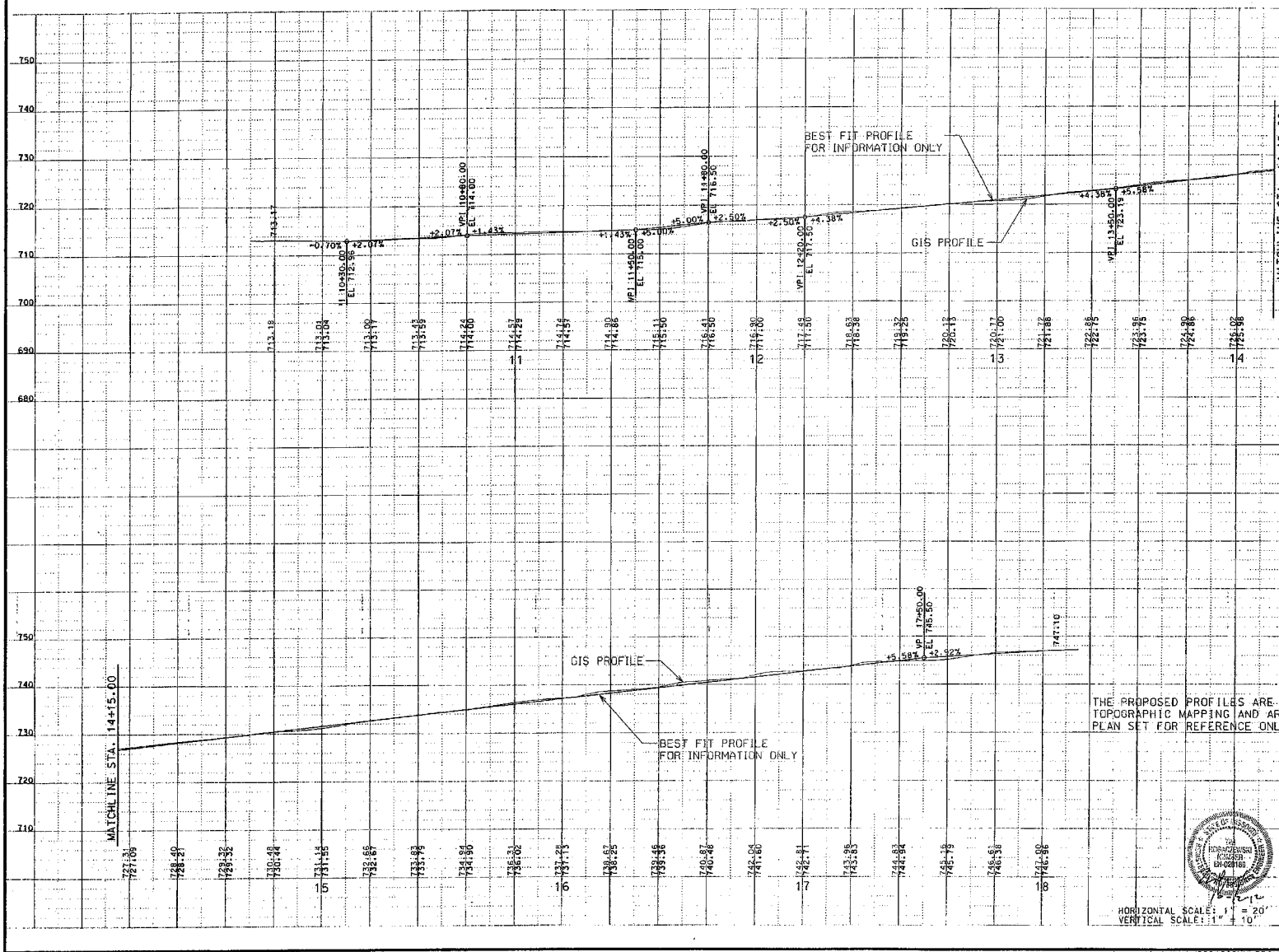
NOTES:

- CONTRACTOR SHALL FIELD VERIFY IMPROVEMENTS AT SOUTH END OF THIS PROJECT TIES INTO IMPROVEMENTS OF PROJECT PROVIDENCE AT BUSINESS LOOP 70 INTERSECTION.

BM 173
FOUND MAGNAIL
4.30' NW COR. CONC. WALK
3.95' NW COR. CONC. VAULT ELEV. 743.17
N: 1140151.99 E: 1687399.43



NON-MOTORIZED TRANSPORTATION IMPROVEMENTS			
NORTH PROVIDENCE (RTE 163) PEDWAY IMPROVEMENTS BUSINESS LOOP 70 - VANDIVER DR.			
PROJECT NO. 1	DATE: 10-12-12	SCALE: 1"=20'	
FED'L PROJ. #	DESIGNED BY: TJB	DRAWN BY: TR	
CE-3329 (1512)			
SHEET 6 OF 37		PLAN SHEET STA. 31+60.00 TO STA. 35+24.13	
FILES	STUDIES	DATES	

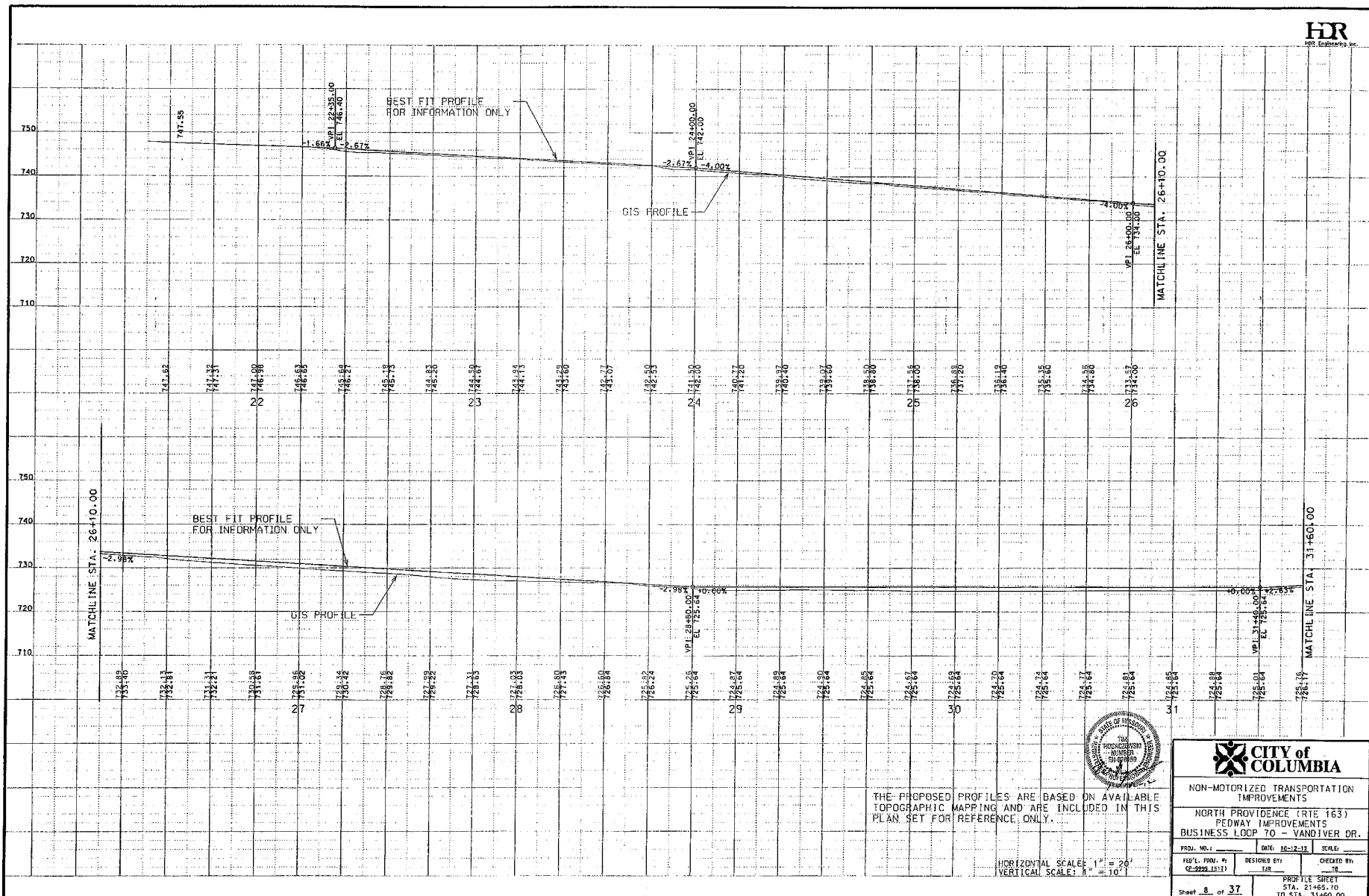


THE PROPOSED PROFILES ARE BASED ON AVAILABLE TOPOGRAPHIC MAPPING AND ARE INCLUDED IN THIS PLAN SET FOR REFERENCE ONLY.

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 10'



CITY of COLUMBIA			
NON-MOTORIZED TRANSPORTATION IMPROVEMENTS			
NORTH PROVIDENCE (RTE 163) PEDWAY IMPROVEMENTS BUSINESS LOOP 70 - VANDIVER DR.			
PROJ. NO.: 10-12-12	DATE: 10-12-12	SCALE: 1" = 20'	
DESIGNED BY: JHR	CHECKED BY: JHR	DATE: 10-12-12	
PROFILE SHEET STA. 8+40.00 TO STA. 19+20.00			
Sheet 2 of 37			



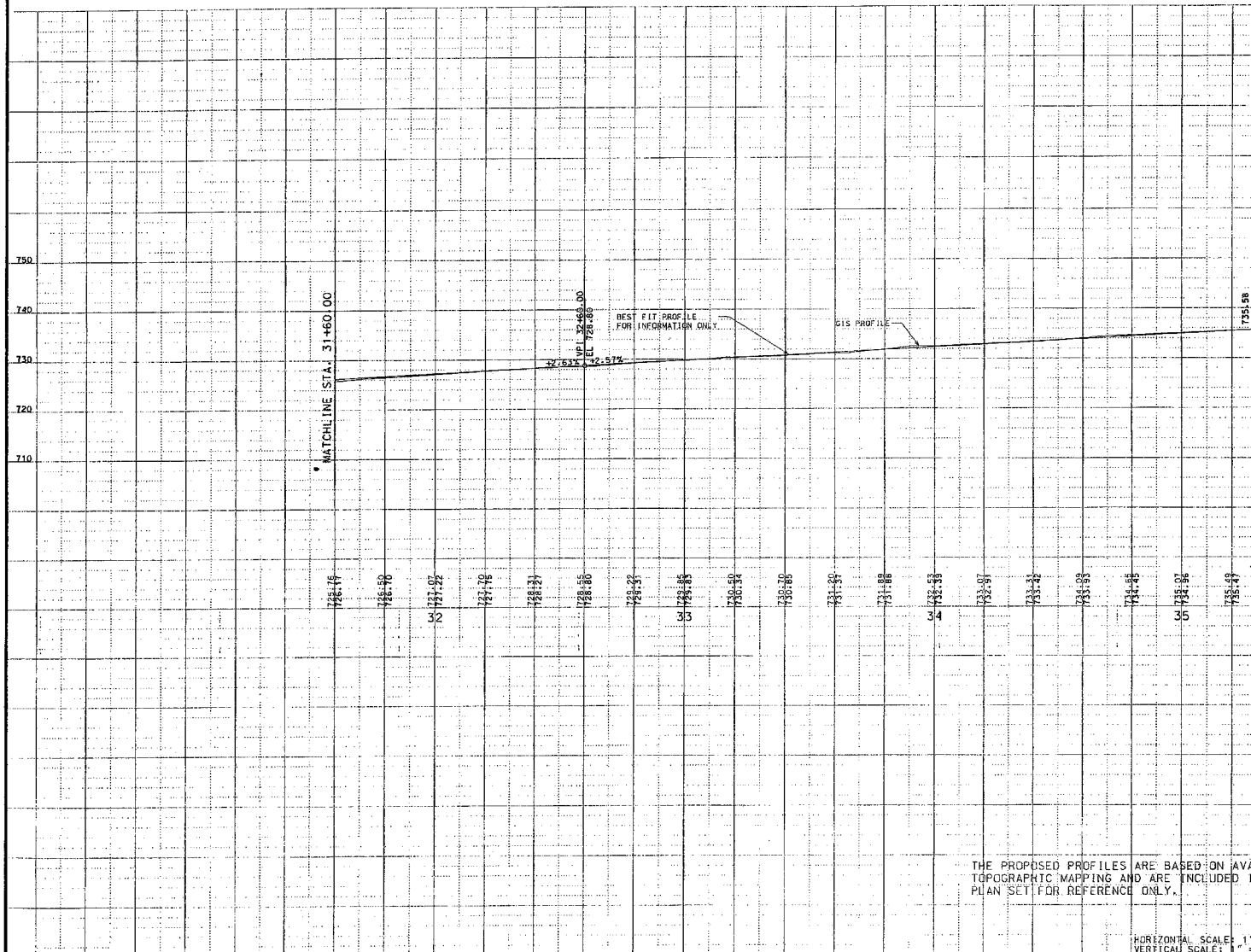
THE PROPOSED PROFILES ARE BASED ON AVAILABLE TOPOGRAPHIC MAPPING AND ARE INCLUDED IN THIS PLAN SET FOR REFERENCE ONLY.

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 10'



NON-MOTORIZED TRANSPORTATION IMPROVEMENTS
NORTH PROVIDENCE (RTE 163)
PEDWAY IMPROVEMENTS
BUSINESS LOOP 70 - VANDIVER DR.

PROJ. NO. 1	DATE: 02-12-12	SCALE:
DESIGNED BY: JAR	CHECKED BY: JAR	
SHEET 8 OF 37		

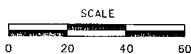


THE PROPOSED PROFILES ARE BASED ON AVAILABLE TOPOGRAPHIC MAPPING AND ARE INCLUDED IN THIS PLAN SET FOR REFERENCE ONLY.

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 10'



CITY of COLUMBIA			
NON-MOTORIZED TRANSPORTATION IMPROVEMENTS			
NORTH PROVIDENCE (RTE 163) PEDWAY IMPROVEMENTS			
BUSINESS LOOP TO - VANDIVER DR.			
PROJ. NO.:	DATE: 10-12-12	SCALE:	
FED'L. PROJ. #:	DESIGNED BY:	CHECKED BY:	
CP-8892 (10/11)	TJB	TJB	
Sheet 9 of 37		PROFILE SHEET	
		STA. 31+60.00 TO STA. 38+94.53	



c:\pwworking\omc\d0594602\N_PROV_SP_01_120.dgn 8:51:33 AM 10/12/2012

GENERAL NOTES:
Design Specifications:
2002 - AASHTO 17th Edition
Load Factor Design
Seismic Performance Category A

All concrete for leveling pad shall be Class B or B-1 with $f'_c = 4000$ psi.

The MSE wall system shall be a small block wall system in accordance with Sec 720 and shall be selected from the Pre-Qualified Products list in Sec 720.

All Project retaining walls shall be the same wall type, wall style and color and shall be approved by the City prior to ordering material.

Factor of safety shall be 2.0 for overturning, 1.5 for sliding and 2.0 for bearing.

The cost of joint filler and joint seal, complete-in-place, will be considered completely covered by the contract unit price for Mechanically stabilized earth wall systems.

$\phi = 27'$ for backfill material to be retained by the mechanically stabilized earth wall system.

$\phi = 27'$ for foundation material the wall is to rest on.

$\phi = 24'$ for the select granular backfill for structural systems.

Design $\phi = 34'$ for the select granular backfill for structural systems.

The Geotechnical Report and boring log information prepared for the design of this project is available from the Project Contact upon written request as outlined in the Project Special Provisions.

Global stability of retaining wall system shall be performed by the Contractor using the information provided in the Geotechnical Report. Submit calculations with shop drawings. Submittal shall be signed and sealed by an Missouri Professional Engineer.

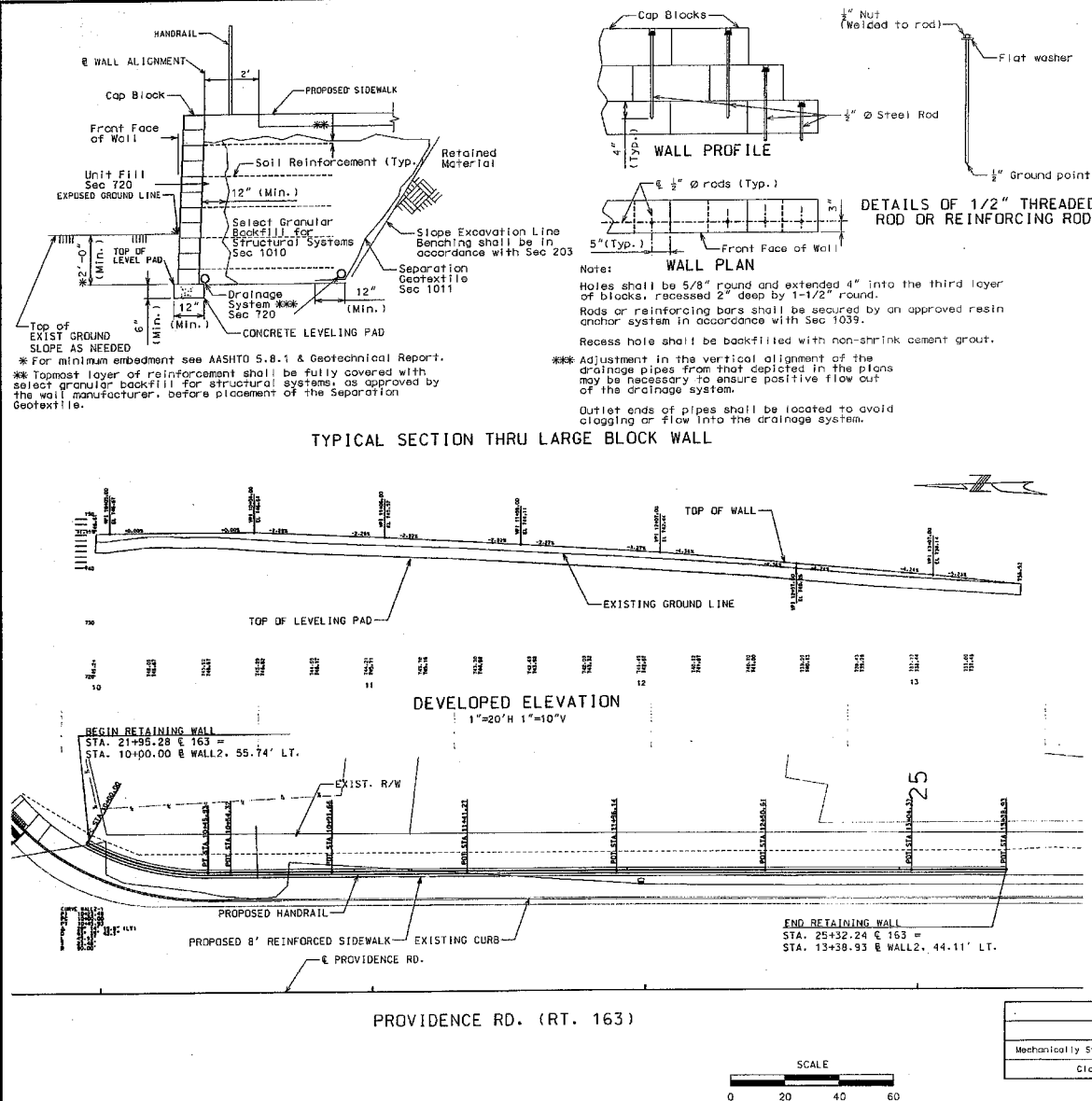
A filter cloth meeting the requirements for a Separation Geotextile material shall be placed between the select granular backfill for structural systems and the backfill being retained by the mechanically stabilized earth wall system.

The top and bottom elevations are given for a vertical wall. If a battered wall system is used, the height of the wall shall be adjusted as necessary to fit the ground slope and the concrete leveling pad shall be adjusted as necessary to account for the wall batter.

Asphalt Patch shall be a bituminous mixture approved by the engineer.

Wall elevations and wall location shall be adjusted as required to construct the retaining wall in the right-of-way and easement limits. Adjustment to wall location shall not be paid for directly.

Contractor shall verify the top of wall elevations with the intent of the sidewalk prior to construction.



MSE Wall Systems Data Table				
Proprietary Wall Systems		Combination Wall Systems		
Manufacturer	System	Facing Unit Manufacturer	Facing Unit	Geogrid Manufacturer

MSE Wall Systems Data Table is to be completed by City construction personnel to record the manufacturer of the proprietary wall system or the manufacturers of the combination wall system that was used for constructing the MSE wall.

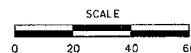


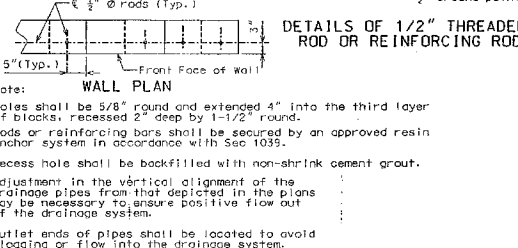
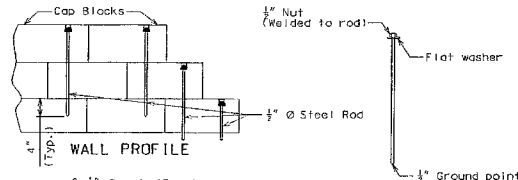
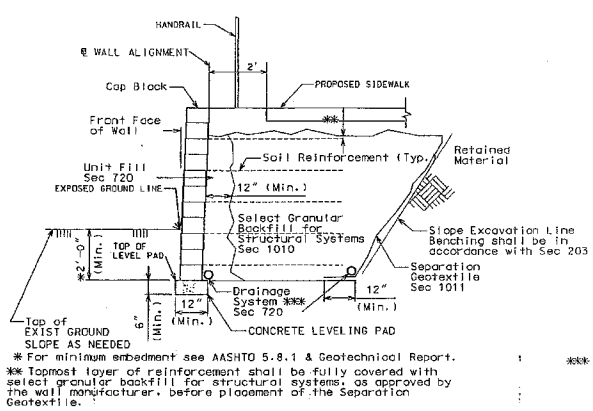
NON-MOTORIZED TRANSPORTATION IMPROVEMENTS

NORTH PROVIDENCE (RTE 163)
PEDWAY IMPROVEMENTS
BUSINESS LOOP 70 - VANDIVER DR.

PROJ. NO.: 12-12-12	DATE: 12-12-12	SCALE:
DESIGNED BY: 12-12-12	DESIGNED BY: 12-12-12	CHECKED BY:
SHEET 11 OF 37	SPECIAL SHEET	

ESTIMATED QUANTITIES		
Item	Sq. Ft.	Quantity
Mechanically Stabilized Earth Wall Systems	1150	
Class IV Excavation 20'	50	





GENERAL NOTES:
 Design Specifications:
 2002 - AASHTO 17th Edition
 Load Factor Design
 Seismic Performance Category A

All concrete for leveling pad shall be Class B or B-1 with $f'c = 4000$ psi.

The MSE wall system shall be a small block wall system in accordance with Sec 720 and shall be selected from the Pre-Qualified Products list in Sec 720.

All Project retaining walls shall be the same wall type, wall style and color and shall be approved by the City prior to ordering material.

Factor of safety shall be 2.0 for overturning, 1.5 for sliding and 2.0 for bearing.

The cost of joint filler and joint seal, complete-in-place, will be considered completely covered by the contract unit price for Mechanically stabilized earth wall systems.

$\Phi = 27^\circ$ for backfill material to be retained by the mechanically stabilized earth wall system.

$\Phi = 27^\circ$ for foundation material the wall is to rest on.

$\Phi \geq 34^\circ$ for the select granular backfill for structural systems.

Design $\Phi = 34^\circ$ for the select granular backfill for structural systems.

The Geotechnical Report and boring log information performed for the design of this project is available from the Project Contact upon written request as outlined in the Project Special Provisions.

Global stability of retaining wall system shall be performed by the Contractor using the information provided in the Geotechnical Report. Submit calculations with shop drawings. Submittal shall be signed and sealed by an Missouri Professional Engineer.

A filter cloth meeting the requirements for a Separation Geotextile material shall be placed between the select granular backfill for structural systems and the backfill being retained by the mechanically stabilized earth wall system.

The top and bottom elevations are given for a vertical wall. If a battered wall system is used, the height of the wall shall be adjusted as necessary to fit the ground slope and the concrete leveling pad shall be adjusted as necessary to account for the wall batter.

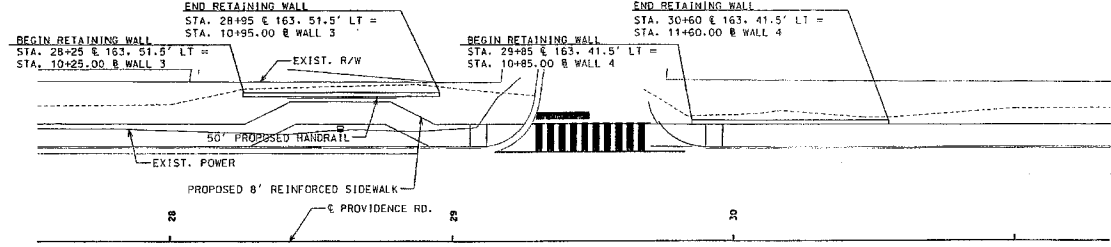
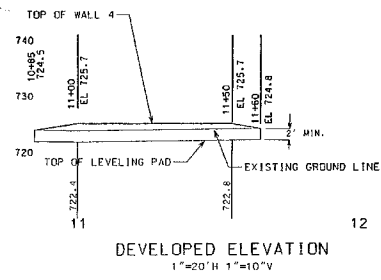
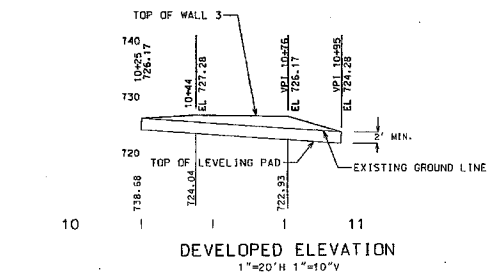
Asphalt Patch shall be a bituminous mixture approved by the engineer.

Wall elevations and wall location shall be adjusted as required to construct the retaining wall in the right-of-way and easement limits. Adjustment to wall location shall not be paid for directly.

Contractor shall verify the top of wall elevations with the intent of the sidewalk prior to construction.



TYPICAL SECTION THRU LARGE BLOCK WALL



MSE Wall Systems Data Table					
Proprietary Wall Systems		Combination Wall Systems			
Manufacturer	System	Facing Unit Manufacturer	Facing Unit	Geogrid Manufacturer	Geogrid

MSE Wall Systems Data Table is to be completed by City construction personnel to record the manufacturer of the proprietary wall system or the manufacturers of the combination wall system that was used for constructing the MSE wall.



CITY OF COLUMBIA

NON-MOTORIZED TRANSPORTATION IMPROVEMENTS

NORTH PROVIDENCE (RTE 163) PEDWAY IMPROVEMENTS

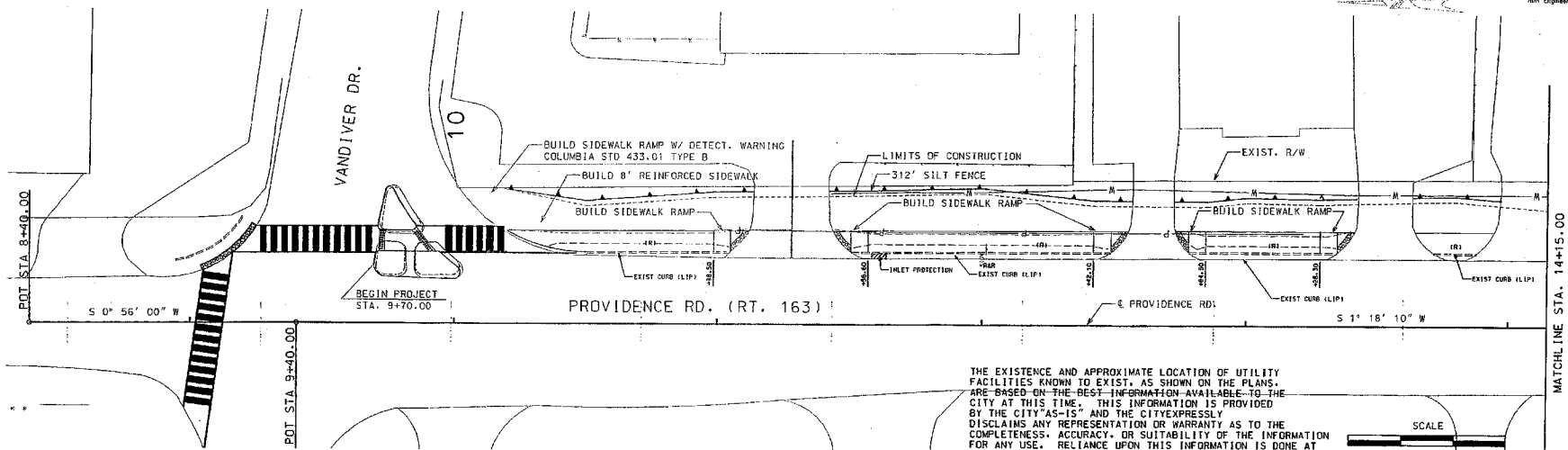
BUSINESS LOOP 70 - VANDIVER DR.

PROJ. NO.: 11-33-32-12 SCALE: 1"=20' H 1"=10' V

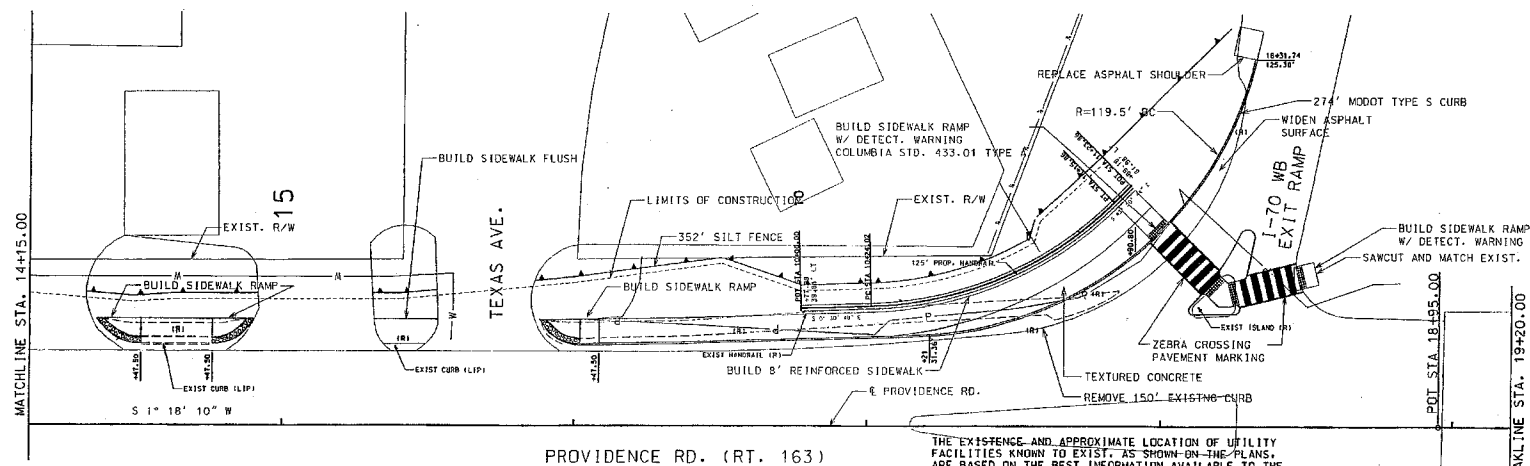
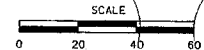
DESIGNED BY: [] CHECKED BY: []

SHEET 12 OF 37 SPECIAL SHEET

ESTIMATED QUANTITIES	
Item	Quantity
Mechanically Stabilized Earth Wall Systems	Sq. Ft. 225
Mechanically Stabilized Earth Wall Systems	Sq. Ft. 235
Class IV Excavation	Cu. Yd. 40

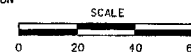


THE EXISTENCE AND APPROXIMATE LOCATION OF UTILITY FACILITIES KNOWN TO EXIST, AS SHOWN ON THE PLANS, ARE BASED ON THE BEST INFORMATION AVAILABLE TO THE CITY AT THIS TIME. THIS INFORMATION IS PROVIDED BY THE CITY "AS-IS" AND THE CITY EXPRESSLY DISCLAIMS ANY REPRESENTATION OR WARRANTY AS TO THE COSTS, ACCURACY, OR SUITABILITY OF THE INFORMATION FOR ANY USE. RELIANCE UPON THIS INFORMATION IS DONE AT THE RISK AND PERIL OF THE USER, AND THE CITY SHALL NOT BE LIABLE FOR ANY DAMAGES THAT MAY ARISE FROM ANY ERROR IN THE INFORMATION.



1. WHERE PROPOSED SIDEWALK OR CURB AND GUTTER REMOVAL IS NOTED ON THE PLANS, EXISTING SIDEWALK AND CURB AND GUTTER SHALL BE REMOVED TO THE NEAREST JOINT FROM THE LOCATION SHOWN ON PLANS.

THE EXISTENCE AND APPROXIMATE LOCATION OF UTILITY FACILITIES KNOWN TO EXIST, AS SHOWN ON THE PLANS, ARE BASED ON THE BEST INFORMATION AVAILABLE TO THE CITY AT THIS TIME. THIS INFORMATION IS PROVIDED BY THE CITY "AS-IS" AND THE CITY EXPRESSLY DISCLAIMS ANY REPRESENTATION OR WARRANTY AS TO THE COMPLETENESS, ACCURACY, OR SUITABILITY OF THE INFORMATION. NO RELIANCE UPON THIS INFORMATION IS DONE AT THE RISK AND PERIL OF THE USER, AND THE CITY SHALL NOT BE LIABLE FOR ANY DAMAGES THAT MAY ARISE FROM ANY ERROR IN THE INFORMATION.



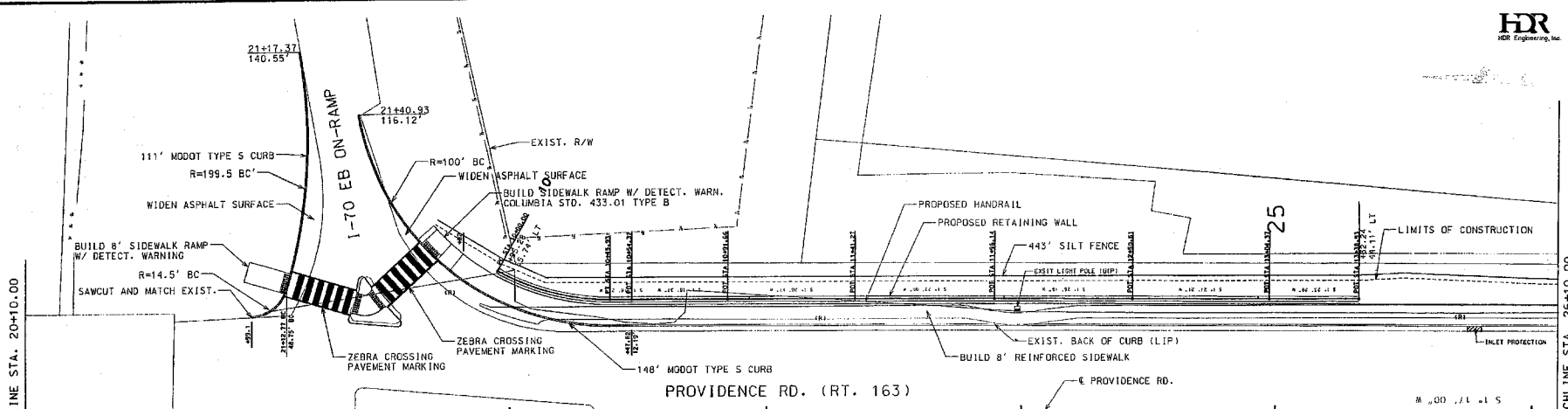
NON-MOTORIZED TRANSPORTATION IMPROVEMENTS

NORTH PROVIDENCE (RTE 163)
PEDWAY IMPROVEMENTS
BUSINESS LOOP 70 - VANDIVER DR.

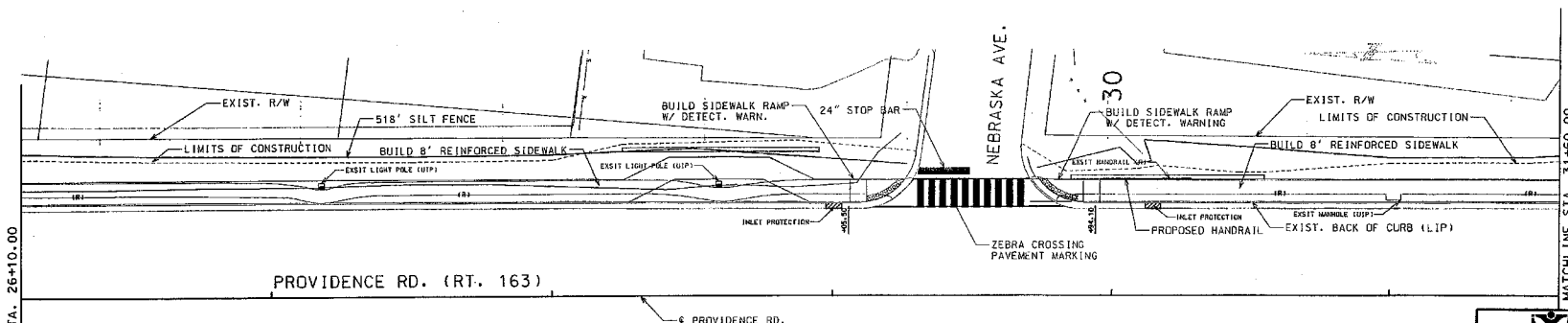
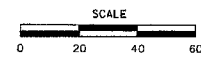
PROJ. NO.: _____	DATE: <u>10-12-12</u>	SCALE: <u>1"= 20'</u>
FED'L. PROJ. #: _____	DESIGNED BY: _____	CHECKED BY: _____

CF-9399 (517)	TJR	FB
	EROSION CONTROL STA 8+10.00	

Sheet 14 of 37
STA. 8+40.00
TO STA. 19+20.00
ROV_EC_01_120.dgn 12:28:41 PM 1/15/2017



THE EXISTENCE AND APPROXIMATE LOCATION OF UTILITY FACILITIES KNOWN TO EXIST, AS SHOWN ON THE PLANS, ARE BASED ON THE BEST INFORMATION AVAILABLE TO THE CITY AT THIS TIME. THIS INFORMATION IS PROVIDED BY THE CITY "AS-IS" AND THE CITY EXPRESSLY DISCLAIMS ANY REPRESENTATION OR WARRANTY AS TO THE COMPLETENESS, ACCURACY, OR SUITABILITY OF THE INFORMATION FOR ANY USE. RELIANCE UPON THIS INFORMATION IS DONE AT THE RISK AND PERIL OF THE USER, AND THE CITY SHALL NOT BE LIABLE FOR ANY DAMAGES THAT MAY ARISE FROM ANY ERROR IN THE INFORMATION.



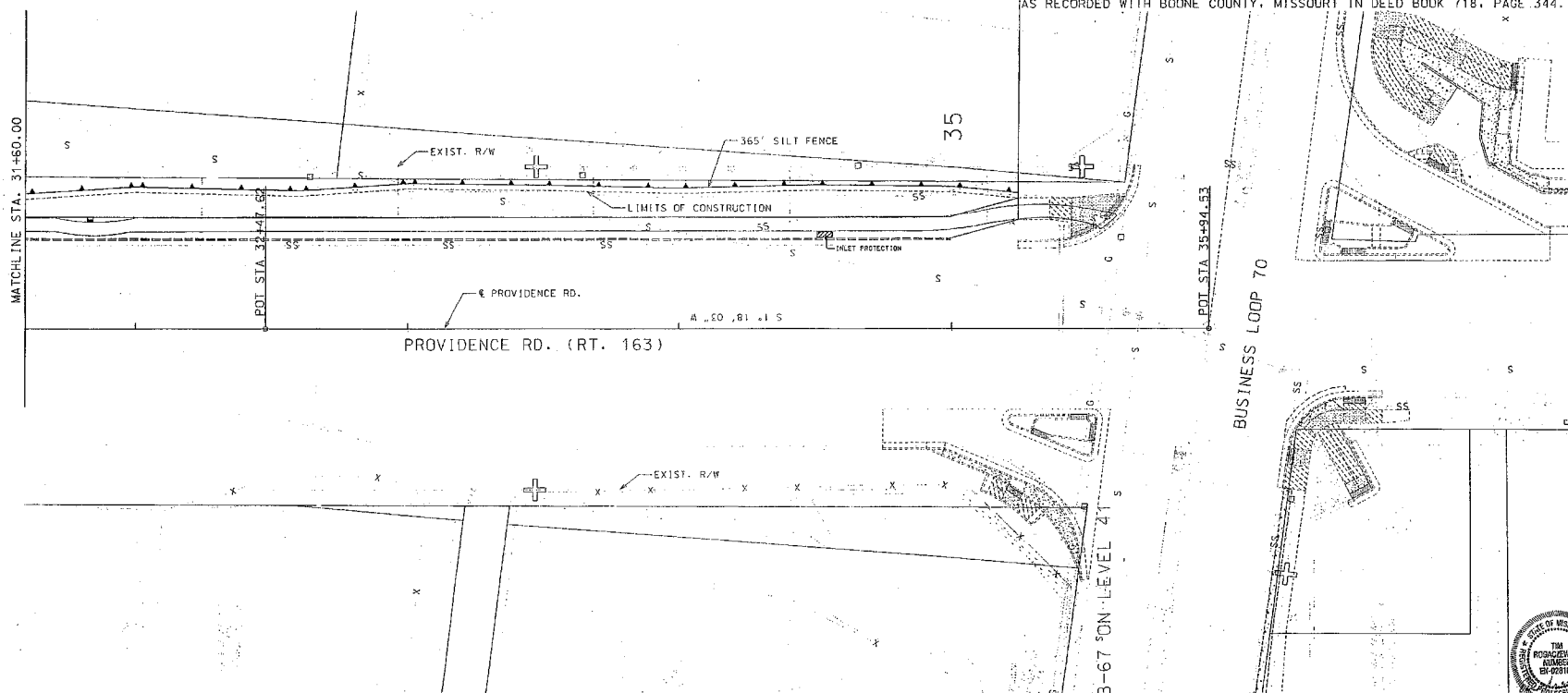
THE EXISTENCE AND APPROXIMATE LOCATION OF UTILITY FACILITIES KNOWN TO EXIST, AS SHOWN ON THE PLANS, ARE BASED ON THE BEST INFORMATION AVAILABLE TO THE CITY AT THIS TIME. THIS INFORMATION IS PROVIDED BY THE CITY "AS-IS" AND THE CITY EXPRESSLY DISCLAIMS ANY REPRESENTATION OR WARRANTY AS TO THE COMPLETENESS, ACCURACY, OR SUITABILITY OF THE INFORMATION FOR ANY USE. RELIANCE UPON THIS INFORMATION IS DONE AT THE RISK AND PERIL OF THE USER, AND THE CITY SHALL NOT BE LIABLE FOR ANY DAMAGES THAT MAY ARISE FROM ANY ERROR IN THE INFORMATION.



CITY of COLUMBIA			
NON-MOTORIZED TRANSPORTATION IMPROVEMENTS			
NORTH PROVIDENCE (RTE 163) PEDWAY IMPROVEMENTS			
BUSINESS LOOP 70 - VANDIVER DR.			
PROJ. NO. 1	DATE: 10-12-12	SCALE:	
DESIGNED BY: TJB	CHECKED BY: TB		
Sheet 15 of 37		EROSION CONTROL	



MATCH PROJECT PROVIDENCE & BUSINESS LOOP 70
INTERSECTION IMPROVEMENTS
END PROJECT STA. 35+24.13, 48.44' LT., & PROVIDENCE RD.
AT A POINT APPROX. 293.78' EAST & 7.08' SOUTH OF
FOUND IRON PIPE AT THE SW CORNER OF 207 BUSINESS LOOP 70.
PART OF LOTS 15 & 16 OF CELIA J. BARKWELL'S SUBDIVISION PLAT
AS RECORDED WITH BOONE COUNTY, MISSOURI IN DEED BOOK 718, PAGE 344.

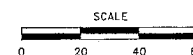


LAND CORNER
FOUND IRON PIPE AT THE SOUTHWEST CORNER OF 207 BUSINESS LOOP 70.
PART OF LOT 15 AND 16 OF CELIA J. BARKWELL'S SUBDIVISION PLAT
AS RECORDED WITH BOONE COUNTY, MISSOURI IN DEED BOOK 718, PAGE 344.

NOTES:

1. CONTRACTOR SHALL FIELD VERIFY IMPROVEMENTS AT SOUTH END OF THIS PROJECT TIES INTO IMPROVEMENTS OF PROJECT PROVIDENCE AT BUSINESS LOOP 70 INTERSECTION.

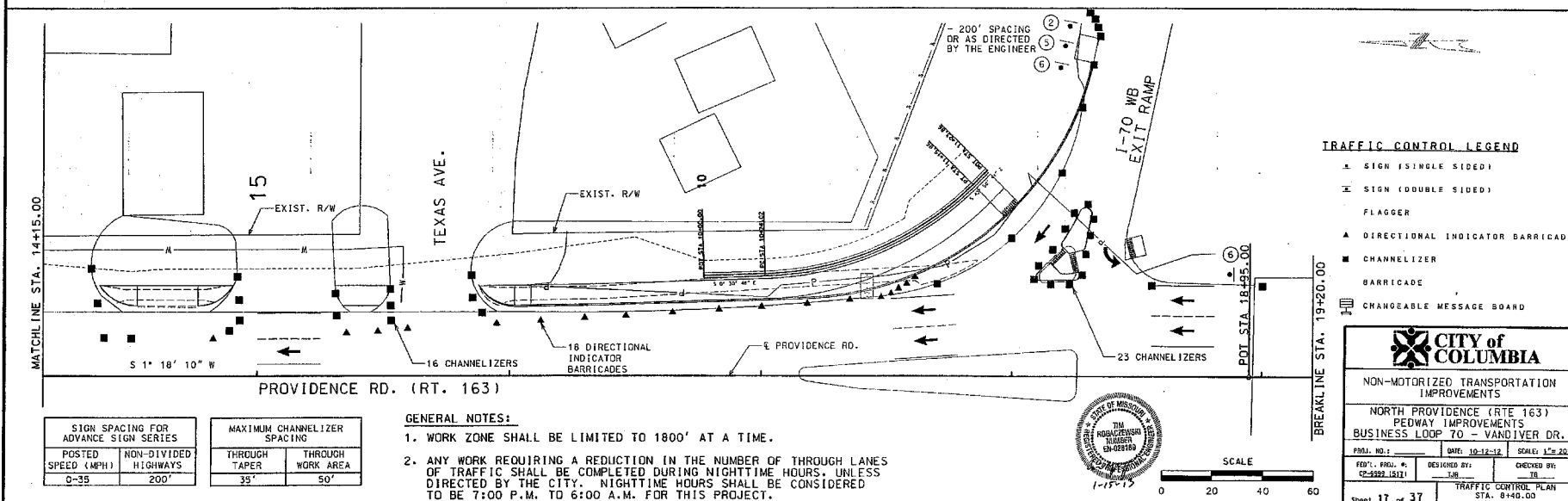
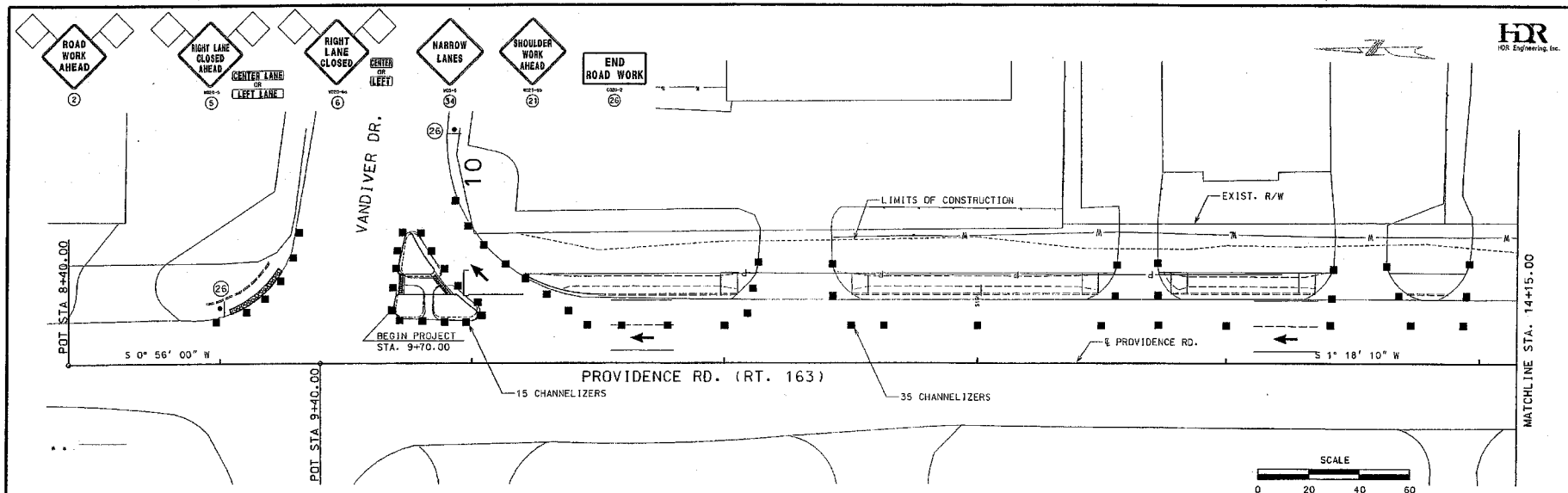
BM 173
FOUND MAGNAIL
4.30' NW COR. CONC. WALK
3.95' NW COR. CONC. VAULT ELEV. 743.17
N: 1140151.99 E: 1687399.43

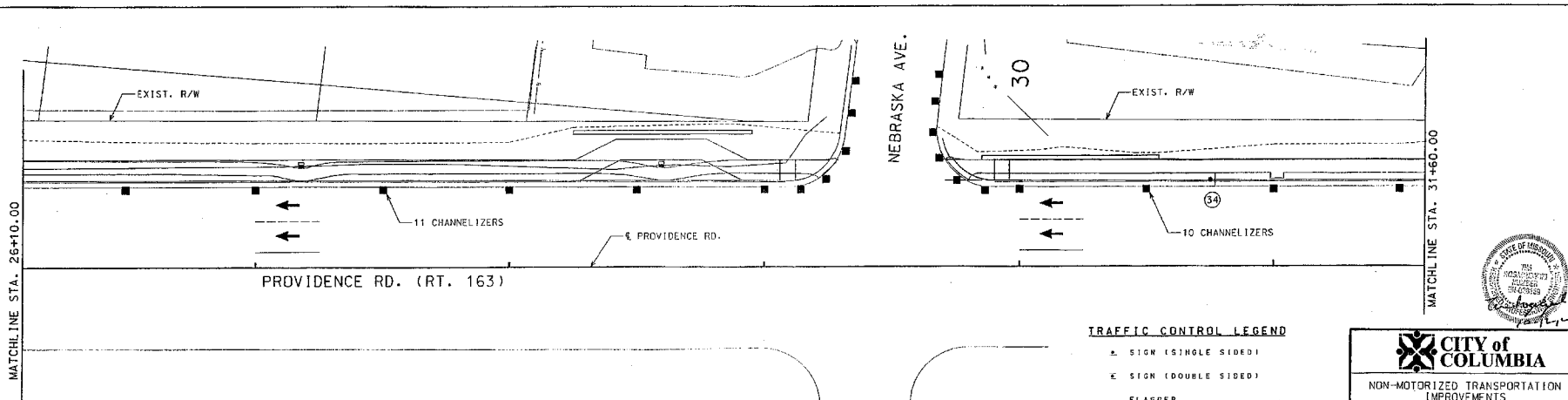
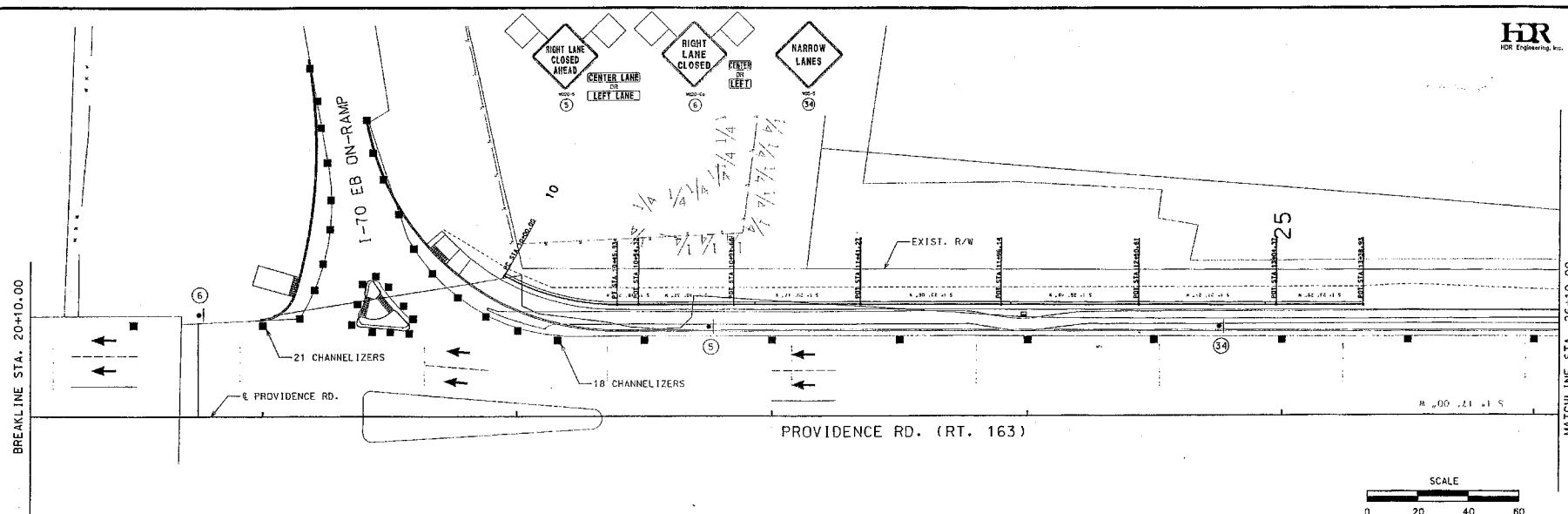


NON-MOTORIZED TRANSPORTATION
IMPROVEMENTS

NORTH PROVIDENCE (RTE 163)
PEDWAY IMPROVEMENTS
BUSINESS LOOP 70 - VANDIVER DR.

PROJ. NO. 1	DATE: 10-12-12	SCALE: 1"=20'
FED. L. PROJ. #:	DESIGNED BY:	CHECKED BY:
CE-9999 (5/11)	LJB	JB
Sheet 16 of 37	EROSION CONTROL	
FILES	STONES	BOARDS





SIGN SPACING FOR ADVANCE SIGN SERIES	
POSTED SPEED (MPH)	NON-DIVIDED HIGHWAYS
0-35	200'

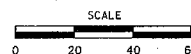
MAXIMUM CHANNELIZER SPACING	
THROUGH TAPER	THROUGH WORK AREA
35'	50'

GENERAL NOTES:

1. WORK ZONE SHALL BE LIMITED TO 1800' AT A TIME.
2. ANY WORK REQUIRING A REDUCTION IN THE NUMBER OF THROUGH LANES OF TRAFFIC SHALL BE COMPLETED DURING NIGHTTIME HOURS, UNLESS DIRECTED BY THE CITY. NIGHTTIME HOURS SHALL BE CONSIDERED TO BE 7:00 P.M. TO 6:00 A.M. FOR THIS PROJECT.

TRAFFIC CONTROL LEGEND

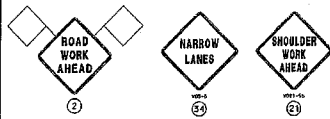
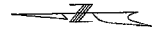
- ▲ SIGN (SINGLE SIDED)
- E SIGN (DOUBLE SIDED)
- FLAGGER
- ▲ DIRECTIONAL INDICATOR BARRICADE
- CHANNELIZER
- BARRICADE
- CHANGEABLE MESSAGE BOARD



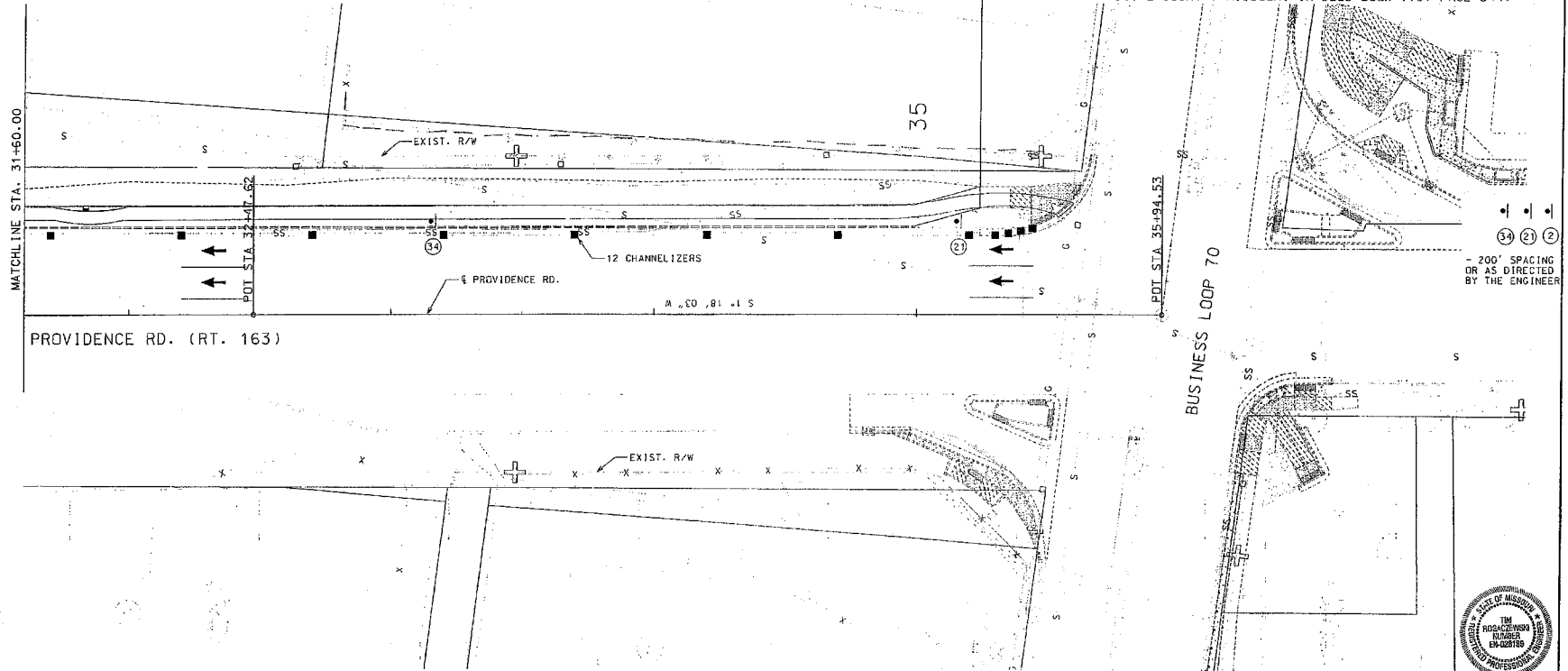
CITY of COLUMBIA
NON-MOTORIZED TRANSPORTATION
IMPROVEMENTS

NORTH PROVIDENCE (RTE 163)
PEDWAY IMPROVEMENTS
BUSINESS LOOP 70 - VANDIVER DR.

PROJ. NO. 1	DATE: 10-12-12	SCALE: 1"=20'
DESIGNED BY: 18	CHECKED BY: 18	DATE: 10-12-12
SHEET 18 OF 37		
TRAFFIC CONTROL PLAN		
STA. 20+10.00 TO STA. 31+60.00		



MATCH PROJECT PROVIDENCE & BUSINESS LOOP 70
INTERSECTION IMPROVEMENTS
END PROJECT STA. 35+24.13, 48.44' LT., & PROVIDENCE RD.
AT A POINT APPROX. 293.78' EAST & 7.08' SOUTH OF
FOUND IRON PIPE AT THE SW CORNER OF 207 BUSINESS LOOP 70.
PART OF LOTS 15 & 16 OF CELIA J. BARKWELL'S SUBDIVISION PLAT
AS RECORDED WITH BOONE COUNTY, MISSOURI IN DEED BOOK 718, PAGE 344.

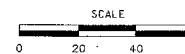


SIGN SPACING FOR ADVANCE SIGN SERIES	
POSTED SPEED (MPH)	NON-DIVIDED HIGHWAYS
0-35	200'

MAXIMUM CHANNELIZER SPACING	
THROUGH TAPER	THROUGH WORK AREA
35'	50'

GENERAL NOTES:

1. WORK ZONE SHALL BE LIMITED TO 1800' AT A TIME.
2. ANY WORK REQUIRING A REDUCTION IN THE NUMBER OF THROUGH LANES OF TRAFFIC SHALL BE COMPLETED DURING NIGHTTIME HOURS, UNLESS DIRECTED BY THE CITY. NIGHTTIME HOURS SHALL BE CONSIDERED TO BE 7:00 P.M. TO 6:00 A.M. FOR THIS PROJECT.




















TRAFFIC CONTROL LEGEND

- ▲ SIGN (SINGLE SIDED)
- × SIGN (DOUBLE SIDED)
- FLAGGER
- ▲ DIRECTIONAL INDICATOR BARRICADE
- CHANNELIZER
- ⌈ BARRICADE
- ⌈ CHANGEABLE MESSAGE BOARD



NON-MOTORIZED TRANSPORTATION IMPROVEMENTS			
NORTH PROVIDENCE (RTE 163) PEDWAY IMPROVEMENTS			
BUSINESS LOOP 70 - VANDIVER DR.			
PROJ. NO. 1	DATE: 10-12-17	SCALE: 1"=20'	
FED'L. PROJ. NO. 02-9998 (3127)	DESIGNED BY: TAB	CHECKED BY: TR	
Sheet 19 of 37		TRAFFIC CONTROL PLAN	
STA. 31+60.00 TO STA. 35+24.13		SHEET 19 OF 37	

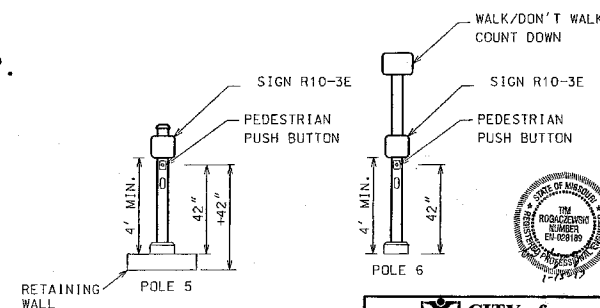


TRAFFIC SIGNALS LEGEND			
	CONTROLLER (EXISTING)		CONDUIT PUSHED
	POWER SOURCE		CONDUIT EXISTING
P.S. 	POWER SUPPLY		CONDUIT TRENCHED
	SIGNAL HEAD (EXISTING)		TYPE C MAST ARM B BASE
	PUSH BUTTON DETECTOR		6 X 6 LOOP DETECTOR
	PREFORMED PULL BOX TYPE 1		6 X 15 LOOP DETECTOR
	EXISTING PULL BOX		30 X 6 LOOP DETECTOR
	PULL BOX TYPE 1		PEDESTRIAN SIGNAL HEAD
	PULL BOX TYPE 2		

NOTES:

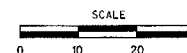
1. THIS PROJECT INVOLVES MODIFYING THE EXISTING TRAFFIC SIGNAL BY ADDING PEDESTRIAN SIGNAL HEADS.
2. THE CONTRACTOR WILL BE REQUIRED TO INSTALL THE ADDITIONAL SIGNAL CABLES, AS SPECIFIED, IN THE EXISTING ROADWAY CROSSING SIGNAL CONDUITS TO CONTROL THE PROPOSED PEDESTRIAN SIGNAL HEADS.
3. THE PROPOSED LOCATION FOR POLE 5 IS BEHIND THE RETAINING WALL AT THE EDGE OF THE SIDEWALK. FINAL LOCATION TO BE FIELD VERIFIED BASED ON CONSTRUCTABILITY AND POTENTIAL UTILITY CONFLICTS.

POLE TYPICALS
SEE MODOT STD. 902.00



NON-MOTORIZED TRANSPORTATION IMPROVEMENTS

NORTH PROVIDENCE (RTE 163)
PEDWAY IMPROVEMENTS
BUSINESS LOOP 70 - VANDIVER DR.



PROVIDENCE (RTE 163) AT VANDIVER DR.

INTERSECTION

PROJ. NO. 1	DATE 10-12-12	SCALE 1"=30'
DESIGNED BY: JH	CHECKED BY: JH	

Sheet 20 of 37 SIGNAL IMPROVEMENTS



HDR Engineering, Inc.

POST NUMBER	LOCATION			BASE				PULL BOX				POST																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
	APPROACH	STATION	OFFSET	A				F				C	CONCRETE** (CU. YDS.)	PREFORMED		CONCRETE STANDARD	DRAIN TYPE**		TOP MOUNT POST	TYPE C & CL										TYPE B & BL										LUMINAIR BRACKET ARM*																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
				9	9.5	10	10.5	11	12	9	9.5			10	10.5		11	12		CLASS 1	CLASS 2	CLASS 3	CLASS 5	DOUBLE, TYPE A	DOUBLE, TYPE B	A	B	C	D	E	F	G	H	I	J	K	L	M	N		O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT	BU	BV	BW	BX	BY	BZ	CA	CB	CC	CD	CE	CF	CG	CH	CI	CJ	CK	CL	CM	CN	CO	CP	CQ	CR	CS	CT	CU	CV	CW	CX	CY	CZ	DA	DB	DC	DD	DE	DF	DG	DH	DI	DJ	DK	DL	DM	DN	DO	DP	DQ	DR	DS	DT	DU	DV	DW	DX	DY	DZ	EA	EB	EC	ED	EE	EF	EG	EH	EI	EJ	EK	EL	EM	EN	EO	EP	EQ	ER	ES	ET	EU	EV	EW	EX	EY	EZ	FA	FB	FC	FD	FE	FF	FG	FH	FI	FJ	FK	FL	FM	FN	FO	FP	FQ	FR	FS	FT	FU	FV	FW	FX	FY	FZ	GA	GB	GC	GD	GE	GF	GG	GH	GI	GJ	GK	GL	GM	GN	GO	GP	GQ	GR	GS	GT	GU	GV	GW	GX	GY	GZ	HA	HB	HC	HD	HE	HF	HG	HH	HI	HJ	HK	HL	HM	HN	HO	HP	HQ	HR	HS	HT	HU	HV	HW	HX	HY	HZ	IA	IB	IC	ID	IE	IF	IG	IH	II	IJ	IK	IL	IM	IN	IO	IP	IQ	IR	IS	IT	IU	IV	IW	IX	IY	IZ	JA	JB	JC	JD	JE	JF	JG	JH	JI	JJ	JK	JL	JM	JN	JO	JP	JQ	JR	JS	JT	JU	JV	JW	JX	JY	JZ	KA	KB	KC	KD	KE	KF	KG	KH	KI	KJ	KK	KL	KM	KN	KO	KP	KQ	KR	KS	KT	KU	KV	KW	KX	KY	KZ	LA	LB	LC	LD	LE	LF	LG	LH	LI	LJ	LK	LL	LM	LN	LO	LP	LQ	LR	LS	LT	LU	LV	LW	LX	LY	LZ	MA	MB	MC	MD	ME	MF	MG	MH	MI	MJ	MK	ML	MN	MO	MP	MQ	MR	MS	MT	MU	MV	MW	MX	MY	MZ	NA	NB	NC	ND	NE	NF	NG	NH	NI	NJ	NK	NL	NM	NO	NP	NQ	NR	NS	NT	NU	NV	NW	NX	NY	NZ	OA	OB	OC	OD	OE	OF	OG	OH	OI	OJ	OK	OL	OM	ON	OO	OP	OQ	OR	OS	OT	OU	OV	OW	OX	OY	OZ	PA	PB	PC	PD	PE	PF	PG	PH	PI	PJ	PK	PL	PM	PN	PO	PP	PQ	PR	PS	PT	PU	PV	PW	PX	PY	PZ	QA	QB	QC	QD	QE	QF	QG	QH	QI	QJ	QK	QL	QM	QN	QO	QP	QQ	QR	QS	QT	QU	QV	QW	QX	QY	QZ	RA	RB	RC	RD	RE	RF	RG	RH	RI	RJ	RK	RL	RM	RN	RO	RP	RQ	RR	RS	RT	RU	RV	RW	RX	RY	RZ	SA	SB	SC	SD	SE	SF	SG	SH	SI	SJ	SK	SL	SM	SN	SO	SP	SQ	SR	SS	ST	SU	SV	SW	SX	SY	SZ	TA	TB	TC	TD	TE	TF	TG	TH	TI	TJ	TK	TL	TM	TN	TO	TP	TQ	TR	TS	TT	TU	TV	TW	TX	TY	TZ	UA	UB	UC	UD	UE	UF	UG	UH	UI	UJ	UK	UL	UM	UN	UO	UP	UQ	UR	US	UT	UU	UV	UW	UX	UY	UZ	VA	VB	VC	VD	VE	VF	VG	VH	VI	VJ	VK	VL	VM	VN	VO	VP	VQ	VR	VS	VT	VU	VV	VW	VX	VY	VZ	WA	WB	WC	WD	WE	WF	WG	WH	WI	WJ	WK	WL	WM	WN	WO	WP	WQ	WR	WS	WT	WU	WV	WW	WX	WY	WZ	XA	XB	XC	XD	XE	XF	XG	XH	XI	XJ	XK	XL	XM	XN	XO	XP	XQ	XR	XS	XT	XU	XV	XW	XX	XY	XZ	YA	YB	YC	YD	YE	YF	YG	YH	YI	YJ	YK	YL	YM	YN	YO	YP	YQ	YR	YS	YT	YU	YV	YW	YX	YY	YZ	ZA	ZB	ZC	ZD	ZE	ZF	ZG	ZH	ZI	ZJ	ZK	ZL	ZM	ZN	ZO	ZP	ZQ	ZR	ZS	ZT	ZU	ZV	ZW	ZX	ZY	ZZ

[illegible][illegible]

LEGEND
T - TOP MOUNT
S - SIDE MOUNT
C - SPANWIRE MOUNT
B - MAST ARM MOUNT

NON-MOTORIZED TRANSPORTATION
IMPROVEMENTS

NORTH PROVIDENCE (RTE 163)
PEDWAY IMPROVEMENTS
BUSINESS LOOP 70 - VANDIVER DR.

PROVIDENCE (RTE 163) AT VANDIVER DR.
INTERSECTION

INTERSECTION

D-37A

Sheet 21 of 31

7 SIGNAL IMPROVEMENTS

EFFECTIVE: 07-01-2008

HR
 H&R Engineering, Inc.

CONDUIT																CABLE																		
FROM	TO	CENTER TO CENTER DISTANCE	LOOP DET.	TRENCH				PUSHED			MEDIAN			ON STRUCTURE		REMARKS	FROM	TO	CENTER TO CENTER DISTANCE	POWER		CONTROL				CLOSED LOOP INTERCONNECT	LUMINAIRE		DETECTOR		FIBER		REMARKS	
				1"	2"	3"	4"	2"	3"	4"	2"	3"	4"	2"	3"					2c #16	5c #16	7c #16	3c #16	3 PAIR #16	CONTROL		POLE & BRACKET	1c #14 IN DUCT	2c #14 LEAD-IN CABLE	SINGLE-MODE	MULTI-MODE			
1	6	10			12												X	2	26															
																	2	2	11															
																	2	1	58															
																	1	1	5															
																	1	5	10															
																	1	3	67															
																	3	6	5															
																		1																
																		2																
																		5																


 NON-MOTORIZED TRANSPORTATION
 IMPROVEMENTS

 NORTH PROVIDENCE (RTE 163)
 PEDESTRIAN IMPROVEMENTS
 BUSINESS LOOP 70 - VANDIVER DR.

 PROJ. NO.: _____ DATE: 10-12-12 SCALE: _____
 DESIGNED BY: _____ CHECKED BY: _____
 (2-2592-1512) CT JHE

INTERSECTION PROVIDENCE (RTE 163) AT VANDIVER DR.

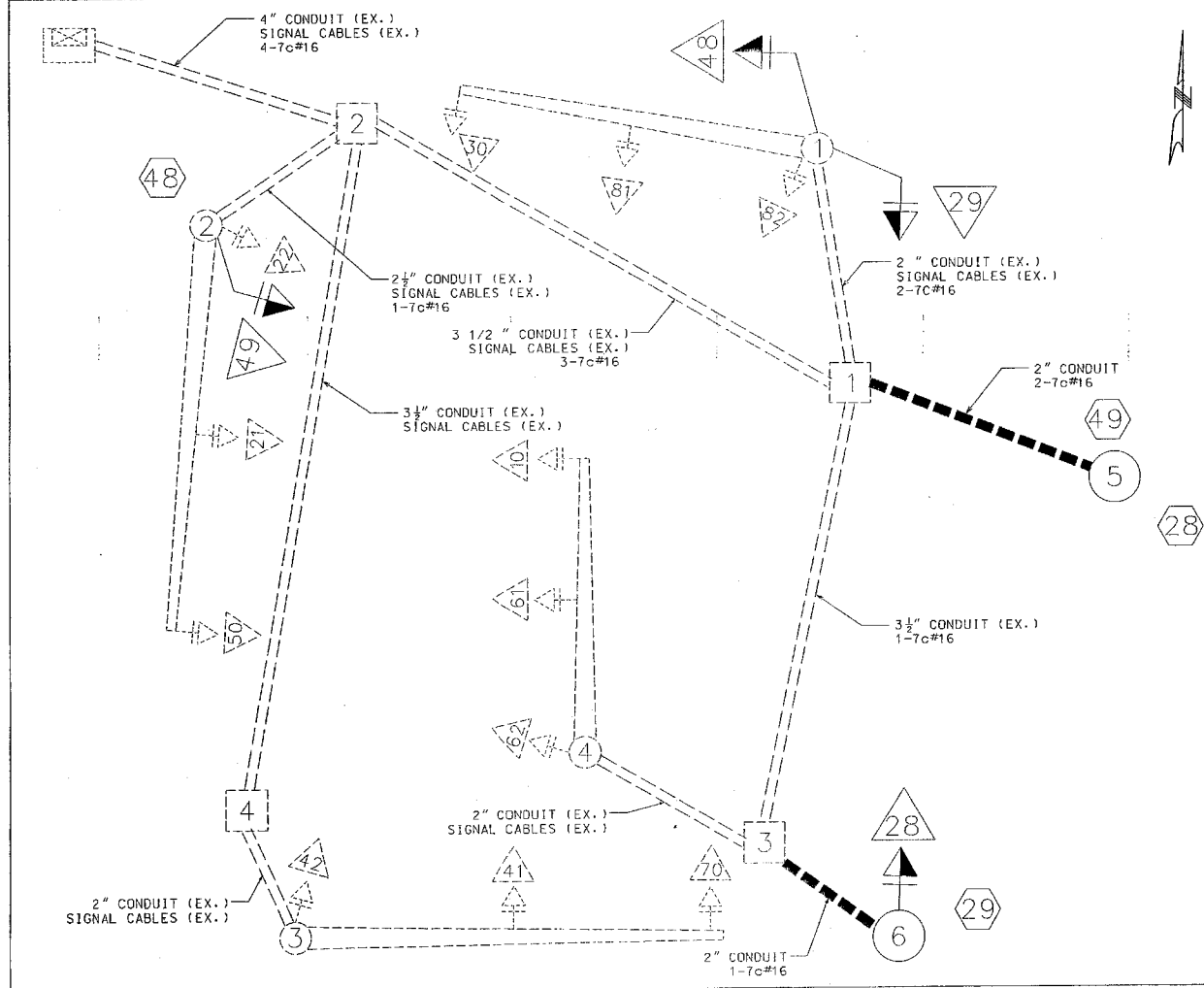
D-37B

Sheet 22 of 37 SIGNAL IMPROVEMENTS

c:\pwworking\oma\c0814027\N_PROV_Signal_01.D37B.dgn 11:31:58 AM 12/17/2012

c:\pwworking\oma\d0614027\N_PROV_Signal_01_037C.dwg 3:47:16 PM 10/11/2012

WIRING DIAGRAM



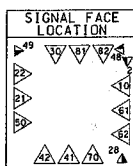
LEGEND

- 3" CONDUIT CONTAINING CABLE WITH SIZE
- CABLE
- X-Xc MULTI-CONDUCTOR CABLE #12 AWG (UNLESS OTHERWISE INDICATED)
- LIC #14 AWG DETECTOR LEAD-IN CABLE (2C TWISTED SHIELDED)
- [X] PULL BOX WITH NUMBER
- [X] POST WITH NUMBER
- [X] POST WITH MAST ARM
- [X] POST WITH MAST ARM AND LUMINAIRE
- [X] DETECTOR WITH NUMBER
- [X] SIGNAL HEAD WITH NUMBER
- [X] SIGNAL CONTROLLER
- [X] POWER SUPPLY
- [X] LIGHTING CONTROLLER

PROVIDENCE (RTE 163) AT VANDIVER DR.
INTERSECTION

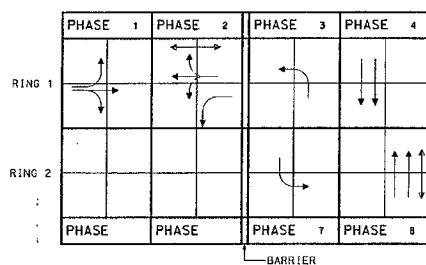


NON-MOTORIZED TRANSPORTATION IMPROVEMENTS			
NORTH PROVIDENCE (RTE 163) PEDWAY IMPROVEMENTS			
BUSINESS LOOP 70 - VANDIVER DR.			
PROJ. NO. 1	DATE: 10-02-12	SCALE: N.T.S.	
DESIGNED BY: J.B.	CHECKED BY: TB	SHEET 24 OF 37	
D-37D		SIGNAL IMPROVEMENTS	



TRAFFIC PHASING AND COLOR SEQUENCE - ACTUATED CONTROLLERS

FACE NUMBERS		PHASE 1		PHASE 2		PHASE 3		PHASE 4		PHASE 5		PHASE 6		PHASE 7		PHASE 8		PED + OVERLAP		PED + 2 OVERLAP		PED + 8 OVERLAP		PED + OVERLAP	
FACE NUMBERS		10	61	62	50	21	22	30		41	42			70		81	82			48	49	28	29		
SIGNAL INDICATIONS		R																							
SIGNAL INDICATIONS		Y																							
SIGNAL INDICATIONS		FYA																							
SIGNAL INDICATIONS		G																							
DETECTOR ASSIGNMENTS		L	G	G	L	S	G	LT		S	G			LT		S	G			W	W	W	W		
DETECTOR ASSIGNMENTS		3	4		7	8		5		2	9			1		6				49	48	29	28		
DETECTOR ASSIGNMENTS (PEDS. ONLY)																									
OVERLAP PHASES																									



RING STRUCTURE

IF CALLED, ALL NON-CONFLICTING PHASES SHALL COMBINE AND TIME CONCURRENTLY. TIME TO BE DETERMINED BY THE ENGINEER AT SIGNAL TURN ON AND SET IN THE CONTROLLER BY THE CONTRACTOR.

LEGEND

- ACTUATED VEHICULAR MOVEMENT
- PARTIALLY RESTRICTED ACTUATED VEHICULAR MOVEMENT
- NON-ACTUATED VEHICULAR MOVEMENT
- PARTIALLY RESTRICTED NON-ACTUATED VEHICULAR MOVEMENT
- ACTUATED PEDESTRIAN MOVEMENT
- NON-ACTUATED PEDESTRIAN MOVEMENT
- VEHICLE STOPPED
- FDW — FLASHING DON'T WALK
- R/W — RIGHT OF WAY INTERVAL
- OW — DON'T WALK
- RY — YELLOW RIGHT ARROW
- RT — GREEN RIGHT ARROW
- W — WALK
- LY — YELLOW LEFT ARROW
- YL — GREEN LEFT ARROW
- GS — GREEN STRAIGHT AHEAD ARROW
- CG — CIRCULAR GREEN
- CY — CIRCULAR YELLOW
- CR — CIRCULAR RED
- TF — TRAFFIC PHASE
- AD — ALL OTHERS
- FR — FLASHING RED
- FYA — FLASHING CIRCULAR YELLOW
- FYA — FLASHING YELLOW ARROW
- FYL — FLASHING YELLOW LEFT ARROW
- FYR — FLASHING YELLOW RIGHT ARROW

FLASHING OPERATION

ALL APPROACHES	FR
	FY
CONTROLLER TYPE	Ø 8

TRAFFIC SIGNAL CONTROL OPERATION

INTERSECTION OF
PROVIDENCE (ROUTE 163) AT VANDIVER DR.



NON-MOTORIZED TRANSPORTATION IMPROVEMENTS

NORTH PROVIDENCE (RTE 163) PEDWAY IMPROVEMENTS BUSINESS LOOP 70 - VANDIVER DR.

PROJ. NO.: 10-12-12	SCALE:
FED'L. PROJ. #: CE-5599 (517)	DESIGNED BY: CT
	CHECKED BY: JKE

D-38A

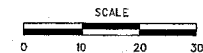
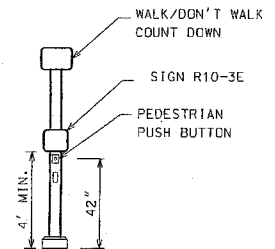
Sheet 25 of 37

SIGNAL IMPROVEMENTS

TRAFFIC SIGNALS LEGEND	
	CONTROLLER (EXISTING)
	POWER SOURCE
	POWER SUPPLY
	SIGNAL HEAD (EXISTING)
	PUSH BUTTON DETECTOR
	PREFORMED PULL BOX TYPE 1
	EXISTING PULL BOX
	PULL BOX TYPE 1
	PULL BOX TYPE 2
	CONDUIT PUSHED
	CONDUIT EXISTING
	CONDUIT TRENCHED
	TYPE C MAST ARM B BASE
	6 X 6 LOOP DETECTOR
	6 X 15 LOOP DETECTOR
	30 X 6 LOOP DETECTOR
	PEDESTRIAN SIGNAL HEAD

NOTES:
1. THIS PROJECT INVOLVES ADDING PEDESTRIAN SIGNAL PEDESTAL POLES WITH PUSHBUTTONS FOR THE NORTH-SOUTH CROSSING OF THE WESTBOUND I-70 OFF EXIT RAMP. THE SIGNAL CONTROL DOES NOT INCLUDE THE CHANNELIZED RIGHT TURN LANE FOR WESTBOUND VEHICLES.

POLE TYPICAL
SEE MODOT STD. 902.00



CITY of COLUMBIA	
NON-MOTORIZED TRANSPORTATION IMPROVEMENTS	
NORTH PROVIDENCE (RTE 163) PEDESTRIAN IMPROVEMENTS BUSINESS LOOP 70 - VANDIVER DR.	
PROJ. NO. 1	DATE: 10-12-12
DESIGNED BY: TJB	CHECKED BY: TJB
SHEET 26 OF 37	
SIGNAL IMPROVEMENTS	

PROVIDENCE (RTE 163) AT I-70 WB RAMP 1 & 3

INTERSECTION

EFFECTIVE: 07-01-2008

HR
 HRR Engineering, Inc.

CONDUIT																CABLE																		
FROM	TO	CENTER TO CENTER DISTANCE	LOOP DET.	TRENCH				PUSHED			MEDIAN			ON STRUCTURE		REMARKS	FROM	TO	CENTER TO CENTER DISTANCE	POWER	CONTROL				CLOSED LOOP INTERCONNECT	LUMINAIRE		DETECTOR		FIBER		REMARKS		
				1"	2"	3"	4"	2"	3"	4"	2"	3"	4"	2"	3"						2c #16	5c #16	7c #16	3c #16		3 PAIR #16	CONTROL	POLE & BRACKET	1c #14 IN DUCT	2c #14 LEAD-IN CABLE	SINGLE-MODE		MULTI-MODE	
1	6	10			8												X	11	5															
6	3	125						123									11	6	10															
3	5	45						43									6	3	125															
3	5	8			10												3	5	8															
5	4	6			8												5	4	45															
																		4	6															

c:\pwworking\pma\d0614027\N_PROV_Signal-02_D37C.dan 3:48:02 PM 10/11/2012



- PROVIDENCE (RTE 163) AT I-70 WB RAMPS 1 & 3

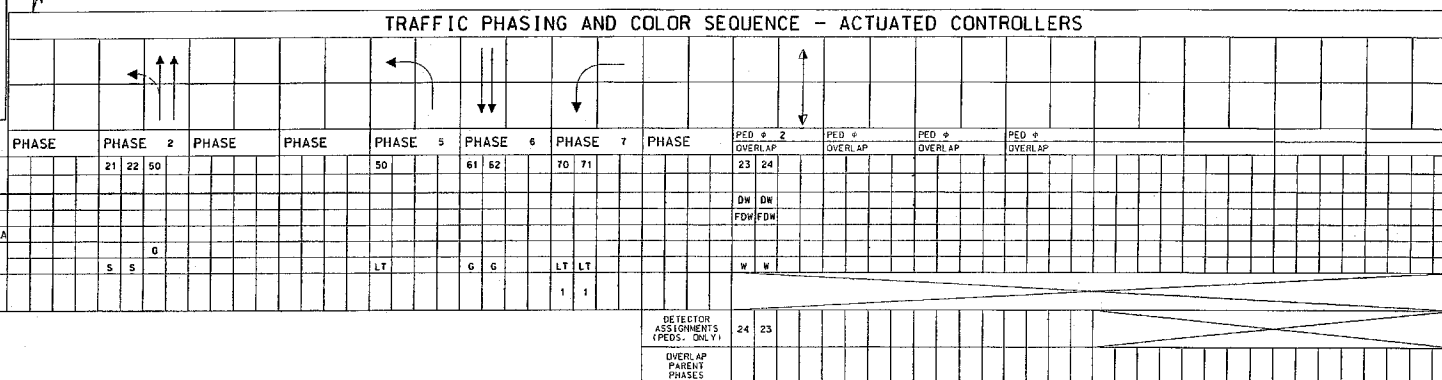
INTERSECTION

D-37D

Sheet 30 of 37

SIGNAL IMPROVEMENTS

c:\pwworking\oma\d0614027\N_PROV_Signal_02_037D.dgn 3:48:12 PM 10/11/2012



IF CALLED, ALL NON-CONFLICTING PHASES SHALL COMBINE AND TIME CONCURRENTLY. TIME TO BE DETERMINED BY THE ENGINEER AT SIGNAL TURN ON AND SET IN THE CONTROLLER BY THE CONTRACTOR.

- ACTUATED VEHICULAR MOVEMENT
- PARTIALLY RESTRICTED ACTUATED VEHICULAR MOVEMENT
- NON-ACTUATED VEHICULAR MOVEMENT
- PARTIALLY RESTRICTED NON-ACTUATED VEHICULAR MOVEMENT
- ACTUATED PEDESTRIAN MOVEMENT
- NON-ACTUATED PEDESTRIAN MOVEMENT
- VEHICLE STOPPED
- FLASHING DON'T WALK
- R/W — RIGHT OF WAY INTERVAL
- DW — DON'T WALK
- YRT — YELLOW RIGHT ARROW
- RT — GREEN RIGHT ARROW
- W — WALK
- LY — YELLOW LEFT ARROW
- L — GREEN LEFT ARROW
- LS — GREEN STRAIGHT AHEAD ARROW
- SCY — CIRCULAR GREEN
- CY — CIRCULAR YELLOW
- CR — CIRCULAR RED
- R — TRAFFIC PHASE
- AD — ALL OTHERS
- FR — FLASHING RED
- FY — FLASHING CIRCULAR YELLOW
- FYA — FLASHING YELLOW ARROW
- FYL — FLASHING YELLOW LEFT ARROW
- FYR — FLASHING YELLOW RIGHT ARROW

CONTROLLER TYPE	Ø 3
-----------------	-----

PROVIDENCE (ROUTE 163) AT RAMP 1 & RAMP 3




















PROJ. NO.: _____		DATE: 10-12-12	SCALE: _____
FED'L. PROJ. #: CP-9999 45121	DESIGNED BY: CT	CHECKED BY: JKE	

0-38A

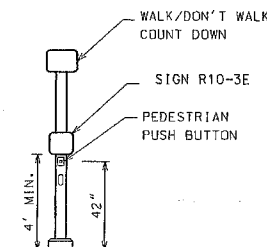
Sheet 31 of 37

SIGNAL IMPROVEMENT

TRAFFIC SIGNALS LEGEND			
	CONTROLLER (EXISTING)		CONDUIT PUSHED
	POWER SOURCE		CONDUIT EXISTING
	POWER SUPPLY		CONDUIT TRENCHED
	SIGNAL HEAD (EXISTING)		TYPE C MAST ARM B BASE
	PUSH BUTTON DETECTOR		6 X 6 LOOP DETECTOR
	PREFORMED PULL BOX TYPE 1		6 X 15 LOOP DETECTOR
	EXISTING PULL BOX		30 X 6 LOOP DETECTOR
	PULL BOX TYPE 1		PEDESTRIAN SIGNAL HEAD
	PULL BOX TYPE 2		

THIS PROJECT INVOLVES ADDING PEDESTRIAN SIGNAL PEDESTAL POLES WITH PUSHBUTTONS FOR THE NORTH SOUTH CROSSING OF THE EASTBOUND I-70 ENTRANCE RAMP. THE SIGNAL CONTROL DOES NOT INCLUDE THE CHANNELIZED RIGHT TURN LANE FOR NORTHBOUND VEHICLES.

POLE TYPICAL
SEE MODOT STD. 902.00

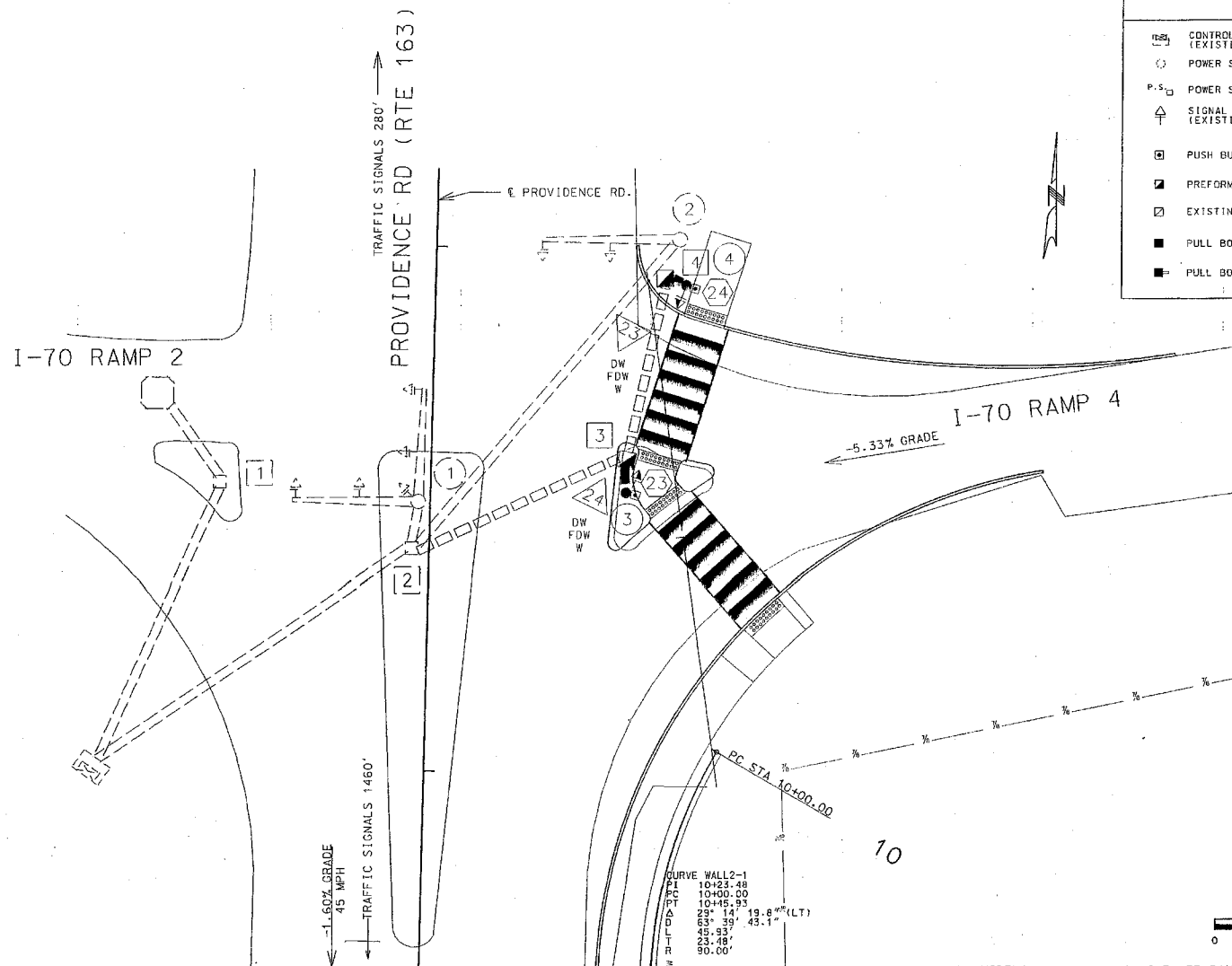


SCALE
0 10 20 30

CITY of COLUMBIA		
NON-MOTORIZED TRANSPORTATION IMPROVEMENTS		
NORTH PROVIDENCE (RTE 163) PEDWAY IMPROVEMENTS BUSINESS LOOP 70 - VANDIVER DR.		
PROJ. NO.: 10-12-12	DATE: 10-12-12	SCALE: 1"=10'
DESIGNED BY: J.B.	CHECKED BY: J.B.	
Sheet 32 of 37 SIGNAL IMPROVEMENTS		

PROVIDENCE (RTE 163) AT I-70 EB RAMPS 2 & 4

INTERSECTION



EFFECTIVE: 09/08/2009



POST NUMBER	PULL BOX NUMBER	LOCATION			BASE												PULL BOX												POST																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
		APPROACH	STATION	OFFSET	A				F				C	CONCRETE* (CU. YDS.)	PREFORMED		CONCRETE		DRAIN TYPE*	TOP MOUNT POST	TYPE C & CL												TYPE B & BL																LUMINAIR BRACKET ARM*																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
					ARM LENGTH	SIGNAL SPACING	SIGNAL SPACING	ARM LENGTH	LEFT ARM E						RIGHT ARM K						INCLUDED ANGLE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
									SIGNAL SPACING	SIGNAL SPACING	SIGNAL SPACING	SIGNAL SPACING			SIGNAL SPACING	SIGNAL SPACING																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
																	A	A				A	A	B	C	D	D	E	E	E	E	F	G	H	H	F	G	H	H	L	M	N	N	L	M	N	N																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
1		CONTROLER	AS REQ'D																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															

SIGNAL HEADS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
SPAN NUMBER	POST NUMBER	FACE NUMBER	LUMINAIRE 1500 SODIUM	INDICATIONS *																VISORS *		LOUVERS *		BACKPLATE*		BRACKET*		ONE-FACE SECTION										TWO-FACE SECTIONS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
				12" LENS CONVENTIONAL												COUNT DOWN		12" LENS OPTICAL LIMITING				12" LENS	PED.	LENSES					TYPE		1-					3-					4-					5-					11-					33-					34-					35-					44-					45-																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
				R	Y	L	W	U	V	P	G	S	L	R	R	Y	L	W	U	V	P			G	S	L	R	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
				1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6			7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
	3	24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					

SUBTOTAL OPTICALLY LIMITED
SUBTOTAL CONVENTIONAL
SUBTOTAL COMBINATION OL & CONV
TOTAL OPTICALLY LIMITED
TOTAL CONVENTIONAL
TOTAL COMBINATION OL & CONV

REMARKS

ALL LENGTHS AND SPACINGS ARE IN FEET UNLESS OTHERWISE INDICATED.
* * ITEMS FOR WHICH SEPARATE PAYMENT WILL NOT BE MADE.
*** SEE STANDARD PLANS 902.10 AND 902.30 FOR CONCRETE REQUIREMENTS ON BASES.
**** USE D3-16 FOR ONE LINE. USE D3-18 FOR TWO LINE.
SIGNAL STRUCTURES WHICH WILL EXCEED THE DIMENSION LIMITS SHOWN ON STANDARD PLAN SHEETS IN SECTION 902 AND ANY OTHER INSTALLATION WHERE THE DETAILS OF CONSTRUCTION ARE NOT FURNISHED IN THE CONTRACT PLANS, SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER IN ACCORDANCE WITH THE 2001 AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, 4TH EDITION, AND LATEST INTERIMS. THE STRUCTURE SHALL BE DESIGNED AS IMPORTANCE CATEGORY 1 FOR FATIGUE WITH A 50-YEAR DESIGN LIFE. THE CONTRACTOR SHALL SUBMIT A SET OF SHOP DETAIL DRAWINGS INCLUDING WELD PROCEDURE SPECIFICATIONS AND DESIGN COMPUTATIONS FOR MDOT RECORDS AND REFERENCE. THE SUBMITTED DRAWINGS AND CALCULATIONS SHALL BE SIGNED AND SEALED IN ACCORDANCE WITH THE LAWS RELATING TO ARCHITECTS AND PROFESSIONAL ENGINEERS (CHAPTER 327, RSMG.), AND SHALL INCLUDE A TITLE BLOCK OR SUMMARY SHEET WHICH LISTS AND CERTIFIES THAT THE PRODUCT MEETS ALL OF THE SPECIFIED DESIGN CRITERIA.

SIGNS				TOTAL AREA EACH SIGN (SQ. FT.)	
QUANTITY	MUTCD SIGN NUMBER	SIZE (INCHES)	AREA (SQ. FT.)		
1	R10-10R	24 X 30	5.0		
1	R10-10R	24 X 30	5.0		
1	R3-5L	30 X 36	7.5		
1	R3-5R	30 X 36	7.5		
1	R3-5S	30 X 36	7.5		
1	R3-6L	30 X 36	7.5		
1	R3-6R	30 X 36	7.5		
1	R3-2	24 X 24	4.0		
1	R3-1	24 X 24	4.0		
1	R3-3	24 X 24	4.0		
1	R10-5	24 X 30	5.0		
1	R10-12	24 X 30	5.0		
1	D3-16***	VAR. X 18			
1	D3-18***	VAR. X 18			
2	R10-3E	9 X 12	0.9375	1.875	
1	R10-11A	24 X 30	5.0		
1	R10-15	60 X 30	12.5		
SUBTOTAL AREA ITEM NO. 903-50.66				1.875	
TOTAL AREA ITEM NO. 903-50.66				1.875	

LEGEND
T - TOP MOUNT
S - SIDE MOUNT
C - SPANWIRE MOUNT
B - MAST ARM MOUNT



NON-MOTORIZED TRANSPORTATION IMPROVEMENTS
NORTH PROVIDENCE (RTE 163)
PEDWAY IMPROVEMENTS
BUSINESS LOOP 70 - VANDIVER DR.

PROJ. NO.: DATE: 10-12-12 SCALE:
DESIGNED BY: CHECKED BY:
CT JRE



PROVIDENCE (RTE 163) AT 1-70 EB RAMP 2 & 4
INTERSECTION

D-37A

Sheet 33 of 37

SIGNAL IMPROVEMENTS

c:\pwworking\lomo\d0614027\NL_PROV_Signal_D3-37A.dgn 11:47:57 AM 12/17/2012

INCLUDES 5% FOR SNAKING



NORTH PROVIDENCE (RTE 163)
PEDWAY IMPROVEMENTS
BUSINESS LOOP 70 - VANDIVER DR.

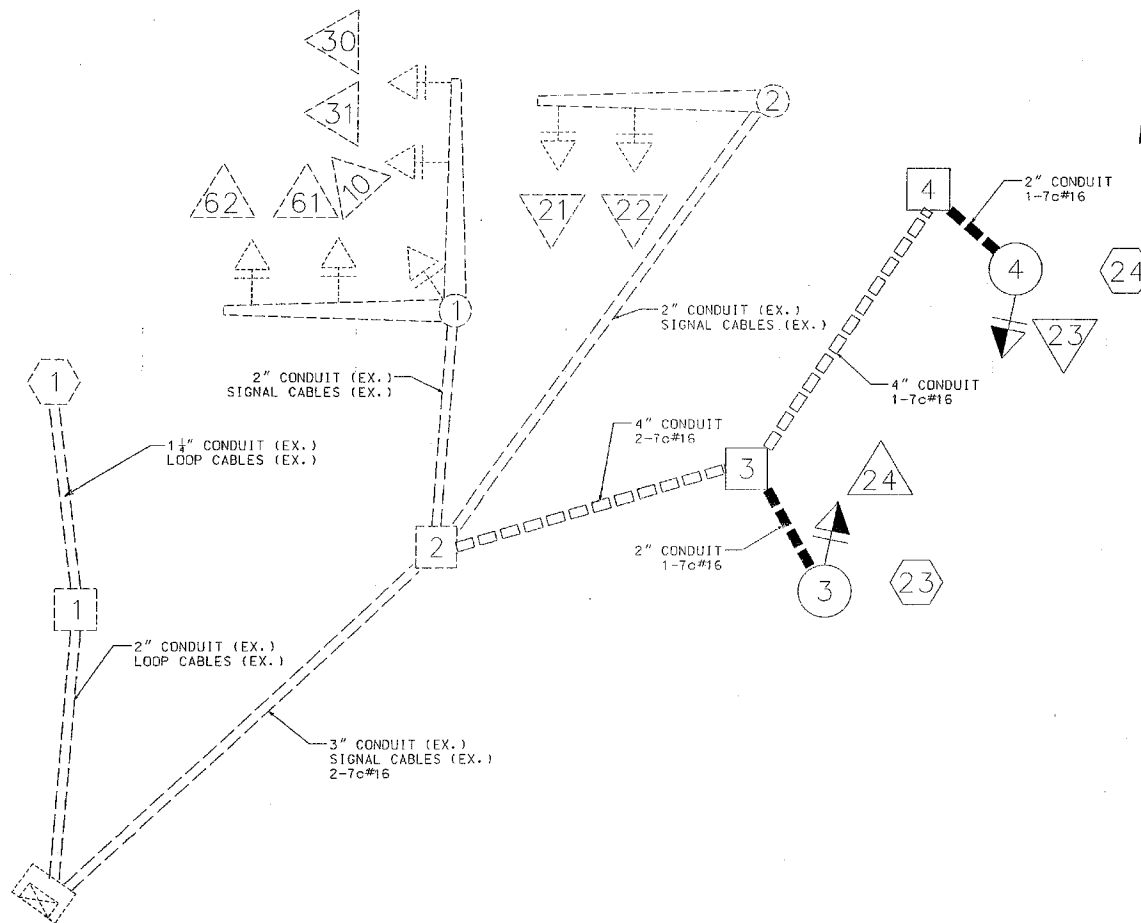
PROJ. NO.: _____	DATE: <u>10-12-12</u>	SCALE: _____
FED'L PROJ. #: <u>CP-9999 (S17)</u>	DESIGNED BY: <u>CT</u>	CHECKED BY: <u>JKE</u>

D-37B

Sheet 34 of 37 SIGNAL IMPROVEMENTS

c:\pwworking\omo\d0614027\N_PROV_Signal_03-D37C.dan 3:48:52 PM 10/11/2012

WIRING DIAGRAM



LEGEND

- 3" CONDUIT CONTAINING CABLE WITH SIZE
- CABLE
- X-Xc MULTI-CONDUCTOR CABLE #12 AWG UNLESS OTHERWISE INDICATED
- LIC #14 AWG DETECTOR LEAD-IN CABLE (2C TWISTED SHIELDED)
- [X] PULL BOX WITH NUMBER
- [X] POST WITH NUMBER
- [X] POST WITH MAST ARM
- [X] POST WITH MAST ARM AND LUMINAIRE
- [X] DETECTOR WITH NUMBER
- [X] SIGNAL HEAD WITH NUMBER
- [X] SIGNAL CONTROLLER
- [X] POWER SUPPLY
- [X] LIGHTING CONTROLLER

OFFICIAL 66-01-01



NON-MOTORIZED TRANSPORTATION
IMPROVEMENTS
NORTH PROVIDENCE (RTE 163)
PEDWAY IMPROVEMENTS
BUSINESS LOOP TO VANDIVER DR.

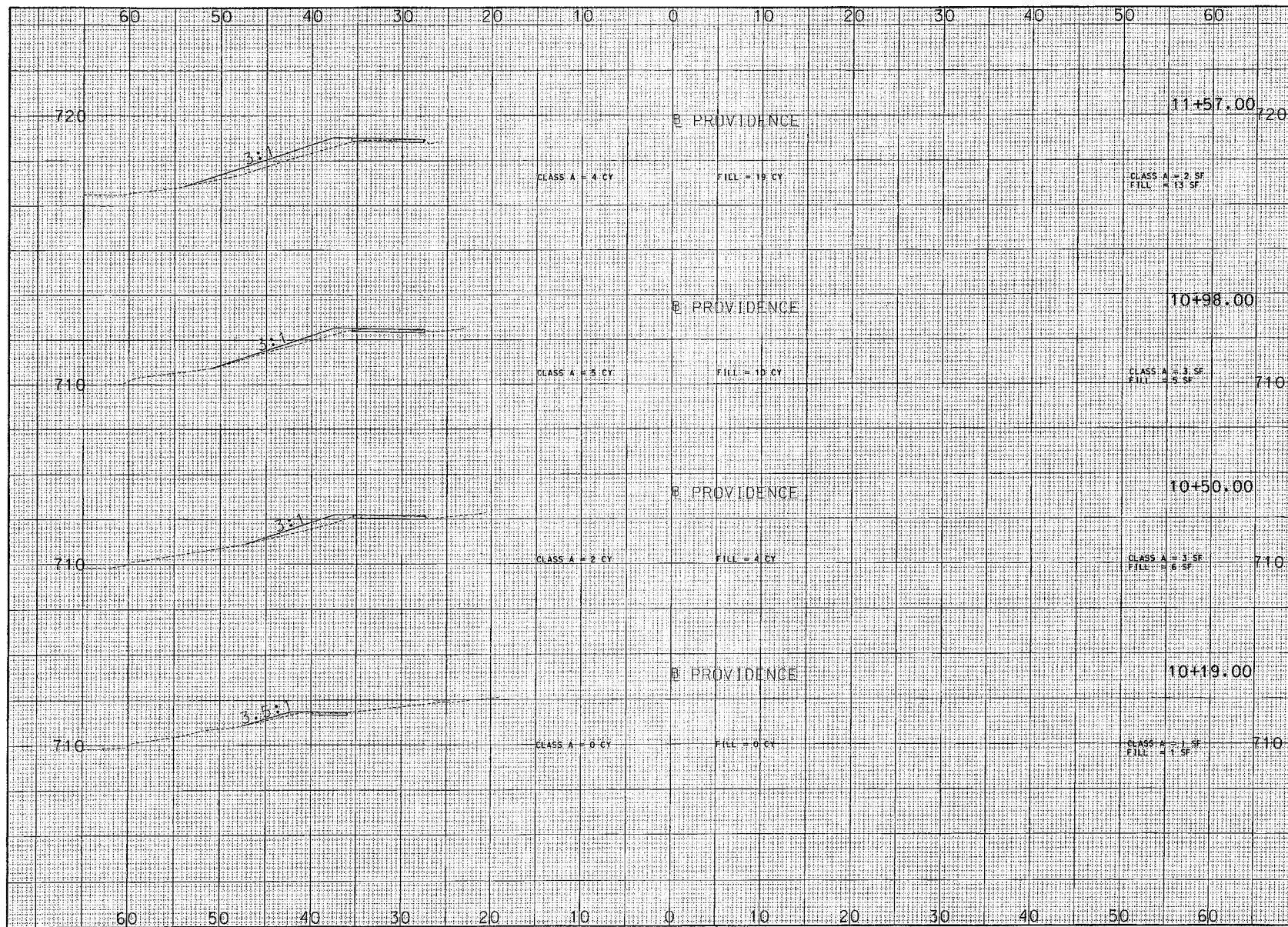
PROJ. NO. 10-12-02 DATE 10-12-02 SCALE: N.T.S.
DESIGNED BY: JLB CHECKED BY: TR

PROVIDENCE (RTE 163) AT I-70 EB RAMPS 2 & 4
INTERSECTION

D-370

Sheet 36 of 37

SIGNAL IMPROVEMENTS

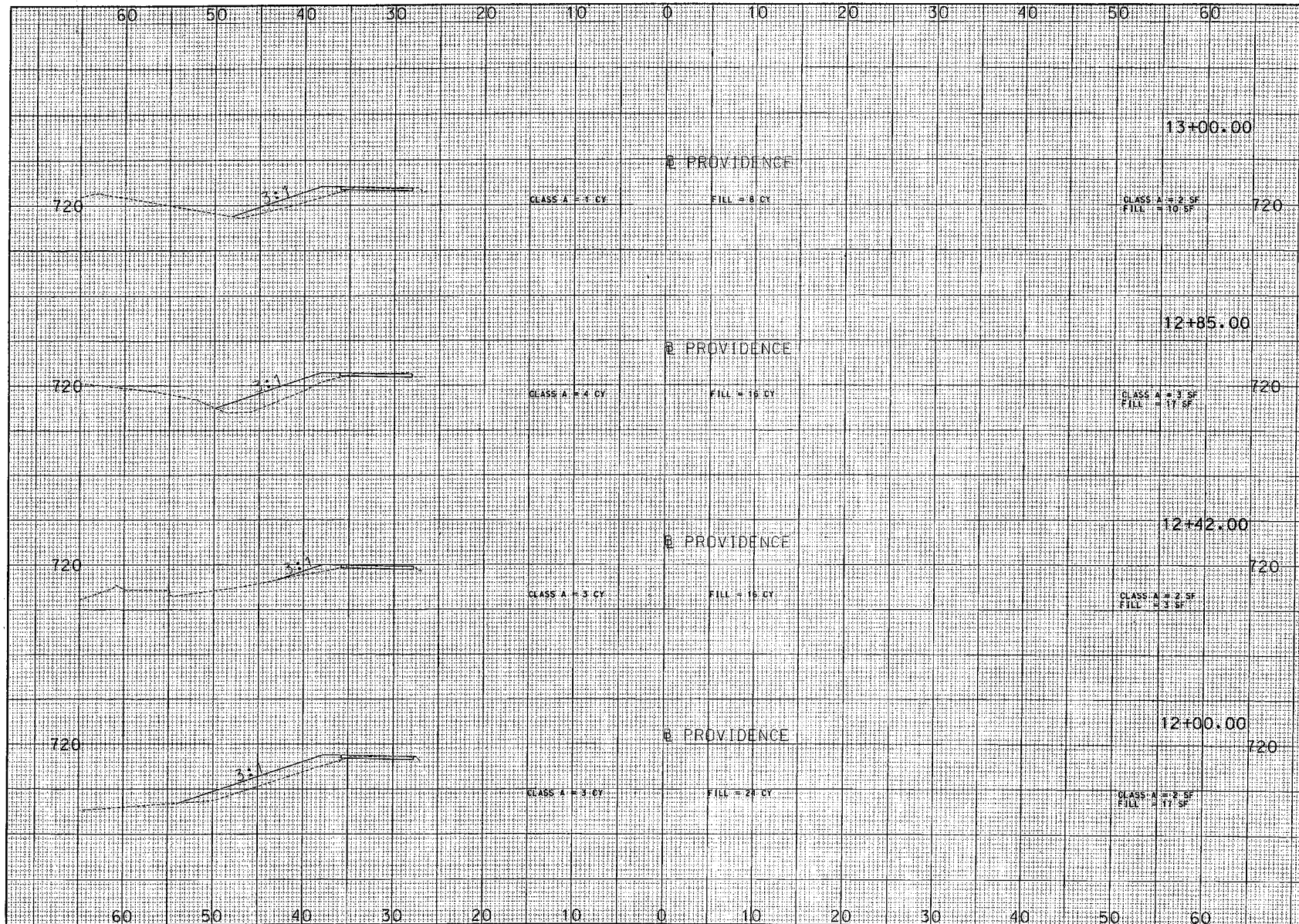


DATE	12/31/05
REVISION	
BY	
CHECKED	
DESIGNED	
IN CHARGE	
PROJECT NO.	STP-2101 (504)
PROJECT NAME	WEST: CP-899 (311) EAST

HDR
 HDR Engineering Inc.
 120 S. 21st Street, Suite 400
 Pawtucket, RI 02860-2287
 401-422-4300
 Certificate of Authority 00085

NORTH PROVIDENCE PEDWAY
CROSS SECTIONS

DATE	12/31/05
DESIGN	TJR
CHECKED	
IN CHARGE	
PROJECT NO.	STP-2101 (504)
PROJECT NAME	WEST: CP-899 (311) EAST
SHEET	1 OF 11



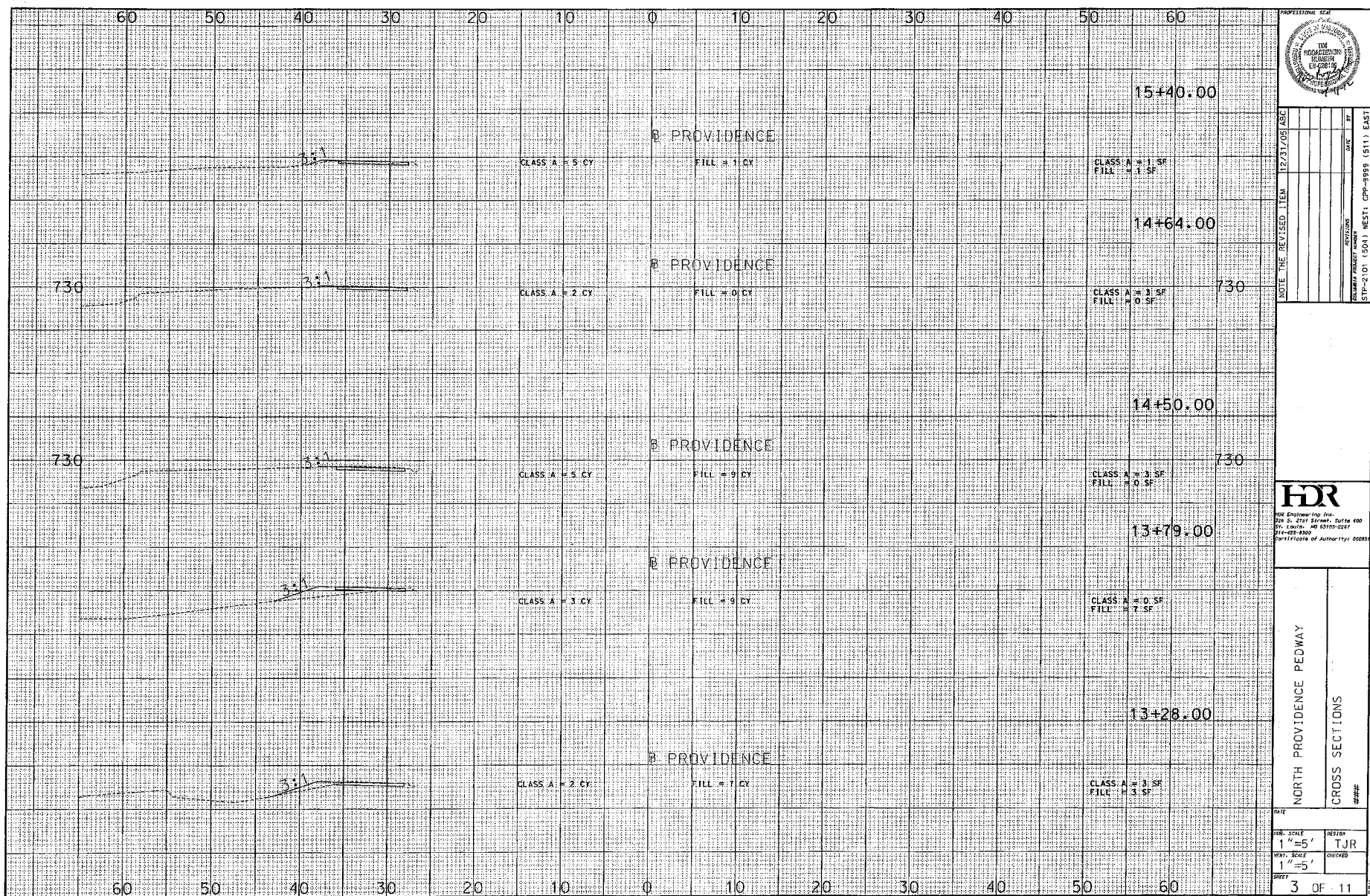
PROJECT NO.	12731/09/ABC
DATE	
BY	
CHECKED	
APPROVED	

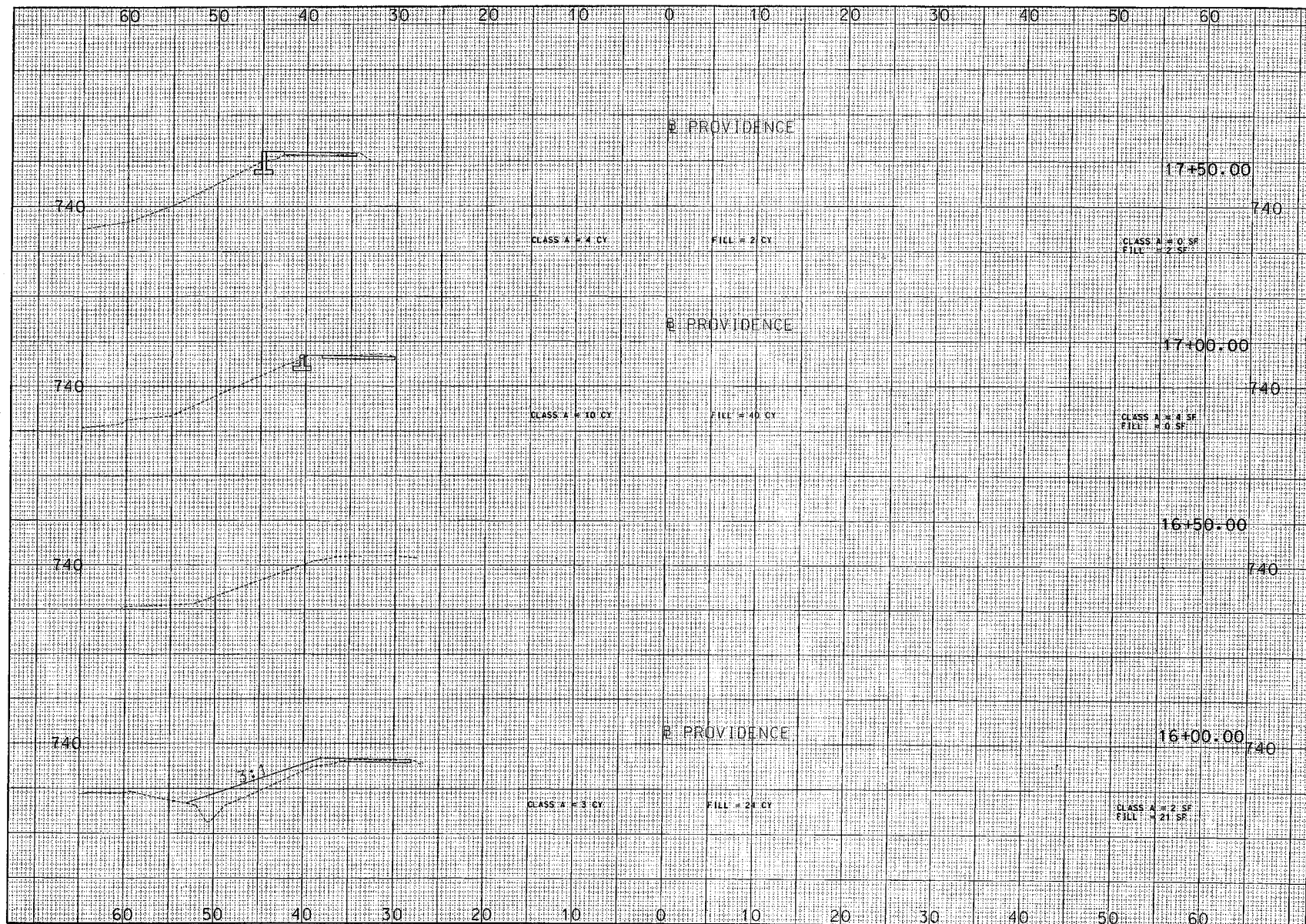
NOTE THE REVISED ITEM 12731/09/ABC



NORTH PROVIDENCE PEDWAY
CROSS SECTIONS

DATE	12/31/09
SCALE	1"=5'
DESIGN	TJR
REV. NO.	1
CHECKED	
SHEET	2 OF 11





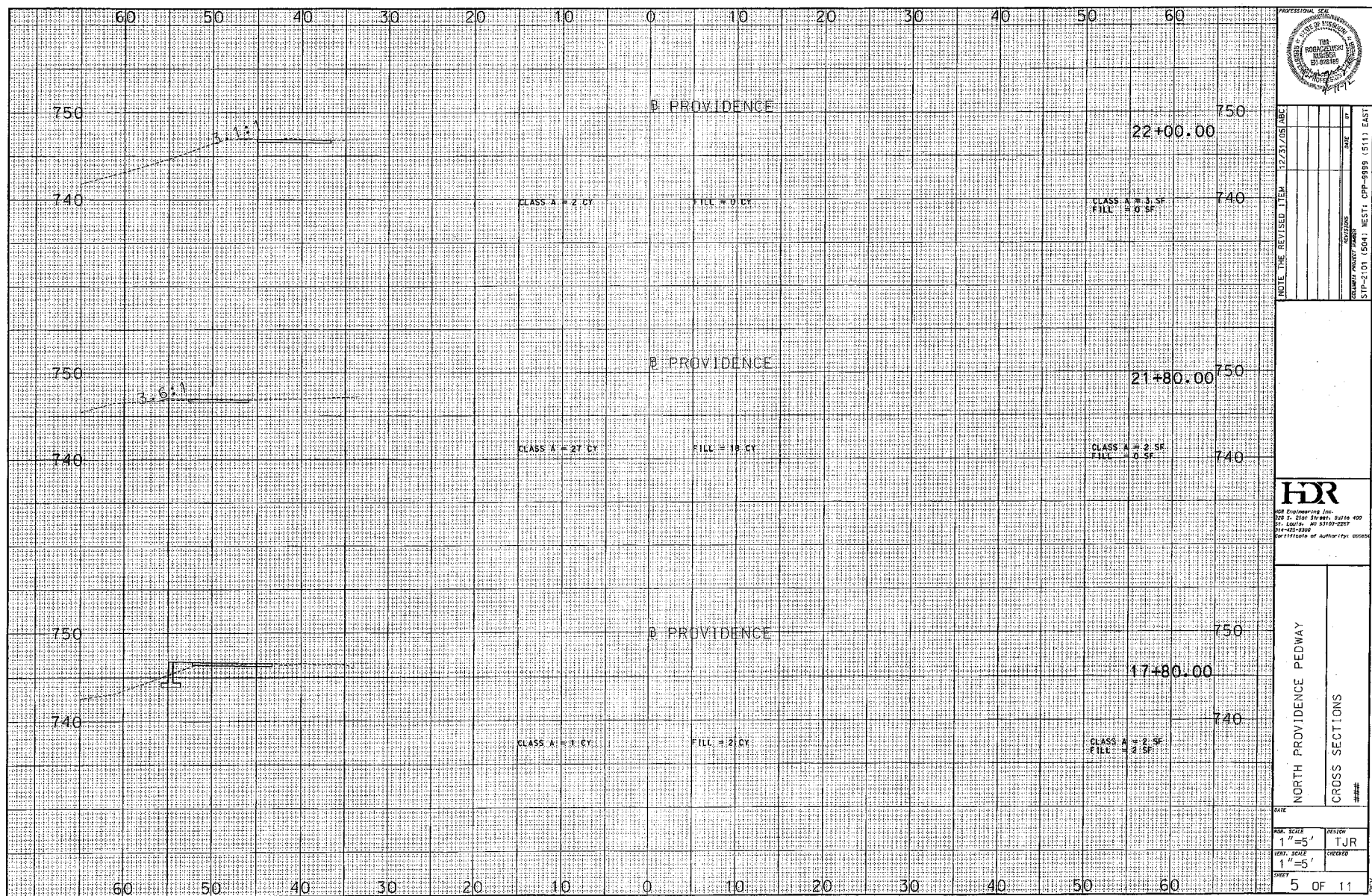
PROFESSIONAL SEAL	DATE	BY
NOTE THE REVISED ITEM	12/31/09	AWG
STP-2101 (304) WEST: CPT-8889 (451) EAST		

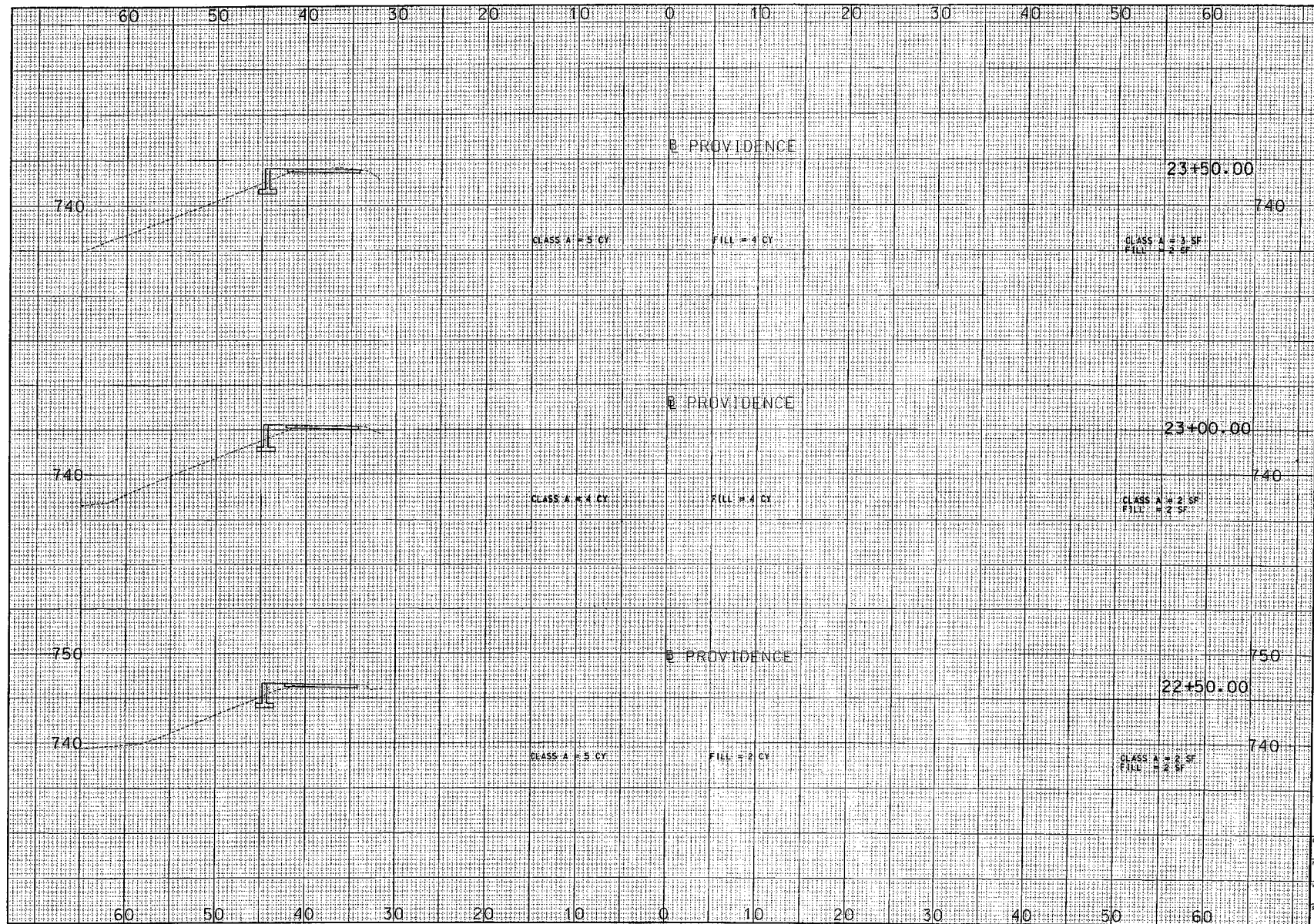
HDR
HDR Engineering Inc.
200 S. Main Street, Suite 400
Providence, RI 02903-1000
401-851-1000
FAX 401-851-1001
www.hdr.com

NORTH PROVIDENCE PEDWAY

CROSS SECTIONS

DATE	DESIGN	CHECKED
12/31/09	TJR	
12/31/09		
4 OF 11		



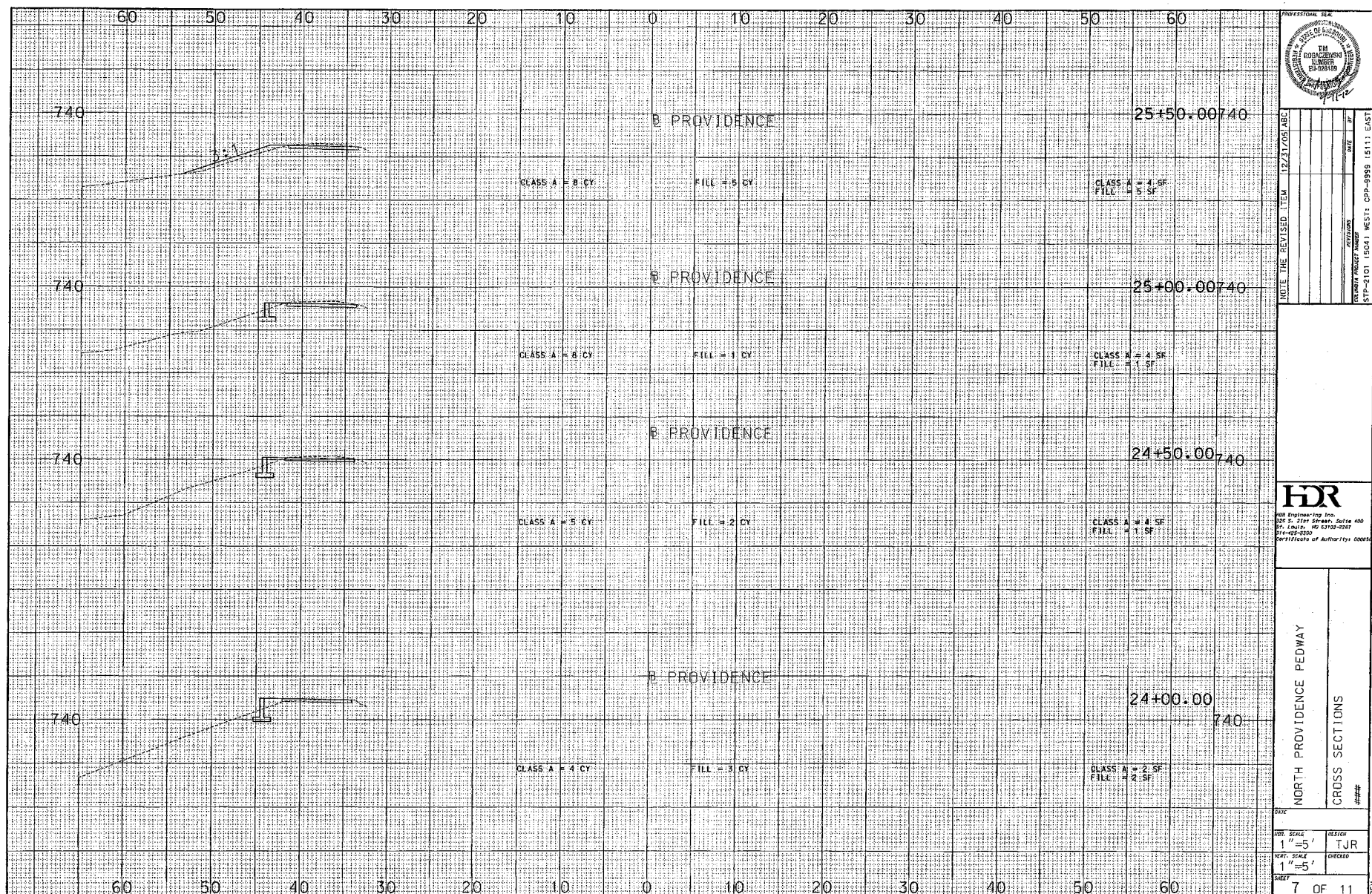


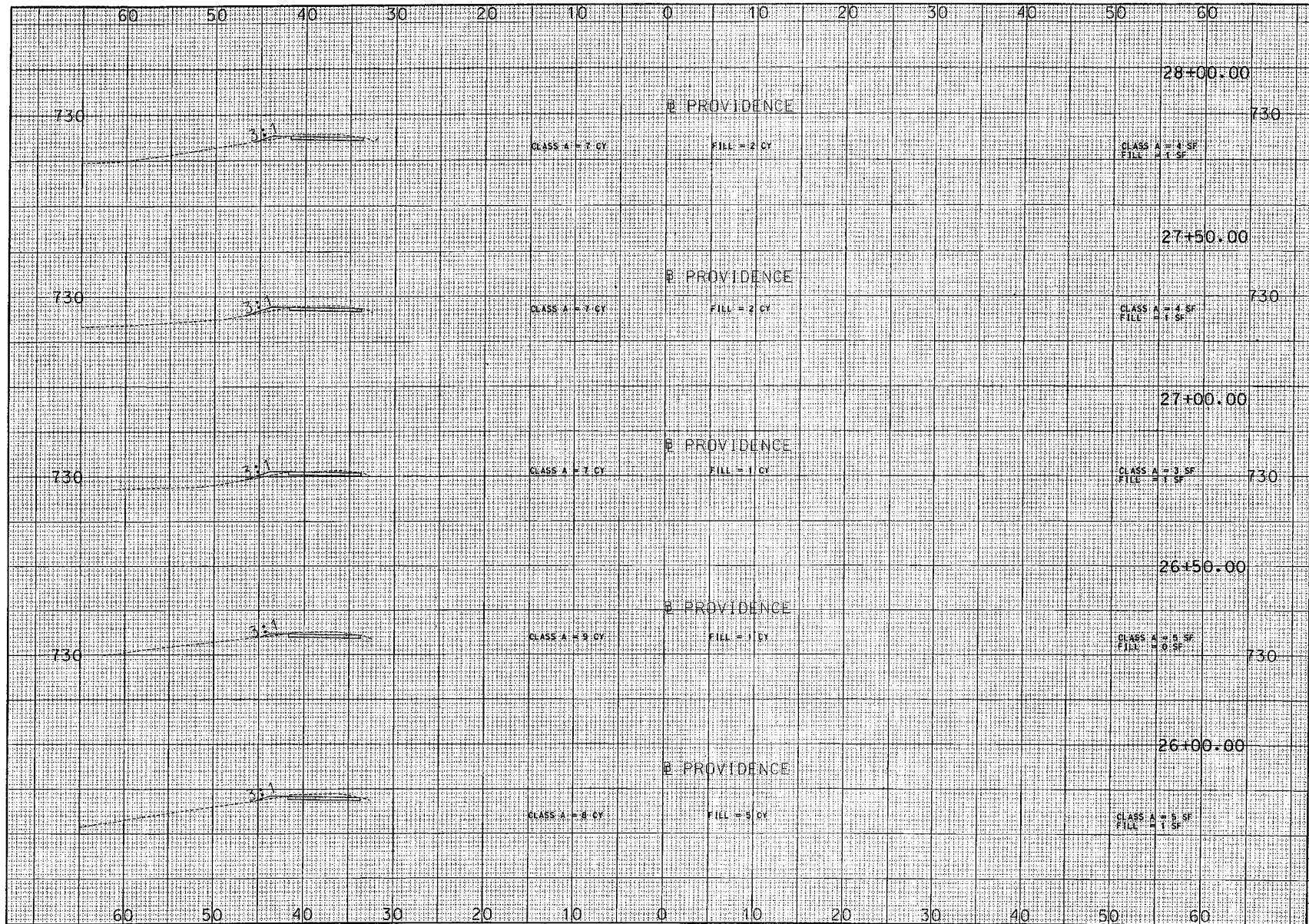
DATE	12/31/05
PROJECT	STP-2101 (504) WEST: CPP-9999 (511) EAST
REVISION	
DATE	
BY	
CHECKED	
DATE	

HDR
HDR Engineering Inc.
300 S. First Street, Suite 400
Providence, RI 02903-2057
401-455-8300
Certificate of Authority: 00089

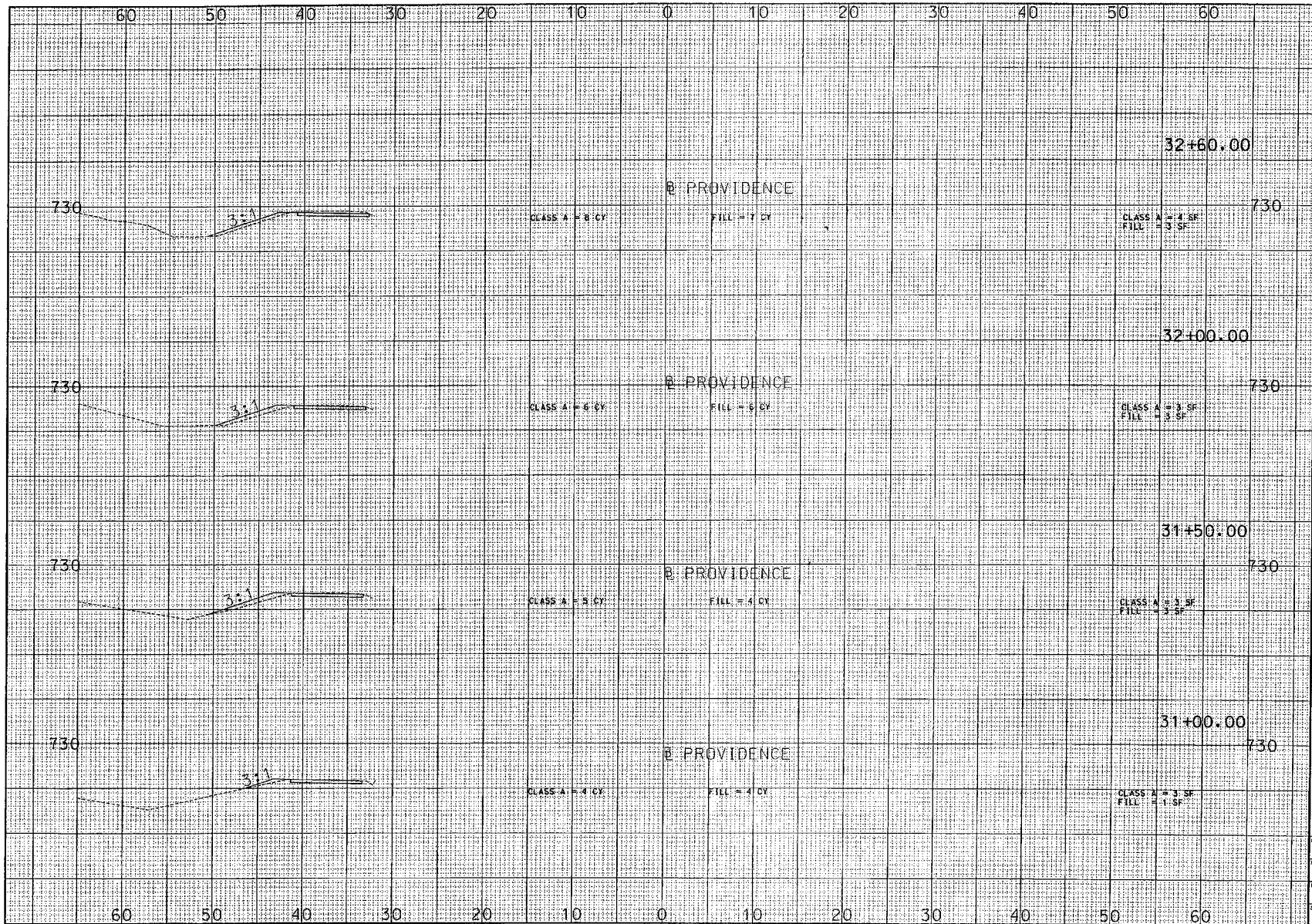
NORTH PROVIDENCE PEDWAY
CROSS SECTIONS
###

DATE	12/31/05
DESIGN	TJR
CHECKED	
DATE	
BY	
CHECKED	
DATE	

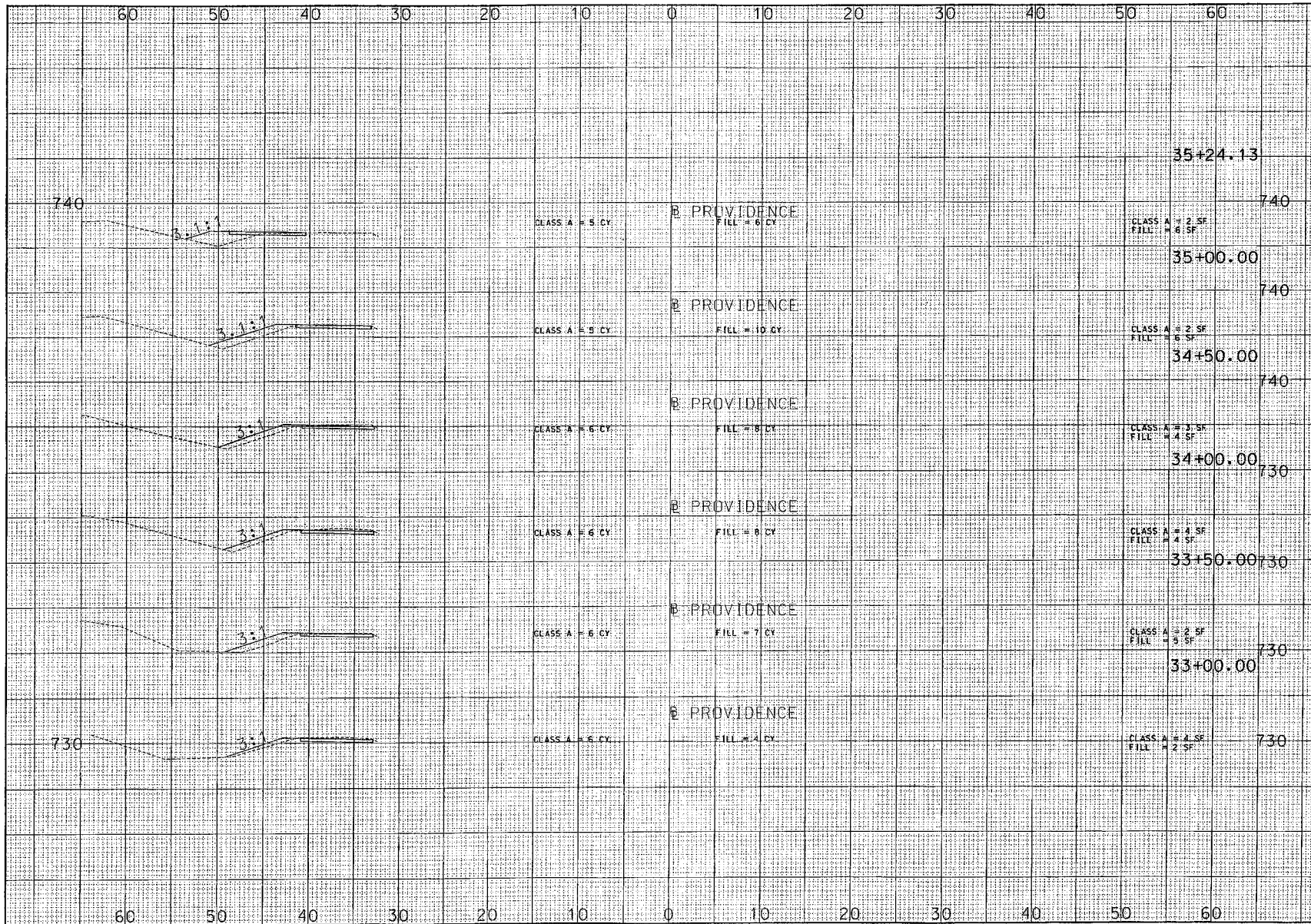




DATE	12/31/05
PROJECT	STP-2101 (504) WEST OPP-9999 (511) EAST
REVISION	
HDR HDR Engineering Inc. 200 S. 31st Street, Suite 400 St. Louis, MO 63103-2627 Certificate of Authority: 00086	
NORTH PROVIDENCE PEDWAY CROSS SECTIONS ###	
HORIZ. SCALE 1" = 5' VERT. SCALE 1" = 5' SHEET 8 OF 11	DESIGN TJR CHECKED DATE



DATE	12/31/09 ABC
REVISION	
PROJECT NUMBER	STP-2101 (504) WEST: CIP-9999 (511) EAST
NORTH PROVIDENCE PEDWAY	
CROSS SECTIONS	
###	
DATE	10 OF 11
REV. SCALE	DESIGN
1" = 5'	TJR
VERT. SCALE	CHECKED
1" = 5'	



PROFESSIONAL SEAL

12/31/05 ABC

DATE

NOTE THE REVISED ITEM

PROJECT: NORTH PROVIDENCE PEDWAY

SECTION: CROSS SECTIONS

SHEET: 11 OF 11

DATE: 11/05/05

SCALE: 1"=5'

CHECKED: TJR

DESIGNED: TJR

BY: TJR

FOR: HDR

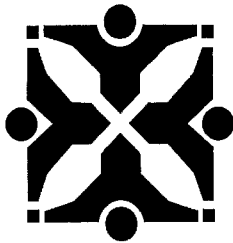
FOR Engineering Inc.

ONE E. 21st Street, Suite 400

St. Louis, MO 63103-3257

14-02-000

Certificate of Authority: 00085



Source: Public Works

Agenda Item No:

To: City Council
From: City Manager and Staff

Council Meeting Date: May 6, 2013

Re: Sidewalk Improvements Agreement with MHTC for North Providence Pedway from Business Loop 70 to Vandiver Drive

EXECUTIVE SUMMARY:

Staff has prepared for Council consideration an ordinance authorizing the City Manager to execute a Sidewalk Improvements Agreement with Missouri Highways and Transportation Commission (MHTC) relating to the North Providence Road Pedway project, which extends from Business Loop 70 to Vandiver Drive. This agreement is required for all local projects within MoDOT right-of-way, and outlines the requirements of the City which include maintenance of the new pedway.

DISCUSSION:

The North Providence Road Pedway project, from Business Loop 70 to Vandiver Drive, is part of the Non Motorized Transportation (GetAbout) program. The project includes construction of an 8-foot wide sidewalk at the back of the curb on the east side of Providence Road from Business Loop 70 to Vandiver Drive. In addition, the signalized intersections at Providence Road and Vandiver Drive, and at Providence and the I-70 ramps, will be upgraded to include pedestrian signals. The project ties in on the south to the recently completed work at Providence Road and Business Loop 70, and on the north with the Providence Road reconstruction project completed in 2010, from Vandiver Drive to Blue Ridge Road. Staff anticipates construction to be completed by the end of 2013. Since the improvements will be constructed in MoDOT right-of-way, the agreement with MHTC outlining the City's responsibilities, with regard to this project, is required.

FISCAL IMPACT:

There is no fiscal impact associated with this agreement.

VISION IMPACT:

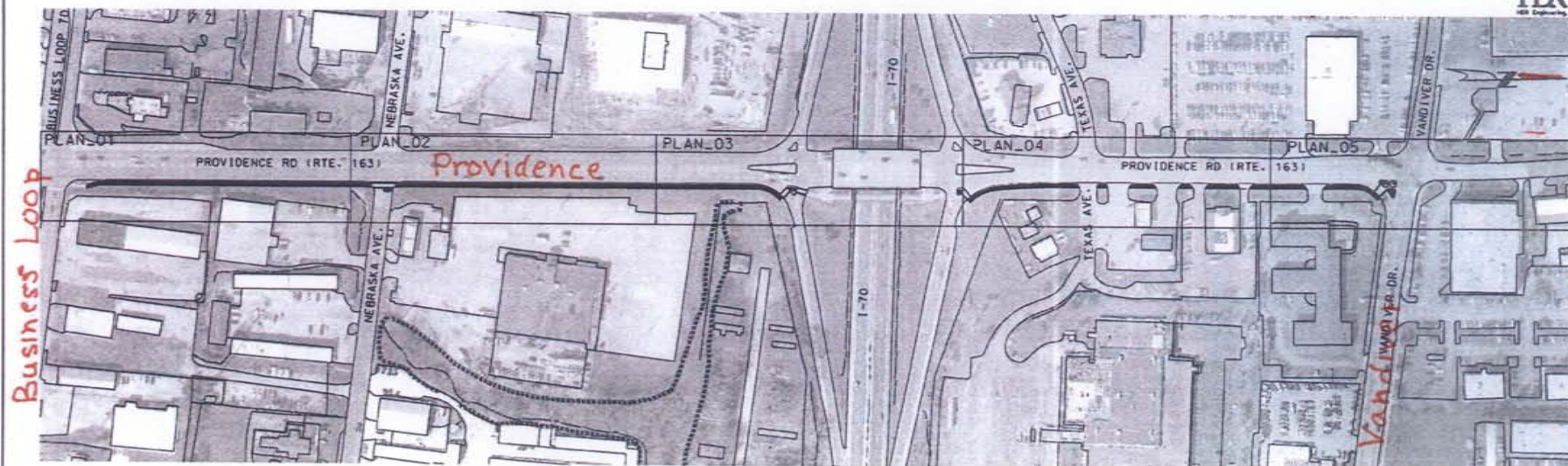
<http://www.gocolumbiamo.com/Council/Meetings/visionimpact.php>

None

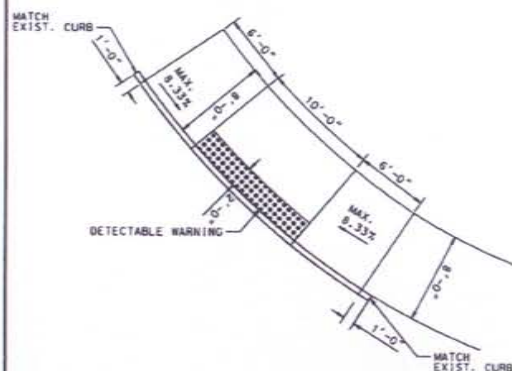
SUGGESTED COUNCIL ACTIONS:

Approval of the ordinance authorizing the City Manager to execute the Sidewalk Improvements Agreement with MHTC.

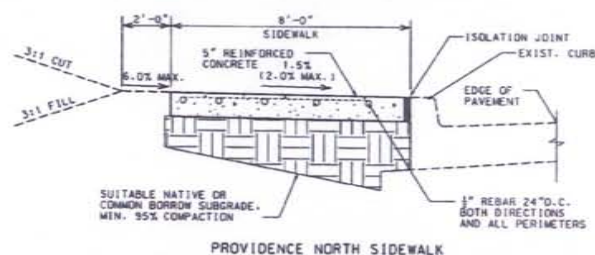
FISCAL and VISION NOTES:					
City Fiscal Impact Enter all that apply		Program Impact		Mandates	
City's current net FY cost	\$0.00	New Program/ Agency?	No	Federal or State mandated?	No
Amount of funds already appropriated	\$0.00	Duplicates/Expands an existing program?	No	Vision Implementation impact	
Amount of budget amendment needed	\$0.00	Fiscal Impact on any local political subdivision?	No	Enter all that apply: Refer to Web site	
Estimated 2 year net costs:		Resources Required		Vision Impact?	No
One Time	\$0.00	Requires add'l FTE Personnel?	No	Primary Vision, Strategy and/or Goal Item #	
Operating/ Ongoing	\$0.00	Requires add'l facilities?	No	Secondary Vision, Strategy and/or Goal Item #	
		Requires add'l capital equipment?	No	Fiscal year implementation Task #	



TYPICAL SECTION



CURB RAMP DETAIL



PROVIDENCE NORTH SIDEWALK

NON-MOTORIZED TRANSPORTATION IMPROVEMENTS		
PROVIDENCE (RTE 163) NORTH PEDWAY IMPROVEMENTS		
BUSINESS LOOP 70 - VANDIVER DR.		
PROJ. NO. 1	DATE: 6/26/2018	SCALE:
DESIGNED BY: J.E.	CHECKED BY: J.E.	
GENERAL PLAN & TYPICAL SECTION		