

990152 1/13

Oversight / NHS	
FHWA REGION VIII OVERSIGHT?	<input checked="" type="checkbox"/> NO <input type="checkbox"/> YES
NATIONAL HIGHWAY SYSTEM?	<input type="checkbox"/> NO <input checked="" type="checkbox"/> YES

CITY OF AURORA STATE OF COLORADO

HIGHWAY CONSTRUCTION BID PLANS OF PROPOSED

FEDERAL AID PROJECT NO. NH 030A-022

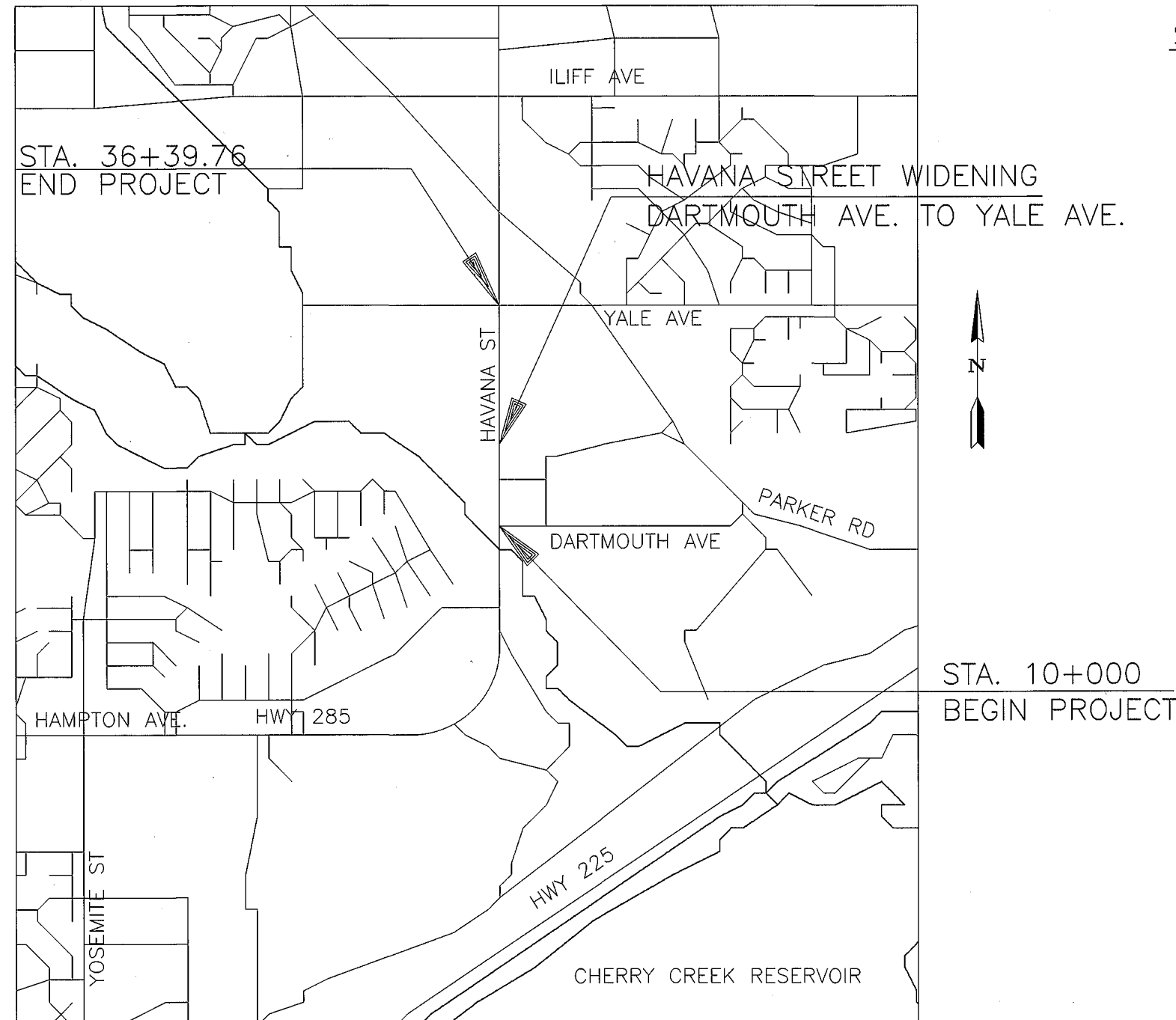
CITY OF AURORA PROJECT #99043

STATE HIGHWAY NO. 30

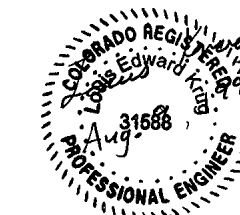
ARAPAHOE COUNTY

TABULATION OF LENGTH & DESIGN DATA

STATION	FEET
	ROADWAY SH 30
STA. 20+22.58 BEGIN WIDENING	327.42
STA. 23+50.00 END WIDENING	
TOTAL	328
SUMMARY OF PROJECT LENGTH	FEET



SHEET NO.	INDEX OF SHEETS
1	TITLE SHEET
2	STANDARD PLANS LIST
3	TYPICAL SECTIONS / GENERAL NOTES
4	SUMMARY OF APPROXIMATE QUANTITIES
5	SURVEY CONTROL DIAGRAM / TABULATION
6-7	ROADWAY PLANS
8	ROADWAY PROFILES
9	MISCELLANEOUS DETAILS
10	SIGNING AND STRIPING PLAN
11	TRAFFIC CONTROL PLAN
12-13	CROSS SECTIONS



Computer File Information		Index of Revisions		Colorado Department of Transportation		As Constructed		Contract Information		Project No./Code			
Creation Date:	4/15/99 Initials: LLF	(R-)		2000 SOUTH HOLLY DENVER, CO 80222 Phone: (303)757-9866 FAX: (303)757-9059 Region 6 B.B.M.		HDR Engineering, Inc.		Contractor		NH-030A-022			
Last Modification Date:	7/27/99 Initials: KMC	(R-)						No Revisions:		Resident Engineer		12661	
Full Path:	P:\6890027	(R-)						Revised:		Project Engineer		ACCEPTED	
Drawing File Name:	GETS01.dwg	(R-)						Void:		PROJECT STARTED		Sheet Number 1	
Acad Ver.	R14 Scale: NTS Units: English	(R-)						Comments:					

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PLAN NUMBER	M STANDARD TITLE	PAGE NUMBER
<input checked="" type="checkbox"/> M-100-1	STANDARD SYMBOLS	1
<input type="checkbox"/> M-107-1	TEMPORARY EROSION CONTROL	2
<input type="checkbox"/> M-203-1	APPROACH ROADS	3
<input type="checkbox"/> M-203-2	DITCH TYPES	4
<input type="checkbox"/> M-203-10	SUPERELEVATION CROWNED HIGHWAYS	5
<input type="checkbox"/> M-203-11	SUPERELEVATION DIVIDED HIGHWAYS SHOULDER PIVOT	6
<input type="checkbox"/> M-203-12	SUPERELEVATION STREETS	7
<input type="checkbox"/> M-203-13	SUPERELEVATION DIVIDED HIGHWAYS CENTER PIVOT	8
<input type="checkbox"/> M-206-1	EXCAVATION AND BACKFILL FOR STRUCTURES (3 SHEETS)	9
<input type="checkbox"/> M-206-2	EXCAVATION AND BACKFILL FOR BRIDGES	12
<input type="checkbox"/> M-210-1	MAILBOX SUPPORTS (2 SHEETS)	13
<input type="checkbox"/> M-214-1	PLANTING DETAILS	15
<input type="checkbox"/> M-412-1	CONCRETE PAVEMENT JOINTS	16
<input type="checkbox"/> M-412-2	CURBED CONCRETE PAVEMENT JOINTS	17
<input type="checkbox"/> M-504-1	STEEL CRIBBING	18
<input type="checkbox"/> M-506-1	GABIONS AND SLOPE MATTRESS	19
<input type="checkbox"/> M-510-1	STRUCTURAL PLATE CULVERT PIPE H-20 LOADING	20
<input type="checkbox"/> M-601-1	SINGLE CONCRETE BOX CULVERT (2 SHEETS)	21
<input type="checkbox"/> M-601-2	DOUBLE CONCRETE BOX CULVERT (2 SHEETS)	23
<input type="checkbox"/> M-601-3	TRIPLE CONCRETE BOX CULVERT (2 SHEETS)	25
<input type="checkbox"/> M-601-10	HEADWALL FOR PIPE CULVERTS	27
<input type="checkbox"/> M-601-11	TYPE "S" SADDLE HEADWALL FOR PIPE CULVERTS	28
<input type="checkbox"/> M-601-12	HEADWALLS AND CULVERT OUTLET PAVING	29
<input type="checkbox"/> M-601-20	WINGWALLS FOR PIPE OR BOX CULVERTS	30
<input type="checkbox"/> M-603-1	METAL AND PLASTIC CULVERT PIPE (2 SHEETS)	31
<input type="checkbox"/> M-603-2	REINFORCED CONCRETE PIPE	33
<input type="checkbox"/> M-603-3	PRECAST CONCRETE BOX CULVERT	34
<input type="checkbox"/> M-603-10	CONCRETE AND METAL END SECTIONS (2 SHEETS)	35
<input type="checkbox"/> M-604-10	INLET, TYPE C	37
<input type="checkbox"/> M-604-11	INLET, TYPE D	38
<input type="checkbox"/> M-604-12	CURB INLET, TYPE R (2 SHEETS)	39
<input type="checkbox"/> M-604-13	CONCRETE INLET, TYPE 13	41
<input type="checkbox"/> M-604-20	MANHOLES (3 SHEETS)	42
<input type="checkbox"/> M-605-1	SUBSURFACE DRAINS	45
<input type="checkbox"/> M-606-1	GUARDRAIL, TYPE 3, W-BEAM (12 SHEETS)	46
<input type="checkbox"/> M-606-12	GUARDRAIL, TYPE 4, CONCRETE BARRIER (6 SHEETS)	58

PLAN NUMBER	M STANDARD TITLE	PAGE NUMBER
<input type="checkbox"/> M-607-1	WIRE FENCES AND GATES (2 SHEETS)	64
<input type="checkbox"/> M-607-2	CHAIN LINK FENCE (3 SHEETS)	66
<input type="checkbox"/> M-607-3	BARRIER FENCE	69
<input type="checkbox"/> M-607-4	DEER FENCE AND GATE (2 SHEETS)	70
<input type="checkbox"/> M-607-10	PICKET SNOW FENCE	72
<input type="checkbox"/> M-608-1	CURB RAMPS	73
<input type="checkbox"/> M-609-1	CURBS AND GUTTERS	74
<input type="checkbox"/> M-611-1	CATTLE GUARD (2 SHEETS)	75
<input type="checkbox"/> M-613-1	CONVENTIONAL HIGHWAY LIGHTING (3 SHEETS)	77
<input type="checkbox"/> M-613-2	HIGH MAST LIGHTING (2 SHEETS)	80
<input type="checkbox"/> M-614-1	RUMBLE STRIPS	82
<input type="checkbox"/> M-615-1	EMBANKMENT PROTECTOR, TYPE 3	83
<input type="checkbox"/> M-615-2	EMBANKMENT PROTECTOR, TYPE 5	84
<input type="checkbox"/> M-616-1	INVERTED SIPHON (ALSO USE APPLICABLE M-603)	85
<input type="checkbox"/> M-620-1	FIELD LABORATORY, CLASS 1	86
<input type="checkbox"/> M-620-2	FIELD LABORATORY, CLASS 2	87
<input type="checkbox"/> M-620-11	FIELD OFFICE, CLASS 1	88
<input type="checkbox"/> M-620-12	FIELD OFFICE, CLASS 2	89
<input type="checkbox"/> M-629-1	SURVEY MONUMENTS (2 SHEETS)	90


PLAN NUMBER	S STANDARD TITLE	PAGE NUMBER
<input checked="" type="checkbox"/> S-612-1	TYPICAL DELINEATOR INSTALLATIONS (5 SHEETS)	93
<input checked="" type="checkbox"/> S-614-1	TYPICAL GROUND SIGN PLACEMENT	98
<input checked="" type="checkbox"/> S-614-2	CLASS I GROUND SIGN INSTALLATIONS	99
<input type="checkbox"/> S-614-3	CLASS II GROUND SIGN INSTALLATIONS	100
<input type="checkbox"/> S-614-4	CLASS III SIGNS, SHEET ALUMINUM PANELS (3 SHEETS)	101
<input type="checkbox"/> S-614-5	BREAK-AWAY SIGN SUPPORT DETAILS FOR GROUND SIGNS (2 SHEETS)	104
<input type="checkbox"/> S-614-6	CONCRETE FOOTINGS AND SIGN ISLANDS FOR CLASS III SIGNS (2 SHEETS)	106
<input type="checkbox"/> S-614-10	TYPICAL MARKER ASSEMBLY INSTALLATIONS	108
<input type="checkbox"/> S-614-11	MILEPOST SIGN AND INSTALLATION	109
<input type="checkbox"/> S-614-12	STRUCTURE NUMBER INSTALLATION (BRIDGE INFORMATION SHEET)	110
<input type="checkbox"/> S-614-14	FLASHING BEACON AND SIGN INSTALLATION (2 SHEETS)	111
<input type="checkbox"/> S-614-20	TYPICAL POLE MOUNT SIGN INSTALLATION	113
<input type="checkbox"/> S-614-21	CONCRETE BARRIER SIGN POST INSTALLATIONS	114
<input type="checkbox"/> S-614-22	TYPICAL MULTI-SIGN INSTALLATIONS	115
<input checked="" type="checkbox"/> S-614-40	TYPICAL TRAFFIC SIGNAL INSTALLATION DETAILS (3 SHEETS)	116
<input checked="" type="checkbox"/> S-627-1	TYPICAL PAVEMENT MARKINGS (4 SHEETS)	119
<input type="checkbox"/> S-630-1	TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION (9 SHEETS)	123
<input checked="" type="checkbox"/> S-630-2	BARRICADES, DRUMS, CONCRETE BARRIERS (TEMP) & VERTICAL PANELS	132
<input type="checkbox"/> S-630-3	FLASHING BEACON (PORTABLE) DETAILS	133

THE STANDARD PLAN SHEETS INDICATED HEREON BY A MARKED BOX ARE TO BE USED TO CONSTRUCT THIS PROJECT.

CITY OF AURORA STANDARD DETAILS:
 S4.2 CROSS PAVEMENT
 S7.1 CURB AND GUTTER
 S7.3 SIDEWALK AND CONSTRUCTION JOINTS
 S9.1 CURB RAMPS
 S22.1 PROJECT SIGN

CITY OF AURORA UTILITY DETAILS:
 101 PIPE BEDDING CLASSES
 103 24" MANHOLE RING AND COVER

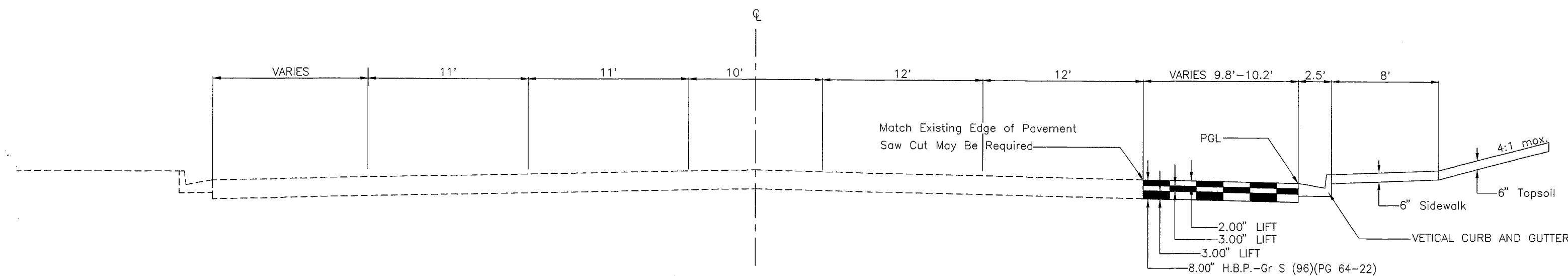
DENVER WATER STANDARD DETAILS:
 DR. 127 NO. 35, SHEET 7 OF 79

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Drawing File Name:	gets02.DWG	<input type="checkbox"/> (R-X)			Sheet Subset:	Subset Sheets:	XXX of XXX				
Acad Ver. R14	Scale: NTS Units: English	<input type="checkbox"/> (R-X)									

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TYPICAL SECTION HAVANA STREET
STA. 20+22.58 TO 23+50.00
WIDENING RIGHT



GENERAL NOTES

WATER SHALL BE USED AS A DUST PALLIATIVE WHERE REQUIRED. LOCATIONS SHALL BE AS ORDERED. COST ASSOCIATED WITH DUST CONTROL IS CONSIDERED SUBSIDIARY TO THE WORK.

ANY LAYER OF BITUMINOUS PAVEMENT THAT HAS A SUCCEEDING LAYER PAVED THEREON SHALL BE COMPLETED FULL WIDTH BEFORE SUCCEEDING LAYER IS PLACED.

CLEARING AND GRUBBING SHALL INCLUDE ALL EXISTING SURFACE FEATURES AND OTHER ITEMS LOCATED IN AREAS TO BE DISTURBED BY CONSTRUCTION AND WHICH ARE NOT REMOVED AS A PART OF A PROJECT REMOVAL ITEM. (SUCH AS ROCK SCAPING, PLANTS, SOD, BERMS, SPRINKLERS, ETC.) AND WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE WORK.

EXCAVATION REQUIRED FOR COMPACTION OF BASES OF CUTS AND FILLS WILL BE CONSIDERED SUBSIDIARY TO THAT OPERATION AND WILL NOT BE PAID FOR SEPARATELY.

TYPE OF COMPACTION FOR THIS PROJECT WILL BE AASHTO T-99 FOR MATERIALS CLASSIFYING AS A-2-6 TO A-7-6. TYPE OF COMPACTION FOR THIS PROJECT WILL BE AASHTO T-180 FOR MATERIALS WHICH CLASSIFY BETWEEN A-1 AND A-2-5.

THE CONTRACTOR SHALL KEEP THE WORK AREA DRY OF STANDING WATER AND SHALL KEEP THE EXCAVATION AREAS FREE FROM STORM RUN-OFF.

RESISTANCE VALUES SHALL BE A MINIMUM, R=10 FOR ALL MATERIAL PLACED IN THE EMBANKMENTS.

RECONDITIONING AREAS SHALL INCLUDE ALL EXISTING AND PROPOSED EMBANKMENTS AND EXCAVATIONS. THE COST OF CONSTRUCTING EMBANKMENTS AND REMOVING EXCESS EXCAVATION IS NOT TO BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST OF UNCLASSIFIED EXCAVATION

FOR PRELIMINARY PLAN QUANTITIES OF ROADWAY MATERIALS, THE FOLLOWING RATES OF APPLICATION WERE USED:

- DILUTED EMULSIFIED ASPHALT AT 0.10 gal./sq. yd. (DILUTED)
- BITUMINOUS PAVEMENT AT 110 lbs./sq. yd./1"

DILUTED EMULSIFIED ASPHALT FOR TACK COAT SHALL CONSIST OF 1 PART EMULSIFIED ASPHALT AND 1 PART WATER. RATES OF APPLICATION SHALL BE AS DETERMINED BY THE ENGINEER AT THE TIME OF APPLICATION. COST ASSOCIATED WITH TACK COAT APPLICATION WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE WORK.

WHERE IT IS REQUIRED TO CUT EXISTING PAVEMENT THE CUTTING SHALL BE DONE TO A NEAT WORK LINE FULL DEPTH WITH A PAVEMENT CUTTING SAW OR OTHER METHOD AS APPROVED BY THE ENGINEER. IT IS NOT TO PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE WORK.

REMOVAL OF EXISTING CURB/GUTTER, SIDEWALK, DRIVEWAYS, CURB CUTS, AND OTHER CONCRETE ITEMS THAT ARE ATTACHED OR ADJACENT TO OTHER CONCRETE ITEMS SHALL INCLUDE SAW CUTTING TO A NEAT WORK LINE FULL CONCRETE DEPTH AS NEEDED TO AVOID DAMAGING THE REMAINING CONCRETE ITEMS. ANY DAMAGE TO ADJACENT FACILITIES SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.

SHORING SHALL BE REQUIRED AT THE STORM SEWER AND MAY BE REQUIRED AT OTHER LOCATIONS. THE COST OF SHORING SHALL BE INCLUDED IN THE WORK.

EXISTING CONTROL MONUMENTS ARE TO BE LOCATED AND MARKED TO AVOID DAMAGE. ANY CONTROL MONUMENTS DAMAGED OR DESTROYED SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.


WATER LINES, GAS LINES, TELEPHONE LINES, ETC. AS SHOWN ON PLAN SHEETS ARE PLOTTED FROM THE BEST INFORMATION AVAILABLE. CONTRACTOR SHALL POTHOLE ALL UTILITIES PRIOR TO EXCAVATION. DATA TO BE PROVIDED TO THE OWNER FOR REVIEW A MINIMUM OF 48 HOURS PRIOR TO WORK. IT IS ESTIMATED THAT EIGHT HOURS OF POTHOLING WILL BE REQUIRED ON THIS PROJECT. POTHOLING IS NOT TO BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED ON THE COST OF WORK.

THE CONTRACTOR SHALL CALL 1-800-922-1987 FOR UTILITY LOCATIONS 2 WORKING DAYS PRIOR TO ANY DIGGING. (UTILITY NOTIFICATION CENTER OF COLORADO). (CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES).

IT IS SUGGESTED THAT THE CONTRACTOR INITIATE A REQUEST TO THE PUBLIC SERVICE COMPANY FOR ANY CONSTRUCTION RELATED TEMPORARY ELECTRICAL POWER SOURCES AS SOON AS POSSIBLE. IN SOME INSTANCES UP TO 30 DAYS MAY BE REQUIRED TO PROVIDE THE SOURCES. THE REQUEST IS TO BE PROCESSED THROUGH: PUBLIC SERVICE COMPANY OF COLORADO - STREETS AND LIGHTING AT (303) 571-2505.

THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF THE WORK. ANY CONCRETE SUFFERING DAMAGE SUCH AS GRAFFITI, TACK COAT SPRAY, FOOTPRINTS, RAIN DAMAGE, ETC. WILL BE REMOVED AND REPLACED BY THE CONTRACTOR AT THE CONTRACTOR'S COST PRIOR TO FINAL ACCEPTANCE AND PAYMENT. IF ANY CONCRETE MUST BE REPLACED BECAUSE OF RAVELING AT THE JOINTS, IMPROPER JOINTS, RANDOM CRACKING, FOOTPRINTS, GRAFFITI, ETC. THE ENTIRE SLAB MUST BE REPLACED AT THE EXPENSE OF THE CONTRACTOR.

ANY DAMAGE TO ADJACENT LANDSCAPING SPRINKLERS, OR OTHER IMPROVEMENTS DUE TO THE CONTRACTOR'S OPERATION WILL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

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Last Modification Date:	07\27\99 Initials: KMC	<input type="checkbox"/>				Revised:				12661	
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Drawing File Name:	gets03.dwg	<input type="checkbox"/>				Sheet Subset:					
Acad Ver. R14	Scale: NTS Units: English	<input type="checkbox"/>									

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SUMMARY OF APPROXIMATE QUANTITIES

CONTRACT ITEM NO.	CONTRACT ITEM	UNIT	ROADWAY	
			TOTAL FOR BID	AS-CONST
1800.0000	MOBILIZATION	LS	1	
2113.0000	UNCLASSIFIED EXCAVATION	CY	220	
2132.0000	TOPSOIL	CY	95	
2211.0000	REMOVAL OF CURB AND GUTTER	LF	488	
2231.0620	VERTICAL CURB AND GUTTER	LF	414	
2235.0000	CONCRETE CROSS PAN	SF	775	
2233.0800	CONCRETE SIDEWALK (8')	LF	600	
2237.0025	CURB RAMP	EA	1	
2332.0080	HOT BITUMINOUS PAVEMENT (GR S), 8" THICK	SY	385	
2332.5060	RECYCLED ASPHALT (6")	SY	180	
2710.0100	REMOVAL OF CONCRETE PAVEMENT, 10" THICK	SY	600	
3113.3000	REMOVAL OF PIPE, 30" RCP	LF	24	
3133.3030	30" REINFORCED CONCRETE PIPE	LF	51	
3230.2400	24" CORRUGATED METAL PIPE	LF	410	
3230.3000	30" CORRUGATED METAL PIPE	LF	100	
3433.0614	14'x6' STORM SEWER VAULT	EA	1	
3433.0618	18'x6' STORM SEWER VAULT	EA	1	
3692.1000	ADJUST SANITARY MANHOLE	EA	1	
4621.1000	ADJUST WATER VALVE BOX	EA	3	
4722.9000	REMOVE AND REPLACE HYDRANT	LS	1	
7131.3100	SEEDING, DRYLAND GRASS	SF	5300	
8220.0000	RESET TRAFFIC SIGN	EA	2	
8210.0000	REMOVE TRAFFIC SIGN	EA	2	
8233.2000	PROJECT SIGN	EA	1	
8334.1000	EPOXY STRIPING (4" WHITE DASHED STRIPE)	LF	250	
8470.0000	TRAFFIC CONTROL	LS	1	

REMOVALS SUMMARY

CONTRACT ITEM NO.	CONTRACT ITEM	STATION LIMITS	UNIT	QUANTITY	TOTAL	TOTAL FOR BID
2710.0100	REMOVAL OF CONCRETE PAVEMENT, 10" THICK	20+55.00 - 22+88.00	SY	600	600	600
2211.0000	REMOVAL OF CURB AND GUTTER	10+58.30 - 11+32.00	LF	140	460	488
		21+22.58 - 23+50.00	LF	320		

PAVEMENT SUMMARY

CONTRACT ITEM NO.	CONTRACT ITEM	STATION LIMITS	UNIT	QUANTITY	TOTAL	TOTAL FOR BID
2332.0080	HOT BITUMINOUS PAVEMENT (GR S), 8" THICK	20+22.58 - 23+50.00	SY	360	360	385
2332.5060	RECYCLED ASPHALT (6")	22+17.00 - 22+98.00	SY	170	170	180
2113.0000	UNCLASSIFIED EXCAVATION	20+22.58 - 23+50.00	CY	220	220	220

STORM SEWER SUMMARY

CONTRACT ITEM NO.	CONTRACT ITEM	STATION LIMITS	UNIT	QUANTITY	TOTAL	TOTAL FOR BID
3133.3030	30" REINFORCED CONCRETE PIPE	10+80.90 - 10+88.09	LF	48	48	51
3113.3000	REMOVAL OF PIPE, 30" RCP	10+80.90 - 10+88.09	LF	24	24	24
*NON PAY ITEM	STRUCTURAL EXCAVATION	10+80.90 - 10+88.09	CY	14	NON PAY ITEM	
NON PAY ITEM	GRANULAR BEDDING MATERIAL	10+80.90 - 10+88.09	CY	4	NON PAY ITEM	
NON PAY ITEM	BACK FILL	10+80.90 - 10+88.09	CY	7	NON PAY ITEM	
3433.0618	18'x6' STORM SEWER VAULT	10+91.20	EA	1	1	1
NON PAY ITEM	STRUCTURAL EXCAVATION	10+88.09 - 10+94.14	CY	10	NON PAY ITEM	
NON PAY ITEM	GRANULAR BEDDING MATERIAL	10+88.09 - 10+94.14	CY	2	NON PAY ITEM	
NON PAY ITEM	BACK FILL	10+88.09 - 10+94.14	CY	12	NON PAY ITEM	
3230.2400	24" CORRUGATED METAL PIPE	10+94.14 - 12+40.65	LF	294	294	
NON PAY ITEM	STRUCTURAL EXCAVATION	10+94.14 - 10+10.00	CY	16	NON PAY ITEM	
NON PAY ITEM	REMOVAL OF PIPE, 24" CMP	10+94.14 - 10+10.00	LF	16	NON PAY ITEM	
NON PAY ITEM	GRANULAR BEDDING MATERIAL	10+94.14 - 12+40.65	CY	35	NON PAY ITEM	
NON PAY ITEM	BACK FILL	10+94.14 - 12+40.65	CY	115	NON PAY ITEM	410
3230.2400	24" CORRUGATED METAL PIPE	24+17.23 - 24+63.06	LF	92	92	
NON PAY ITEM	STRUCTURAL EXCAVATION	24+17.23 - 24+63.06	CY	0	NON PAY ITEM	
NON PAY ITEM	GRANULAR BEDDING MATERIAL	24+17.23 - 24+63.06	CY	11	NON PAY ITEM	
NON PAY ITEM	BACK FILL	24+17.23 - 24+63.06	CY	60	NON PAY ITEM	
3230.3000	30" CORRUGATED METAL PIPE	24+68.06 - 25+13.67	LF	92	92	92
NON PAY ITEM	STRUCTURAL EXCAVATION	24+68.06 - 25+13.67	CY	0	NON PAY ITEM	
NON PAY ITEM	GRANULAR BEDDING MATERIAL	24+68.06 - 25+13.67	CY	14	NON PAY ITEM	
NON PAY ITEM	BACK FILL	24+68.06 - 25+13.67	CY	70	NON PAY ITEM	
3433.0614	14'x6' STORM SEWER VAULT	24+65.55	EA	1	1	1
NON PAY ITEM	STRUCTURAL EXCAVATION	24+63.06 - 24+68.06	CY	8	NON PAY ITEM	
NON PAY ITEM	GRANULAR BEDDING MATERIAL	24+63.06 - 24+68.06	CY	2	NON PAY ITEM	
NON PAY ITEM	BACK FILL	24+63.06 - 24+68.06	CY	7	NON PAY ITEM	

*NON PAY ITEM-- FOR CONTRACTOR'S INFORMATION ONLY

CONCRETE SUMMARY

CONTRACT ITEM NO.	CONTRACT ITEM	STATION LIMITS	UNIT	QUANTITY	TOTAL	TOTAL FOR BID
2231.0620	VERTICAL CURB AND GUTTER	10+58.30 - 10+32.00	LF	140		
		20+22.58 - 22+17.00	LF	195	390	414
		22+98.00 - 23+50.00	LF	55		
3433.0618	CONCRETE SIDEWALK	10+58.30 - 12+61.72	LF	210		
		20+22.58 - 22+17.00	LF	195	565	600
		22+98.00 - 23+50.00	LF	50		
		24+09.76 - 25+24.63	LF	110		
3230.2400	CONCRETE CROSS PAN	21+93.00 - 23+22.00	SF	775	775	775
2237.0025	CURB RAMP	10+75.00	EA	1	1	1

TOP SOIL AND SEEDING SUMMARY

CONTRACT ITEM NO.	CONTRACT ITEM	STATION LIMITS	UNIT	QUANTITY	TOTAL	TOTAL FOR BID
2132.0000	TOP SOIL	10+58.30 - 12+61.72	CY	83		
		24+09.76 - 25+24.63	CY	12	95	95
7131.3100	SEEDING	10+58.30 - 12+61.72	SF	4400		
		24+09.76 - 25+24.63	SF	600	5000	5300


UTILITY SUMMARY

CONTRACT ITEM NO.	CONTRACT ITEM	STATION LIMITS	UNIT	QUANTITY	TOTAL	TOTAL FOR BID
3692.1000	ADJUST SANITARY MANHOLE	21+93.50	EA	1	1	1
4621.1000	ADJUST WATER VALVE	22+16.00, 22+32.00	EA	3	3	3
		23+22.00				
4722.9000	REMOVE AND REPLACE HYDRANT	22+30.00, 21+60.00	LS	1	1	1


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(R-)	

Colorado Department of Transportation



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Phone: 303-757-9866
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HDR Engineering, Inc.

Region 6

As Constructed		Summary of Approximate Quantities	
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Revised:		Detailer:	KMC
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CITY OF AURORA STATE OF COLORADO

SURVEY CONTROL DIAGRAM

FEDERAL AID PROJECT NO. NH-030A-022

FOR THE LOCATION OF ACQUIRED PARCELS ONLY

AT SOUTH HAVANA STREET

IN SECTION 35, T4S, R67W

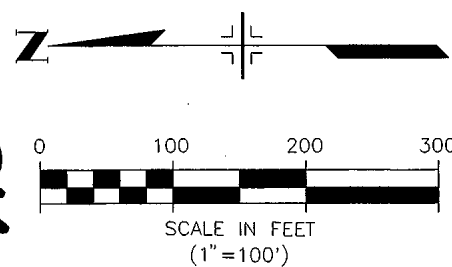
ARAPAHOE COUNTY

AS CONSTRUCTED		
NO REVISIONS	REVISED	VOND

FED. ROAD REGION	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
VI	COLORADO		5	13

RIGHT OF WAY
EAST SIDE HAVANA ST
BETWEEN YALE AVE
AND DARTMOUTH AVE

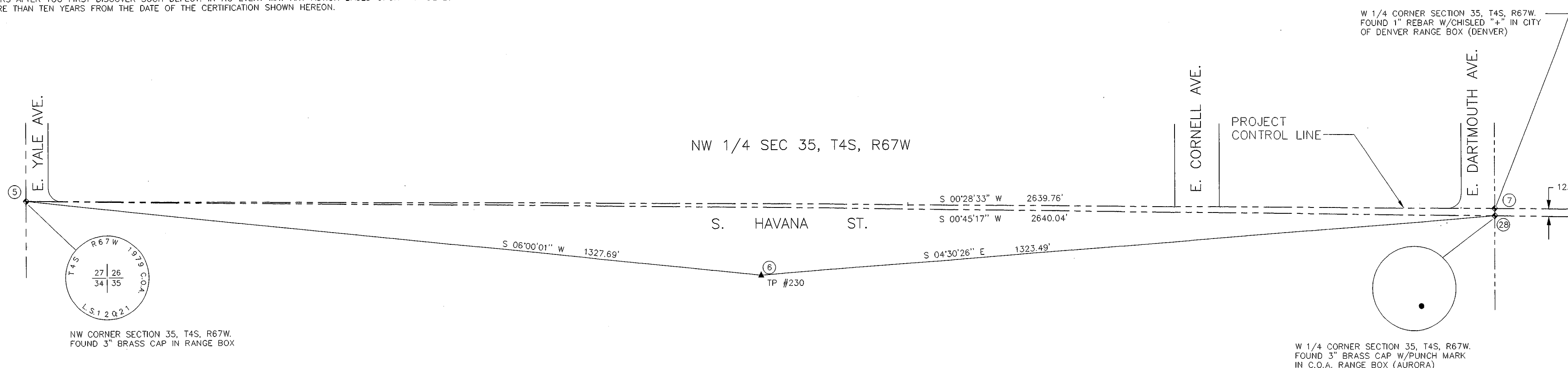
REVISIONS	



GENERAL NOTES

- THIS CONTROL SURVEY IS FOR THE EXCLUSIVE USE OF THE CITY OF AURORA, AND DOES NOT CONSTITUTE A COMPLETE BOUNDARY SURVEY. FOR THE PURPOSE OF THIS CONTROL SURVEY, TITLE RESEARCH WAS NOT PERFORMED. ANY PHYSICAL EVIDENCE OF EASEMENTS, RIGHTS-OF-WAY, PROPERTY BOUNDARIES, AND RESTRICTIONS ARE NOT SHOWN ON THIS CONTROL SURVEY.
- PROJECT COORDINATES ARE ASSUMED PROJECT SPECIFIC COORDINATES ONLY. THE STATE PLANE COORDINATES FOR THE SECTION CORNERS, GIVEN FOR INFORMATIONAL PURPOSES ONLY, ARE:

	NORTHING	EASTING	GRID FACTOR
NW CORNER SEC. 35	668636.304	2178647.919	0.99972017
W4 CORNER SEC. 35	665997.013	2178632.123	0.99972132
- BASIS OF BEARINGS: BEARINGS ARE DERIVED FROM AN ASSUMED BEARING OF S 00° 45' 17" W FROM THE NORTHWEST CORNER TO THE WEST QUARTER CORNER (PT 7) OF SECTION 35, TOWNSHIP 4 SOUTH, RANGE 67 WEST, 6th PRINCIPAL MERIDIAN.
- BASIS OF ELEVATIONS: ELEVATIONS ARE DERIVED FROM THE CITY OF AURORA VERTICAL CONTROL 1981 DATUM, WHICH IS BASED ON SEA LEVEL DATUM OF 1929, USC AND GS 1961 SUPPLEMENTAL ADJUSTMENTS. BENCHMARKS USED: C.O.A. R-010, ELEV. 5484.39', A 3" DIAMETER BRASS CAP AT THE NE CORNER OF CONC. SLAB FOR METAL BOX W/SIGN "METRO WASTEWATER RECLAMATION" IN MEDIAN EAST OF INTERSECTION, HAVANA AND DARTMOUTH.
- FIELD SURVEY CONTROL PRECISION MEETS OR EXCEEDS CDOT TYPE B SURVEY REQUIREMENTS.
- NOTICE: ACCORDING TO COLORADO LAW YOU MUST COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FIRST DISCOVER SUCH DEFECT. IN NO EVENT MAY ANY ACTION BASED UPON ANY DEFECT IN THIS SURVEY BE COMMENCED MORE THAN TEN YEARS FROM THE DATE OF THE CERTIFICATION SHOWN HEREON.



I, RICHARD A. BELLAMY, A PROFESSIONAL LAND SURVEYOR REGISTERED IN THE STATE OF COLORADO, DO HEREBY CERTIFY THAT FIELD SURVEYS, AND PREPARATION CHECKING OF THIS CONTROL SURVEY DIAGRAM WERE PREFORMED UNDER MY DIRECTION AND SUPERVISION.

RICHARD A. BELLAMY, COLORADO PLS 15244
FOR AND ON BEHALF OF
THE CITY OF AURORA, COLORADO

PROJECT CONTROL COORDINATE TABULATION

PT. NO.	POINT NAME	NORTHING(FT.)	EASTING(FT.)	ELEVATION(FT.)	DESCRIPTION
5	NW COR S35	9988.2770	4716.6450	5534.03	FOUND 3" BRASS CAP IN C.O.A. RANGE BOX
6	TP #230	8667.8650	4577.8600	5510.02	FOUND #5 REBAR W/PUNCH MARK-S.W. COR OF SIDEWALK AT END OF WALK, WEST SIDE OF HAVANA
7	W 1/4 COR S35 (DENVER)	7348.6130	4694.7190	5482.64	FOUND 1" REBAR W/CHISLED CROSS IN DENVER RANGE BOX
28	W 1/4 COR S35 (AURORA)	7348.4660	4681.8690	5483.29	FOUND 3" BRASS CAP W/PUNCHMARK IN C.O.A. RANGE BOX

COUNTY RECORDER'S CERTIFICATE

ACCEPTED FOR FILING IN THE OFFICE OF THE CLERK AND RECORDER OF ARAPAHOE COUNTY, COLORADO, DEPOSITED THIS _____ DAY OF _____ 19____ AT _____ O'CLOCK ____ M., IN BOOK _____ PAGE _____ OF THE COUNTY LAND SURVEY PLATS / RIGHT-OF-WAY SURVEYS.
RECEPTION NO. _____
BY _____
DEPUTY CLERK & RECORDER

CALL UTILITY NOTIFICATION
CENTER OF COLORADO
1-800-922-1987
CALL 2-BUSINESS DAYS IN ADVANCE
BEFORE YOU DIG, GRADE, OR EXCAVATE
FOR THE LOCATION OF UNDERGROUND
MEMBER UTILITIES.

DESIGNED BY: R. BELLAMY	CAD BY: D. REYNOLDS	CHECKED BY:	SCALE: AS SHOWN	PROJECT NO. 99043
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CITY OF AURORA ENGINEERING DIVISION
 1470 S. HAVANA STREET AURORA, COLORADO 80012
 PHONE 303 739-7300
 HAVANA STREET
 SURVEY CONTROL DIAGRAM

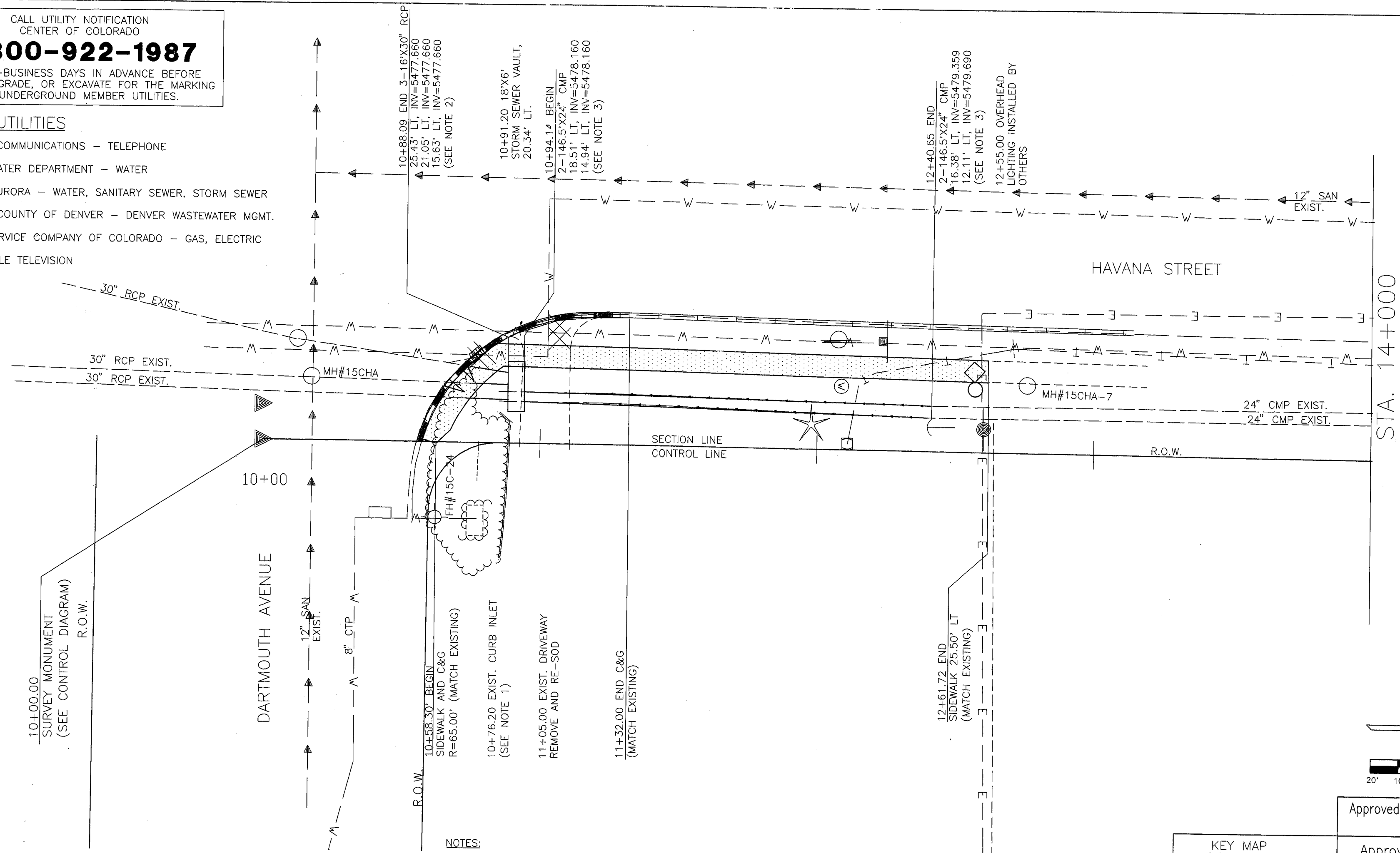
990152 5/13

990152 9/3

CALL UTILITY NOTIFICATION
CENTER OF COLORADO
1-800-922-1987
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE
YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING
OF UNDERGROUND MEMBER UTILITIES.

UTILITIES

- US WEST COMMUNICATIONS - TELEPHONE
- DENVER WATER DEPARTMENT - WATER
- CITY OF AURORA - WATER, SANITARY SEWER, STORM SEWER
- CITY AND COUNTY OF DENVER - DENVER WASTEWATER MGMT.
- PUBLIC SERVICE COMPANY OF COLORADO - GAS, ELECTRIC
- TCI - CABLE TELEVISION

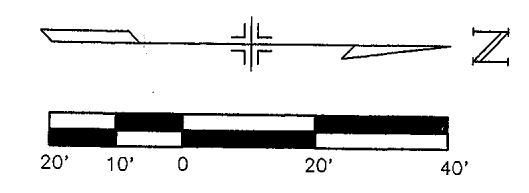


LEGEND

- FULL DEPTH HOT BITUMINOUS PAVEMENT (WIDENING)
- CONCRETE DRIVEWAY, CURB RAMP AND SIDEWALK
- VERTICAL CURB AND GUTTER

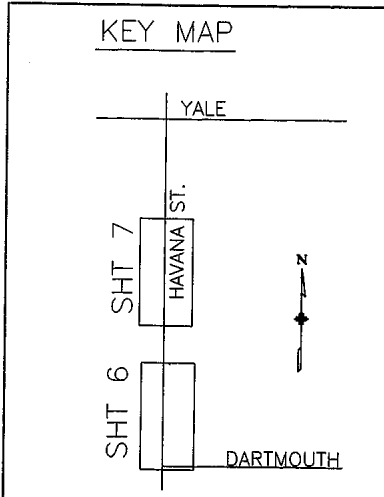
NOTES:

1. EXISTING CURB INLET TO REMAIN. TRANSITION CURB AND GUTTER ON BOTH SIDES OF INLET AS REQUIRED.
2. REMOVE 8" OF EXISTING 3-30" RCP (OR TO NEAREST JOINT). FURNISH AND INSTALL NEW 30" RCP PIPE FROM JOINT TO STORM SEWER VAULT.
3. FILL EXISTING DITCH. INSTALL PIPES AND PLACE BACKFILL TO ELIMINATE EXISTING DITCH. PIPE, BACKFILL, GRADING, AND EMBANKMENT REQUIRED TO FILL EXISTING DITCH SHALL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST OF THE PIPE PER LINEAR FOOT.
4. CONTRACTOR SHALL GRADE PROPOSED GROUND FROM STA. 10+90 TO 12+40 IN A MANNER IN WHICH SURFACE DRAINAGE WILL FLOW TOWARDS THE STORM SEWER VAULT AND INLET AT STATION 10+91.20.



Approved for One Year From this Date
8-25-99

Approved for Curb Gutter Only Initials: <i>VEZ</i> Date: <i>8/12/99</i>	Approved for Street Permits Initials: <i>VEZ</i> Date: <i>8/12/99</i>
<i>DR Hogan</i> Director of Public Works Date: <i>8/12/99</i>	
<i>JF Scumell</i> Director of Utilities Date: <i>8/12/99</i>	
Fire Department	Date:



Computer File Information	
Creation Date: 4/07/99	Initials: LLF
Last Modification Date: 7/27/99	Initials: KMC
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Sheet Revisions	
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(R-)	
(R-)	

Colorado Department of Transportation
Region 6

STREET TOWN, CO ZIP
Phone: 303-757-9866
FAX: 303-757-9059

HDR
HDR Engineering, Inc.

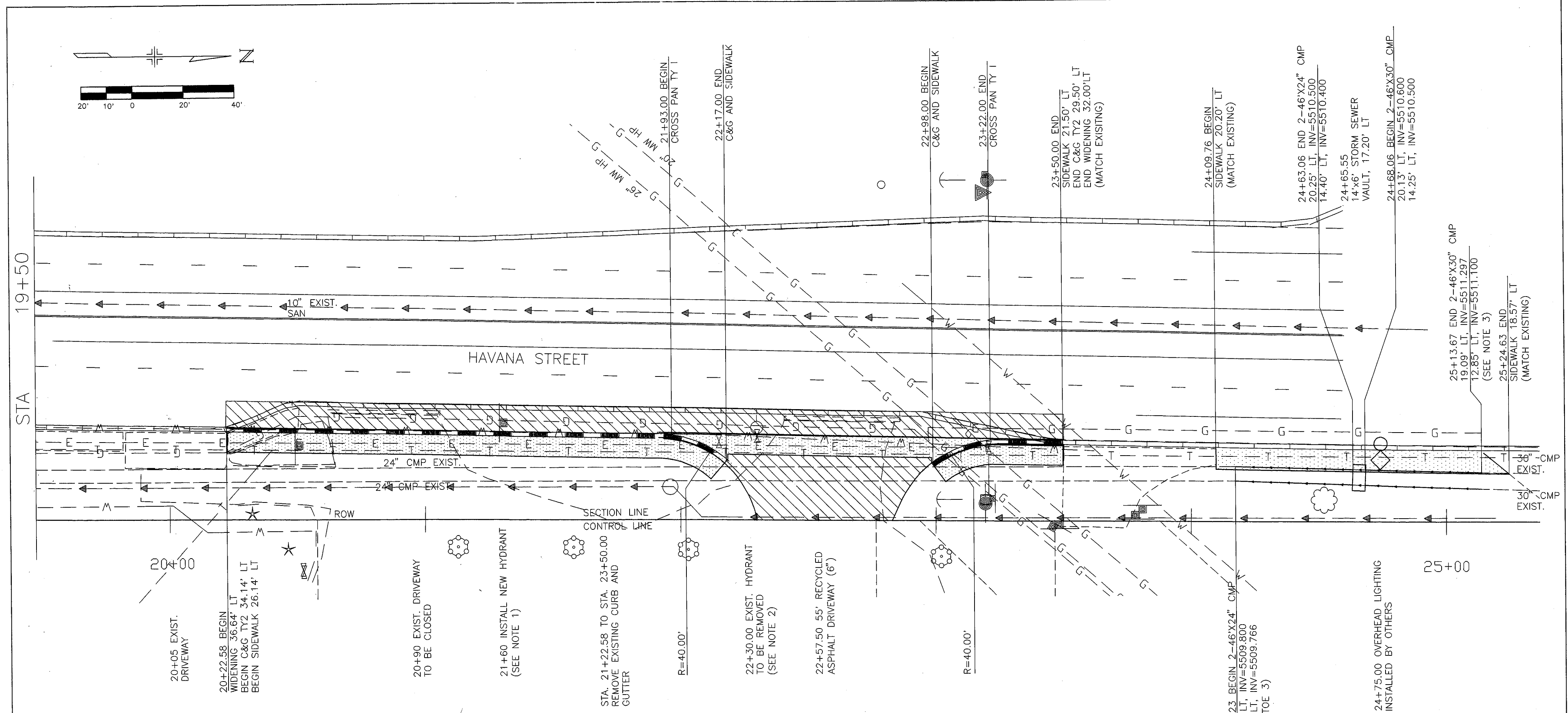
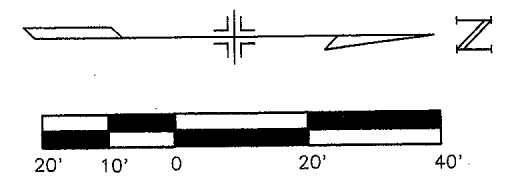
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Designer: RST	
Detailer: LLF	
Sheet Subset: Roadway	Subset Sheets: RD1 of 2

Project No./Code	
NH 030A-022	
12661	
Sheet Number	6

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990152 7/13



LEGEND

- FULL DEPTH HOT BITUMINOUS PAVEMENT (WIDENING)
- CONCRETE DRIVEWAY, CURB RAMP AND SIDEWALK
- VERTICAL CURB AND GUTTER

CALL UTILITY NOTIFICATION
CENTER OF COLORADO
1-800-922-1987
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE
YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING
OF UNDERGROUND MEMBER UTILITIES.

NOTES:

1. INSTALL WATER TAP 34 FT LEFT. INSTALL FIRE HYDRANT ASSEMBLY 24 FT LEFT. CONTRACTOR SHALL POTHOLE ALL EXISTING UTILITIES PRIOR TO RELOCATING FIRE HYDRANT OR EXCAVATION ACTIVITIES. DATA TO BE PROVIDED TO ENGINEER FOR REVIEW A MINIMUM OF 48 HOURS PRIOR TO WORKING ON INSTALLATION OF WATER FACILITIES.
2. REMOVE EXISTING HYDRANT, 6" PIPE CONNECTING TO TEE AND EXISTING 6" VALVE. INSTALL 6" MECHANICAL JOINT PLUG AT TEE AND INSTALL THRUST BLOCK.
3. FILL EXISTING DITCH. INSTALL PIPES AND PLACE BACKFILL TO ELIMINATE DITCH. PIPE BACKFILL AND EMBANKMENT REQUIRED TO FILL EXISTING DITCH SHALL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST OF THE PIPE PER LINEAR FOOT.
4. THE CONTRACTOR'S ATTENTION IS CALLED TO THE 20" AND 26" HIGH PRESSURE GAS LINES LOCATED WITHIN THE WORK AREA. CONTRACTOR SHALL PRACTICE EXTREME CAUTION WHEN WORKING NEAR HIGH PRESSURE GAS LINES.

Approved for One Year From this Date
8-25-99

Approved for Curb, Gutter Only <i>LLF</i> 8/12/99 INITIALS DATE	Approved for Street Permits <i>LLF</i> 8/12/99 INITIALS DATE
<i>DR Hoga</i> 8/12/99 Director of Public Works Date	
<i>J. Brumell</i> 8/12/99 Director of Utilities Date	
<i>John Doherty</i> 8/12/99 Fire Department Date	

KEY MAP
SHT 7
SHT 6
YALE
HAVANA ST.
DARTMOUTH

Computer File Information	
Creation Date:	4/7/99 Initials: LLF
Last Modification Date:	7/30/99 Initials: LLF
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Sheet Revisions	
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Colorado Department of Transportation
DOT
STREET TOWN, CO ZIP
Phone: 303-757-9866
FAX: 303-757-9059
Region 6 C.D.L.
HDR
HDR Engineering, Inc.

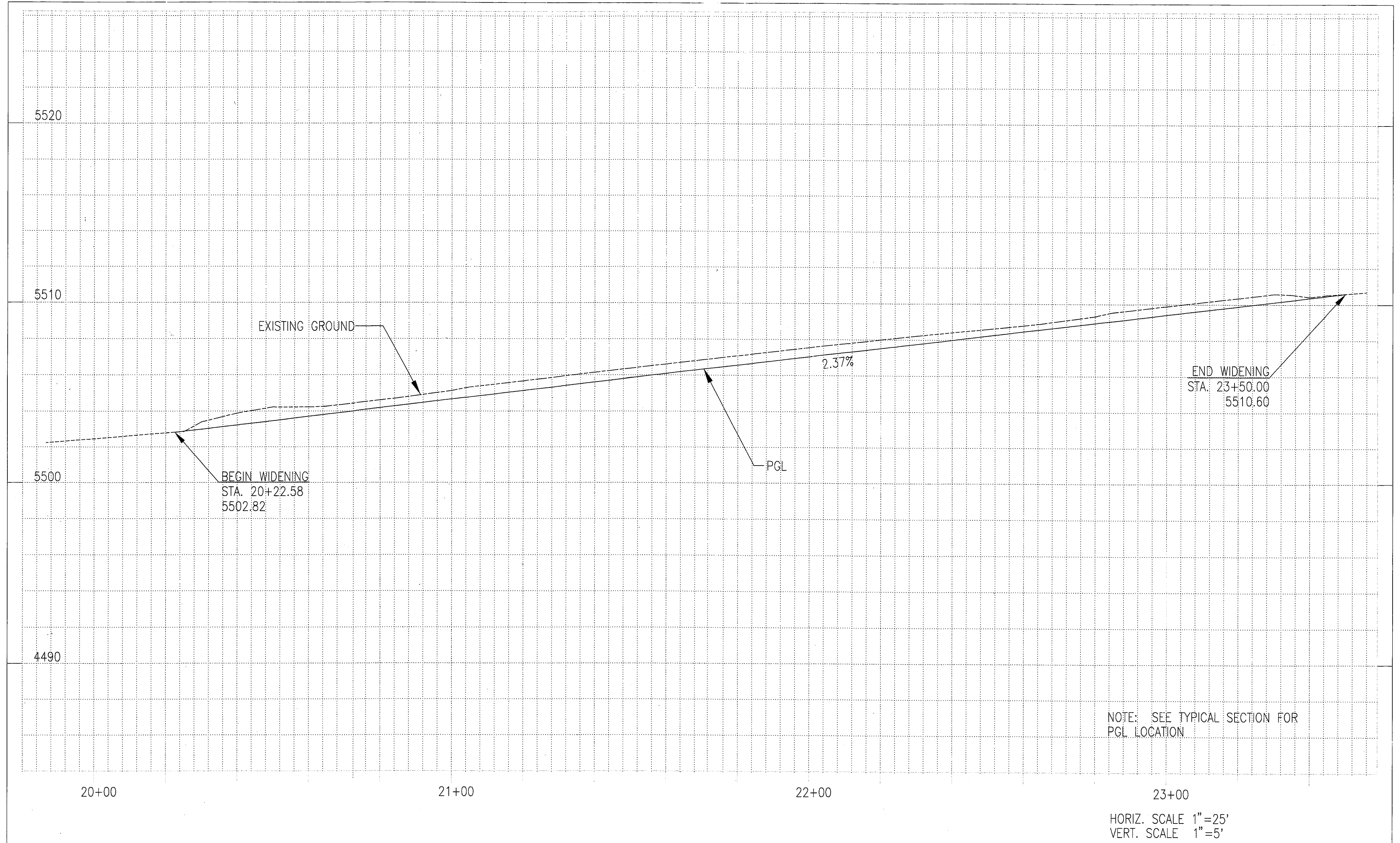
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Revised:
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Designer:	RST
Detailer:	LLF
Sheet Subset:	Roadway
Subset Sheets:	RD2 of 2

Project No./Code	
NH 030A-022	
12661	
Sheet Number	7

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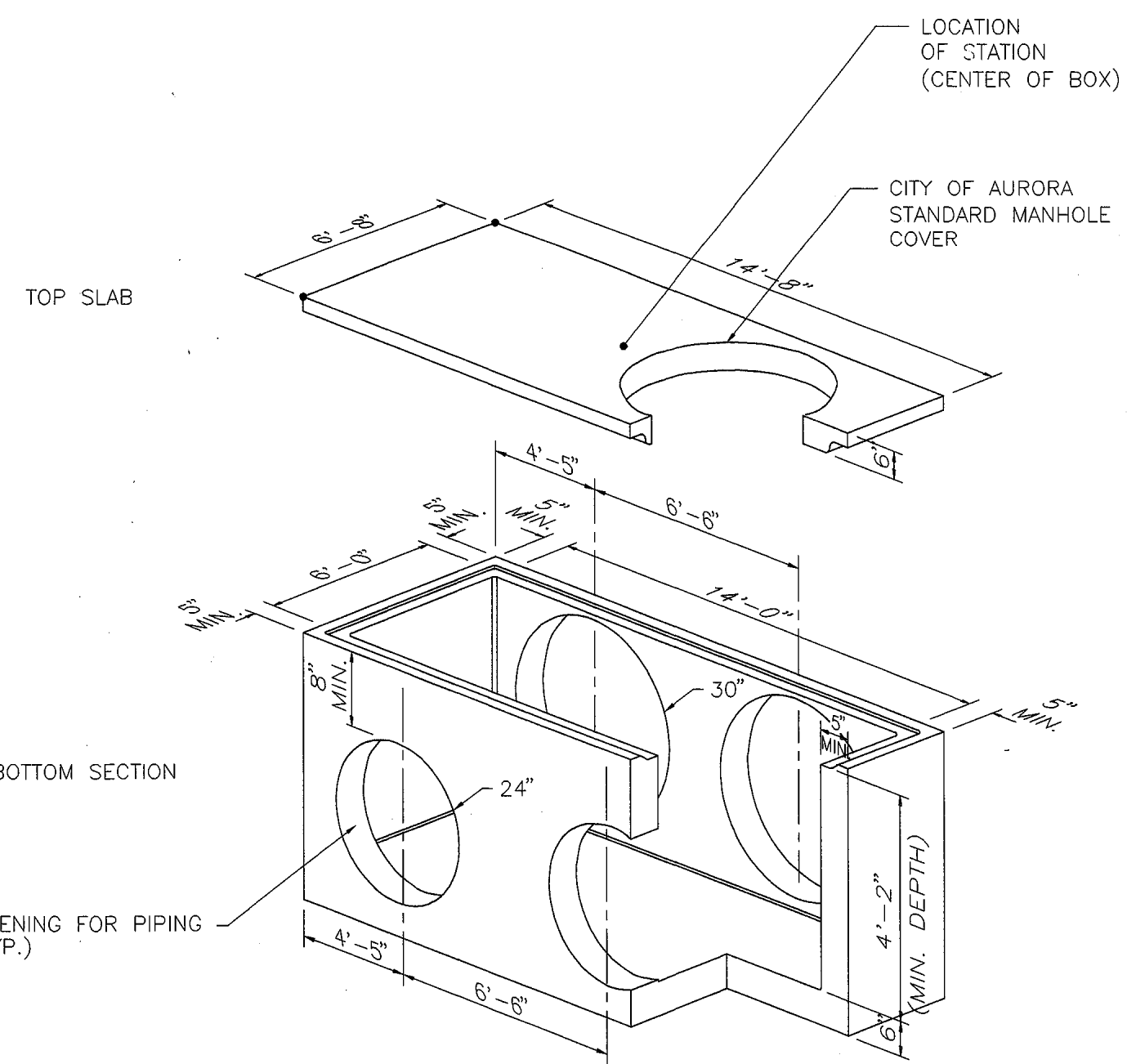
990152 8/13



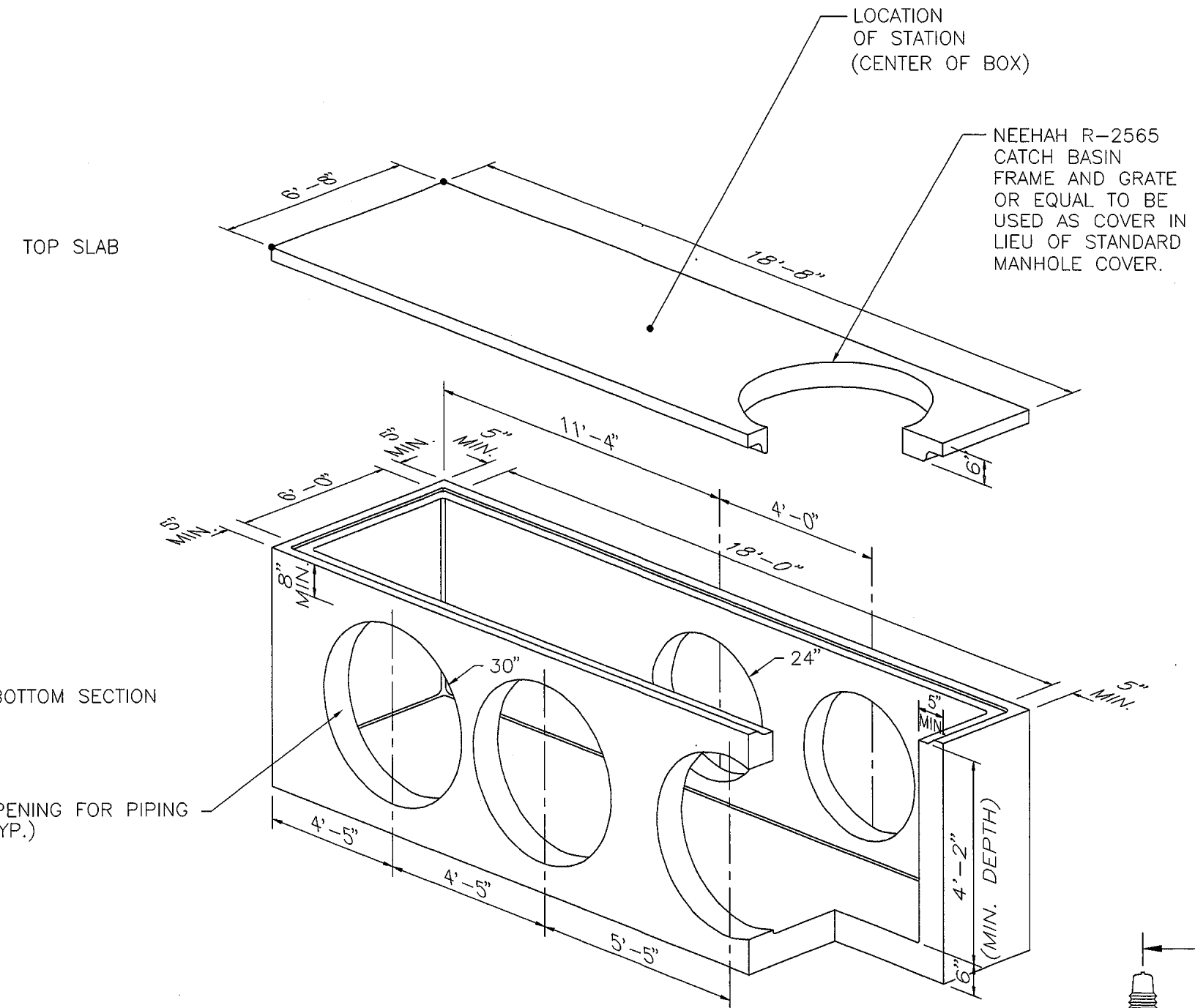
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990152 9/13



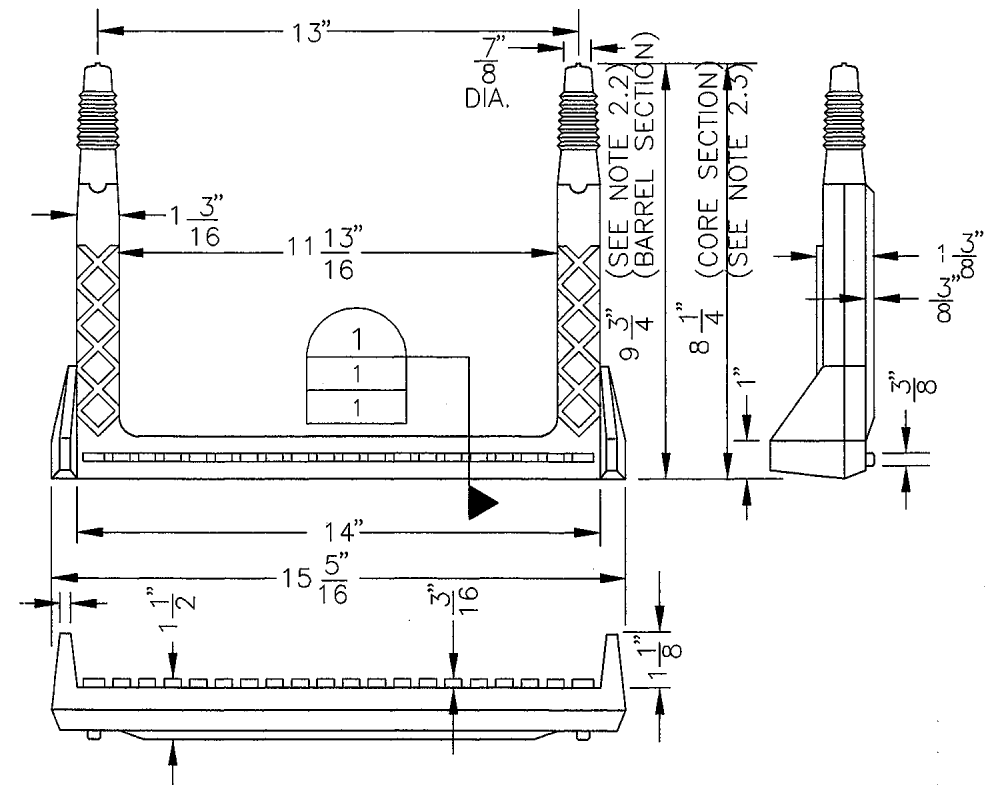
14'x6' STORM SEWER VAULT



18'x6' STORM SEWER VAULT

NOTES:

- 1) STORM SEWER BOXES SHALL BE PRECAST. ALL CONCRETE SHALL HAVE A 28 DAY COMPRESSIVE STRENGTH OF 4500 psi.
- 2) REINFORCING STEEL SHALL COMPLY WITH ASTM A815 GRADE 60, A708 GRADE 60 OR A497 GRADE 70. BAR BENDING AND PLACEMENT SHALL COMPLY WITH THE LATEST ACI STANDARDS.
- 3) STANDARD STRUCTURAL DESIGN SHALL BE BASED ON AASHTO HS 20 WHEEL LOADING.
- 4) THE DESIGN SHALL BE BASED ON THE TOP AT ANY ELEVATION BETWEEN FINISHED GRADE AND 5'-0" BELOW GRADE.
- 5) THE STRUCTURE SHALL BE PLACED ON A COMPACTED GRANULAR BASE TO INSURE UNIFORM DISTRIBUTION OF SOIL PRESSURES.
- 6) INSTALL MANHOLE STEPS ON VERTICAL WALL OF STRUCTURE. STEPS SHALL HAVE A 9-3/4" LEG AND SHALL PROJECT FROM THE WALL 6-5/8". SEE DETAIL.
- 7) UTILITY VAULT DESIGN TO BE COMPLETED BY FABRICATOR. SHOP DRAWINGS AND DESIGN CALCULATIONS SHALL BE SEALED BY A PROFESSIONAL ENGINEER AND SUBMITTED TO THE RESIDENT ENGINEER.

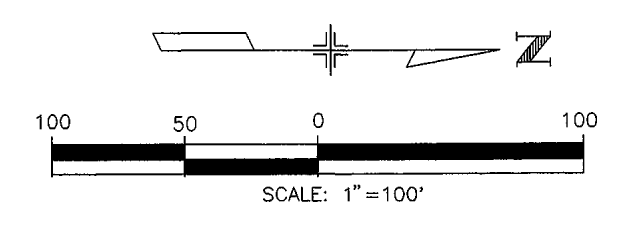
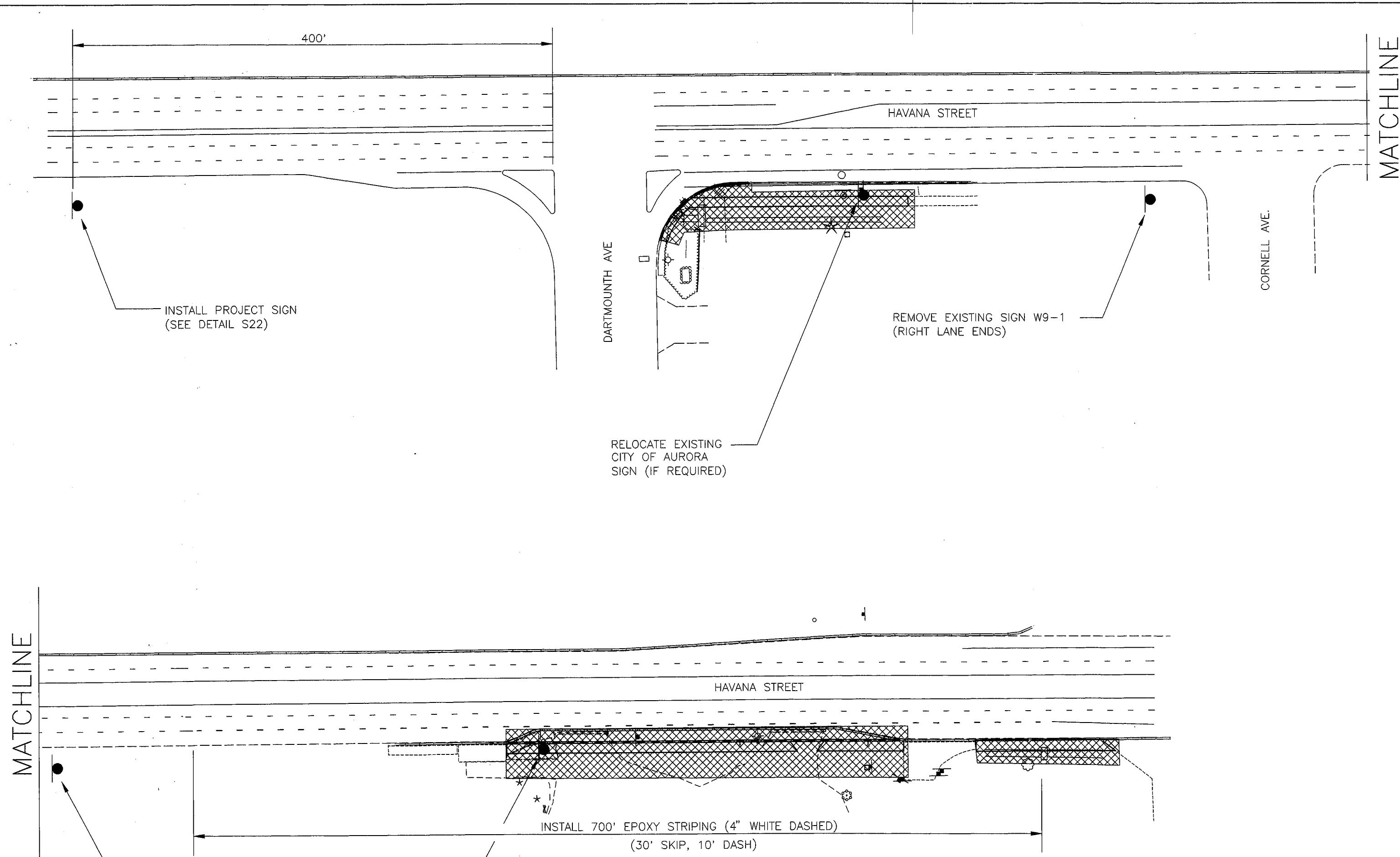


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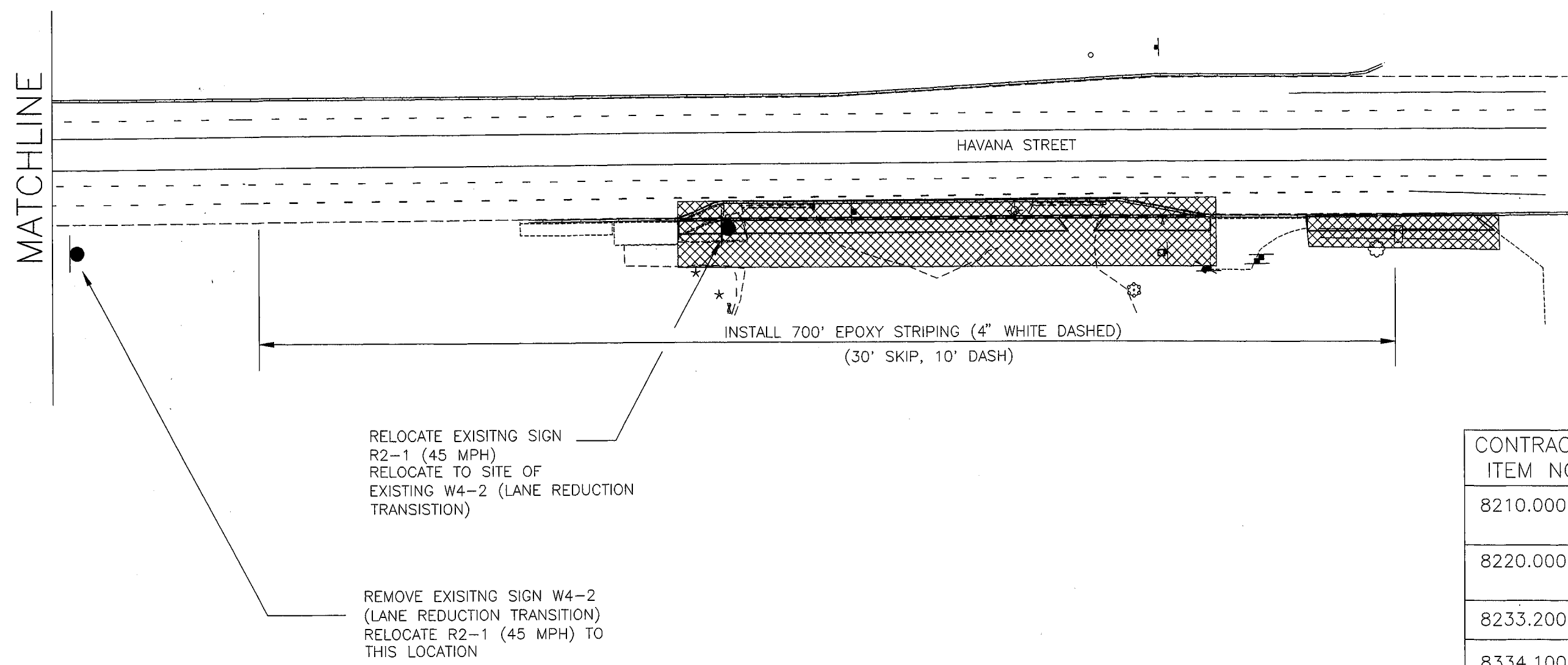
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								Subset Sheets:		Subset Sheets: 1 of 1	

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990152 19/13



LEGEND
 WORK AREA



SIGNING AND STRIPING SUMMARY

CONTRACT ITEM NO.	CONTRACT ITEM	STATION LIMITS	UNITS	QUANTITY	TOTAL
8210.0000	REMOVE TRAFFIC SIGN	16+15.00 14+75.00	EA EA	1 1	2
8220.0000	RESET SIGN	20+48.00 TO 16+15.00 12+25.00	EA EA	1 1	2
8233.2000	PROJECT SIGN	SEE PLAN	EA	1	1
8334.1000	EPOXY STRIPING	16+08.00 - 23+80.00	SF	250	250

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Last Modification Date:	7/29/99 Initials: KMC
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Colorado Department of Transportation
 2000 SOUTH HOLLY
 DENVER, CO 80222
 Phone: 303-757-9866
 FAX: 303-757-9059

HDR
 HDR Engineering, Inc.

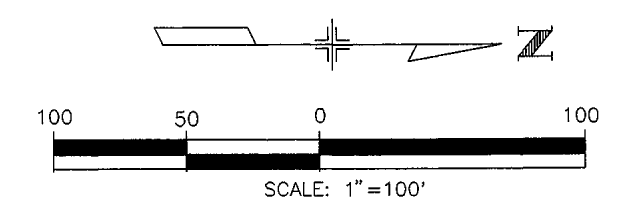
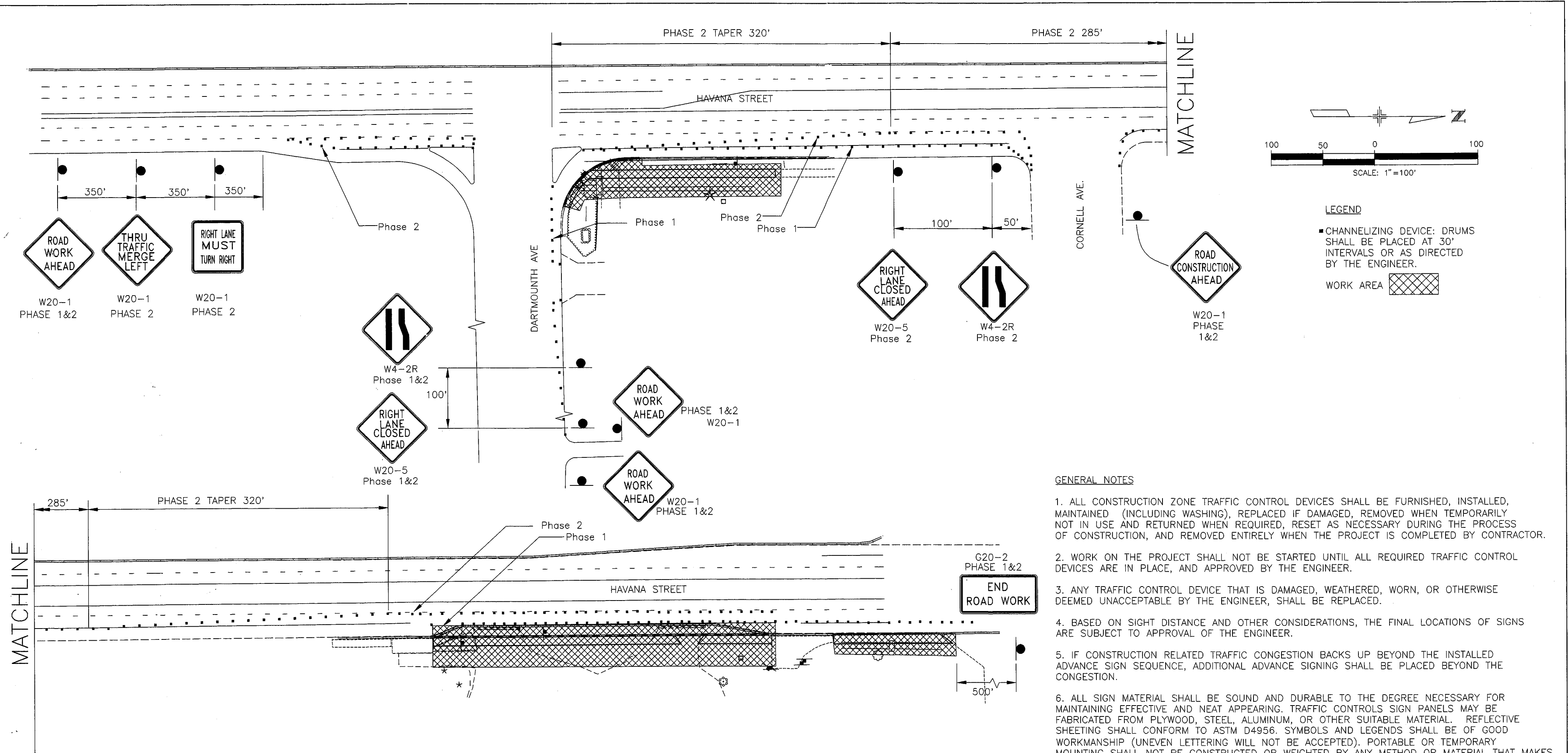
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No Revisions:		Designer:	KMC
Revised:		Detailer:	KMC
Void:		Sheet Subset:	Roadway
		Subset Sheets:	RD2 of 2

Project No./Code	
NH 030A-022	
12661	
Sheet Number	10

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990152 11/13



LEGEND

- CHANNELIZING DEVICE: DRUMS SHALL BE PLACED AT 30' INTERVALS OR AS DIRECTED BY THE ENGINEER.
- WORK AREA [Cross-hatched box symbol]

- GENERAL NOTES**
- ALL CONSTRUCTION ZONE TRAFFIC CONTROL DEVICES SHALL BE FURNISHED, INSTALLED, MAINTAINED (INCLUDING WASHING), REPLACED IF DAMAGED, REMOVED WHEN TEMPORARILY NOT IN USE AND RETURNED WHEN REQUIRED, RESET AS NECESSARY DURING THE PROCESS OF CONSTRUCTION, AND REMOVED ENTIRELY WHEN THE PROJECT IS COMPLETED BY CONTRACTOR.
 - WORK ON THE PROJECT SHALL NOT BE STARTED UNTIL ALL REQUIRED TRAFFIC CONTROL DEVICES ARE IN PLACE, AND APPROVED BY THE ENGINEER.
 - ANY TRAFFIC CONTROL DEVICE THAT IS DAMAGED, WEATHERED, WORN, OR OTHERWISE DEEMED UNACCEPTABLE BY THE ENGINEER, SHALL BE REPLACED.
 - BASED ON SIGHT DISTANCE AND OTHER CONSIDERATIONS, THE FINAL LOCATIONS OF SIGNS ARE SUBJECT TO APPROVAL OF THE ENGINEER.
 - IF CONSTRUCTION RELATED TRAFFIC CONGESTION BACKS UP BEYOND THE INSTALLED ADVANCE SIGN SEQUENCE, ADDITIONAL ADVANCE SIGNING SHALL BE PLACED BEYOND THE CONGESTION.
 - ALL SIGN MATERIAL SHALL BE SOUND AND DURABLE TO THE DEGREE NECESSARY FOR MAINTAINING EFFECTIVE AND NEAT APPEARING. TRAFFIC CONTROLS SIGN PANELS MAY BE FABRICATED FROM PLYWOOD, STEEL, ALUMINUM, OR OTHER SUITABLE MATERIAL. REFLECTIVE SHEETING SHALL CONFORM TO ASTM D4956. SYMBOLS AND LEGENDS SHALL BE OF GOOD WORKMANSHIP (UNEVEN LETTERING WILL NOT BE ACCEPTED). PORTABLE OR TEMPORARY MOUNTING SHALL NOT BE CONSTRUCTED OR WEIGHTED BY ANY METHOD OR MATERIAL THAT MAKES THEM HAZARDOUS TO TRAFFIC.
 - ALL CONSTRUCTION SIGN PLACEMENT SHALL BE IN ACCORDANCE WITH STANDARD PLAN "TYPICAL GROUND SIGN PLACEMENT" UNLESS OTHERWISE APPROVED.
- SIGNS APPROVED TO BE MOUNTED ON PORTABLE SUPPORTS, OR APPROPRIATE SIGNS MOUNTED ON BARRICADES, MAY BE AT LOWER HEIGHTS, BUT THE BOTTOM OF THE SIGNS SHALL NOT BE LESS THAN ONE FOOT ABOVE THE PAVEMENT ELEVATION.
- ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE SPECIFICATIONS OUTLINED IN THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD).
 - TYPE 1 BARRICADES AND VERTICAL PANELS SHALL NOT BE USED.
 - BUFFER SPACE SHALL BE MINIMUM OF 1 FOOT.
 - MAINTAIN ALL BUSINESS ACCESS AT ALL TIMES DURING CONSTRUCTION.

- CONSTRUCTION SEQUECE**
- PHASE 1**
 - INSTALL NEW CURB AND GUTER, SIDEWALK, STORM SEWER PIPES AND VAULT AT NORTHEAST INTERSECTION OF HAVANA AND DARMOUTH.
 - INSTALL FIRE HYDRANT, CURB AND GUTTER, SIDEWALK, DRIVEWAY, STORM SEWER PIPES AND VAULT NORTH OF CORNELL AVE.
 - PHASE 2 (NORTH OF CORNELL AVE.)**
 - REMOVE EXISTING HYDRANT AND CURB & GUTTER AND EXCAVATE WIDENING AREA.
 - PAVE WIDENING AREA.

Computer File Information		Sheet Revisions		Colorado Department of Transportation		As Constructed		Traffic Control Plan		Project No./Code	
Creation Date:	7/09/99	Initials:	KMC	(R-)			No Revisions:			NH 030A-022	
Last Modification Date:	7/09/99	Initials:	KMC	(R-)			Revised:		Designer:	KMC	12661
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2000 SOUTH HOLLY
DENVER, CO 80222
Phone: 303-757-9866
FAX: 303-757-9059

DOT
DEPARTMENT OF TRANSPORTATION
Region 6

HDR
HDR Engineering, Inc.

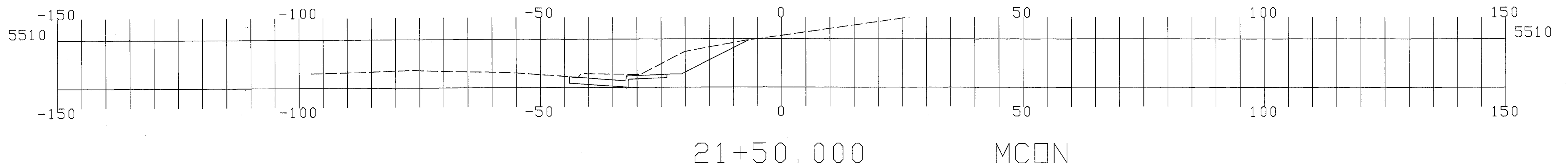
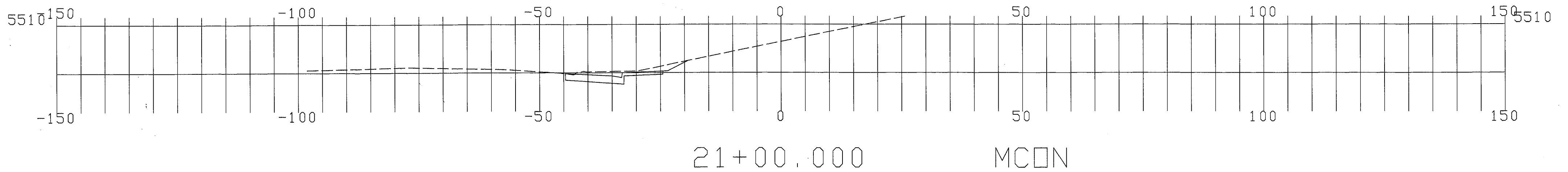
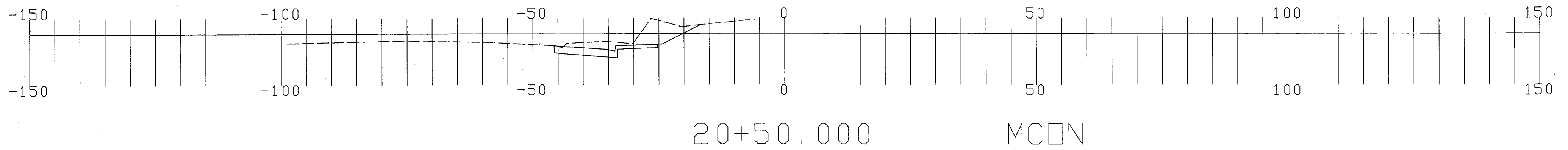
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990152 12/13

CROSS SECTIONS

SCALE- 1 IN. = 10 FT. HORIZ.
1 IN. = 5 FT. VERT.

PROJECT NUMBER	SHEET NO.
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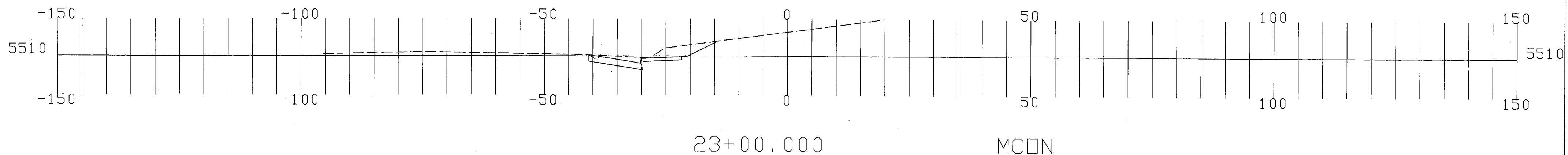
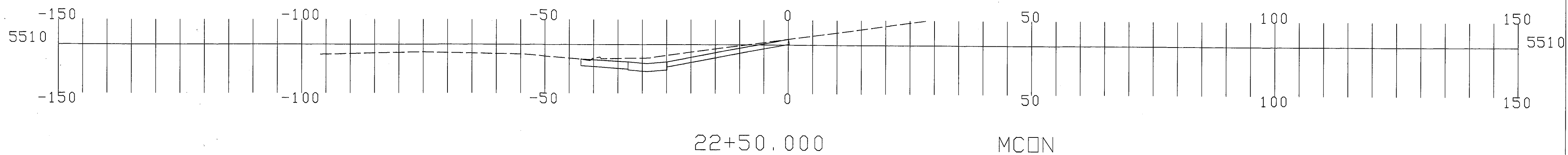
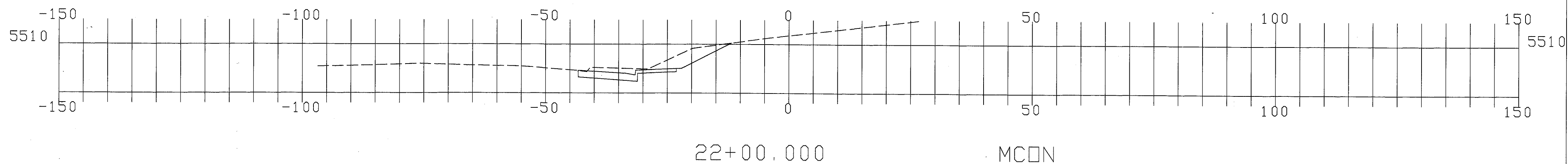
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990152 13/13

CROSS SECTIONS

SCALE- 1 IN. = 10 FT. HORIZ.
1 IN. = 5 FT. VERT.

PROJECT NUMBER	SHEET NO.
NH 030A-022	13



990152 13/13