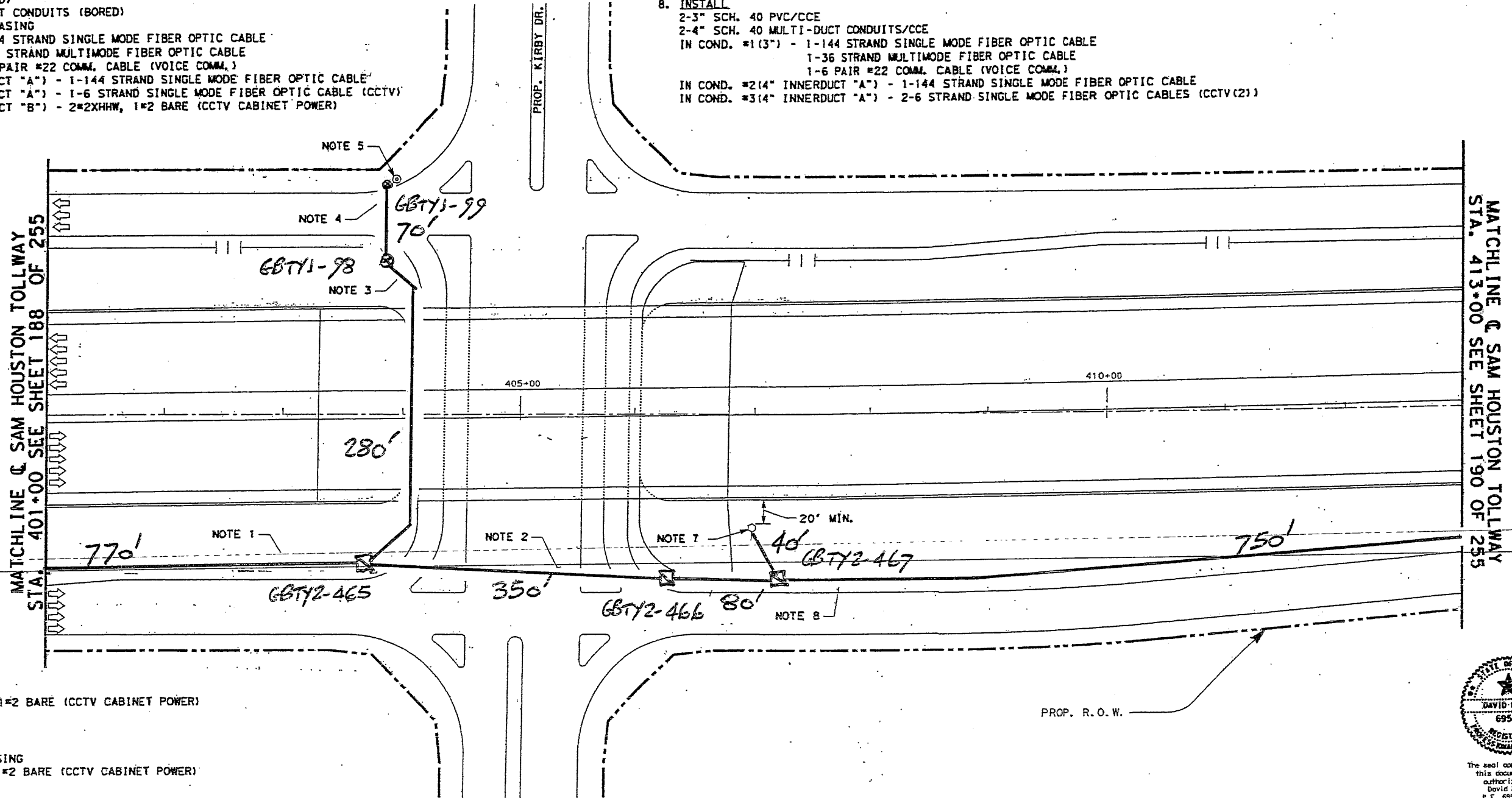


1. INSTALL
2-3" SCH. 40 PVC/CCE
2-4" SCH. 40 MULTI-DUCT CONDUITS/CCE
IN COND. #1(3") - 1-144 STRAND SINGLE MODE FIBER OPTIC CABLE
1-36 STRAND MULTIMODE FIBER OPTIC CABLE
1-6 PAIR #22 COMM. CABLE (VOICE COMM.)
IN COND. #2(4" INNERDUCT "A") - 1-144 STRAND SINGLE MODE FIBER OPTIC CABLE
IN COND. #3(4" INNERDUCT "A") - 1-6 STRAND SINGLE MODE FIBER OPTIC CABLE (CCTV)
2. INSTALL
2-3" SCH. 80 PVC (BORED)
2-4" SCH. 80 MULTI-DUCT CONDUITS (BORED)
IN NEW SCH. 40 STEEL CASING
IN COND. #1(3") - 1-144 STRAND SINGLE MODE FIBER OPTIC CABLE
1-36 STRAND MULTIMODE FIBER OPTIC CABLE
1-6 PAIR #22 COMM. CABLE (VOICE COMM.)
IN COND. #2(4" INNERDUCT "A") - 1-144 STRAND SINGLE MODE FIBER OPTIC CABLE
IN COND. #3(4" INNERDUCT "A") - 1-6 STRAND SINGLE MODE FIBER OPTIC CABLE (CCTV)
(4" INNERDUCT "B") - 2*2XHHW, 1#2 BARE (CCTV CABINET POWER)

7. INSTALL (STA. 407+00)
CCTV CAMERA #65
CCTV CAMERA SUPPORT POLE & FOUNDATION (55')
CCTV CABINET
CCTV FIELD EQUIPMENT
FIBER OPTIC RS-232 DATA MODEM
VIDEO FIBER OPTIC TX (S/M)
3-2" SCH. 80 PVC TO GRD. BOX
IN COND. #1 - 1-6 STRAND SINGLE MODE FIBER OPTIC CABLE (CCTV)
IN COND. #2 - 2*2XHHW, 1#2 BARE (CCTV CABINET POWER)
8. INSTALL
2-3" SCH. 40 PVC/CCE
2-4" SCH. 40 MULTI-DUCT CONDUITS/CCE
IN COND. #1(3") - 1-144 STRAND SINGLE MODE FIBER OPTIC CABLE
1-36 STRAND MULTIMODE FIBER OPTIC CABLE
1-6 PAIR #22 COMM. CABLE (VOICE COMM.)
IN COND. #2(4" INNERDUCT "A") - 1-144 STRAND SINGLE MODE FIBER OPTIC CABLE
IN COND. #3(4" INNERDUCT "A") - 2-6 STRAND SINGLE MODE FIBER OPTIC CABLES (CCTV(2))



3. INSTALL
2-2" SCH. 80 PVC
IN COND. #1 - 2*2XHHW, 1#2 BARE (CCTV CABINET POWER)
4. INSTALL
2-2" SCH. 80 PVC (BORED)
IN NEW SCH. 40 STEEL CASING
IN COND. #1 - 2*2XHHW, 1#2 BARE (CCTV CABINET POWER)
5. INSTALL
SERVICE POLE D-62
1-2" SCH. 80 PVC TO GRD. BOX
2*2XHHW, 1#2 BARE (CCTV CABINET POWER)
6. INSTALL
2-3" SCH. 40 PVC/CCE
2-4" SCH. 40 MULTI-DUCT CONDUITS/CCE
IN COND. #1(3") - 1-144 STRAND SINGLE MODE FIBER OPTIC CABLE
1-36 STRAND MULTIMODE FIBER OPTIC CABLE
1-6 PAIR #22 COMM. CABLE (VOICE COMM.)
IN COND. #2(4" INNERDUCT "A") - 1-144 STRAND SINGLE MODE FIBER OPTIC CABLE
IN COND. #3(4" INNERDUCT "A") - 1-6 STRAND SINGLE MODE FIBER OPTIC CABLE (CCTV)
(4" INNERDUCT "B") - 2*2XHHW, 1#2 BARE (CCTV CABINET POWER)



The seal appearing on this document was authorized by David Muñoz, P.E. 69516, on 06-10-2002

David Muñoz, P.E.

SEE SHEET 186 OF 255 FOR LEGEND

SCALE: 1" = 100'

TEXAS DEPARTMENT OF TRANSPORTATION
BW-8 (SAM HOUSTON TOLLWAY)

COMPUTERIZED TRANSPORTATION MANAGEMENT SYSTEM LAYOUT

SHEET 189 OF 255

DATE: SC	DRAWING: ORIGINAL	DATE: NOV 01	FED. RD. DIST. NO.:	STATE:	FEDERAL AID PROJECT NO.:	HIGHWAY NO.:
CHK: KBP						

SUPER DATA

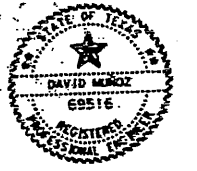
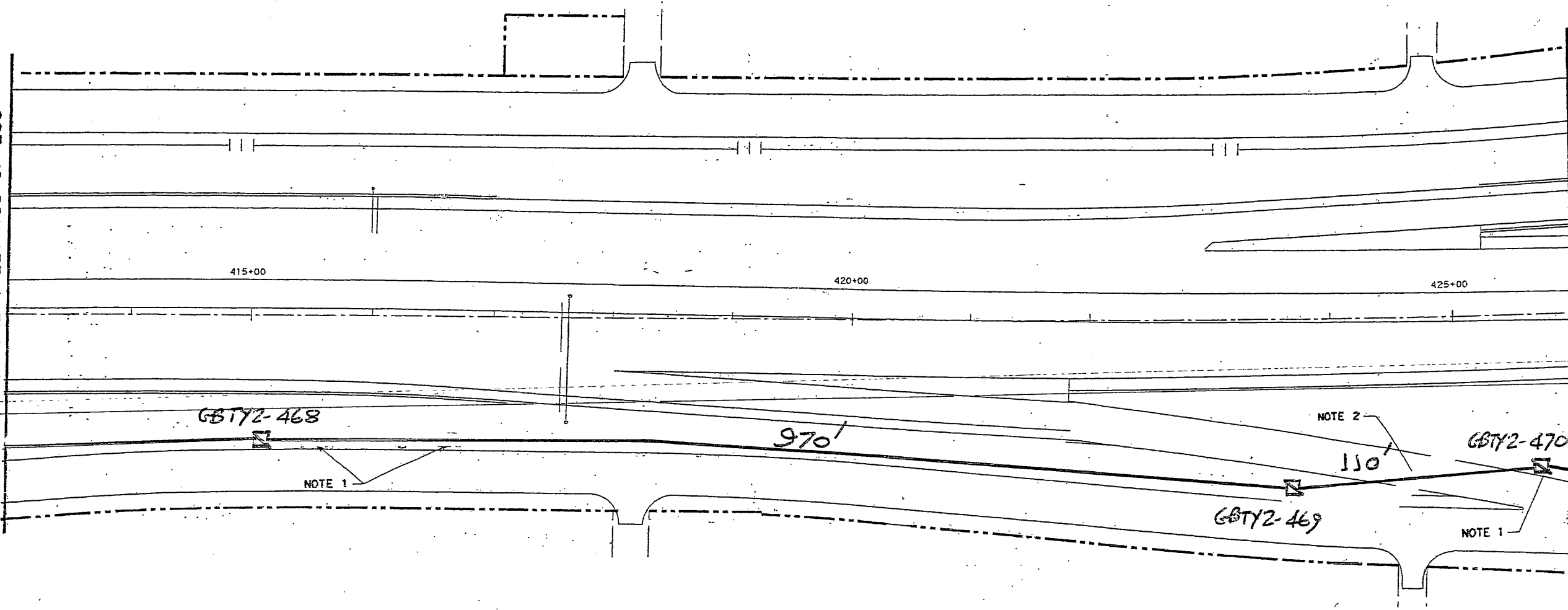
1. INSTALL
 2-3" SCH. 40 PVC/CCE
 2-4" SCH. 40 MULTI-DUCT CONDUITS/CCE
 IN COND. #1(3") - 1-144 STRAND SINGLE MODE FIBER OPTIC CABLE
 1-36 STRAND MULTIMODE FIBER OPTIC CABLE
 1-6 PAIR #22 COMM. CABLE (VOICE COMM.)
 IN COND. #2(4" INNERDUCT "A") - 1-144 STRAND SINGLE MODE FIBER OPTIC CABLE
 IN COND. #3(4" INNERDUCT "A") - 2-6 STRAND SINGLE MODE FIBER OPTIC CABLES (CCTV(2))

2. INSTALL
 2-3" SCH. 80 PVC (BORED)
 2-4" SCH. 80 MULTI-DUCT CONDUITS (BORED)
 IN NEW SCH. 40 STEEL CASING
 IN COND. #1(3") - 1-144 STRAND SINGLE MODE FIBER OPTIC CABLE
 1-36 STRAND MULTIMODE FIBER OPTIC CABLE
 1-6 PAIR #22 COMM. CABLE (VOICE COMM.)
 IN COND. #2(4" INNERDUCT "A") - 1-144 STRAND SINGLE MODE FIBER OPTIC CABLE
 IN COND. #3(4" INNERDUCT "A") - 2-6 STRAND SINGLE MODE FIBER OPTIC CABLES (CCTV(2))



MATCHLINE @ SAM HOUSTON TOLLWAY
STA. 413+00 SEE SHEET 189 OF 255

MATCHLINE @ SAM HOUSTON TOLLWAY
STA. 426+00 SEE SHEET 191 OF 255



The seal appearing on this document was authorized by David M. King, P.E. 69516, on 6-10-2002

David M. King, P.E.

SEE SHEET 186 OF 255 FOR LEGEND
 SCALE: 1" = 100'

TEXAS DEPARTMENT OF TRANSPORTATION
 BW-6 (SAM HOUSTON TOLLWAY)

© 2002 TxDOT

**COMPUTERIZED TRANSPORTATION
 MANAGEMENT SYSTEM LAYOUT**

SHEET 190 OF 255

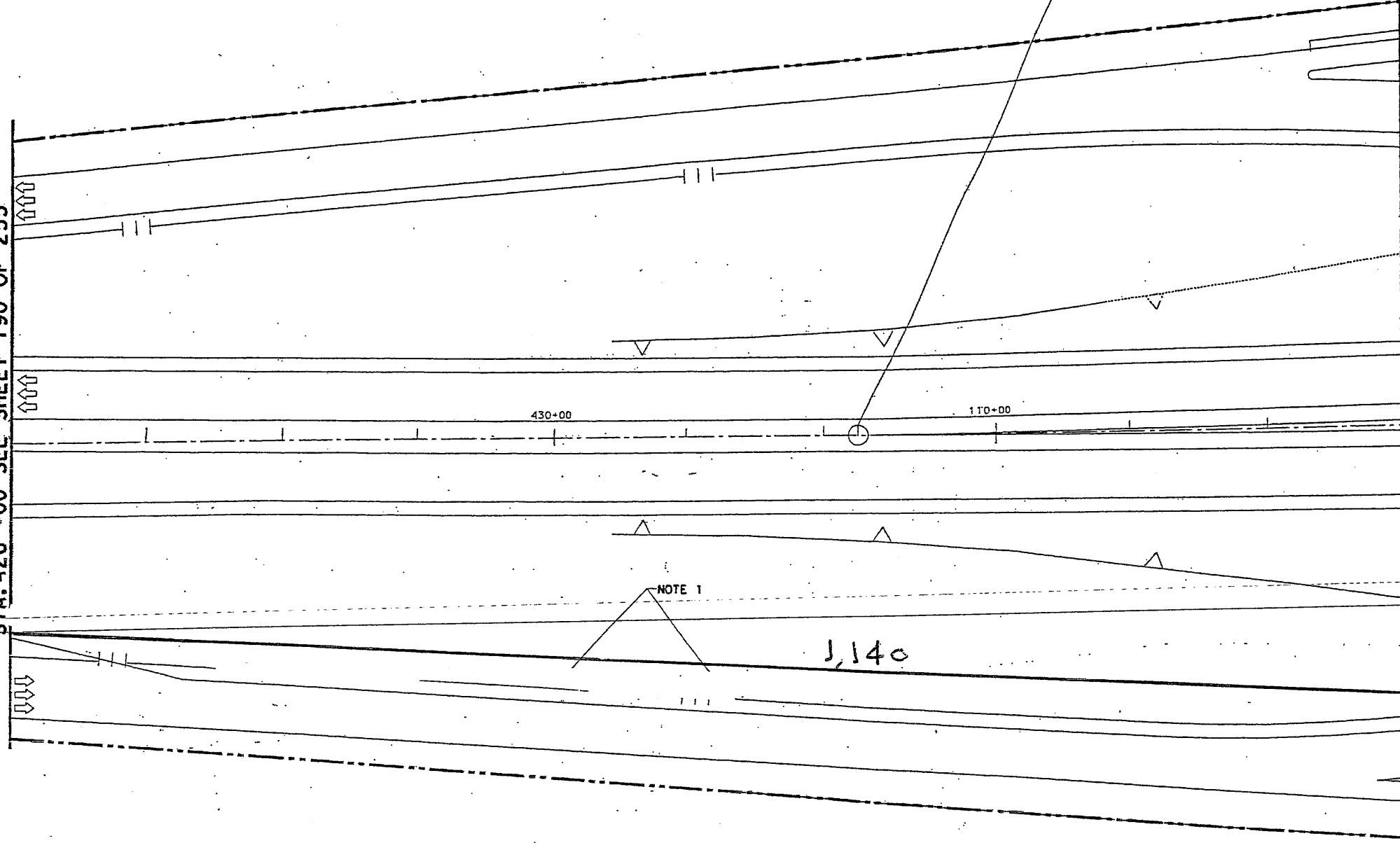
DN: SC	DRAWING	DATE	FED. RD. DIST. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.
CK: DMI	KBP	ORIGINAL	NOV 01	6 TEXAS	FU 2002(60) ETC.	BW-6

1. **INSTALL**
 2-3" SCH. 40 PVC/CCE
 2-4" SCH. 40 MULTI-DUCT CONDUITS/CCE
 IN COND. #1(3") - 1-144 STRAND SINGLE MODE FIBER OPTIC CABLE
 1-36 STRAND MULTIMODE FIBER OPTIC CABLE
 1-6 PAIR #22 COMM. CABLE (VOICE COMM.)
 IN COND. #2(4" INNERDUCT "A") - 1-144 STRAND SINGLE MODE FIBER OPTIC CABLE
 IN COND. #3(4" INNERDUCT "A") - 2-6 STRAND SINGLE MODE FIBER OPTIC CABLES (CCTV(2))

EQUATION:
 STA. 432+28.00 BK=
 STA. 109+00.00 FWD

MATCHLINE @ SAM HOUSTON TOLLWAY
 STA. 426+00 SEE SHEET 190 OF 255

MATCHLINE @ SAM HOUSTON TOLLWAY
 STA. 113+00 SEE SHEET 192 OF 255



LEGEND

- RIGHT OF WAY
- NEW CONDUIT
- EXISTING CONDUIT
- PROPOSED M.B.G.F.
- ⊙ NEW GROUND BOX: TYPE 1
- ⊙ EXISTING GROUND BOX: TYPE 1
- ⊙ NEW GROUND BOX: TYPE 2
- ⊙ EXISTING GROUND BOX: TYPE 2
- ⊙ NEW GROUND BOX: TYPE 3
- ⊙ EXISTING GROUND BOX: TYPE 3
- ⊙ EXISTING SIGNAL GROUND BOX
- ⊙ EXISTING CABINET
- ⊙ NEW CABINET (DOOR ON DARKENED SIDE)
- ⊙ NEW COMMUNICATIONS HUB BUILDING
- ⊙ EXISTING COMMUNICATIONS HUB BUILDING
- ⊙ NEW CCTV CAMERA
- ⊙ EXISTING CCTV CAMERA
- ⊙ EXISTING DETECTOR LOOP: TYPE 1
- ⊙ NEW DETECTOR LOOP: TYPE 1
- ⊙ EXISTING DETECTOR LOOP: TYPE 3
- ⊙ NEW DETECTOR LOOP: TYPE 3
- ⊙ EXISTING TYPE 1 LOOPS
- ⊙ NEW SERVICE POLE
- ⊙ EXISTING SERVICE POLE
- ⊙ JUNCTION BOX
- (UNLESS OTHERWISE NOTED)
- ⊙ EXISTING DYNAMIC MESSAGE SIGN
- ⊙ NEW DYNAMIC MESSAGE SIGN

NOTE 1

1,140



The seal appearing on this document was authorized by David Muñoz, P.E. 69516, on 6-10-2002

David Muñoz, P.E.

SCALE: 1" = 100'

TEXAS DEPARTMENT OF TRANSPORTATION
 BW-8 (SAM HOUSTON TOLLWAY)

COMPUTERIZED TRANSPORTATION
 MANAGEMENT SYSTEM LAYOUT

SHEET 191 OF 255

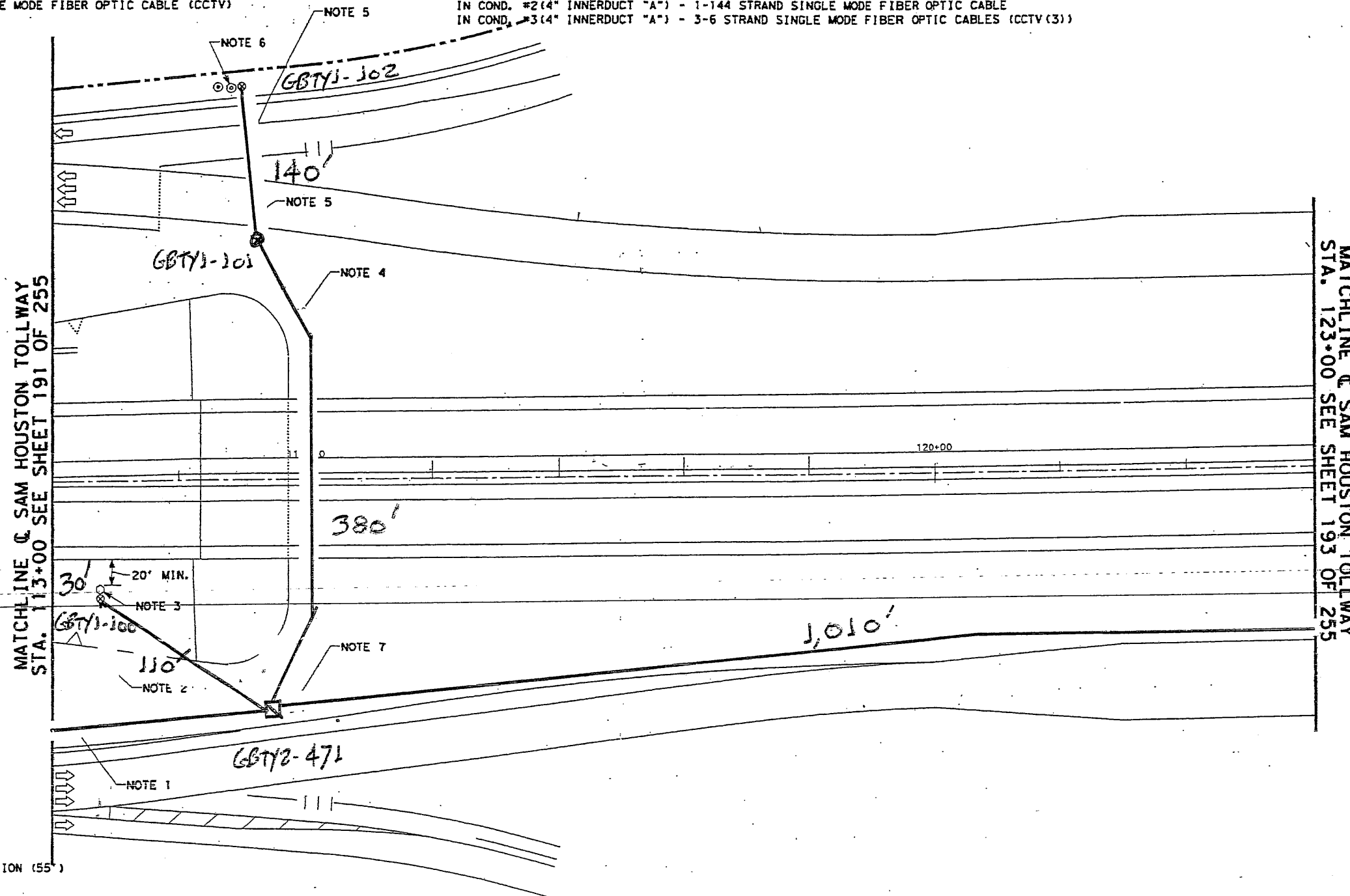
DN: SC	DRAWING	DATE	FED. RD.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.
BY: KRP	PRINTED	11/01/01	11	TX		

1. **INSTALL**
 2-3" SCH. 40 PVC/CCE
 2-4" SCH. 40 MULTI-DUCT CONDUITS/CCE
 IN COND. #1(3") - 1-144 STRAND SINGLE MODE FIBER OPTIC CABLE
 1-36 STRAND MULTIMODE FIBER OPTIC CABLE
 1-6 PAIR #22 COMM. CABLE (VOICE COMM.)
 IN COND. #2(4" INNERDUCT "A") - 1-144 STRAND SINGLE MODE FIBER OPTIC CABLE
 IN COND. #3(4" INNERDUCT "A") - 2-6 STRAND SINGLE MODE FIBER OPTIC CABLES (CCTV(2))

2. **INSTALL**
 2-2" SCH. 80 PVC
 IN COND. #1 - 1-6 STRAND SINGLE MODE FIBER OPTIC CABLE (CCTV)

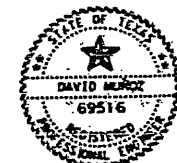
6. **INSTALL**
 SERVICE POLE D-63
 1-2" SCH. 80 PVC TO GRD. BOX
 2#2XHHW, 1#2 BARE (CCTV CABINET POWER)

7. **INSTALL**
 2-3" SCH. 40 PVC/CCE
 2-4" SCH. 40 MULTI-DUCT CONDUITS/CCE
 IN COND. #1(3") - 1-144 STRAND SINGLE MODE FIBER OPTIC CABLE
 1-36 STRAND MULTIMODE FIBER OPTIC CABLE
 1-6 PAIR #22 COMM. CABLE (VOICE COMM.)
 IN COND. #2(4" INNERDUCT "A") - 1-144 STRAND SINGLE MODE FIBER OPTIC CABLE
 IN COND. #3(4" INNERDUCT "A") - 3-6 STRAND SINGLE MODE FIBER OPTIC CABLES (CCTV(3))



4. **INSTALL**
 2-2" SCH. 80 PVC
 IN COND. #1 - 2#2XHHW, 1#2 BARE (CCTV CABINET POWER)

5. **INSTALL**
 2-2" SCH. 80 PVC (BORED)
 IN NEW SCH. 40 STEEL CASING
 IN COND. #1 - 2#2XHHW, 1#2 BARE (CCTV CABINET POWER)



The seal appearing on this document was authorized by David M. Rouse, P.E. 69516, on 6-10-2002

David M. Rouse, P.E.

SEE SHEET 191 OF 255 FOR LEGEND

SCALE: 1" = 100'

TEXAS DEPARTMENT OF TRANSPORTATION
 BW-8 (SAM HOUSTON TOLLWAY)

**COMPUTERIZED TRANSPORTATION
 MANAGEMENT SYSTEM LAYOUT**

SHEET 192 OF 255

DATE: SC	DRAWING	DATE	FED. RD.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.
BY: KRP	REVISED	NOV 01	DIV. 80			

1. EXISTING
4-3" CONDUITS
IN COND. #1 THRU 3 - CTMS CABLES

EXISTING
2-2" CONDUITS
IN COND. #1 & 2 - CTMS CABLES

3. EXISTING
SERVICE POLE
1-2" CONDUIT TO GRD. BOX
CTMS CONDUCTORS

4. EXISTING
1-2" CONDUIT
CTMS CONDUCTORS

5. EXISTING
4-3" CONDUITS
IN COND. #1 & 2 - CTMS CABLES AND CONDUCTORS

INSTALL
IN COND. #3 - 2-144 STRAND SINGLE MODE FIBER OPTIC CABLES
2-36 STRAND MULTIMODE MODE FIBER OPTIC CABLES
2-6 PAIR #22 COMM. CABLES (VOICE COMM. (2))
IN COND. #4 - 4-6 STRAND SINGLE MODE FIBER OPTIC CABLES (CCTV (4))

6. EXISTING
CCTV CAMERA
CAMERA SUPPORT POLE & FOUNDATION (55')
CCTV CABINET & EQUIPMENTS
3-2" CONDUITS
IN COND. #1 THRU 3 - CTMS CABLES AND CONDUCTORS

7. EXISTING
4-3" CONDUITS
1-2" CONDUIT
IN COND. #1 THRU 4 - CTMS CABLES AND CONDUCTORS

8. EXISTING (STA. 126+00)
COMMUNICATIONS HUB BUILDING
CTMS EQUIPMENTS
8-3" CONDUITS
1-2" CONDUIT
IN COND. #1 THRU 4 - CTMS CABLES AND CONDUCTORS

INSTALL
DROP/INSERT MULDEM
1 FIBER OPTIC VIDEO MULTIPLEXOR (TX)
7 VIDEO FIBER OPTIC RX'S (S/M)
2 DATA FIBER OPTIC TX/RX'S (M/M)
4 FIBER OPTIC RS-232 DATA MODEMS
1 RS-232 PORT SHARING DEVICE
FIBER OPTIC SPLICE ENCLOSURE (S/M)
FIBER OPTIC SPLICE ENCLOSURE (M/M)
IN COND. #5 (3") - 2-144 STRAND SINGLE MODE FIBER OPTIC CABLES
2-36 STRAND MULTIMODE FIBER OPTIC CABLES
2-6 PAIR #22 COMM. CABLES (VOICE COMM. (2))
IN COND. #6 (3") - 2-144 STRAND SINGLE MODE FIBER OPTIC CABLES
IN COND. #7 (3") - 4-6 STRAND SINGLE MODE FIBER OPTIC CABLES (CCTV (4))

9. INSTALL
2-3" SCH. 40 PVC/CCE
2-4" SCH. 40 MULTI-DUCT CONDUITS/CCE
IN COND. #1 (3") - 1-144 STRAND SINGLE MODE FIBER OPTIC CABLE
1-36 STRAND MULTIMODE FIBER OPTIC CABLE
1-6 PAIR #22 COMM. CABLE (VOICE COMM.)
IN COND. #2 (4" INNERDUCT "A") - 1-144 STRAND SINGLE MODE FIBER OPTIC CABLE
IN COND. #3 (4" INNERDUCT "A") - 3-6 STRAND SINGLE MODE FIBER OPTIC CABLES (CCTV (3))

10. INSTALL
2-3" SCH. 80 PVC (BORED)
2-4" SCH. 80 MULTI-DUCT CONDUITS (BORED)
IN NEW SCH. 40 STEEL CASING
IN COND. #1 (3") - 1-144 STRAND SINGLE MODE FIBER OPTIC CABLE
1-36 STRAND MULTIMODE FIBER OPTIC CABLE
1-6 PAIR #22 COMM. CABLE (VOICE COMM.)

11. INSTALL
2-3" SCH. 40 PVC/CCE
2-4" SCH. 40 MULTI-DUCT CONDUITS/CCE
IN COND. #1 (3") - 1-144 STRAND SINGLE MODE FIBER OPTIC CABLE
1-36 STRAND MULTIMODE FIBER OPTIC CABLE
1-6 PAIR #22 COMM. CABLE (VOICE COMM.)
IN COND. #2 (4" INNERDUCT "A") - 1-144 STRAND SINGLE MODE FIBER OPTIC CABLE
IN COND. #3 (4" INNERDUCT "A") - 1-6 STRAND SINGLE MODE FIBER OPTIC CABLE (CCTV)

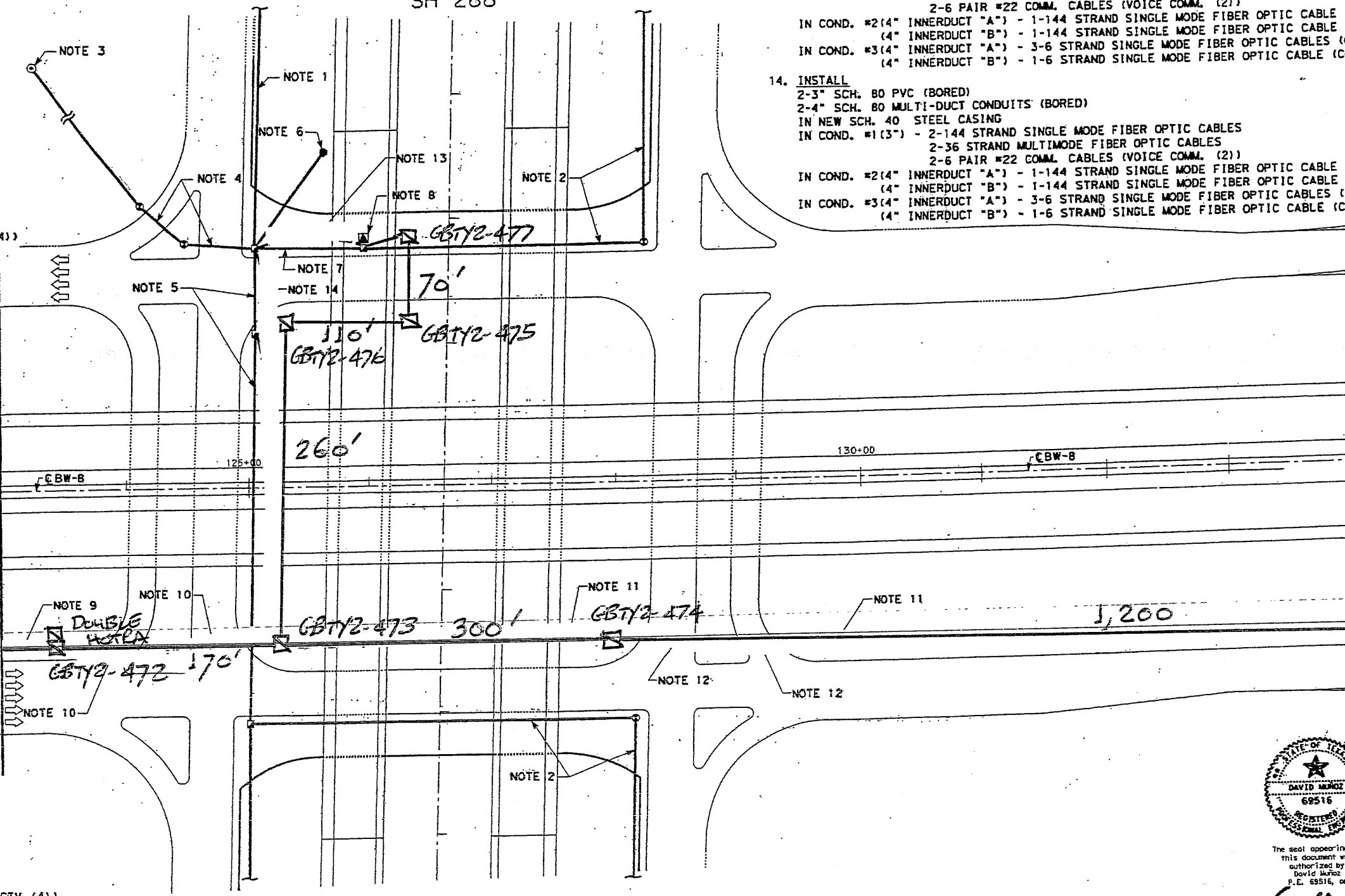
12. INSTALL
2-3" SCH. 80 PVC (BORED)
2-4" SCH. 80 MULTI-DUCT CONDUITS (BORED)
IN NEW SCH. 40 STEEL CASING
IN COND. #1 (3") - 1-144 STRAND SINGLE MODE FIBER OPTIC CABLE
1-36 STRAND MULTIMODE FIBER OPTIC CABLE
1-6 PAIR #22 COMM. CABLE (VOICE COMM.)
IN COND. #2 (4" INNERDUCT "A") - 1-144 STRAND SINGLE MODE FIBER OPTIC CABLE

13. INSTALL
2-3" SCH. 40 PVC/CCE
2-4" SCH. 40 MULTI-DUCT CONDUITS/CCE
IN COND. #1 (3") - 2-144 STRAND SINGLE MODE FIBER OPTIC CABLES
2-36 STRAND MULTIMODE FIBER OPTIC CABLES
2-6 PAIR #22 COMM. CABLES (VOICE COMM. (2))
IN COND. #2 (4" INNERDUCT "A") - 1-144 STRAND SINGLE MODE FIBER OPTIC CABLE
(4" INNERDUCT "B") - 1-144 STRAND SINGLE MODE FIBER OPTIC CABLE
IN COND. #3 (4" INNERDUCT "A") - 3-6 STRAND SINGLE MODE FIBER OPTIC CABLES (CCTV (3))
(4" INNERDUCT "B") - 1-6 STRAND SINGLE MODE FIBER OPTIC CABLE (CCTV)

14. INSTALL
2-3" SCH. 80 PVC (BORED)
2-4" SCH. 80 MULTI-DUCT CONDUITS (BORED)
IN NEW SCH. 40 STEEL CASING
IN COND. #1 (3") - 2-144 STRAND SINGLE MODE FIBER OPTIC CABLES
2-36 STRAND MULTIMODE FIBER OPTIC CABLES
2-6 PAIR #22 COMM. CABLES (VOICE COMM. (2))
IN COND. #2 (4" INNERDUCT "A") - 1-144 STRAND SINGLE MODE FIBER OPTIC CABLE
(4" INNERDUCT "B") - 1-144 STRAND SINGLE MODE FIBER OPTIC CABLE
IN COND. #3 (4" INNERDUCT "A") - 3-6 STRAND SINGLE MODE FIBER OPTIC CABLES (CCTV (3))
(4" INNERDUCT "B") - 1-6 STRAND SINGLE MODE FIBER OPTIC CABLE (CCTV)

MATCHLINE @ SAM HOUSTON TOLLWAY
STA. 123+00 SEE SHEET 192 OF 255

MATCHLINE @ SAM HOUSTON TOLLWAY
STA. 134+00 SEE SHEET 194 OF 255



6-10-2002
David Muñoz, P.E.

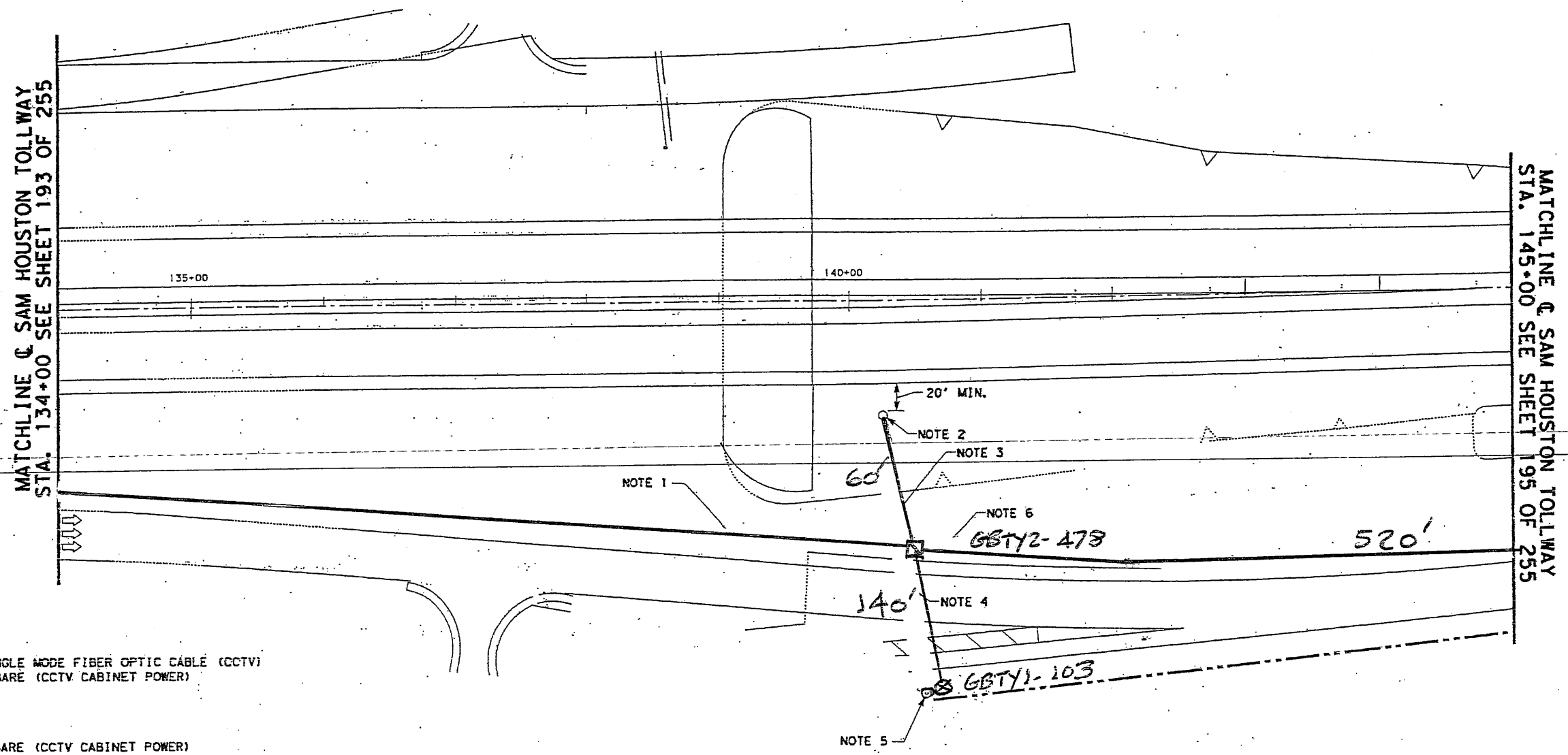
SEE SHEET 191 OF 255
FOR LEGEND

SCALE: 1" = 100'

TEXAS DEPARTMENT OF TRANSPORTATION
BW-8 (SAM HOUSTON TOLLWAY)
COMPUTERIZED TRANSPORTATION
MANAGEMENT SYSTEM LAYOUT
SHEET 193 OF 255
DATE: 6/10/02
DRAWN BY: SJA
CHECKED BY: KBP
DATE: 6/10/02
STATE: TEXAS
FEDERAL AID PROJECT NO.: 44-2002(50) ETC
HIGHWAY NO.: 193

- INSTALL
 - 2-3" SCH. 40 PVC/CCE
 - 2-4" SCH. 40 MULTI-DUCT CONDUITS/CCE
 - IN COND. #1(3") - 1-144 STRAND SINGLE MODE FIBER OPTIC CABLE
 - 1-36 STRAND MULTIMODE FIBER OPTIC CABLE
 - 1-6 PAIR #22 COMM. CABLE (VOICE COMM.)
 - IN COND. #2(4" INNERDUCT "A") - 1-144 STRAND SINGLE MODE FIBER OPTIC CABLE
 - IN COND. #3(4" INNERDUCT "A") - 1-6 STRAND SINGLE MODE FIBER OPTIC CABLE (CCTV)

- INSTALL (STA. 140+30)
 - CCTV CAMERA #67
 - CCTV CAMERA SUPPORT POLE & FOUNDATION (55')
 - CCTV CABINET
 - CCTV FIELD EQUIPMENT
 - FIBER OPTIC RS-232 DATA MODEM
 - VIDEO FIBER OPTIC TX (S/M)
 - 3-2" SCH. 80 PVC TO GRD. BOX
 - IN COND. #1 - 1-6 STRAND SINGLE MODE FIBER OPTIC CABLE (CCTV)
 - IN COND. #2 - 2#6XHHW, 1#6 BARE (CCTV CABINET POWER)



- INSTALL
 - 2-2" SCH. 80 PVC
 - IN COND. #1 - 1-6 STRAND SINGLE MODE FIBER OPTIC CABLE (CCTV)
 - IN COND. #2 - 2#6XHHW, 1#6 BARE (CCTV CABINET POWER)

- INSTALL
 - 2-2" SCH. 80 PVC (BORED)
 - IN NEW SCH. 40 STEEL CASING
 - IN COND. #1 - 2#6XHHW, 1#6 BARE (CCTV CABINET POWER)

- INSTALL
 - SERVICE POLE D-64
 - 1-2" SCH. 80 PVC TO GRD. BOX
 - 2#6XHHW, 1#6 BARE (CCTV CABINET POWER)

- INSTALL
 - 2-3" SCH. 40 PVC/CCE
 - 4" SCH. 40 MULTI-DUCT CONDUITS/CCE
 - COND. #1(3") - 1-144 STRAND SINGLE MODE FIBER OPTIC CABLE
 - 1-36 STRAND MULTIMODE FIBER OPTIC CABLE
 - 1-6 PAIR #22 COMM. CABLE (VOICE COMM.)
 - IN COND. #2(4" INNERDUCT "A") - 1-144 STRAND SINGLE MODE FIBER OPTIC CABLE



The seal appearing on this document was authorized by David M. McCoy, P.E. 69516, on 06-19-2007
David M. McCoy, P.E.

SEE SHEET 191 OF 255 FOR LEGEND

SCALE: 1" = 100'

TEXAS DEPARTMENT OF TRANSPORTATION
 BB-B (SAM HOUSTON TOLLWAY)

COMPUTERIZED TRANSPORTATION MANAGEMENT SYSTEM LAYOUT

SHEET 194 OF 255

DN: SC	DRAWING	DATE	FED. RD. DIST. NO.	STATE	FEDERAL AID PROJECT NO.	HIGHWAY NO.
EX: DN: KBP	ORIGINAL	NOV 01				