

CITY OF AURORA GENERAL NOTES

- 2.03.5.01 City of Aurora plan review is only for general conformance with City of Aurora design criteria and the City Code. The City is not responsible for the accuracy and adequacy of the design, dimensions, and elevations which shall be confirmed and correlated at the job site. The City of Aurora, through the approval of this document, assumes no responsibility for the completeness and/or accuracy of this document.
- 2.03.5.02 All roadway construction from curb to curb shall conform to CDOT Standard Specifications for Road & Bridge Construction. All construction behind the curb shall conform to City of Aurora "Roadway Design and Construction Specifications," latest revision.
- 2.03.5.03 All water distribution, sanitary sewer, and storm drainage construction shall conform to City of Aurora "Public Utility Improvements Rules and Regulations Regarding Standards and Specifications," latest revision, except that drainage inlets and pipes maintained by CDOT shall conform to CDOT Specifications and Standards, latest edition.
- 2.03.5.04 All materials and workmanship shall be subject to inspection by the City. The City reserves the right to accept or reject any materials and workmanship that does not conform to the required standards and specifications.
- 2.03.5.05 The Contractor shall notify the City Public Improvement Inspections Division, 303-739-7350, 24 hours prior to the beginning of construction.
- 2.03.5.06 Location of existing utilities shall be verified by the Contractor prior to actual construction. For information, contact Utility Notification Center of Colorado, 1-800-922-1987.
- 2.03.5.07 The Contractor shall have one signed copy of the plans (approved by the City of Aurora), one copy of the appropriate standards and specifications at the job site at all times, and a copy of any permits and extension agreements needed at the job site at all times.
- 2.03.5.08 It is the Consultant's responsibility to accurately show existing conditions, both on-site, and off-site, on the construction plans. Any modifications needed due to conflicts, omissions, or changed conditions either on-site or off-site, that arise in the field, will be entirely the Developer's responsibility. The cost to rectify any adverse situation to meet the City standards and specifications and the City Code shall be borne solely by the Developer.
- 2.03.5.09 The contractor must obtain the written permission of the adjacent property owner(s) prior to any off-site construction staging.
- 2.03.5.10 Concrete shall not be placed until the forms have been inspected and a pour slip issued. Pour slips will not be issued unless the Contractor has, at the job site, a copy of the approved plans bearing the signature of the City Engineer and with the "Approved for Curb and Gutter Only" block initiated by the City Engineer's representative.
- 2.03.5.11 Paving shall not start until a soil report and pavement design is approved by the City Engineer and subgrade compaction tests taken by the developer's geotech are approved by Public Improvements Inspections.
- 2.03.5.12 Standard City of Aurora curb ramps are to be constructed at all curb returns, at all "T" intersections and at all curbside kiosks or clusters.
- 2.03.5.13 All stationing is based on flowline of roadways unless otherwise noted.
- 2.03.5.14 All elevations are flowline unless otherwise noted.
- 2.03.5.15 The City of Aurora shall not be liable for the maintenance of (Insert name of specific private improvement.) These facilities may not meet City standards and are to remain in private maintenance in perpetuity.
- 2.03.5.16 The contractor/developer is responsible for contacting CDOT to ensure that all work on or adjacent to state highways or CDOT R.O.W. meets CDOT requirements.
- 2.03.5.17 The streetlight installation cost is funded by the developer/owner. Coordinate the streetlight locations and installation with the Public Works Department 303-7397300. Show streetlight location on civil construction plans.
- 2.03.5.18 The Owner/Contractor must obtain an a C.D.P.S. storm water discharge permit from the Colorado Department of Health, if required.
- 2.03.5.19 The Owner/Contractor is responsible for coordinating with the Army Corp of Engineers for wetland mitigation or work within the Waters of the U.S., if required. It is the responsibility of the Owner/Contractor to inform the City of Aurora of the Army Corp of Engineer's requirements. City approval of the construction plans is subject to the Owner/Contractor obtaining a 404 permit, if applicable.

UTILITY NOTES

- 1 All materials, workmanship, construction details, and testing for the water line construction shall conform to the standards and specifications for water distribution lines as set forth by the City of Aurora, Department of Utilities, latest revision.
- 2 All fire hydrants will be located not less than three feet - six inches (3' - 6") and not more than eight (8) feet from the back of curb to the center of the hydrant and be unobstructed on the street side. Minimum clearance on all other sides will be five (5) feet.
- 3 All fire hydrants must be grade staked in the field whenever curb and gutter has not been installed.
- 4 All utility easements must remain unobstructed and fully accessible along their entire length for maintenance equipment.
- 5 Water main restraint shall be in accordance with The City of Aurora Public Utility Improvements Rules and Regulations Regarding Standards and Specifications, latest edition. Megalugs or Uni-flange may be used in place of rods and clamps.
- 6 Water line valves are not allowed in cross pans.
- 7 All water meters, water service lines and sanitary sewer service lines are not allowed in or under driveways.
- 8 All sanitary service lines shall be tees off of mains. Wyes shall be used for lots at back of culde-sacs.
- 9 No connections are allowed to the fire line between the gate valve at the water line main and the back flow preventer (within the building).
- 10 Water Pressure Zone (4C). Zero (0) psi @ elevation (5785) static. A pressure reducing valve (PRV) is required when the pressure at the unit is greater than eighty (80) psi.
- 11 Adjust all manholes, fire hydrants, and valve boxes to grade per City of Aurora Standards and Specifications, latest revision, as necessary.
- 12 All fire lines and commercial water service lines will require reduced pressure back flow preventer or double check valves as required by the City of Aurora Utility department. Contact the Building Division at (303) 739-7420 to schedule flow tests for private fire lines prior to the issuance of a certificate of occupancy.
- 13 The contractor shall contact the C.O.A. Wastewater Control division at (303) 326-8050 for inspection of any required grease traps or sand/oil interceptors prior to the issuance of the certificate of occupancy.

CITY OF AURORA

HAVANA ST NB ACCELERATION LANE

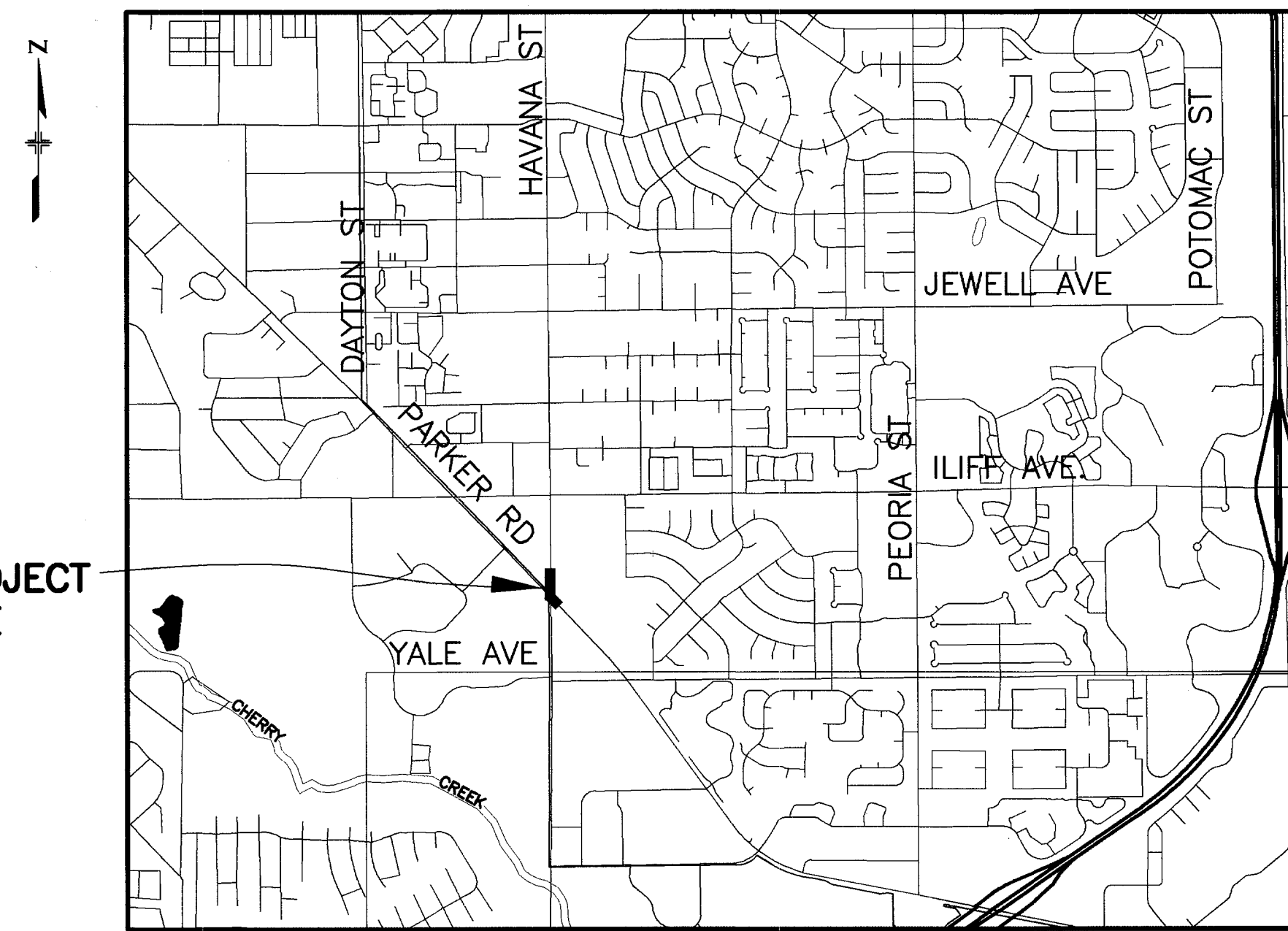
FOR RIGHT TURNS FROM PARKER RD (SH 83)

CDOT PROJECT NO SHE 0831-101/15542

C.O.A. PROJECT# 06048

SECTION 26 T4S, R67W, 6th P.M.
ARAPAHOE COUNTY, COLORADO

THE NOTES WITH A MARKED BOX APPLY TO THIS PROJECT



VICINITY MAP
SCALE: 1" = 2000'

Approved One Year From This Date
03.28.07

Cesar Sanchez 3-8-07
Senior Engineer Date

David Dechant 3-14-07
City Engineer Date

Joseph E. W... 3-14-07
Aurora Water Department Date

PLANS PREPARED FOR:
CONTACT: CEASAR SANCHEZ 303-739-7329
CITY OF AURORA PUBLIC WORKS DEPT.
15151 E. ALAMEDA PKWY, AURORA CO 80012

PLANS PREPARED BY:
CONTACT: HOANH TRAN 303-739-7309
CITY OF AURORA ENGINEERING DIVISION
15151 E. ALAMEDA PKWY, AURORA CO 80012

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LEGEND

<p>PROPOSED</p> <p>EXISTING</p> <p>RIGHT-OF-WAY</p> <p>EASEMENT LINE</p> <p>CURB AND GUTTER</p> <p>CONCRETE PAN</p> <p>SIDEWALK</p> <p>WOOD FENCE</p> <p>CHAIN LINK FENCE</p> <p>COMBINATION WIRE FENCE</p> <p>BARBED WIRE FENCE</p> <p>SANITARY SEWER</p> <p>STORM SEWER</p> <p>INLETS, FLARED END SECTION</p> <p>FLOW LINE OF DITCH</p> <p>EDGE OF STREAM</p> <p>WATER LINE</p> <p>FIRE HYDRANT</p> <p>WATER VALVE</p> <p>INDEX CONTOURS</p> <p>CONTOURS</p>	<p>WATER METER, GAS METER</p> <p>GAS LINE AND VALVE</p> <p>UGND ELECTRIC LINE</p> <p>UGND TELE CABLE AND VAULT</p> <p>UGND TV CABLE</p> <p>UGND FIBER OPTIC CABLE</p> <p>DECIDUOUS TREE, CONIFEROUS TREE</p> <p>DECIDUOUS SHRUB, CONIFEROUS SHRUB</p> <p>DECIDUOUS OR CONIFEROUS TREE GROVE</p> <p>DECIDUOUS HEDGE OR CONIFEROUS SHRUB GROVE</p> <p>POWER POLE, TELEPHONE POLE</p> <p>POLES WITH GUY WIRES</p> <p>STREET LIGHT, HIGH MAST LIGHT POLE</p> <p>JUNCTION BOX-ELECTRIC, TELEPHONE, TRAFFIC, OR TV</p> <p>SIGN, BILLBOARD SIGN</p> <p>LANDSCAPE TIMBER WALL</p> <p>BENCH</p> <p>SPRINKLER HEAD AND CONTROLLER OR MANIFOLD</p> <p>BUILDING</p> <p>FLAG POLE</p> <p>MAIL BOX</p> <p>POWER TOWER</p> <p>RAILROAD TRACKS</p> <p>HOT BITUMINOUS PAVEMENT (HBP)</p> <p>PROPOSED CUT CATCH POINT</p> <p>PROPOSED FILL CATCH POINT</p>
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EROSION CONTROL LEGEND

<p>INLET PROTECTION-ON GRADE (IPG)</p> <p>INLET PROTECTION-SUMP (IPS)</p> <p>VEHICLE TRACKING CONTROL (VTC)</p> <p>SILT FENCE (SF)</p> <p>CURB/ROCK SOCKS (CS)</p>	<p>ROUGH STREET CONTROL (RCS)</p> <p>MULCHING (MU)</p> <p>PERMANENT SEEDING (PS)</p> <p>CONCRETE WASHOUT (CW)</p>
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PLAN REVIEW DATES: _____

206228 2

PLAN NUMBER	NEW OR REVISED	M STANDARD TITLE	PAGE NUMBER
<input type="checkbox"/>		M-100-1 STANDARD SYMBOLS (3 SHEETS)	1-3
<input type="checkbox"/>		M-203-1 APPROACH ROADS	4
<input type="checkbox"/>		M-203-2 DITCH TYPES	5
<input type="checkbox"/>		M-203-11 SUPERELEVATION CROWNED AND DIVIDED HIGHWAYS (3 SHEETS)	6-8
<input type="checkbox"/>		M-203-12 SUPERELEVATION STREETS (2 SHEETS)	9-10
<input type="checkbox"/>		M-206-1 EXCAVATION AND BACKFILL FOR STRUCTURES (2 SHEETS)	11-12
<input type="checkbox"/>		M-206-2 EXCAVATION AND BACKFILL FOR BRIDGES (2 SHEETS)	13-14
<input checked="" type="checkbox"/>		M-208-1 TEMPORARY EROSION CONTROL (7 SHEETS)	15-21
<input type="checkbox"/>		M-210-1 MAILBOX SUPPORTS (2 SHEETS)	22-23
<input type="checkbox"/>		M-214-1 PLANTING DETAILS	24
<input checked="" type="checkbox"/>		M-412-1 CONCRETE PAVEMENT JOINTS (5 SHEETS)	25-29
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<input type="checkbox"/>		M-601-1 SINGLE CONCRETE BOX CULVERT (2 SHEETS)	31-32
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PLAN NUMBER	NEW OR REVISED	M STANDARD TITLE	PAGE NUMBER
<input type="checkbox"/>		M-607-1 WIRE FENCES AND GATES (3 SHEETS)	84-86
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<input type="checkbox"/>		S-614-40A ALTERNATIVE TRAFFIC SIGNAL INSTALLATION DETAILS (5 SHEETS)	167-171
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THE STANDARD PLAN SHEETS INDICATED HEREON BY A MARKED BOX ARE TO BE USED TO CONSTRUCT THIS PROJECT.

ALL OF THE M&S STANDARD PLANS, AS SUPPLEMENTED AND REVISED, APPLY TO THIS PROJECT WHEN USED BY DESIGNATED PAY ITEM OR SUBSIDIARY ITEM.

COLORADO
DEPARTMENT OF TRANSPORTATION
STANDARD PLANS LIST
M&S STANDARDS
July 04, 2006

Print Date: \$DATE\$	Sheet Revisions	Colorado Department of Transportation		As Constructed	STANDARD PLAN LIST		Project No./Code	
Drawing File Name: \$FILES\$		Date:	Comments	Init.	No Revisions:			SHE 0831-101/15542
Horiz. Scale: \$SCALES\$	Vert. Scale: As Noted	(R-X)			Revised:	Designer: H. TRAN	X-XX-XX	COA# 06048
Unit Information	Unit Leader Initials				Void:	Detailer: J CREWS	X-XX-XX	Sheet Number 2
						Sheet Subset: XXXXXXXX	Subset Sheets: XXX of XXX	



4201 East Arkansas Avenue
Room 107
Denver, CO 80222
Phone: 303-757-9486 FAX: 303-757-9197

Staff Bridge Branch

XX

CDOT GENERAL NOTES

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2006228

1. PIPE BEDDING FOR NEW STORM SEWER AND WATER LINE WILL NOT BE MEASURED AND PAID FOR SEPARATELY BUT WILL BE INCLUDED IN THE COST OF THE NEW CORRUGATED STEEL PIPE AND NEW PVC PIPE.
2. EXCAVATION REQUIRED FOR COMPACTION OF BASES OF CUTS AND FILLS WILL BE CONSIDERED AS INCIDENTAL TO THAT OPERATION AND WILL NOT BE PAID FOR SEPARATELY.
3. PAVEMENT SUBGRADE SHALL BE PROOF ROLLED WITH A HEAVILY LOADED PNEUMATIC TIRE VEHICLE. PROOF ROLLING SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST OF THE NEW CONCRETE PAVEMENT.
4. THE CONTRACTOR SHALL KEEP THE WORK AREA FREE FROM STANDING WATER AND SHALL KEEP THE EXCAVATION AREA FREE FROM STORM WATER RUN OFF. THE COST OF THIS PROTECTION SHALL BE INCLUDED IN THE COST OF EXCAVATION.
5. THE CONTRACTOR SHALL LIMIT CONSTRUCTION ACTIVITIES TO THOSE AREAS WITHIN THE LIMITS OF DISTURBANCE AND/OR TOES OF SLOPE AS SHOWN ON THE PLANS. ANY DISTURBANCE BEYOND THESE LIMITS SHALL BE RESTORED TO ORIGINAL CONDITIONS BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE. CONSTRUCTION ACTIVITIES, IN ADDITION TO NORMAL CONSTRUCTION PROCEDURES, SHALL INCLUDE THE PARKING OF VEHICLES OR EQUIPMENT, DISPOSAL OF LITTER AND ANY OTHER ACTION WHICH WOULD ALTER EXISTING CONDITIONS.
6. 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 EXPENSE PRIOR TO FINAL ACCEPTANCE AND PAYMENT.
7. TYPE OF COMPACTION FOR SUBGRADE ON THIS PROJECT WILL BE AASHTO T-180 (A-2-4 SOILS). COMPACTION OF A-6 AND A-7 SOILS, IF ENCOUNTERED, SHALL BE PER AASHTO T-99. WATER FOR COMPACTION WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST OF THE WORK.
8. DEPTH OF MOISTURE AND DENSITY CONTROL FOR THIS PROJECT SHALL BE 6 INCHES FOR RECONSTRUCTED OR NEW PAVEMENT AREAS, CONCRETE REPLACEMENT AREAS, AND NEW SIDEWALK AREAS.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COLLECTION AND PROPER DISPOSAL OF WATER FROM PAVEMENT AND CONCRETE SAWCUTTING OPERATIONS ACCORDING TO EROSION AND SEDIMENT CONTROL BMPs.
10. WHERE EXISTING CONCRETE PAVEMENT IS TO BE REMOVED TO PLACE CURB AND GUTTER OR NEW CONCRETE PAVEMENT, IT SHALL BE CUT TO A NEAT LINE FULL DEPTH WITH A PAVEMENT CUTTING SAW OR OTHER METHOD AS APPROVED BY THE ENGINEER TO AVOID DAMAGING REMAINING CONCRETE PAVEMENT. THE SAW RESIDUE MATERIAL SHALL BE CONTAINED TO NOT ALLOW IT TO RUN OFF INTO WATERS OF THE STATE, THROUGH INLETS OR BY ANY OTHER MEANS. SAW CUTTING AND CONTAINMENT OF SAW RESIDUE SHALL NOT BE PAID FOR SEPARATELY, BUT WILL BE INCLUDED IN THE COST OF THE WORK.
11. REMOVAL OF EXISTING CONCRETE ITEMS THAT ARE ADJACENT TO PROPOSED CONCRETE ITEMS SHALL BE SAW CUT TO A NEAT WORK LINE FULL DEPTH AS NEEDED TO AVOID DAMAGING EXISTING CONCRETE. SAW CUTTING AND CONTAINMENT OF SAW RESIDUE SHALL NOT BE MEASURED AND PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE WORK.
12. ALL EQUIPMENT TO REMAIN ON THE ROAD SURFACE, PAVED PARKING LOTS OR AREAS OF DISTURBANCE COVERED IN THE PLANS. ANY OFF ROAD STAGING AREAS MUST BE PRE-APPROVED BY THE PROJECT ENGINEER.
13. THE CONTRACTOR SHALL TAKE APPROPRIATE MEASURES TO ENSURE THE SAFETY OF PEDESTRIANS DURING ALL CURB, GUTTER AND SIDEWALK WORK. AMERICAN'S WITH DISABILITIES ACT (ADA) ACCESS THROUGH CONSTRUCTION ZONE SHALL BE ENFORCED. ADA ACCESS ON SAFETY MEASURES SHALL BE INCLUDED IN THE COSTS OF THE WORK.
14. PRIOR TO OPENING ANY AREAS OF PAVEMENT REMOVAL, REPLACEMENT TO TRAFFIC, THE CONTRACTOR SHALL PLACE ALL SIGNING AND PAVEMENT MARKINGS IN ACCORDANCE WITH THE PLANS, SPECIFICATIONS AND THE M.U.T.C.D.
15. UTILITY INFORMATION SHOWN ON THE PLANS IS BASED ON BEST INFORMATION AVAILABLE AND NOT GUARANTEED TO BE ACCURATE OR COMPLETE. THE CONTRACTOR'S ATTENTION IS DIRECTED TO SUBSECTION 105.10 OF THE STANDARD SPECIFICATIONS CONCERNING UTILITIES. THE CONTRACTOR SHALL CALL THE UTILITY NOTIFICATION CENTER OF COLORADO (UNCC) AT 1-800-922-1987 FOR UTILITY LOCATIONS AT LEAST 2 BUSINESS DAYS, NOT INCLUDING THE DAY OF ACTUAL NOTIFICATION, PRIOR TO ANY EXCAVATION.
16. UTILITY FEATURES, SUCH AS FIBER OPTIC PULL BOXES SHALL BE PROTECTED WITH BARRICADES AND PLASTIC ORANGE FENCING DURING CONSTRUCTION OR AS APPROVED BY THE ENGINEER. THE COST OF SUCH PROTECTION SHALL BE CONSIDERED INCIDENTAL TO THE WORK AND SHALL NOT BE PAID FOR SEPARATELY.
17. IT IS SUGGESTED THAT THE CONTRACTOR INITIATES A REQUEST TO XCEL ENERGY FOR ANY NEEDED CONSTRUCTION RELATED TEMPORARY ELECTRICAL POWER SOURCES AS SOON AS POSSIBLE. THE REQUEST IS TO BE PROCESSED THROUGH XCEL ENERGY - BUILDER'S CALL LINE AT 1-800-628-2121.
18. WATER SHALL BE USED AS A DUST PALLIATIVE WHERE REQUIRED. LOCATIONS SHALL BE AS DIRECTED BY THE ENGINEER. THE COST ASSOCIATED WITH DUST CONTROL IS CONSIDERED INCIDENTAL TO THE WORK AND WILL NOT BE PAID FOR SEPARATELY.
19. MATERIAL THAT IS LOOSENED FROM THE ROADWAY WILL BE CLEARED OFF THE ROADWAY (BROOMED, SWEEPED UP) IMMEDIATELY. NONE OF THE MATERIAL SHALL BE ALLOWED TO RUN OFF INTO WATERS OF THE STATE, THROUGH STATE INLETS, OR BY ANY OTHER MEANS.
20. IF ANY BURIED CULTURAL RESOURCES ARE ENCOUNTERED DURING EXCAVATION ACTIVITIES, WORK SHALL STOP, AND THE CDOT ARCHAEOLOGIST, DAN JEPSON, SHALL BE CALLED AT 303-757-9631.
21. IF ANY PALEONTOLOGICAL RESOURCES ARE ENCOUNTERED DURING EXCAVATION ACTIVITIES, WORK SHALL STOP AND THE CDOT PALEONTOLOGIST, STEVE WALLACE, SHALL BE CALLED AT 303-757-9632.

22. EROSION CONTROL MEASURES MUST BE IMPLEMENTED BEFORE CONSTRUCTION AND GRADING BEGIN.
23. DISPOSAL OF EXCESS MATERIAL OFF-SITE OR THE IMPORTING OF MATERIALS ON-SITE, REGARDLESS OF PROPERTY OWNERSHIP, MUST BE DONE IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL ENVIRONMENTAL REGULATIONS AND THE CDOT PRAIRIE DOG POLICY, IF THE CONTRACTOR HAS ANY QUESTIONS ABOUT WHETHER OR NOT THEY ARE IN COMPLIANCE, THEY SHOULD CALL THE REGION 6 ENVIRONMENTAL PROJECT MANAGER AT (303) 757-9933 PRIOR TO REMOVAL AND DISPOSAL OF MATERIAL.
24. ALL LAND CORNERS, LAND CORNER TIES, BENCH MARKS, OR OTHER SURVEY CONTROL MONUMENTS MUST BE REFERENCED PRIOR TO THEIR DESTRUCTION. IF ANY MONUMENTS ARE ENCOUNTERED, CONTACT ANY OF THE FOLLOWING PERSONS AT LEAST TEN DAYS PRIOR TO SCHEDULED DESTRUCTION: CDOT REGION SURVEYOR AT 303-757-9212; CITY OF AURORA CHIEF SURVEYOR AT 303-326-8015; PATRICIA DICKERSON, CDOT REGION 6 ROW AT 303-757-9922.
25. THE CONTRACTOR SHALL PROTECT PAVED SURFACES FROM EQUIPMENT DAMAGE. BACKHOE EQUIPMENT OUTRIGGERS SHALL BE FITTED WITH RUBBER PADS WHENEVER OUTRIGGERS ARE PLACED ON ANY PAVED SURFACE. TRACKED VEHICLES WITH GROUNDERS ARE NOT PERMITTED ON PAVED SURFACES, UNLESS SPECIFIC PRECAUTIONS ARE TAKEN TO PROTECT THE SURFACE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE CAUSED TO THE PAVEMENT BY THE OPERATION OF SUCH EQUIPMENT AND, UPON ORDER OF THE PROJECT MANAGER, SHALL REPAIR SUCH SURFACES TO THE ORIGINAL CONDITION AT HIS EXPENSE.
26. THE CONTRACTOR SHALL CLEAN UP AREAS FROM WHICH SPOIL HAS BEEN REMOVED AT THE END OF EACH DAY BY SWEEPING, OR OTHER APPROVED METHODS. WHEN THE WORK IS HALTED BY LONG LASTING RAIN, THE CONTRACTOR SHALL CLEAN UP AND CLOSE DOWN THE WORKING AREAS BEFORE LEAVING THE SITE, JUST AS HE WOULD DO AT THE END OF EACH WORKDAY.
27. WASTE MATERIALS, INCLUDING EXCESS EXCAVATION, SHALL BE REMOVED CONCURRENTLY WITH THE PROGRESS OF THE WORK OPERATIONS, AND NO ACCUMULATION OF ANY KIND OF RUBBISH AND DEBRIS SHALL BE PERMITTED. THE COST OF REMOVING WASTE MATERIALS FROM THE SITE AND DISPOSING OF THE SAME SHALL BE INCLUDED IN THE VARIOUS CONTRACT ITEMS, AND NO SEPARATE PAYMENT SHALL BE MADE THEREOF.
28. NO PARKING OR STAGING SHALL BE ALLOWED IN THE BABI YAR PARK LOCATED AT THE SOUTHWEST CORNER OF PARKER ROAD & HAVANA STREET.
29. DEWATERING OF GROUNDWATER IS NOT ANTICIPATED FOR THIS PROJECT. HOWEVER, IF MINOR AMOUNTS OF GROUNDWATER ARE ENCOUNTERED AND NEED TO BE PUMPED AWAY FROM THE PROJECT AREA, THE GROUNDWATER SHALL NOT BE ALLOWED TO RUN OFF INTO WATERS OF THE STATE. IT SHALL BE PROPERLY CONTAINERIZED AND DISPOSED.
30. IT IS ESTIMATED THAT 8 EACH OF POTHOLING FOR UTILITIES WILL BE NEEDED FOR THIS CONSTRUCTION, AS APPROVED BY THE PROJECT ENGINEER.
31. CONTRACTOR SHALL NOTIFY RTD OF THE CONSTRUCTION WORK ADJACENT TO THE BUS STOP PRIOR TO SETTING UP TRAFFIC CONTROL DEVICES.
32. THE CONTRACTOR SHALL NOTIFY CITY OF AURORA, TRAFFIC DIVISION, 303-326-8227, OF CONSTRUCTION WORK PRIOR TO SETTING UP TRAFFIC CONTROL DEVICES SO THAT THE TRAFFIC SIGNAL TIMING MAY BE ADJUSTED FOR THE DURATION OF THE CLOSURE.
33. THE CONTRACTOR SHALL NOTIFY CITY OF AURORA, TRAFFIC DIVISION, 303-326-8227, AS SOON AS WORK IS COMPLETE AND THE CLOSURE IS REMOVED SO THAT THE ORIGINAL TIMING OF THE SIGNAL CAN BE RESTORED.
34. CLASS P CONCRETE SHALL BE USED FOR ALL CONCRETE PAVEMENT.
35. TO PROVIDE FOR ADEQUATE SULFATE RESISTANCE IN ALL CONCRETE SUPPLIED, SEVERITY OF POTENTIAL EXPOSURE SHALL BE CLASS 2 FOR THIS PROJECT. THE CONTRACTOR MAY AT HIS OWN EXPENSE HAVE A CERTIFIED LABORATORY TEST THE SUB GRADE AS PER THE FIELD MATERIALS MANUAL. TESTING SHALL BE AT THE SAME SCHEDULE AND FREQUENCY AS REQUIRED FOR A PRELIMINARY SOIL SURVEY. THE CONTRACTOR MAY PROPOSE A DIFFERENT CLASS OF EXPOSURE FOR THE PROJECT BASED ON THOSE TEST RESULTS.

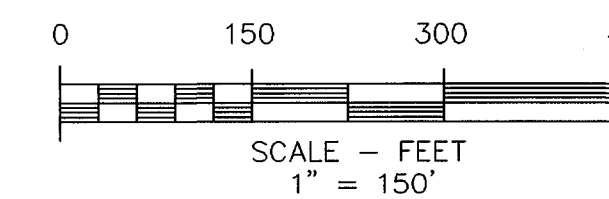
CALL UTILITY NOTIFICATION CENTER OF COLORADO 1-800-922-1987 <small>CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.</small>	
DESIGNED BY: H. TRAN	CHECKED BY: SCALE: PROJECT No.:
CAD BY: JTC	AS SHOWN 06048
REVISIONS	
CITY OF AURORA ENGINEERING DIVISION 15151 E. ALAMEDA PKWY., AURORA, COLORADO 80012 PHONE (303) 739-7300 HAVANA ST NB ACCELERATION LANE FOR RIGHT TURN FROM PARKER RD (SH 83) CDOT GENERAL NOTES	
SHEET 3	

APPROVED FOR ONE YEAR FROM THIS DATE <i>03.28.07</i>	
<i>Cesar Sanchez</i>	3-8-07
SENIOR ENGINEER	DATE
<i>[Signature]</i>	3-16-07
CITY ENGINEER	DATE
<i>[Signature]</i>	3-14-07
AURORA WATER DEPARTMENT	DATE

CONTROL DRAWING

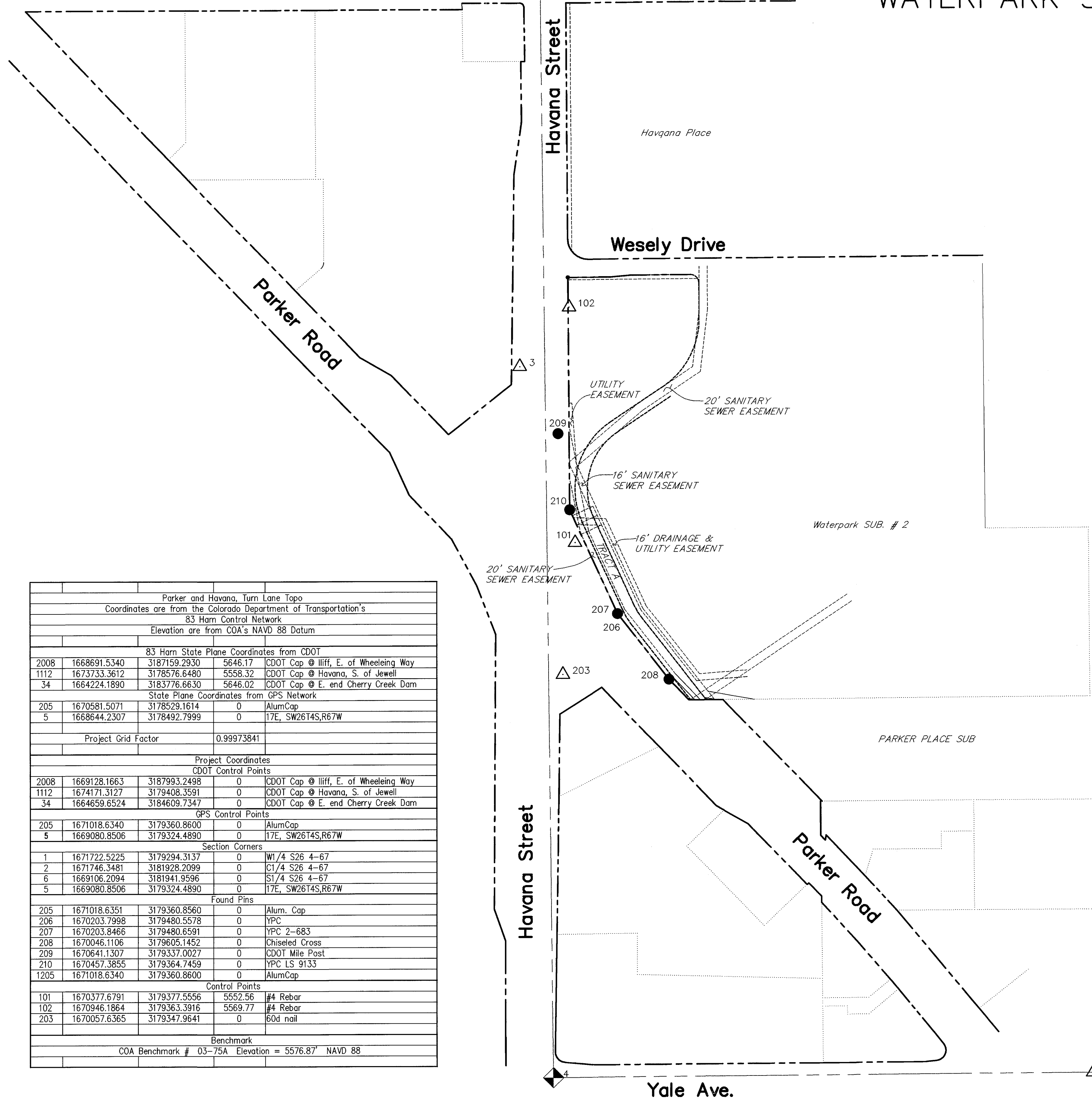
SECTION 26 T4S, R67W, 6th P.M. ARAPAHOE COUNTY, COLORADO

INTERSECTION OF PARKER RD & HAVANA ST WATERPARK SUBDIVISION #2

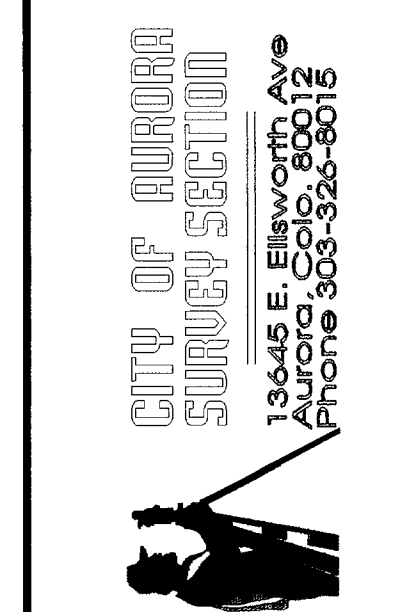


- NE Corner @ Parker and Havana
- 5 June 2006
- Surveyed by Greg Payne and John Dean
- Requested by Hoanh Tran
- Job # 06048
- C.O.A. Benchmark P-010C Elevation = 5573.88'
- Equipment Used: Topcon GTS 800 W/TDS and Zeiss Ni2
- Field Book # 1479, Survey Disk # 5031
- Coordinates are From CDOT's 1993 Harn Network

- #### LEGEND
- FOUND PIN
 - CONTROL POINT
 - ◆ SECTION CORNER OR 1/4 CORNER
 - CALCULATED POINTS
 - ⊕ TIE
 - △ CONTROL POINT



Parker and Havana, Turn Lane Topo				
Coordinates are from the Colorado Department of Transportation's				
83 Harn Control Network				
Elevation are from COA's NAVD 88 Datum				
83 Harn State Plane Coordinates from CDOT				
2008	1668691.5340	3187159.2930	5646.17	CDOT Cap @ Iliff, E. of Wheeling Way
1112	1673733.3612	3178576.6480	5556.32	CDOT Cap @ Havana, S. of Jewell
34	1664224.1890	3183776.8630	5646.02	CDOT Cap @ E. end Cherry Creek Dam
State Plane Coordinates from GPS Network				
205	1670581.5071	3178529.1614	0	AlumCap
5	1668644.2307	3178492.7999	0	17E, SW2614S, R67W
Project Grid Factor		0.99973841		
Project Coordinates				
CDOT Control Points				
2008	1669128.1663	3187993.2498	0	CDOT Cap @ Iliff, E. of Wheeling Way
1112	1674171.3127	3179408.3591	0	CDOT Cap @ Havana, S. of Jewell
34	1664659.6524	3184609.7347	0	CDOT Cap @ E. end Cherry Creek Dam
GPS Control Points				
205	1671018.6340	3179360.8600	0	AlumCap
5	1669080.8506	3179324.4890	0	17E, SW2614S, R67W
Section Corners				
1	1671722.5225	3179294.3137	0	W1/4 S26 4-67
2	1671746.3481	3181928.2099	0	C1/4 S26 4-67
6	1669106.2094	3181941.9596	0	S1/4 S26 4-67
5	1669080.8506	3179324.4890	0	17E, SW2614S, R67W
Found Pins				
205	1671018.6351	3179360.8560	0	Alum. Cap
206	1670203.7998	3179480.5578	0	YPC
207	1670203.8466	3179480.6591	0	YPC 2-683
208	1670046.1106	3179605.1452	0	Chiseled Cross
209	1670641.1307	3179337.0027	0	CDOT Mile Post
210	1670457.3855	3179364.7459	0	YPC LS 9133
1205	1671018.6340	3179360.8600	0	AlumCap
Control Points				
101	1670377.6791	3179377.5556	5552.56	#4 Rebar
102	1670946.1864	3179363.3916	5569.77	#4 Rebar
203	1670057.6365	3179347.9641	0	60d nail
Benchmark				
COA Benchmark # 03-75A Elevation = 5576.87' NAVD 88				



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

DESIGNED BY:	REVISIONS
SURVEY:	
CAD BY:	
JTC:	
CHECKED BY:	
SCALE:	
AS SHOWN:	
PROJECT No.:	
	06048

CITY OF AURORA ENGINEERING DIVISION
15151 E. ALAMEDA PKWY., AURORA, COLORADO 80012
PHONE (303) 739-7300

**HAVANA ST NB ACCELERATION LANE
FOR RIGHT TURNS FROM PARKER RD**
SURVEY CONTROL PLAN

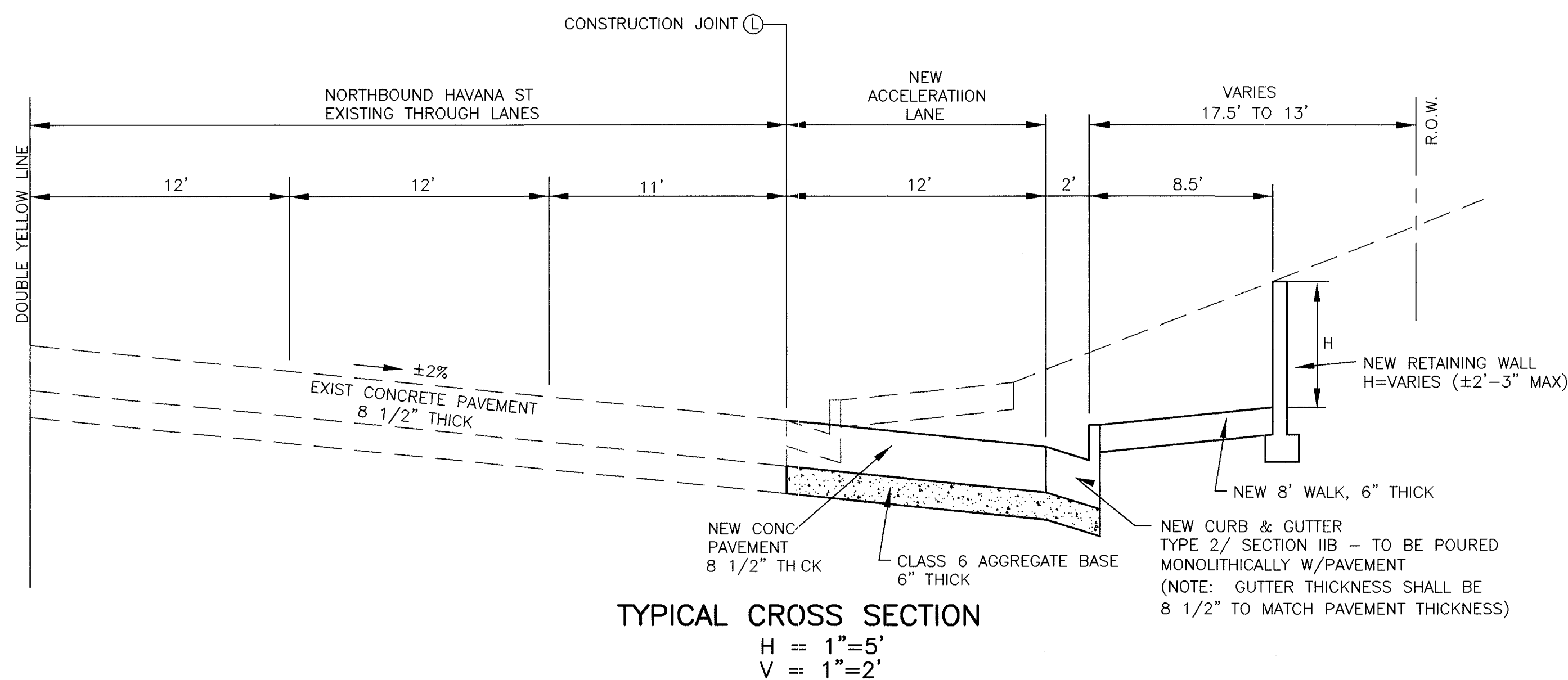
SHEET 4

APPROVED FOR ONE YEAR
FROM THIS DATE
03.28.07

Saul L. Sturley 3/9/07
CHIEF OF SURVEY DATE

4
2006228

200228 5



HAVANA NB ACCELERATION LANE FOR RIGHT TURN FROM PARKER ROAD

Design Parameter	Rigid Pavement
Design Life (years)	30
18K ESAL	477,201
% Trucks	2.30
Initial Serviceability	4.5
Terminal Serviceability	2.5
% Reliability	90
R-Value Design	N/A
Soil Resilient Modulus (psi)	6,457
Concrete Poisson's Ratio	0.15
PCC Modulus of Rupture (psi)	650
PCC Modulus of Elasticity (psi)	3,400,000
PCC Load Transfer Coefficient	2.8
Effective Modulus of Subgrade Reaction (psi/in)	190
Drainage Coefficient	1.0
Pavement Thickness (in) Calculated	6
Pavement Thickness (in) Used	8.5
Base Thickness (in)	6 (Class 6 ABC)
Overall Standard Deviation	0.34

RECORD NO.	ITEM NO.	DESCRIPTION	UNITS	QUANTITY	M & P REFERENCE
1	1601.0000	POTHOLE	EA	8	0
2	1800.0000	MOBILIZATION	LS	1	0
3	2113.4000	UNCLASSIFIED EXCAVATION	CY	488	0
4	2211.0600	REMOVE VERTICAL CURB & GUTTER	LF	442	0
5	2213.0000	REMOVE SIDEWALK CONCRETE	SF	3658	0
6	2216.0000	REMOVE CONCRETE SLOPE PAVING	SF	32	0
7	2231.0621	F/I CDOT CURB AND GUTTER TYPE 2 / SECTION IIB	LF	442	0
8	2233.0016	F & I CONCRETE SIDEWALK / 6 INCH THICK	SF	3628	0
9	2239.3900	FURNISH AND INSTALL CONCRETE/CDOT CLASS B	CY	25	0
10	2331.6606	FURNISH/INSTALL AGGREGATE BASE COURSE CLASS 6	CY	87	0
11	2538.0600	F & I 4 FT. HIGH PLASTIC CONSTRUCTION FENCE	LF	70	0
12	2730.0085	FURNISH/INSTALL CONCRETE PAVEMENT / 8.5 IN THICK	SY	376	0
13	2738.9000	FURNISH & INSTALL FLOWABLE BACKFILL	CY	6	0
14	3113.1800	REMOVE RCP--CLASS 3 18 IN. DIAMETER	LF	3	0
15	3210.3000	REMOVE CMP 30 IN DIAMETER	LF	4	0
16	3230.3000	FURNISH AND INSTALL CMP 30 IN. DIA	LF	6	0
17	3411.3000	REMOVE CDOT TYPE 13 INLET CAST IRON GRATE/SINGLE	EA	1	0
18	3431.1059	FURNISH/INSTALL INLET / CDOT TYPE R / L 5 FT ADJUST MH TO GRADE	EA	1	0
19	3492.1000	FURNISH AND INSTALL CONCRETE COLLAR/30-IN DIA	EA	1	0
20	3734.4030	EROSION & SEDIMENT CONTROL	EA	1	0
21	3738.0000	FURNISH & INSTALL CURB SOCK	EA	3	0
22	3738.4100	F/I CONCRETE WASHOUT	EA	2	0
23	3738.4200	FURNISH & INSTALL INLET PROTECTION/TYPE D INLET	EA	1	0
24	3738.5200	FURNISH & INSTALL INLET PROTECTION AT CURB INLET	EA	5	0
25	3738.5600	FURNISH AND INSTALL VEHICLE TRACKING CONTROL	EA	1	0
26	3739.0100	REMOVE 12 IN. WATERLINE	LF	18	0
27	4010.1200	FURNISH AND INSTALL WATERLINE--PVC/12-IN DIA.	LF	18	0
28	4130.1200	ADJUST VALVE BOX	EA	3	0
29	4621.1000	FURNISH AND INSTALL SOD	SF	1609	0
30	7132.0000	REMOVE AUSTRIAN PINE / 12 IN DIAMETER	EA	2	0
31	7215.3000	FURNISH/INSTALL AUSTRIAN PINE / 10 FT HIGH	EA	2	0
32	7235.3000	REPAIR SPRINKLER SYSTEM	LS	1	0
33	7527.1000	REMOVE TRAFFIC SIGN PANEL / CLASS 1 AND POST	EA	1	0
34	8210.0001	REMOVE SIGN ASSEMBLY / CLASS 2 PANELS AND POST	EA	1	0
35	8210.0002	F/I TRAFFIC SIGN PANEL / CLASS 1 AND POST	EA	2	0
36	8230.0001	FURNISH & INSTALL THERMO PLASTIC PAVEMENT MARKINGS TRAFFIC CONTROL	SF	36	0
37	8332.0000	RESET CDOT MILE POST MARKER	EA	1	0
38	8470.0000	F/A OJT COLORADO TRAINING PROGRAM	LS	1	0
39	9999.7048	F/A PARTNERING	EA	1	0
40	9999.9990	F/A FUEL COST ADJUSTMENT	FA	1	0
41	9999.9991	F/A EMERGING SMALL BUSINESS	FA	1	0
42	9999.9992				
43	9999.9993				

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.

DESIGNED BY: H. TRAN
CAD BY: JTC
CHECKED BY:
SCALE: AS SHOWN
PROJECT NO.: 06048

CITY OF AURORA ENGINEERING DIVISION
15151 E. ALAMEDA PKWY., AURORA, COLORADO 80012
PHONE (303) 739-7300

HAVANA ST NB ACCELERATION LANE
FOR RIGHT TURNS FROM PARKER RD (SH 83)
SUMMARY OF APPROXIMATE QUANTITIES - TYPICAL SECTION/PAVEMENT THICKNESS

SHEET 5

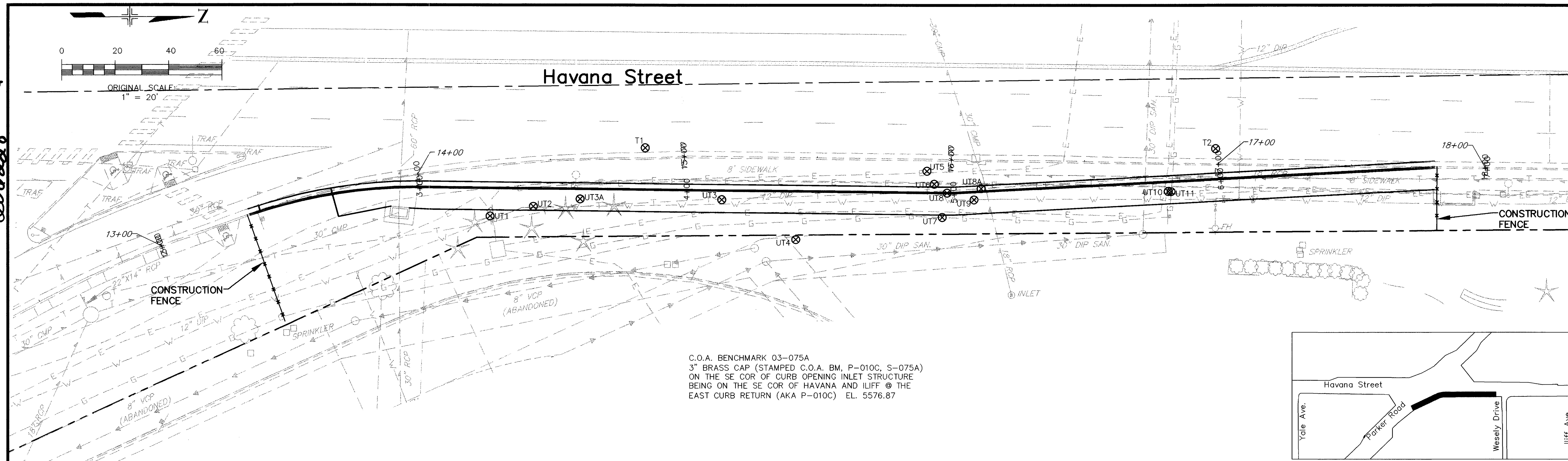
APPROVED FOR ONE YEAR FROM THIS DATE
03.28.07

Cesar Sanchez 3-8-07
SENIOR ENGINEER DATE

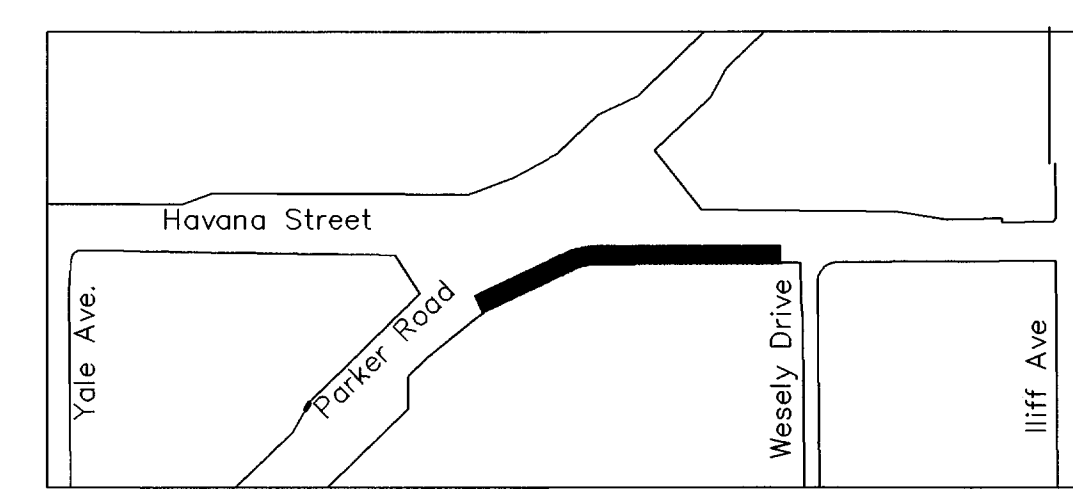
Joseph E. [Signature] 3-14-07
CITY ENGINEER DATE

AURORA WATER DEPARTMENT

4
200228



C.O.A. BENCHMARK 03-075A
3" BRASS CAP (STAMPED C.O.A. BM, P-010C, S-075A)
ON THE SE COR OF CURB OPENING INLET STRUCTURE
BEING ON THE SE COR OF HAVANA AND ILIFF @ THE
EAST CURB RETURN (AKA P-010C) EL. 5576.87



POTHOLING INFORMATION

Utility #	Use	Type / Owner	Diameter	Depth to Top	Exist Ground Elev.	Utility Top Elev.
1	ELEC	Cables / Xcel Energy	6 - 2"	5' - 10"	54.33	48.50
2	WATER	CIP / COA	12"	7' - 5"	54.42	47.00
3	TEL	F.O. Conduits / Level 3	3 - 2"	4' - 3"	56.55	52.30
3A	TEL	F.O. Conduits / Level 3	3 - 2"	6' - 4"	54.42	48.09
4	ELEC	Gray PVC / Xcel Energy	4"	2' - 10"	59.74	56.91
5	ELEC	Cables / Xcel Energy	3 - 2"	5' - 7"	57.94	52.36
6	ELEC	Gray PVC / Xcel Energy	3"	2' - 1"	58.31	56.23
7	GAS	Steel / Xcel Energy	8"	5' - 8"	59.77	54.10
8	TEL	F.O. Conduits / Level 3	3 - 2"	4' - 0"	58.80	54.80
8A	TEL	F.O. Conduits / Level 3	3 - 2"	2' - 9"	58.93	56.18
9	WATER	CIP / COA	12"	6' - 4"	59.32	52.99
10	ELEC	Not Found to 10'				
11	GAS	Steel / Xcel Energy	8"	4' - 3"	61.99	57.74

LEGEND
UT1- LOCATION OF UTILITY POTHOLE
T1- LOCATION OF SOIL BORING

LEGEND

- PAVEMENT: PCC
- Poorly Graded Gravel Base
Coarse, moist, medium dense, medium hard, brown
- Poorly Graded Sand, with clay and gravel, moist, medium stiff, brown
- Weathered SANDSTONE, silty, clayey, moist, very dense to extremely dense, reddish to gray brown.
- Weathered SILTSTONE, sandy, very moist, very hard, reddish brown

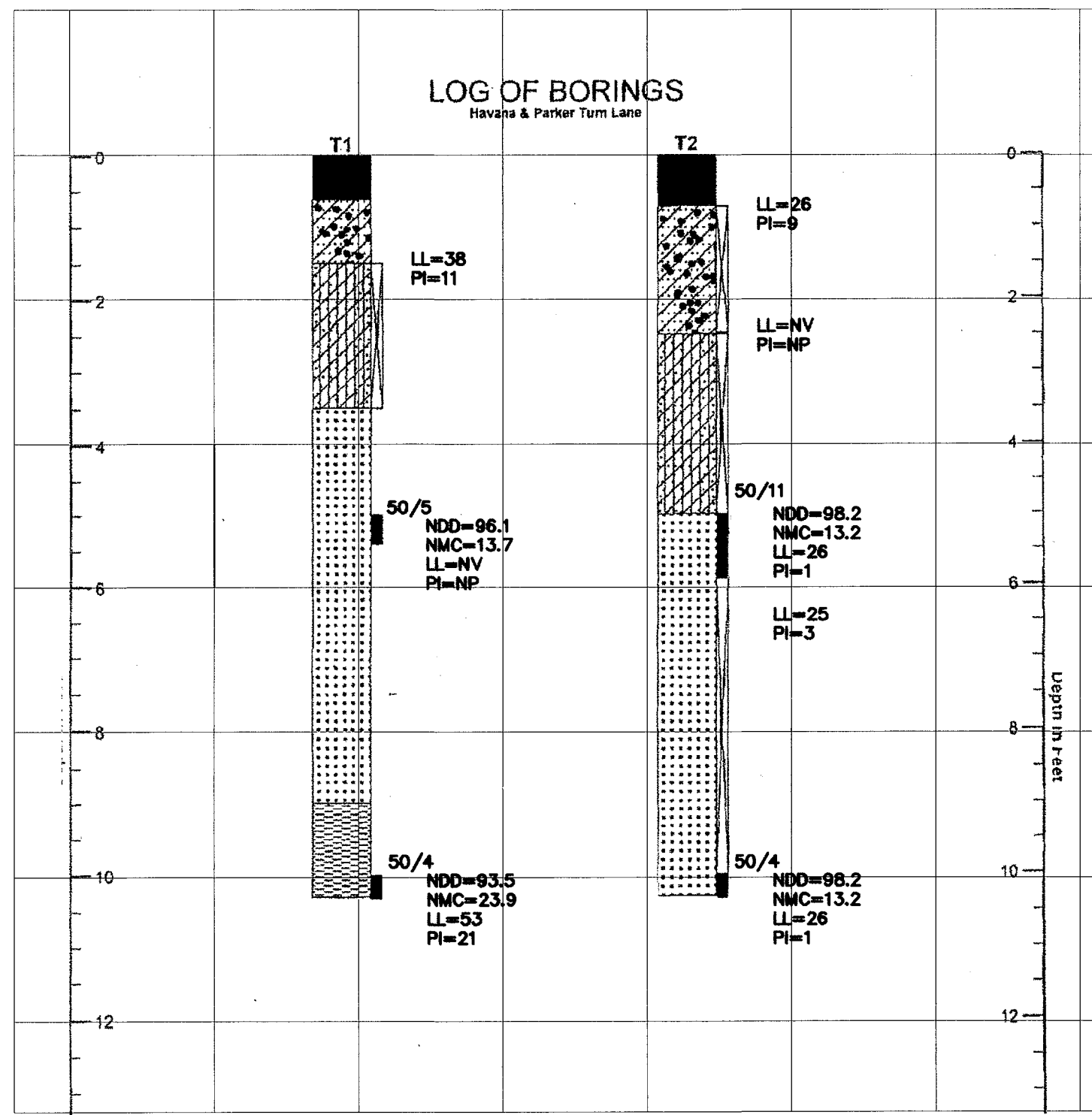
Soil Samplers

- Bulk sample taken from 6 in. auger
- California sampler - 2.5" O.D. - 130 lb. hammer dropped 30".

Notes:

- Exploratory borings were drilled on 12/7/06 using a 6-inch diameter continuous flight power auger.
- No free water was encountered at the time of drilling or when re-checked the following day.
- Boring locations were taped from existing features. Locations shown are approximate.
- The complete geotechnical Engineering report is on file at the City of Aurora Engineering Division, 303-739-7300.

LOG OF BORINGS



CITY OF AURORA MATERIALS TESTING LABORATORY
SUMMARY OF SUBSURFACE SOILS LABORATORY TEST RESULTS

BORING NO.	DEPTH (feet)	SAMPLE TYPE	NDD (pcf)	-200 SIEVE (%)	ATTERBERG LIMITS			pH	UNCONFINED COMPRESSION (ksf)	WATER SOLUBLE SULFATE (ppm)	SOIL DESCRIPTION	SOIL CLASSIFICATION	
					LL	PL	PI					USCS	AASHTO
T1	5'	CA	96.1 13.7	26	NV	NP	NP				SANDSTONE, silty, light brown	SM	A-2-4 0
T1	10'	CA	93.5 23.9	74	53	32	21		3.1		SILTSTONE, elastic, w/sand reddish brown	MH	A-7-5 17
T2	5'	CA	118.9 6.7	18	NV	NP	NP		2.1		SANDSTONE, silty, brown	SM	A-2-4 0
T2	10'	CA	98.2 13.2	17	26	25	1				SANDSTONE, silty, light brown	SM	A-2-4 0
T1	3.5-10'	BS		38	36	25	11				SAND, silty, brown	SM	A-6 1
T2	8"-2.5'	BS		9	26	17	9				Contaminated base coarse, grey brown		
T2	2.5-5'	BS		28	NV	NP	NP				SAND, silty, grey brown	SM	A-2-4 0
T2	5'-10'	BS		35	25	22	3				SAND, silty, brown	SM	A-2-4 0

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.

DESIGNED BY:	H. TRAN
CAD BY:	JTC
CHECKED BY:	
SCALE:	AS SHOWN
PROJECT NO.:	06048

CITY OF AURORA ENGINEERING DIVISION
15151 E. ALAMEDA PKWY., AURORA, COLORADO 80012
PHONE (303) 739-7300
HAVANA ST NB ACCELERATION LANE
FOR RIGHT TURN FROM PARKER RD (SH 83)
LOCATIONS OF SOIL BORING/LOGS AND UTILITY POTHLES
SHEET 6

APPROVED FOR ONE YEAR

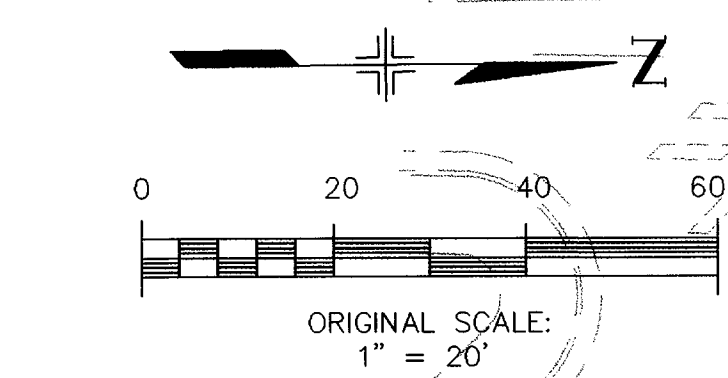
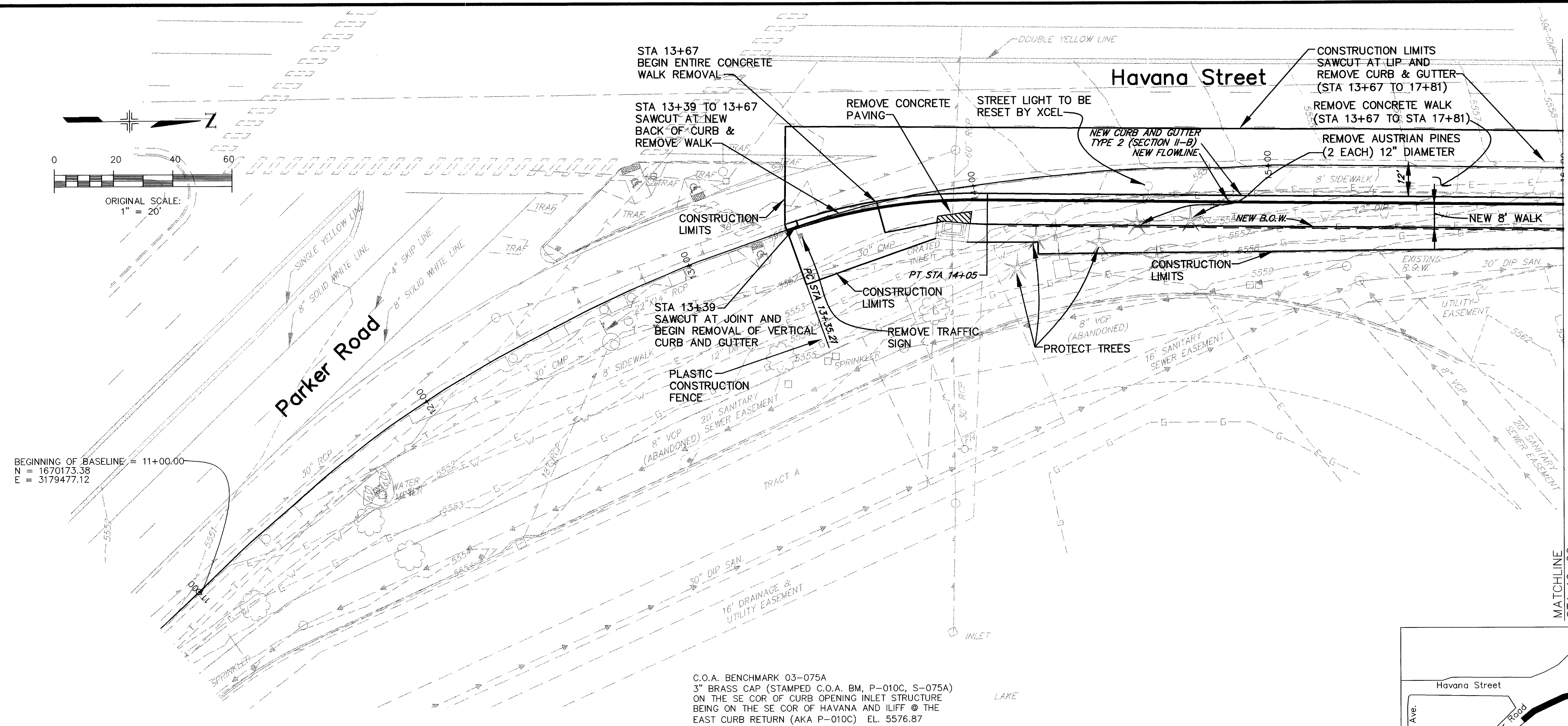
03.28.07

Peter Sanchez 3-8-07
SENIOR ENGINEER DATE

Joseph E. Wray 3-14-07
CITY ENGINEER DATE

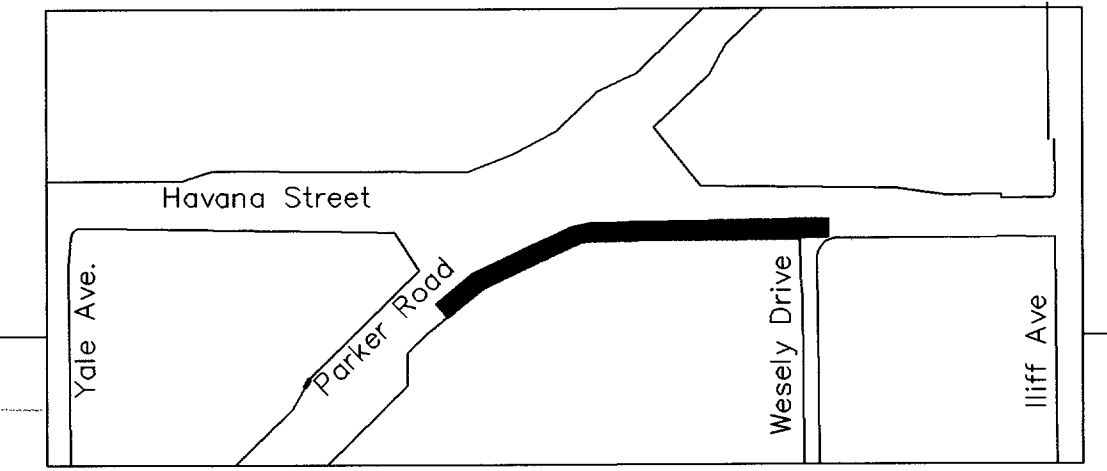
AURORA WATER DEPARTMENT DATE

200228 7

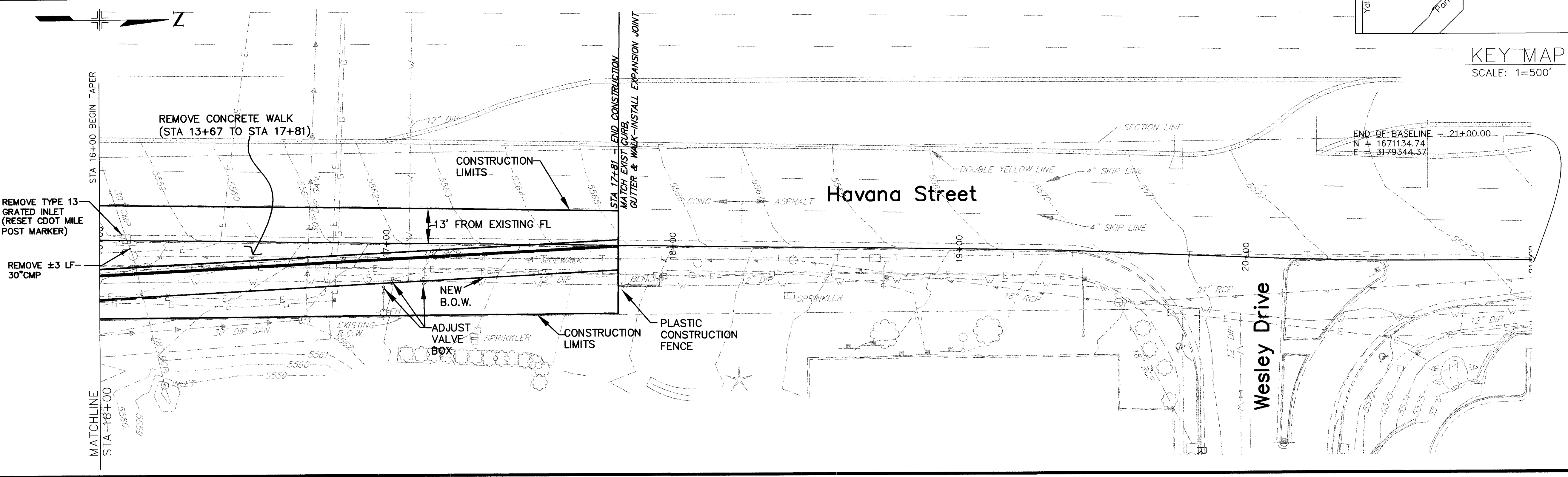


BEGINNING OF BASELINE = 11+00.00
 N = 1670173.38
 E = 3179477.12

C.O.A. BENCHMARK 03-075A
 3\"/>



KEY MAP
 SCALE: 1=500'



END OF BASELINE = 21+00.00
 N = 1671134.74
 E = 3179344.37

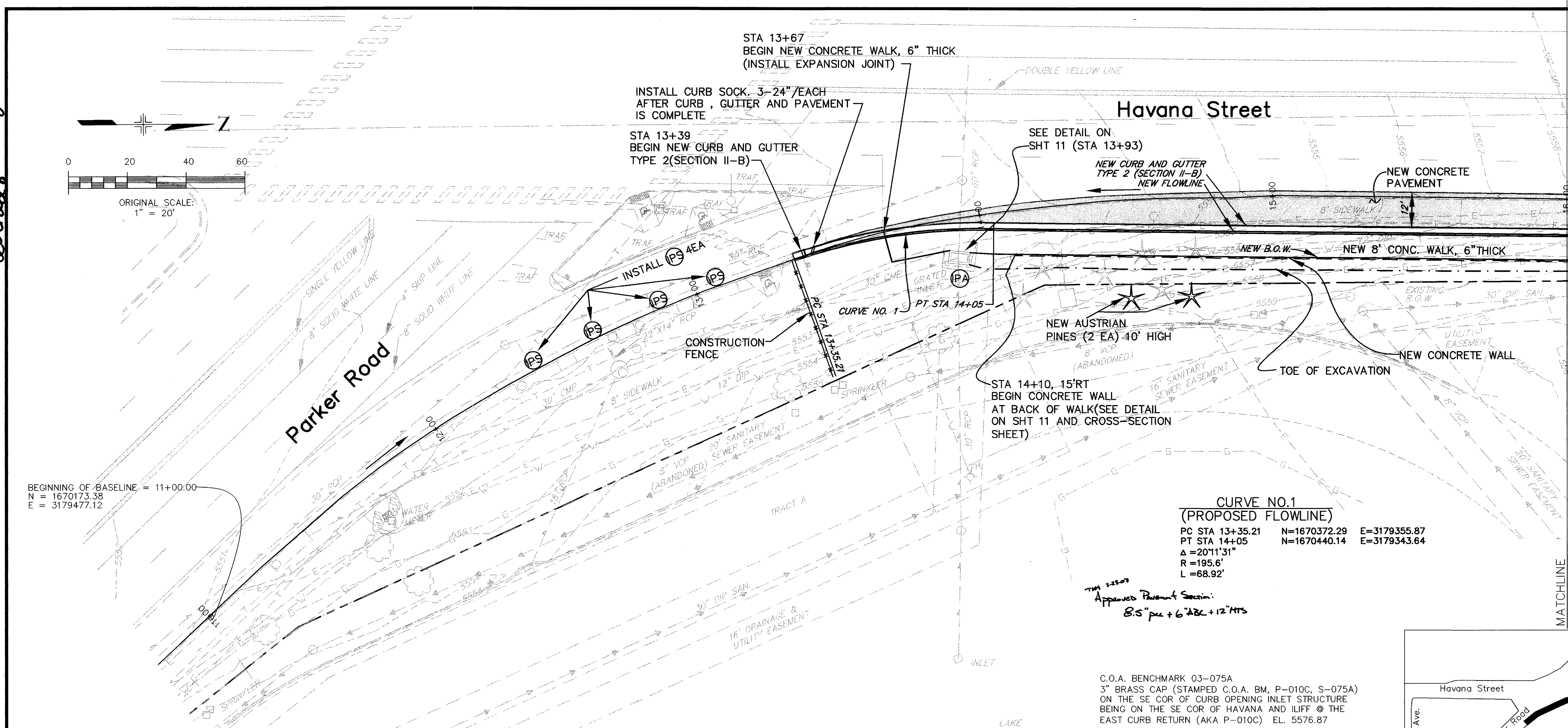
CALL UTILITY NOTIFICATION CENTER OF COLORADO 1-800-922-1987 CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.	
DESIGNED BY: H. TRAN	CHECKED BY: JTC
CAD BY: JTC	SCALE: AS SHOWN
PROJECT No.: 06048	

CITY OF AURORA ENGINEERING DIVISION
 15151 E. ALAMEDA PKWY., AURORA, COLORADO 80012
 PHONE (303) 739-7300
HAVANA ST NB ACCELERATION LANE
 FOR RIGHT TURN FROM PARKER RD (SH 83)
 REMOVAL PLAN-CONSTRUCTION LIMITS

APPROVED FOR STREET CONSTRUCTION INITIALS _____ DATE _____	APPROVED FOR CURB & GUTTER ONLY INITIALS <i>WJ</i> DATE <i>7/14/07</i>
APPROVED FOR ONE YEAR FROM THIS DATE <i>03.28.07</i>	
<i>Rosario Sanchez</i> SENIOR ENGINEER DATE <i>3-8-07</i>	<i>Wesley</i> CITY ENGINEER DATE <i>2-16-07</i>
<i>Joseph S. Wang</i> AURORA WATER DEPARTMENT DATE <i>3-14-07</i>	

SHEET 7

200228



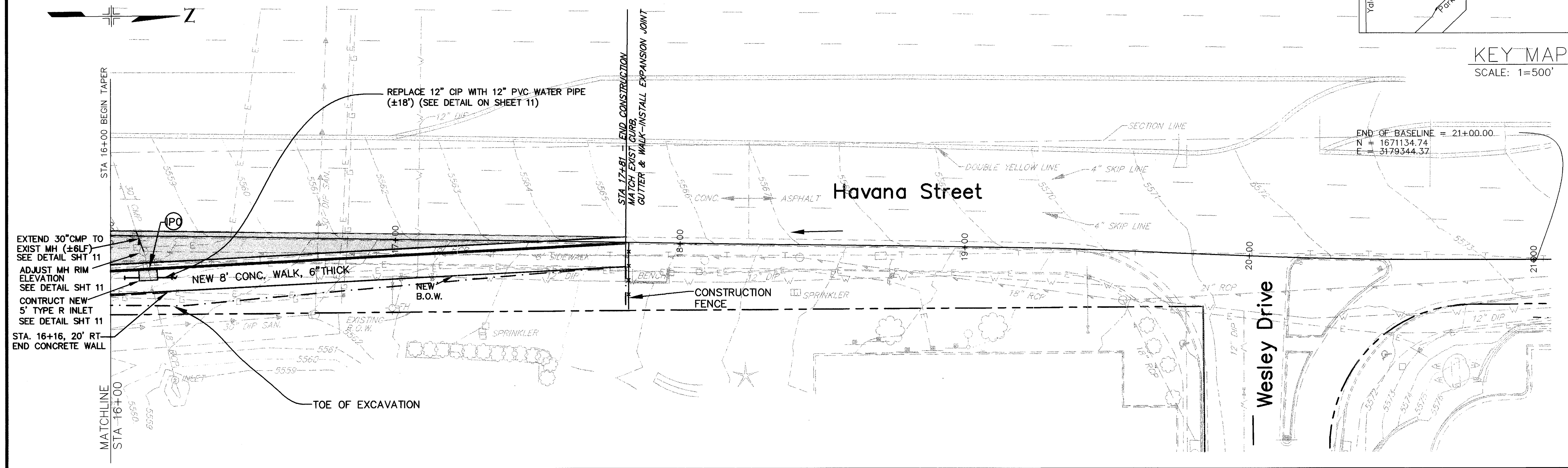
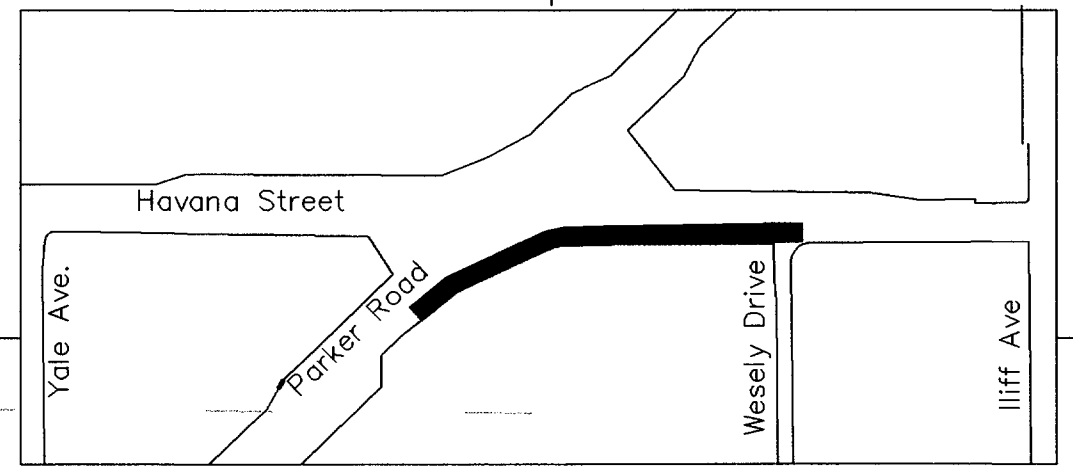
MATCHLINE
STA 16+00

**CURVE NO.1
(PROPOSED FLOWLINE)**

PC STA 13+35.21	N=1670372.29	E=3179355.87
PT STA 14+05	N=1670440.14	E=3179343.64
Δ=20°11'31"		
R=195.6'		
L=68.92'		

Approved Pavement Section:
8.5" pcc + 6" abc + 12" HFS

C.O.A. BENCHMARK 03-075A
3" BRASS CAP (STAMPED C.O.A. BM, P-010C, S-075A)
ON THE SE COR OF CURB OPENING INLET STRUCTURE
BEING ON THE SE COR OF HAVANA AND ILIFF @ THE
EAST CURB RETURN (AKA P-010C) EL. 5576.87



END OF BASELINE = 21+00.00
N = 1671134.74
E = 3179344.37

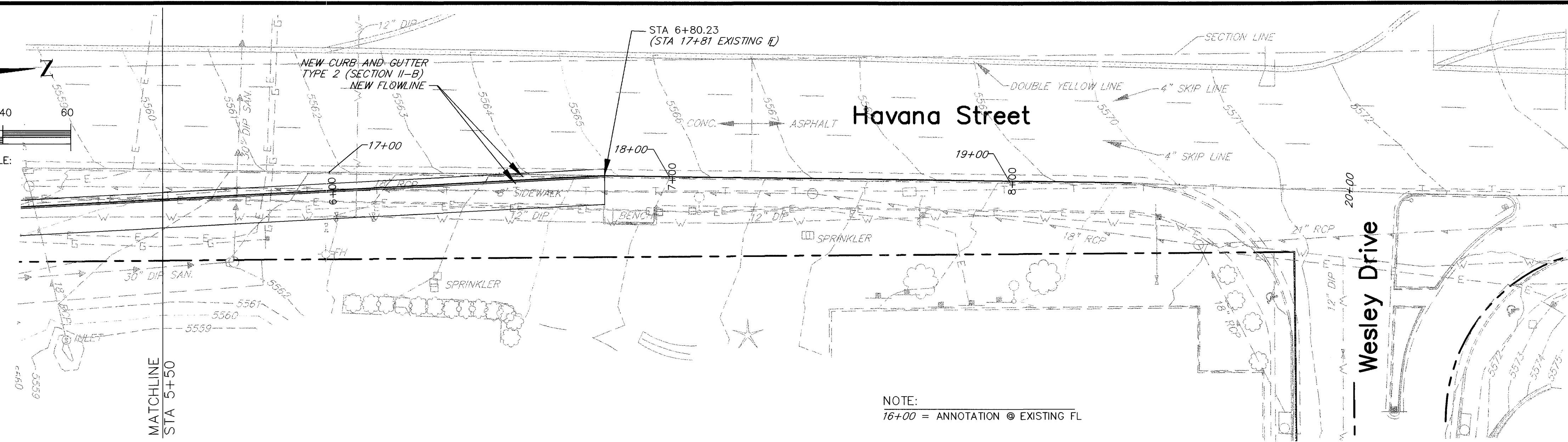
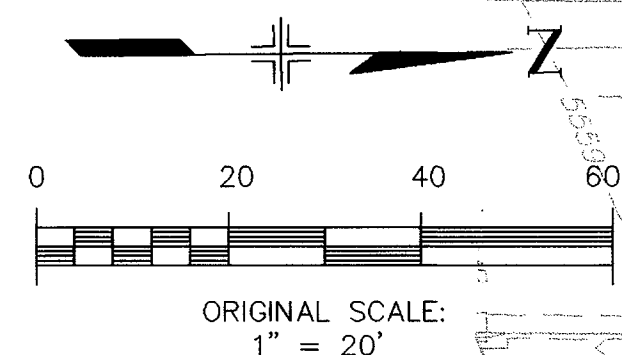
CALL UTILITY NOTIFICATION
CENTER OF COLORADO
1-800-922-1987
CALL 2-BUSINESS DAYS IN ADVANCE
BEFORE YOU DIG, GRADE, OR EXCAVATE
FOR THE MEMBER UTILITIES.

DESIGNED BY:	H. TRAN
CAD BY:	JTC
CHECKED BY:	
SCALE:	AS SHOWN
PROJECT No.:	06048

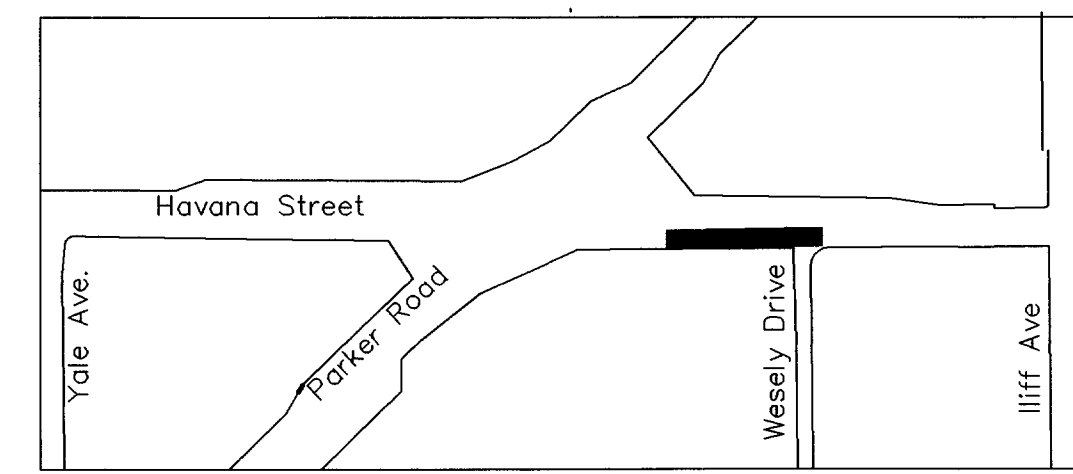
CITY OF AURORA ENGINEERING DIVISION
15151 E. ALAMEDA PKWY., AURORA, COLORADO 80012
PHONE (303) 739-7300
HAVANA ST NB ACCELERATION LANE
FOR RIGHT TURN FROM PARKER RD (SH 83)
ROADWAY CONSTRUCTION & EROSION & SEDIMENT CONTROL PLAN
SHEET 8

APPROVED FOR STREET CONSTRUCTION TAM 3/23/07 INITIALS	APPROVED FOR CURB & GUTTER ONLY WJM 3/16/07 INITIALS DATE
APPROVED FOR ONE YEAR FROM THIS DATE 03.28.07	
Senior Engineer Dora Sanchez 3-8-07 DATE	
City Engineer Wesley 3-16-07 DATE	
Aurora Water Department 3-14-07 DATE	

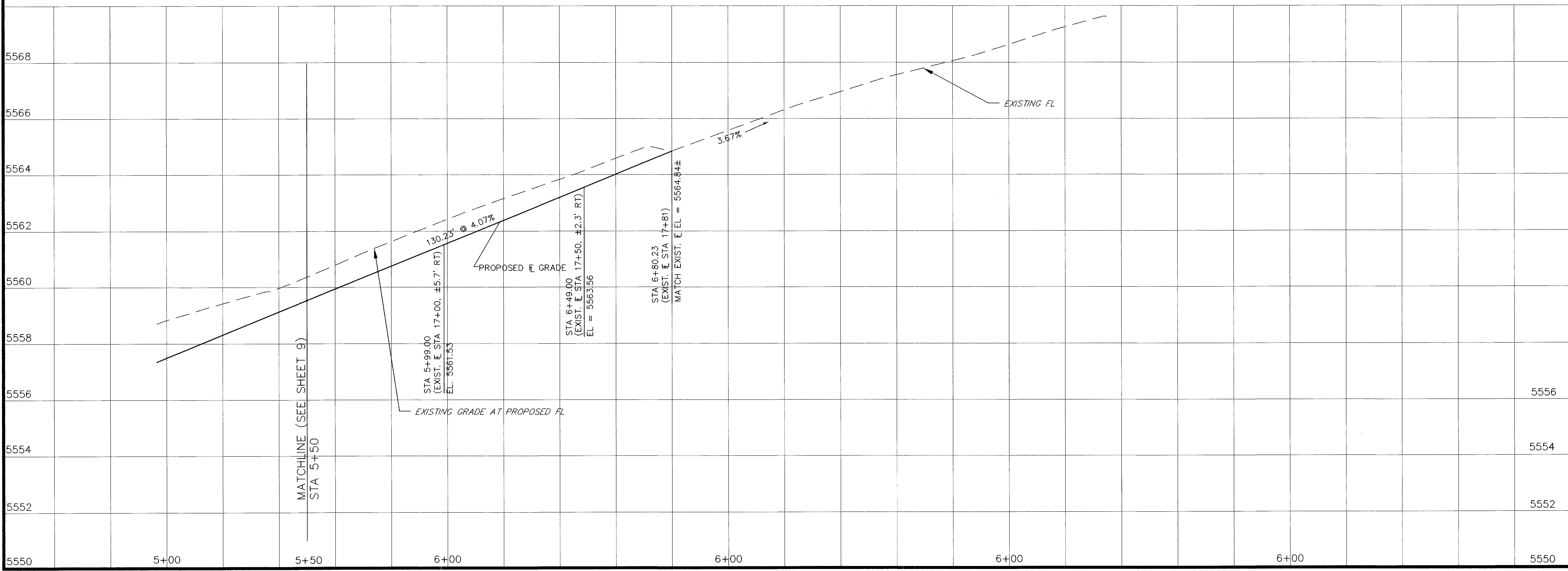
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NOTE:
16+00 = ANNOTATION @ EXISTING FL



C.O.A. BENCHMARK 03-075A
3" BRASS CAP (STAMPED C.O.A. BM, P-010C, S-075A)
ON THE SE COR OF CURB OPENING INLET STRUCTURE
BEING ON THE SE COR OF HAVANA AND ILIFF @ THE
EAST CURB RETURN (AKA P-010C) EL. 5576.87



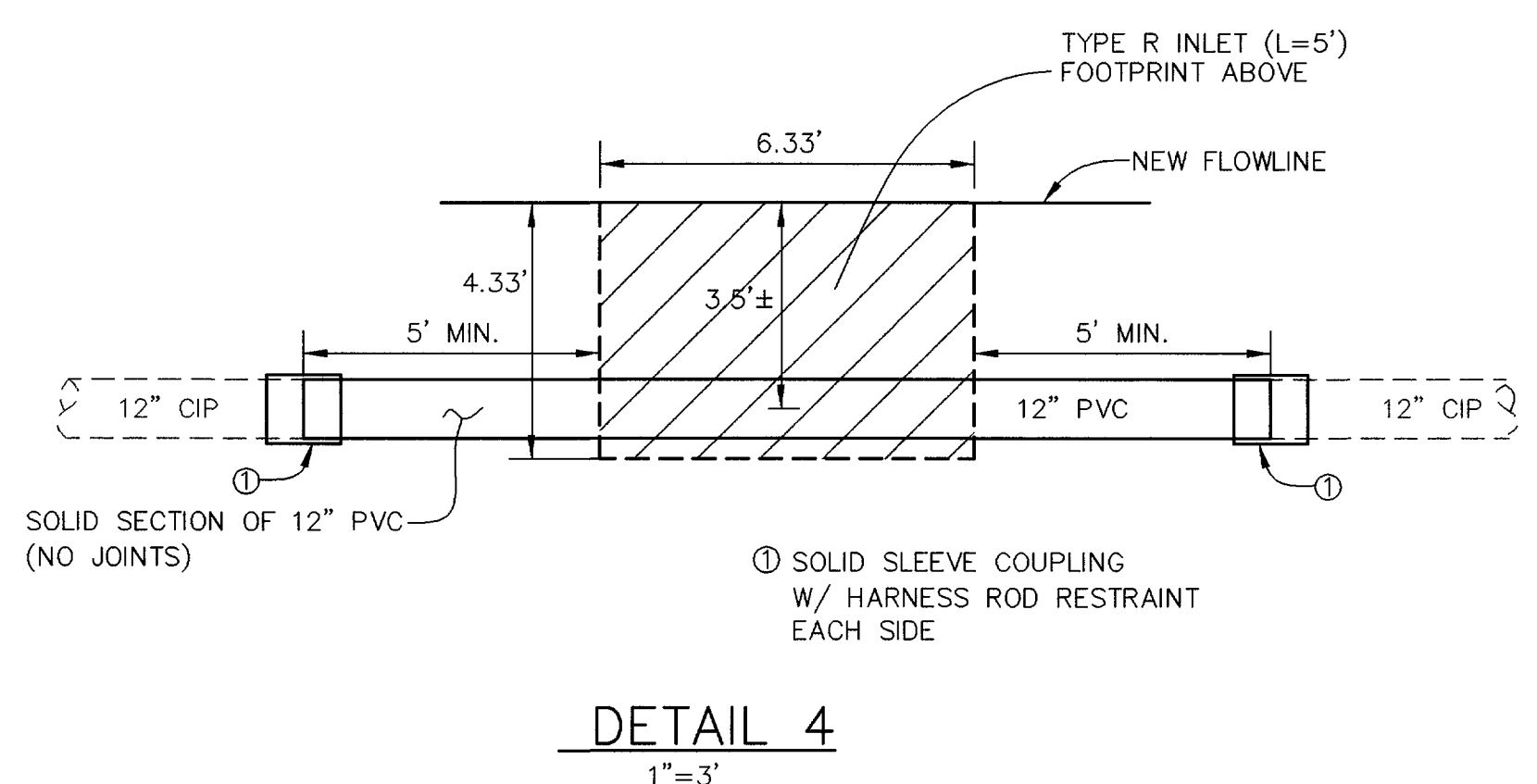
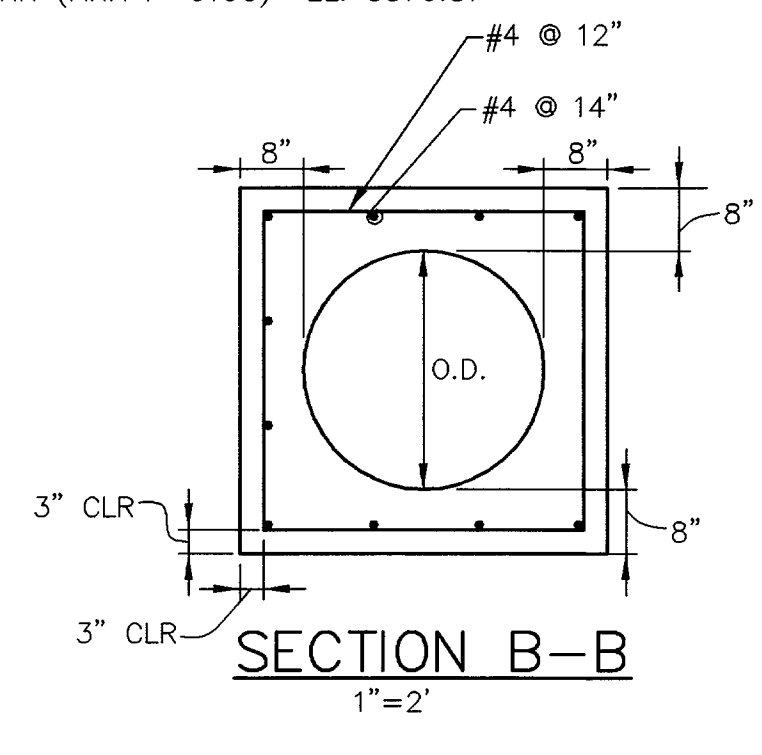
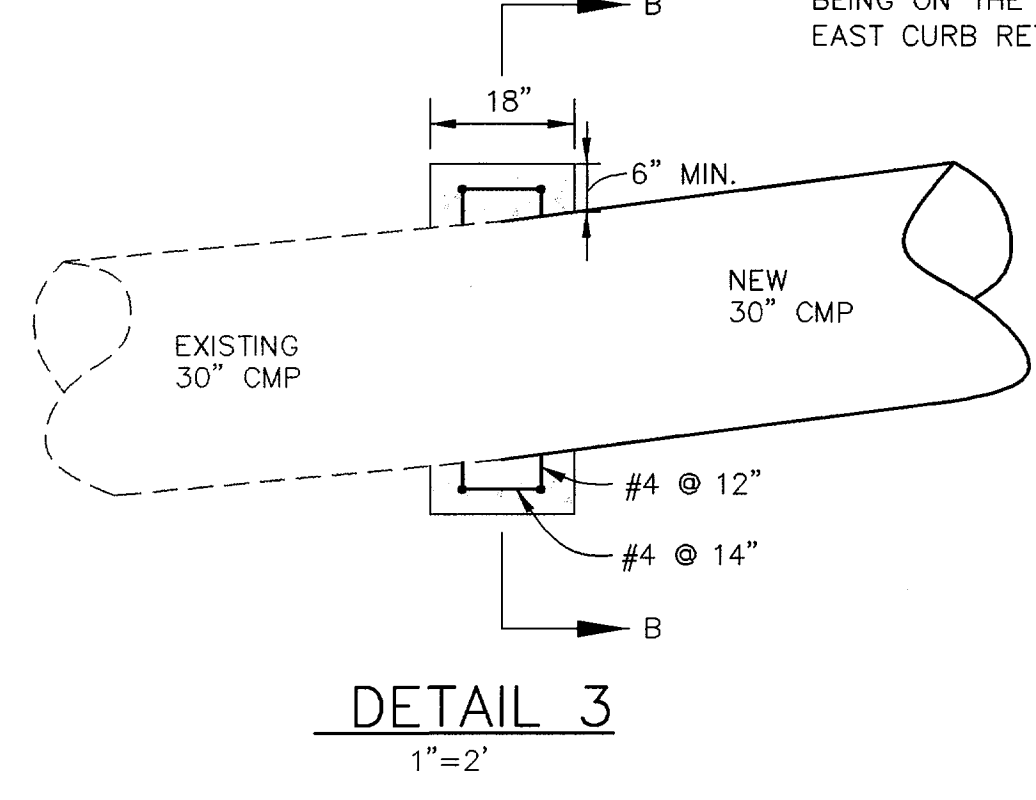
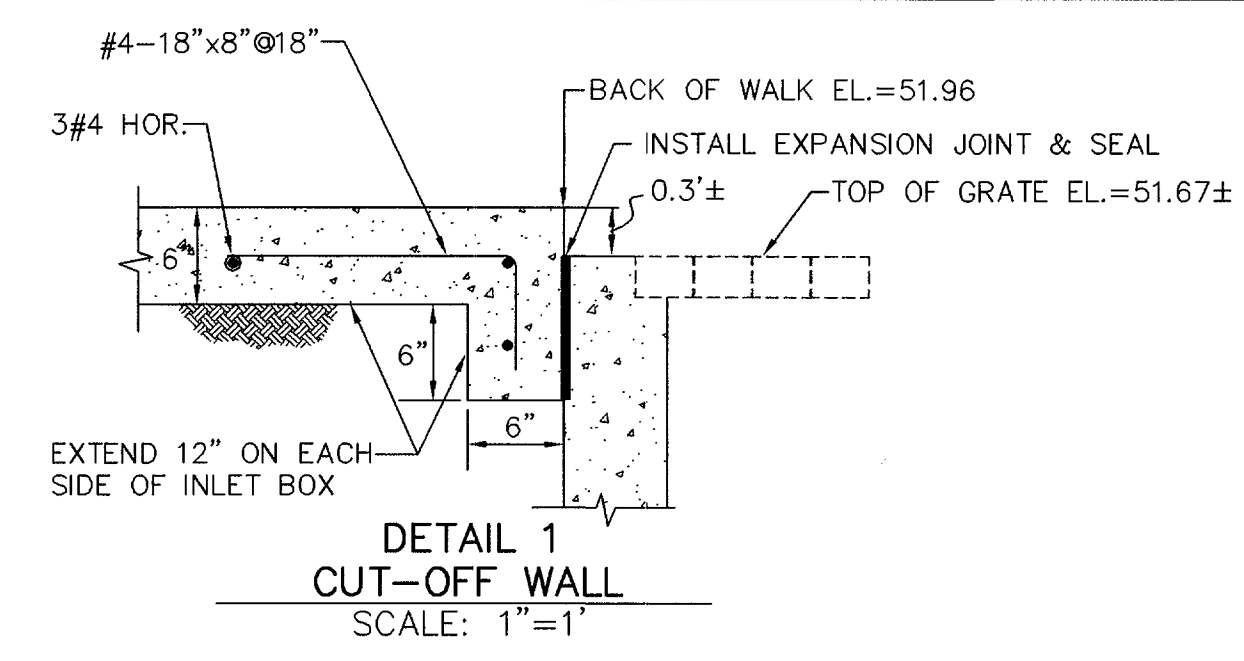
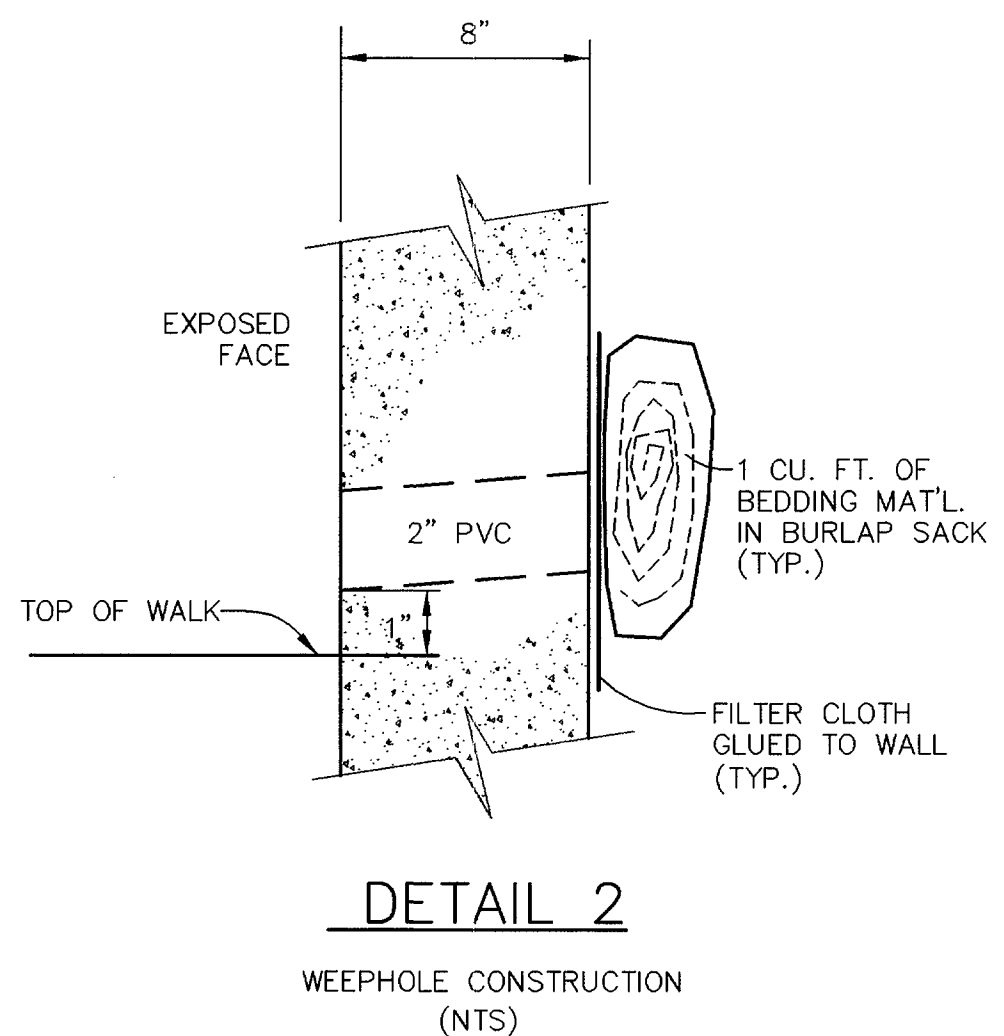
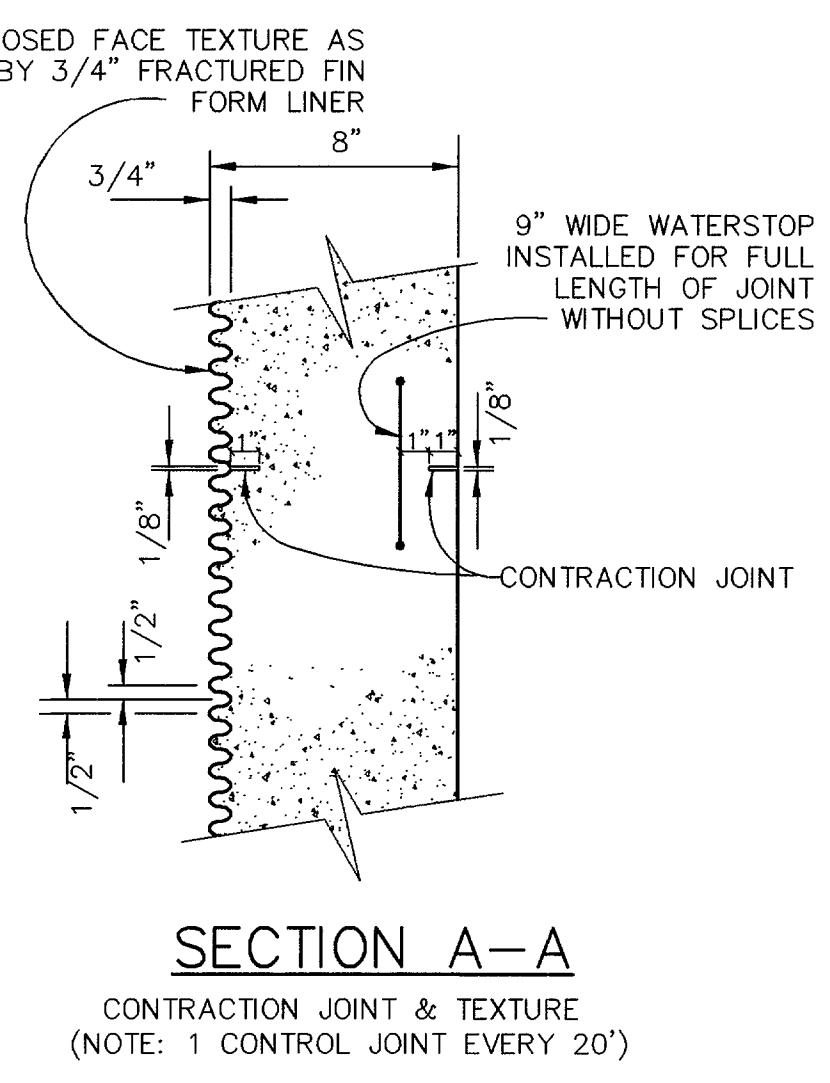
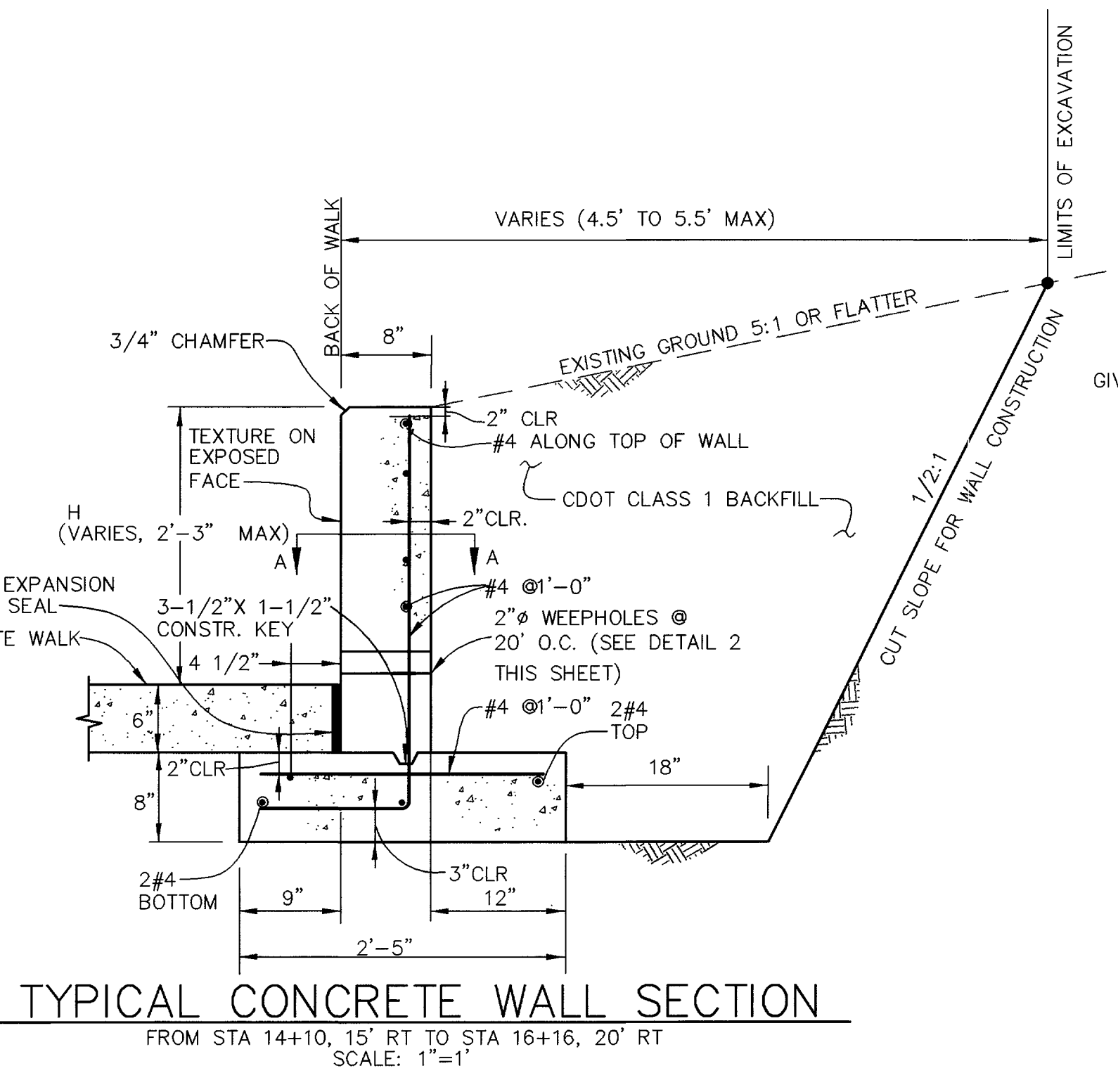
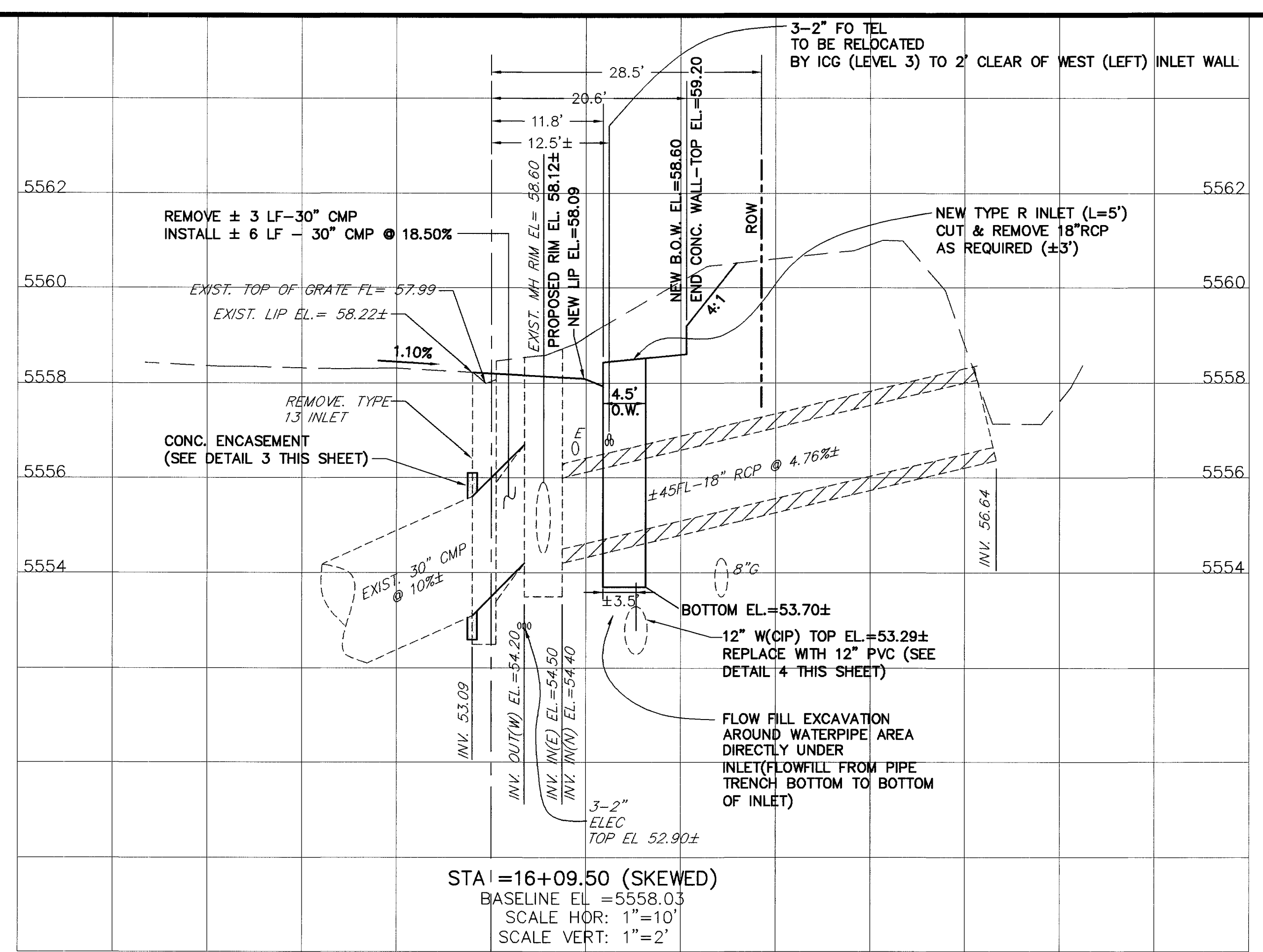
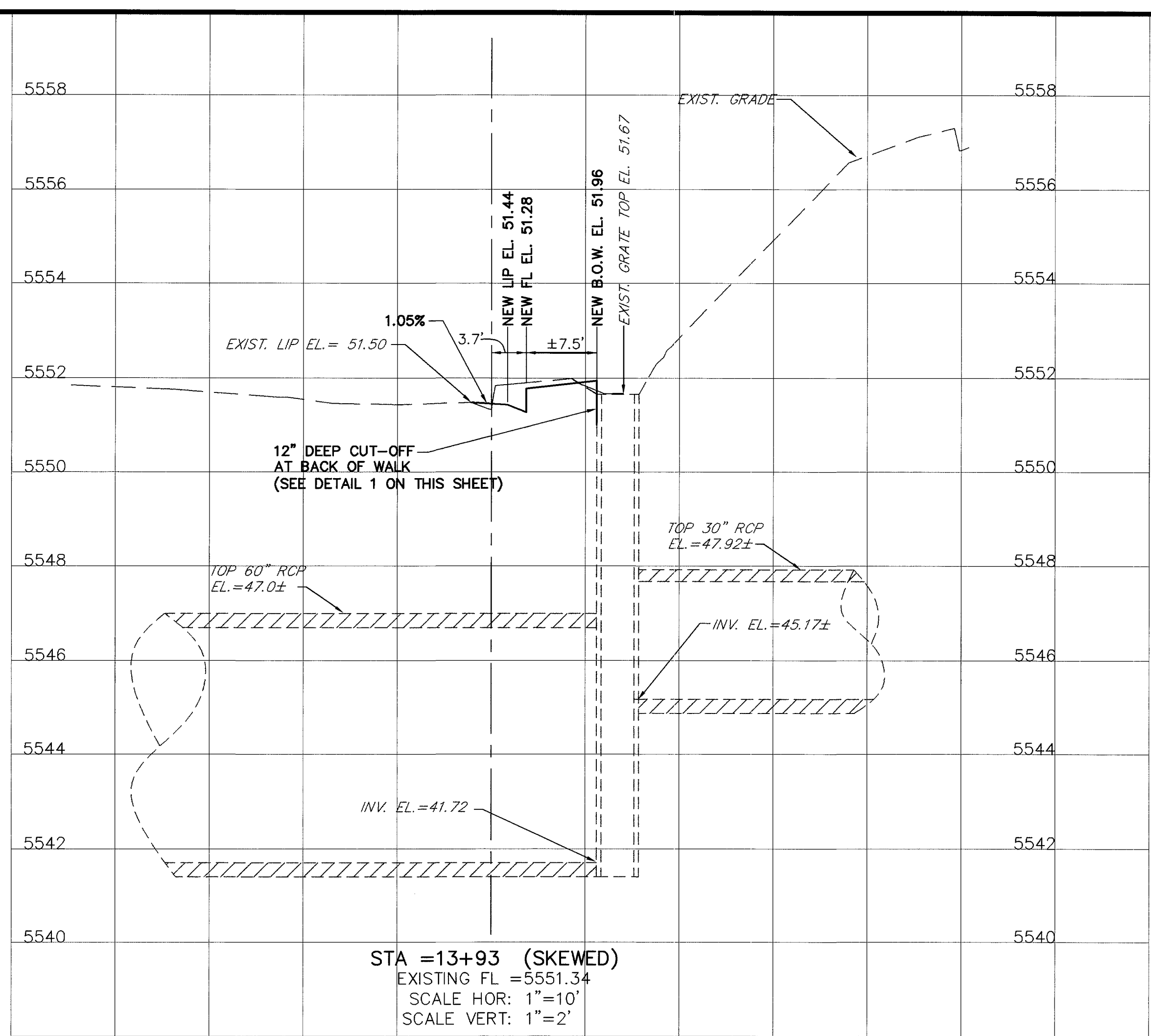
CALL UTILITY NOTIFICATION
CENTER OF COLORADO
1-800-922-1987
CALL 2-BUSINESS DAYS IN ADVANCE
BEFORE YOU DIG, GRADE, OR EXCAVATE
FOR THE MARKING OF UNDERGROUND
MEMBER UTILITIES.

DESIGNED BY: H. TRAN	CAD BY: JTC	CHECKED BY:
SCALE: AS SHOWN	PROJECT NO.:	06048

CITY OF AURORA ENGINEERING DIVISION
15151 E. ALAMEDA PKWY., AURORA, COLORADO 80012
PHONE (303) 739-7300
HAVANA ST NB ACCELERATION LANE
FOR RIGHT TURN FROM PARKER RD (SH 83)
PROPOSED FLOWLINE PROFILE
SHEET 10

APPROVED FOR ONE YEAR FROM THIS DATE <u>03.28.07</u>	
<i>Cesar Sanchez</i> SENIOR ENGINEER	3-8-07 DATE
<i>[Signature]</i> CITY ENGINEER	3-14-07 DATE

200228 11



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.

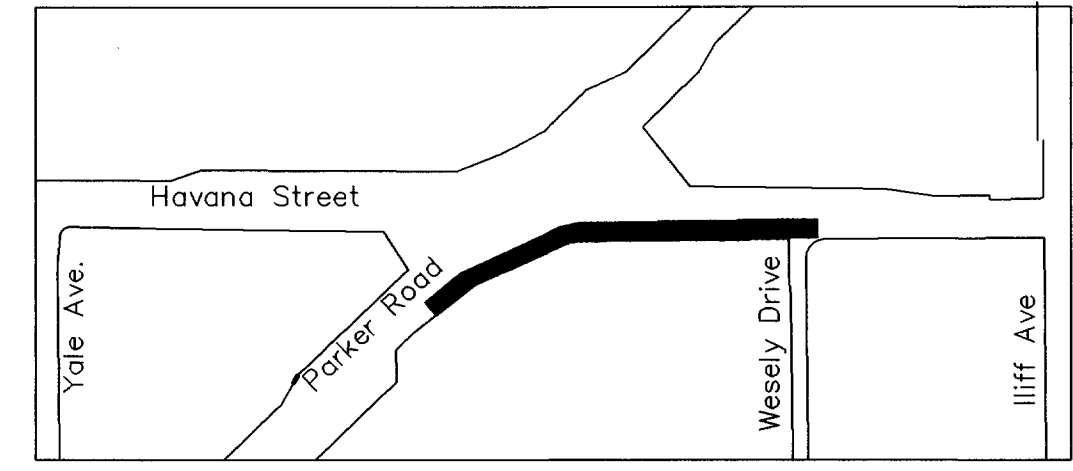
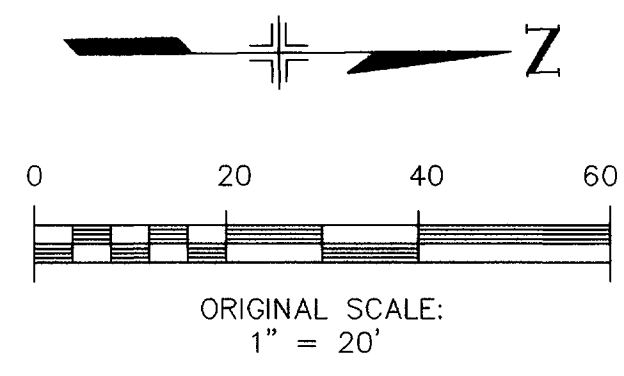
DESIGNED BY:	H. TRAM
CAD BY:	JTC
CHECKED BY:	
SCALE:	AS SHOWN
PROJECT NO.:	06048

CITY OF AURORA ENGINEERING DIVISION
15151 E. ALAMEDA PKWY., AURORA, COLORADO 80012
PHONE (303) 739-7300
HAVANA ST NB ACCELERATION LANE
FOR RIGHT TURNS FROM PARKER RD (SH 83)
DETAILS

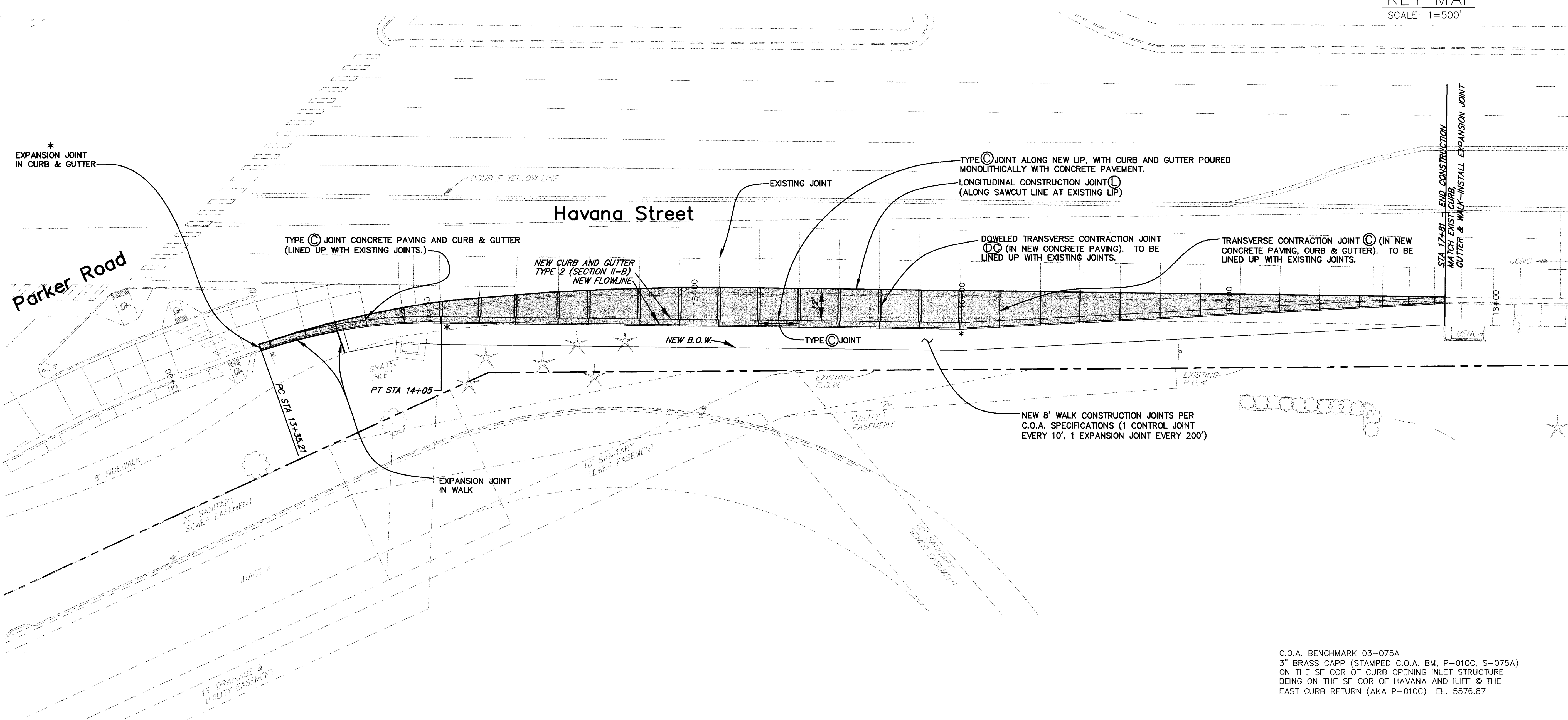
APPROVED FOR ONE YEAR FROM THIS DATE 03.28.07	
<i>Peter Sanchez</i> SENIOR ENGINEER	3-8-07 DATE
<i>David S. ...</i> CITY ENGINEER	3-14-07 DATE
<i>...</i> AURORA WATER DEPARTMENT	3-14-07 DATE

SHEET 11

2010028 1a



KEY MAP
SCALE: 1=500'



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.

DESIGNED BY:	H. TRAN
CAD BY:	JTC
CHECKED BY:	AS SHOWN
SCALE:	PROJECT NO.:
	06048

CITY OF AURORA ENGINEERING DIVISION
15151 E. ALAMEDA PKWY., AURORA, COLORADO 80012
PHONE (303) 739-7300

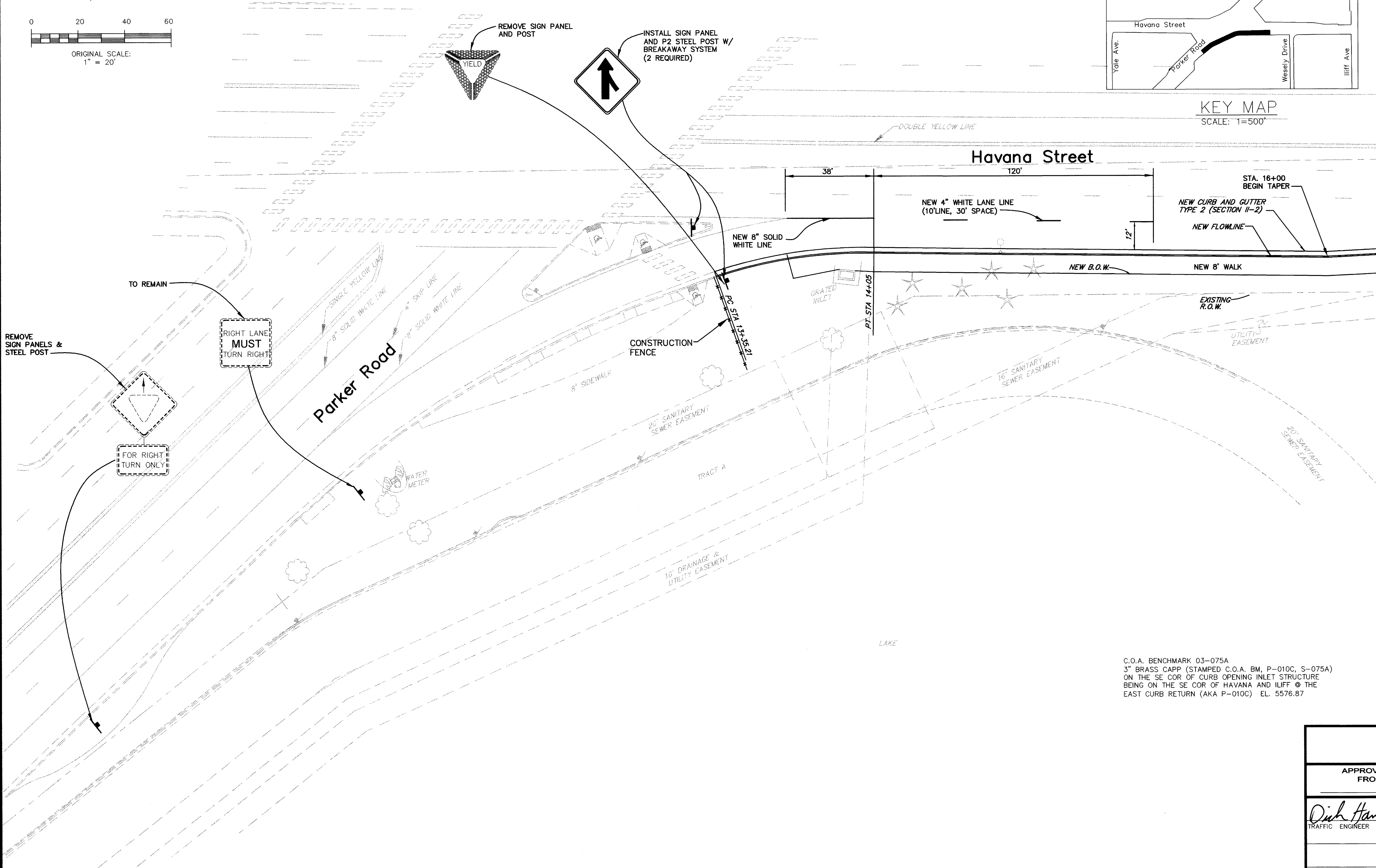
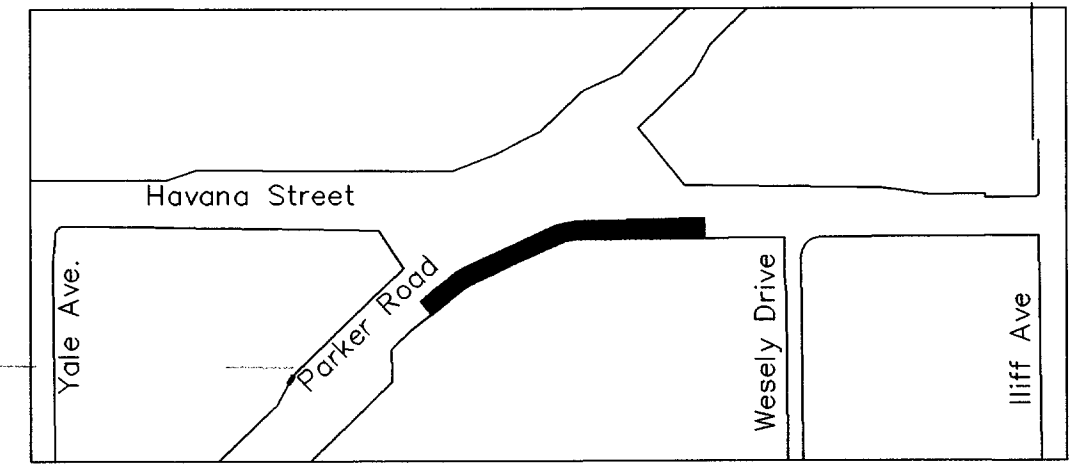
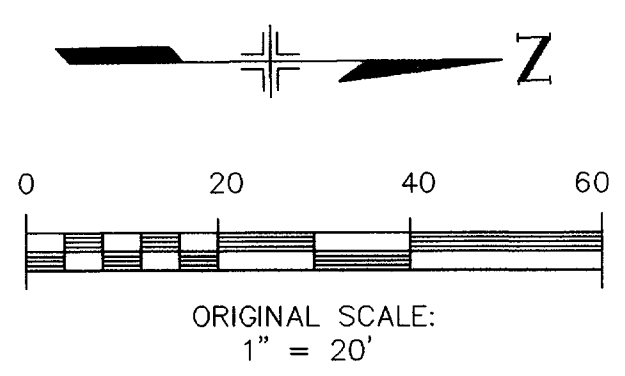
HAVANA ST NB ACCELERATION LANE
FOR RIGHT TURN FROM PARKER RD (SH 83)
CONCRETE PAVEMENT JOINTING PLAN

SHEET 12

C.O.A. BENCHMARK 03-075A
3" BRASS CAPP (STAMPED C.O.A. BM, P-010C, S-075A)
ON THE SE COR OF CURB OPENING INLET STRUCTURE
BEING ON THE SE COR OF HAVANA AND ILIFF @ THE
EAST CURB RETURN (AKA P-010C) EL. 5576.87

APPROVED FOR STREET CONSTRUCTION	INITIALS
APPROVED FOR ONE YEAR FROM THIS DATE 03.28.07	
<i>Cesar Jaucielis</i> 3-8-07 SENIOR ENGINEER	DATE
<i>[Signature]</i> 3-16-07 CITY ENGINEER	DATE

2016228



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.

DESIGNED BY:	H. TRAN
CAD BY:	JTC
CHECKED BY:	
SCALE:	AS SHOWN
PROJECT No.:	05048

CITY OF AURORA ENGINEERING DIVISION
15151 E. ALAMEDA PKWY., AURORA, COLORADO 80012
PHONE (303) 739-7300

HAVANA ST NB ACCELERATION LANE
FOR RIGHT TURN FROM PARKER RD (SH 83)
SIGNING & STRIPING PLAN

C.O.A. BENCHMARK 03-075A
3" BRASS CAPP (STAMPED C.O.A. BM, P-010C, S-075A)
ON THE SE COR OF CURB OPENING INLET STRUCTURE
BEING ON THE SE COR OF HAVANA AND ILIFF @ THE
EAST CURB RETURN (AKA P-010C) EL. 5576.87

APPROVED FOR ONE YEAR FROM THIS DATE <i>03.28.07</i>	
<i>Dick Hameramp</i> TRAFFIC ENGINEER	<i>3/16/07</i> DATE

SHEET 1/3

STORMWATER MANAGEMENT PLAN

1. PROJECT SITE DESCRIPTION: This project consists of adding a 12' wide acceleration lane approximately 440 feet long, to northbound Havana Street for right turns from northwest bound on Parker Road.

Specifically, the project involves sawcutting and removing existing curb and gutter, concrete walk; excavation and grading; construction of a new concrete paved acceleration lane, 12' wide, 440' long including the tapered section; construction of vertical curb and gutter, 8' wide attached concrete walk, a concrete retaining wall, maximum 2' high, at the back of the walk; removal and replanting of two Austrian pine trees; repair of irrigation lines and resodding of the disturbed area behind the back of the new sidewalk. The project also involves the removal of an existing Type 13 grated inlet, lowering a storm manhole ring and cover, and construction of a new Type R inlet.

Inlet protection consisting mainly of installing curb socks in the concrete gutter, will be utilized to control any sediment washout during construction. At completion all disturbed areas behind the new back of walk will be resodded.

2. RECEIVING WATER: Stormwater from the project area drains into a 60" Denver storm sewer through 4 existing Type R inlets, one existing Type D grated inlet, and one relocated Type R inlet. This 60" trunk line drains southwest under Parker Road, and ultimately outfalls to Cherry Creek.

RECEIVING WATER NAME: Cherry Creek
 DISTANCE FROM PROJECT: 0.6 mi southwest of project
 SENSITIVE or TMDL (Total maximum daily load) YES For Chlorophyll A
 WETLAND IMPACTS: NO
 STREAM IMPACTS: NO
 THREATENED AND ENDANGERED SPECIES: NO

3. ESTIMATED RUNOFF COEFFICIENT

Pre: 0.56 Post construction: 0.64

4. ACRES OF DISTURBANCE:

Total area of construction site: 0.49 acre
 Total area of disturbance: 0.22 acre

5. EXISTING VEGETATION, INCLUDING PERCENT COVER: Irrigated sod, pine trees.

Date of Survey: June 7, 2006

6. POTENTIAL POLLUTANTS/MATERIALS HANDLING AND SPILL PREVENTION:

- § Concrete: Concrete washout structures and sawcutting.
- § Excavated dirt, concrete debris, waste: to be removed daily from site.
- § Vehicle fueling and maintenance within construction limits or at contractor's staging area.
- § Equipment maintenance / repair as needed or per routine maintenance.

SITE MAP COMPONENTS

Pre-construction

1. Construction site boundaries: Plan sheet no. 7
2. All areas of soil disturbance and areas of cut and fill: Plan sheet no. 8 and cross-section sheets
3. Areas used for storage of building materials, soils or wastes: To be added prior to construction. See First Construction Activities.
4. Location of any major erosion control facilities or structures: Plan sheet no. 8
5. Springs, streams, wetlands and other surface water: See Title Sheet
6. Locations of protected trees, shrubs and wetlands: See Plan Sheet 7 for protected trees.

REFERENCES TO SPECIFICATIONS, DETAILS AND NOTES

The Contractor and Erosion Control Supervisor shall refer to all specifications, details and notes pertaining to this project.

Items that need to be followed by the Contractor include:

- Standard Specifications, Standard Special Provision and Project Special Provisions:
 - 107.25 (Water Quality Control/methods and potential pollution report-spill contingency prevention plan)
 - 208 (erosion control/methods and materials)
 - 212 (seeding, sodding and fertilizer/methods and materials)
- M&S Standard Plans
- CDOT Erosion Control and Stormwater Quality Guide
- City of Aurora Standard Erosion and Sediment Control Notes and Details

The project title sheet and plan sheets shall be copied and attached to the SWMP package.

The Contractor's potential pollution report-spill contingency prevention plan (CDOT) / spill prevention, control and counter measure plan (City of Aurora), shall be copied and attached to the SWMP package.

INTENT OF STORMWATER MANAGEMENT PLAN

1. The intent of this SWMP is to provide a guide to the Contractor to install effective erosion and sediment control Best Management Practices (BMPs) during construction to prevent the transport of sediment off-site into paved surfaces, drainage inlets, storm drains, and ultimately into receiving waters. The SWMP is also intended to mitigate against other pollutants that may be discharged into the drainage system and adversely impact the receiving waters. Sediment and pollutant washout is caused by construction activities or by any other means including, but not limited to, wind or water erosion, and vehicular tracking.
 - Required permits: CDOT Construction Permit; City of Aurora Public Improvements Permit; City of Aurora Stormwater Quality Permit. If a dewatering permit is required, the Contractor shall obtain it from the Department of Health.
 - The Erosion Control Supervisor (ECS) shall be a person other than the Project Superintendent. The ECS shall read and be familiar with CDOT's "Erosion and Stormwater Quality Guide".
 - The SWMP shall be implemented in a minimum of three phases: first construction activity, during construction and prior to final acceptance.

FAILURE TO PERFORM

Failure to implement SWMP puts the project in automatic violation of CDOT specifications.

Section 208.06 states - "The Contractor will be subject to liquidated damages for incidents of failure to perform erosion control as required by the Contractor." Incidents to which liquidated damages may be applied are defined in Section 208.06. Review Section 107.25 and 208 for more information.

Failure to comply with CDOT specifications will constitute a violation by the Contractor. Criminal pollution of state water*, under the Clean Water Act, is punishable by fines of up to \$25,000 per day. Review section 107.25 for information about Contractor liabilities for fines on CDOT projects. For additional information, go on-line to the CDPHE web site at <http://www.cdphe.state.co.us/wq/permitsunit/wqcdpmt.html>.

* See Standard Specification 107.25 for definition of state waters.

FIRST CONSTRUCTION ACTIVITIES

THE CONTRACTOR SHALL PERFORM THE FOLLOWING:

SITE MAP COMPONENTS

During construction items shall be added by the Erosion Control Supervisor:

1. Areas used for storage of building materials, soils or wastes - per the potential pollution report-spill contingency plan, see Standard Specification 107.25 (b)5.
2. Location of any dedicated asphalt or concrete batch plants - per the potential pollution report-spill contingency plan see Standard Specification 107.25 (b)5.
3. Location of work access routes during construction:
4. Location of borrow and waste locations:

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.

DESIGNED BY: H. TRAN	CAD BY: JTC	CHECKED BY:	SCALE: AS SHOWN	PROJECT NO.:
				06048

CITY OF AURORA ENGINEERING DIVISION
 15151 E. ALAMEDA PKWY., AURORA, COLORADO 80012
 PHONE (303) 739-7300
HAVANA ST NB ACCELERATION LANE
 FOR RIGHT TURNS FROM PARKER RD (SH 83)
 CDOT-STORMWATER MANAGEMENT PLAN

SHEET 14

APPROVED FOR ONE YEAR FROM THIS DATE <u>03-28-07</u>	
<i>Cesar Sanchez</i> SENIOR ENGINEER	3-8-07 DATE
<i>[Signature]</i> CITY ENGINEER	3-14-07 DATE
AURORA WATER DEPARTMENT	

14
0206228

15
2016-2-28

PRIOR TO WORK COMMENCING

1. Perimeter control, if needed, shall be established as the first item on the SWMP.
2. Identify and implement BMPs for other pollutants listed in the potential pollution report-spill contingency plan, equipment maintenance and vehicle washing. The ECS shall add BMP locations to the SWMP.

OFFSITE DRAINAGE

Project site shall be evaluated by the Erosion Control Supervisor for all water draining into or through the project site. This may mean protecting inlets not shown on the plans or downstream of the work area. The ECS shall revise the SWMP accordingly.

INLET PROTECTION

The ECS shall review existing inlets and culverts to determine if inlet protection is needed due to water flow patterns. Prior to construction commencing, inlets needing protection, shall be evaluated, protected and the SWMP revised accordingly. Inlet protection shall be paid for as 208 Storm Drain Inlet Protection.

DURING CONSTRUCTION

DURING CONSTRUCTION - The Contractor shall monitor and evaluate potential pollutant sources throughout the term of the Contract.

1. Contractor shall certify that construction equipment has been cleaned prior to site arrival. Vehicles shall be free of soil and debris capable of transporting noxious weed seeds or roots onto the site.
2. Vehicle cleaning may occur on site, in approved areas, where wash water can be contained.

GRADING AND SLOPE STABILIZATION

1. Pursue and stabilize all disturbances to completion. The Contractor shall provide stabilization schedule showing dates when areas are to be completed and stabilized. Maintain revisions to the schedule and obtain approval for schedule changes.
2. Disturbed surfaces shall be left in a roughened condition at all times by equipment tracking, scarifying or disking the surface on contour with a 2 to 4 inch minimum variation in soil surface.
3. Placement of topsoil or soil conditioner, seed, mulch (weed free) and mulch tackifier (or blankets) will not be done in a single operation, but shall be completed:
 - a. when areas have been completed, permanent stabilization shall occur within 7 calendar days,
 - b. when disturbed areas where work is temporarily halted shall be temporarily stabilized within 7 calendar days after activity has ceased unless work is to be resumed within 30 calendar days after the activity ceased as authorized by the Engineer.
4. It is estimated that several mobilizations shall be required and will be included in the price of the work.
5. The Contractor shall limit construction activities to those areas within the limits of disturbance to toe of slope shown on the plans and cross-section. Construction activities in addition to normal construction procedures shall include the on-site parking of vehicles or equipment, on-site staging, on-site batch plants, haul roads or work access and any other action which would disturb existing conditions. Off road staging areas or stockpiles must be pre approved by the Engineer in consultation with Region Environmental. Disturbances beyond these limits shall be restored to the original condition by the Contractor at the Contractor's expense.
6. The Erosion Control Supervisor shall tabulate additional disturbances not identified in the SWMP and they shall indicate the locations and quantities on the SWMP.

CONCRETE WASHOUT

1. It is estimated that two concrete washout structures shall be required on the project. Structures shall be paid for as Concrete Washout Structure.
2. All concrete washout structure locations shall be shown on the Erosion and Sediment Control Plan sheet by the Contractor. Washout structures shall be checked by the ECS and maintained as required.
3. Only "urban" concrete washout structures may be used. Urban concrete washout examples are rigid plastic baby-pools, wooden boxes lined with heavy duty plastic or waterproof 55 gallon drums. Baby pools may be used a maximum of three times, if not damaged. After use, structure must be removed from the project site.

INLET PROTECTION

1. Newly constructed inlets and culverts shall be protected continually throughout construction and immediately upon completion of construction. The Contractor shall remove sediment, milling, debris and other pollutants generated from the system, prior to use, at no additional cost to the project.

MATERIALS HANDLING

1. Material stockpile locations for projects in sensitive areas: Any material stockpiles shall be located away from sensitive areas and confined so that no material or their run-off will enter state waters. Locations shall be approved by the Engineer in consultation with Region Environmental.
2. Silt fence, berms or other sediment control device shall be placed at the toe (or just beyond toe) of all stockpiles (including topsoil). Sediment control for stockpiles will not be paid for separately.
3. There shall be no stockpiling or side casting of waste materials including but not limited to paint chips, asphalt, and concrete adjacent to any state waters that could potentially result from project activities.
4. Containment and clean up of equipment fuel, oil and lubricant leaks: Contractor shall inspect and certify equipment and vehicles daily to ensure petroleum, oils, and lubricants (POL) are not leaking onto the soil or pavement. Absorbent material or containers approved by the Engineer shall be used to prevent leaking POL from reaching the soil or pavement. Contractor shall have ready approved absorbent material or containers of sufficient capacity to contain any leak POL that can reasonable be foreseen. All materials resulting from POL leakage control and cleanup shall be property of the Contractor and removed from the site. The cost for control and cleanup of POL leaks shall not be paid for separately, but shall be included in the cost of the work.

STREET CLEANING

Whenever sediment is transported onto the highway, the road shall be cleaned as needed. Street washing will not be allowed. Storm drain inlet protection shall be in place prior to shoveling, sweeping or vacuuming. Street cleaning shall not be paid for separately.

GENERAL SITE CONDITIONS

At the end of each day the Contractor shall be responsible for collecting all trash and disposing it in appropriate containers. Containers shall be emptied as needed.

MAINTENANCE OF EROSION CONTROL DEVICES

Inspections shall be continuous and repairs or replacements of erosion control measures shall be made immediately. Erosion bales, silt fence, erosion logs, storm drain inlet protection devices shall be inspected following each occurrence of precipitation or snow melt event that may cause erosion or run-off. Sediment shall be cleaned out when silt depth is 50% or greater than the erosion control device height. Sediment removal and disposal shall not be paid for separately, the cost of cleaning shall be included in the lump sum bid for "Erosion and Sediment Control."

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
FOR THE MEMBER UTILITIES.

DESIGNED BY: H. IRAN	CAD BY: JTC	CHECKED BY:	SCALE: AS SHOWN	PROJECT NO.:
				0604B

CITY OF AURORA ENGINEERING DIVISION
15151 E. ALAMEDA PKWY., AURORA, COLORADO 80012
PHONE (303) 739-7300

HAVANA ST NB ACCELERATION LANE
FOR RIGHT TURNS FROM PARKER RD (SH 83)
CDOT-STORMWATER MANAGEMENT PLAN

SHEET 15

APPROVED FOR ONE YEAR
FROM THIS DATE
03-28-07

Renor Sanchez 3-8-07
SENIOR ENGINEER DATE

Joseph J. Witt 3-14-07
CITY ENGINEER DATE

AURORA WATER DEPARTMENT DATE

INSPECTIONS

1. The project is subject to inspections by CDPHE, COE, EPA and Colorado Department of Transportation at any time.

RECORD KEEPING

THE FOLLOWING ARE REQUIREMENTS OF FORM 1176

In accordance with Standard Specification 208.03(c).

1. Keeping accurate and complete records is a requirement; enforcement action, including fines could result if records are not adequate.
2. The SWMP should be considered a "living document" that is continuously reviewed and modified. The ECS shall make changes to the SWMP, including but not limited to: additions, deletions, changing locations of BMP's shall be marked in the plans, dated and signed at time of occurrence.
3. All inspection and maintenance activities or other repairs shall be documented by the ECS and the records kept on the project site.
4. Records of spill, leaks or overflows that result in the discharge of pollutants must be documented and maintained. Information that should be recorded for all occurrences include the time and date, weather conditions, reasons for spill, etc. Some spills may need to be reported to the Water Quality Control Division immediately. Specifically, a release of any chemical, oil, petroleum product, sewage, etc., which may enter state waters must be reported.
5. Any incidents of noncompliance, such as uncontrolled releases of pollutants including mud, muddy water or measurable quantities of sediment found off-site shall be noted, along with a brief explanation as to measures taken to prevent future violations and measures taken to clean up sediment that has left the site.

PRIOR TO FINAL ACCEPTANCE

1. After all concrete operations are complete, areas affected by these operations (including washout areas) shall be restored by the Contractor at no additional cost to the project.
2. Prior to final acceptance, a final walk through of the project shall occur with the CDOT Landscape Architect, Engineer, Region Environmental, Hydraulics and Maintenance in attendance. At this time BMPs shall be inspected for cleaning, maintenance or removal. Areas will be inspected for any additional BMP's that may be required.
3. BMP's shall be removed when 70% of preexisting cover has been established within the disturbed project limits. BMP's subject to removal shall be determined at the final walk through of the project. The Contractor shall remove approved BMP's; cost of BMP removal will be included in the BMP.
4. Upon completion of work required by walk through the ECS will modify the SWMP to an accurate depiction of what remains on the project site.

SEEDING PLAN

No Seeding is expected on this project, only sod. See the City's notes for temporary and permanent stabilization. The locations of temporary and permanent stabilization shall be shown on the Erosion and Sediment Control Plan sheet.

PAY ITEMS

Description	Unit	Quantity
Furnish and install curb sock	EA	3
Furnish and install inlet protection	EA	6
Furnish and install concrete washout structure	EA	2
Furnish and install stabilized construction entrance	EA	1
Erosion and sediment control *	LS	1
Furnish and install sod	SF	1,609

* Cost to include Erosion Control Supervisor, sediment removal and disposal, any required additional BMPs during construction (such as silt fence around stockpiles, etc).

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FOR THE MARKING OF UNDERGROUND
FOR THE MEMBER UTILITIES.

DESIGNED BY: H. TRAN
CAD BY: JTC
CHECKED BY:
SCALE: AS SHOWN
PROJECT No.: 08048

CITY OF AURORA ENGINEERING DIVISION
15151 E. ALAMEDA PKWY., AURORA, COLORADO 80012
PHONE (303) 739-7300
HAVANA ST NB ACCELERATION LANE
FOR RIGHT TURNS FROM PARKER RD (SH 83)
CDOT-STORMWATER MANAGEMENT PLAN

SHEET 16

APPROVED FOR ONE YEAR FROM THIS DATE <u>03.28.07</u>	
<i>Rosar Sanchez</i> SENIOR ENGINEER	3-8-07 DATE
<i>David Rodriguez</i> CITY ENGINEER	3-16-07 DATE
<i>Jaed T. [Signature]</i> AURORA WATER DEPARTMENT	3-14-07 DATE

206228 16

CITY OF AURORA STANDARD EROSION AND SEDIMENT CONTROL NOTES

"PURSUANT TO SECTIONS 138-440 AND 138-442 OF THE AURORA MUNICIPAL CODE, THE CONTRACTOR SHALL LOCATE, INSTALL, AND MAINTAIN ALL EROSION CONTROL AND WATER QUALITY BMPs AS INDICATED IN THE APPROVED EROSION AND SEDIMENT CONTROL PLAN. THE FOLLOWING NOTES ARE A REQUIREMENT AND SHALL BE INCLUDED ON THE CONSTRUCTION DRAWINGS AND PLANS DEVELOPED FOR THIS PROJECT SUBMITTED FOR APPROVAL BY THE CITY."

- 1) THIS EROSION AND SEDIMENT CONTROL PLAN HAS BEEN PLACED IN THE CITY'S FILE FOR THIS PROJECT AND FULFILLS THE CITY OF AURORA EROSION CONTROL CRITERIA AND REQUIREMENTS. THE CONTRACTOR UNDERSTANDS THAT ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED DUE TO UNFORESEEN EROSION PROBLEMS OR IF THE SUBMITTED PLAN DOES NOT FUNCTION AS INTENDED. IF UNFORESEEN EROSION PROBLEMS OCCUR OR IF THIS PLAN DOES NOT FUNCTION AS INTENDED, THE CITY EROSION CONTROL INSPECTOR AND/OR THE CITY PROJECT MANAGER MAY REQUIRE MODIFICATIONS, ADDITIONS, OR REPAIRS AT THE TIME OF INSPECTION.
- 2) A STORMWATER QUALITY PERMIT MUST BE ISSUED BY THE CITY AND EXECUTED BY AN ENVIRONMENTAL INSPECTOR PRIOR TO ANY EARTHWORK ACTIVITIES. THE CITY ENVIRONMENTAL INSPECTOR WILL CONDUCT AN ON-SITE INSPECTION TO VERIFY THE CORRECT INSTALLATION AND ADEQUACY OF INITIAL BMPs FOR THE SITE. NO EARTHWORK ACTIVITIES ARE TO BEGIN UNTIL THE INITIAL BMPs HAVE PASSED AN INSPECTION AND THE PERMIT HAS BEEN EXECUTED BY THE INSPECTOR. IF NEEDED, THE PERMITTEE IS REQUIRED TO PRESENT THE COLORADO STATE STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY PERMIT FOR THE PROJECT TO THE INSPECTOR DURING THE INITIAL INSPECTION. THE PERMITTEE SHALL DESIGNATE A STORMWATER MANAGEMENT AND EROSION CONTROL (SMEC) MANAGER DURING THE INITIAL INSPECTION. THE SMEC MANAGER WILL ACT AS THE PROJECT REPRESENTATIVE FOR ANY CONCERNS OR ISSUES REGARDING STORMWATER MANAGEMENT.
- 3) THESE REQUIREMENTS SHALL BE THE OBLIGATION OF THE CONTRACTOR, AND/OR THEIR AUTHORIZED AGENTS, UNTIL SUCH TIME AS THE PLAN IS CERTIFIED AS PROPERLY COMPLETED, OR UNTIL SUCH TIME AS OTHERWISE ALLOWED BY THE CITY TO BE VOIDED, MODIFIED, OR REPLACED.
- 4) THIS PLAN SHALL BE KEPT ON SITE AT ALL TIMES.
- 5) ANY DISCREPANCY BETWEEN THIS PLAN AND AN APPROVED STORMWATER MANAGEMENT PLAN FOR THIS SITE SHALL REQUIRE COMPLIANCE WITH THE MORE RESTRICTIVE PLAN.
- 6) THE CONTRACTOR AND/OR THEIR AUTHORIZED AGENTS SHALL REMOVE ALL SEDIMENT, MUD, AND CONSTRUCTION DEBRIS THAT MAY ACCUMULATE IN THE FLOW LINES, PRIVATE PROPERTY, AND PUBLIC RIGHTS OF WAY OF THE CITY AS A RESULT OF THIS CONSTRUCTION PROJECT. REMOVAL SHALL BE CONDUCTED WITHIN 48 HOURS.
- 7) THE CONTRACTOR AND/OR THEIR AUTHORIZED AGENTS SHALL PREVENT SEDIMENT, DEBRIS, AND ALL OTHER POLLUTANTS FROM ENTERING THE ADJACENT WATERWAYS, WETLANDS, OTHER PROPERTIES, ETC., DURING ALL DEMOLITION, EXCAVATION, TRENCHING, BORING, OR OTHER CONSTRUCTION OPERATIONS THAT ARE PART OF THIS PROJECT. THE CONTRACTOR AND/OR THEIR AUTHORIZED AGENTS SHALL BE RESPONSIBLE FOR REMEDIATION OF ANY ADVERSE IMPACTS TO ADJACENT WATERWAYS, WETLANDS, OTHER PROPERTIES, ETC., RESULTING FROM WORK DONE AS PART OF THIS PROJECT.
- 8) ROUGH-CUT STREETS SHALL BE SURFACE ROUGHENED AND MULCHED OR ROUGH-CUT STREET CONTROL IMPLEMENTED WITHIN SEVEN DAYS COMPLETION OF OVERLOT GRADING. IF PAVING IS TO OCCUR WITHIN 14 DAYS AFTER FINAL GRADING ROUGH CUT STREET CONTROL SHALL BE WAIVED.
- 9) THE CONTRACTOR AND/OR THEIR AUTHORIZED AGENTS SHALL PREVENT LOSS OF CUT AND FILL MATERIAL BEING TRANSPORTED TO AND FROM THE SITE BY TAKING APPROPRIATE MEASURES. ALL MUD AND SEDIMENT TRACKED ONTO PUBLIC STREETS SHALL BE CLEANED.
- 10) APPROVED EROSION AND SEDIMENT CONTROL "BEST MANAGEMENT PRACTICES" SHALL BE MAINTAINED AND FULLY FUNCTIONAL FOR THE ENTIRE DURATION OF THIS PROJECT.
- 11) INSPECTION AND MAINTENANCE OF EROSION AND SEDIMENT CONTROL MEASURES ARE THE CONTINUOUS OBLIGATIONS OF THE CONTRACTOR AND/OR THEIR AUTHORIZED AGENTS. BMPs SHALL BE INSPECTED WEEKLY AND AFTER EVERY PRECIPITATION EVENT BY CONTRACTOR. ALL NECESSARY MAINTENANCE AND REPAIR SHALL BE COMPLETED WITHIN 48 HOURS BY CONTRACTOR. A COPY OF ALL INSPECTION REPORTS SHALL BE PROVIDED TO THE CITY PROJECT MANAGER. INSPECTION REPORTS ARE REQUIRED TO BE KEPT ON FILE FOR 3 YEARS AFTER COMPLETION OF THE PROJECT.
- 12) IF STOCKPILES ARE LOCATED WITHIN 100 FEET OF A DRAINAGE WAY, ADDITIONAL SEDIMENT CONTROLS SUCH AS TEMPORARY DIVERSION DIKES OR SILT FENCE OR SEDIMENT BASIN SHALL BE REQUIRED.
- 13) ALL DOWNSTREAM EROSION/SEDIMENT CONTROL FACILITIES MUST BE IN PLACE PRIOR TO COMMENCEMENT OF GRADING OPERATIONS OR ANY OTHER SITE DISTURBANCES.
- 14) ALL WATER QUALITY PONDS SHALL BE PROTECTED TO PREVENT THE STRAIGHT FLOW-THROUGH OF UNTREATED, SEDIMENT-LADEN STORMWATER. THE PERMANENT OUTLET STRUCTURE SHOULD EITHER BE SEALED AS TO PREVENT ANY DISCHARGES FROM THE FEATURE, OUTFITTED WITH A PERFORATED RISER PIPE IN PLACE OF AN ORIFICE PLATE, PROTECTED WITH ROCK WATTLES OR A BERM CONSTRUCTED OF GRAVEL OR OTHER FINE FILTER MEDIUM UNTIL FINAL LANDSCAPING OCCURS AND THE POND IS FUNCTIONING AS A PERMANENT WATER QUALITY FACILITY EXISTING AND PROPOSED PONDS THAT ARE INTENDED TO BE USED AS SEDIMENT BASINS AND HAVE OR WILL HAVE PERMANENT WATER QUALITY OUTLET STRUCTURES REQUIRE OVER EXCAVATION.
- 15) ALL INGRESS AND EGRESS POINTS AND VEHICLE ACCESS POINTS ONTO DISTURBED AREAS SHALL BE STABILIZED WITH VEHICLE TRACKING CONTROL PADS (VTC) THAT ARE CONSTRUCTED WITH ANGULAR ROCK (TYPE VL RIPRAP) AT DEPTH OF AT LEAST 9". THE USE OF RECYCLED CONCRETE IS NOT PERMITTED. THE ROCK PAD SHALL BE INSTALLED OVER A LAYER OF NON-WOVEN GEOTEXTILE WITH A WEIGHT OF AT LEAST 10 OZ./YD² AND A GRAB TENSILE STRENGTH OF AT LEAST 250 POUNDS. ONCE PAVING OPERATIONS HAVE BEGUN, NO DIRT SHALL BE PLACED ON PAVED SURFACES TO ACT AS CURB RAMPS.
- 16) FOR ALL POROUS LANDSCAPE DETENTION FACILITIES, IN ORDER TO PREVENT CLOGGING OF FILTER MEDIUM, INSTALLATION OF THE FILTRATION SYSTEM MUST BE DELAYED UNTIL AFTER THE SITE IS FULLY LANDSCAPED.
- 17) ALL MATERIAL IMPORTED TO OR EXPORTED FROM THE SITE SHALL BE PROPERLY COVERED TO PREVENT THE LOSS OF MATERIAL DURING TRANSPORT. HAUL ROUTE MUST BE PRE-APPROVED BY THE CITY. NO MATERIAL SHALL BE TRANSPORTED TO ANOTHER SITE IN THE CITY WITHOUT FIRST OBTAINING A PERMIT FROM THE CITY.
- 18) FUGITIVE DUST EMISSIONS RESULTING FROM GRADING ACTIVITIES AND/OR WIND SHALL BE CONTROLLED USING REASONABLY AVAILABLE CONTROL TECHNOLOGY AS DEFINED BY THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT.

- 19) FINAL OR TEMPORARY SOIL STABILIZATION MEASURES SHALL BE APPLIED: (1) TO DISTURBED AREAS AND STOCKPILES WITHIN 14 DAYS AFTER FINAL GRADE IS REACHED, (2) WITHIN 14 DAYS TO DISTURBED AREAS WHICH MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAN 30 DAYS, AND (3) WITHIN 14 DAYS OF STOCKPILE CONSTRUCTION ON ANY STOCKPILE WHICH WILL REMAIN DORMANT FOR LONGER THAN 30 DAYS.
- 20) FINAL SOIL STABILIZATION SHALL BE THE FINAL GROUND COVER DEFINED BY THE SITE PLAN OR ASSOCIATED DOCUMENTS. TEMPORARY SOIL STABILIZATION SHALL INCLUDE GRASSES FROM SEED AND MULCHING AS DESCRIBED BELOW: THE SEEDBED SHALL BE WELL SETTLED AND FIRM, BUT FRIABLE ENOUGH THAT SEED CAN BE PLACED AT THE SEEDING DEPTH SPECIFIED. THE SEEDBED SHALL BE REASONABLY FREE OF WEEDS. SOILS THAT HAVE BEEN OVER-COMPACTED BY TRAFFIC OR EQUIPMENT, ESPECIALLY WHEN WET, SHALL BE TILLED TO BREAKUP ROOTING RESTRICTIVE LAYERS AND THEN HARROWED, ROLLED OR PACKED TO PREPARE THE REQUIRED FIRM SEEDBED. MULCH SHALL BE APPLIED AT A RATE OF 2 1/2 TONS PER ACRE AND SHALL BE ATTACHED BY AN APPROVED METHOD SUITABLE FOR THE TYPE OF MULCH USED. MULCH SHALL BE SPREAD UNIFORMLY, IN A CONTINUOUS BLANKET, AFTER SEEDING IS COMPLETE. MULCH SHALL BE CLEAN, WEED AND SEED FREE, LONG STEMMED GRASS OR HAY, OR LONG STEMMED STRAW OF OATS, WHEAT OR RYE. AT LEAST 50% OF MULCH, BY WEIGHT, SHALL BE TEN INCHES OR LONGER. MULCH SHALL BE SPREAD BY HAND OR BLOWER-TYPE MULCH SPREADER. MULCHING SHALL BE STARTED ON THE WINDWARD SIDE OF RELATIVELY FLAT AREAS OR ON THE UPPER PART OF A STEEP SLOPE AND CONTINUED UNIFORMLY UNTIL THE AREA IS COVERED. THE MULCH SHALL NOT BE BUNCHED. IMMEDIATELY FOLLOWING SPREADING, THE MULCH SHALL BE ANCHORED TO THE SOIL BY A V-TYPE WHEEL LAND PACKER OR A SCALLOPED-DISK LAND PACKER DESIGNED TO FORCE MULCH INTO THE SOIL SURFACE A MINIMUM OF 3 INCHES. ALL SEEDED AREAS SHALL BE MULCHED AFTER SEEDING ON THE SAME DAY AS THE SEEDING. THE TYPE OF A SEED MIX USED WILL DEPEND UPON THE FOLLOWING FACTORS: TEMPORARY VS. PERMANENT REVEGETATION; TIME OF YEAR; SOIL TYPE AND SLOPE. AS A GENERAL RULE, TEMPORARY REVEGETATION WILL UTILIZE ANNUAL GRASSES WHILE PERMANENT REVEGETATION SHOULD UTILIZE PERENNIAL GRASSES. THE SEED MIX AND RATE OF APPLICATION SHALL BE AS FOLLOWS (HYDRO SEEDING SHALL BE USED IN LIMITED APPLICATION ON A SITE SPECIFIC BASIS):

THE SEEDBED SHALL BE WELL SETTLED AND FIRM, BUT FRIABLE ENOUGH THAT SEED CAN BE PLACED AT THE SEEDING DEPTH SPECIFIED. THE SEEDBED SHALL BE REASONABLY FREE OF WEEDS. SOILS THAT HAVE BEEN OVER-COMPACTED BY TRAFFIC OR EQUIPMENT, ESPECIALLY WHEN WET, SHALL BE TILLED TO BREAK-UP ROOTING RESTRICTIVE LAYERS AND THEN HARROWED, ROLLED OR PACKED TO PREPARE THE REQUIRED FIRM SEEDBED. MULCH SHALL BE APPLIED AT A RATE OF 2 1/2 TONS PER ACRE AND SHALL BE ATTACHED BY AN APPROVED METHOD SUITABLE FOR THE TYPE OF MULCH USED. MULCH SHALL BE SPREAD UNIFORMLY, IN A CONTINUOUS BLANKET, AFTER SEEDING IS COMPLETE. MULCH SHALL BE CLEAN, WEED AND SEED FREE, LONG STEMMED GRASS OR HAY, OR LONG STEMMED STRAW OF OATS, WHEAT OR RYE. AT LEAST 50% OF MULCH, BY WEIGHT, SHALL BE TEN INCHES OR LONGER. MULCH SHALL BE SPREAD BY HAND OR BLOWER-TYPE MULCH SPREADER. MULCHING SHALL BE STARTED ON THE WINDWARD SIDE OF RELATIVELY FLAT AREAS OR ON THE UPPER PART OF A STEEP SLOPE AND CONTINUED UNIFORMLY UNTIL THE AREA IS COVERED. THE MULCH SHALL NOT BE BUNCHED. IMMEDIATELY FOLLOWING SPREADING, THE MULCH SHALL BE ANCHORED TO THE SOIL BY A V-TYPE WHEEL LAND PACKER OR A SCALLOPED-DISK LAND PACKER DESIGNED TO FORCE MULCH INTO THE SOIL SURFACE A MINIMUM OF 3 INCHES. ALL SEEDED AREAS SHALL BE MULCHED ON THE SAME DAY AS THE SEEDING.

THE TYPE OF A SEED MIX USED WILL DEPEND UPON THE FOLLOWING FACTORS: TEMPORARY VS. PERMANENT REVEGETATION; TIME OF YEAR; SOIL TYPE AND SLOPE. AS A GENERAL RULE, TEMPORARY REVEGETATION WILL UTILIZE ANNUAL GRASSES WHILE PERMANENT REVEGETATION SHOULD UTILIZE PERENNIAL GRASSES. THE SEED MIX AND RATE OF APPLICATION SHALL BE AS FOLLOWS (HYDRO SEEDING SHALL BE USED IN LIMITED APPLICATION ON A SITE SPECIFIC BASIS):

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

DESIGNED BY:	H. TRAN
CAD BY:	JTC
CHECKED BY:	
SCALE:	AS SHOWN
PROJECT No.:	06048

CITY OF AURORA ENGINEERING DIVISION
15151 E. ALAMEDA PKWY., AURORA, COLORADO 80012
PHONE (303) 739-7300

HAVANA ST NB ACCELERATION LANE
FOR RIGHT TURN FROM PARKER RD (SH 83)
COA STANDARD EROSION & SEDIMENT CONTROL NOTES
SHEET 17

COA Project Manager Signature Block	
The Public Works Department has reviewed the information contained within the Erosion and Sediment Control Plan and accepts responsibility for the enforcement set forth.	
<i>Cesar Sanchez</i> Project Manager	3-8-07 Date
APPROVED FOR ONE YEAR FROM THIS DATE <i>03-28-07</i>	
Plan Preparer Signature Block	
I have prepared and reviewed the Erosion and Sediment Control Plan.	
<i>Hoanh Tran</i> Professional Engineer	3/8/07 Date
<i>Cesar Sanchez</i> SENIOR ENGINEER	3-8-07 DATE
<i>Mark Tognoli</i> CITY ENGINEER	3-14-07 DATE
<i>Joseph S. Why</i> AURORA WATER DEPARTMENT	3-14-07 DATE

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CITY OF AURORA STANDARD EROSION AND SEDIMENT CONTROL NOTES

Minimum Drill Seeding Rates for Annual Grasses

Species (Common Name)	Growth Season	Pounds of Pure Live Seed (PLS)/acre	Planting Depth (inches)
1. Oats	Cool	35-50	1-2
2. Spring Wheat	Cool	25-35	1-2
3. Spring Barley	Cool	25-35	1-2
4. Annual ryegrass	Cool	10-15	1/2
5. Millet	Warm	3-15	1/2-3/4
6. Sudangrass	Warm	5-10	1/2-3/4
7. Sorghum	Warm	5-10	1/2-3/4
8. Winter Wheat	Cool	20-35	1-2
9. Winter Barley	Cool	20-35	1-2
10. Winter Rye	Cool	20-35	1-2
11. Triticale	Cool	25-40	1-2

Minimum Drill Seeding Rates for Perennial Grasses

Common Name	Botanical Name	Growth Season	Growth Form	Seeds/Pound	Pounds of PLS/acre
Alkali Soil Seed Mix					
Alkali sacaton	Sporobolus airoides	Cool	Bunch	1,750,000	.25
Basin wildrye	Elymus cinereus	Cool	Bunch	165,000	2.5
Sodar streambank wheatgrass	Agropyron riparium	Cool	Sod	170,000	2.5
Jose tall wheatgrass	Agropyron elongatum	Cool	Bunch	79,000	7.0
Arriba western wheatgrass	Agropyron smithii	Cool	Sod	110,000	5.5
Total					17.75

Common Name	Botanical Name	Growth Season	Growth Form	Seeds/Pound	Pounds of PLS/acre
Fertile Loamy Soil Seed Mix					
Ephriam crested wheatgrass	Agropyron cristatum	Cool	Sod	175,000	2.0
Dural hard fescue	Festuca ovina "duriuscula"	Cool	Bunch	565,000	1.0
Lincoln smooth brome	Bromus inermis leys "Lincoln"	Cool	Sod	130,000	3.0
Sodar Streambank Wheatgrass	Agropyron riparium "Sodar"	Cool	Sod	170,000	2.5
Arriba western wheatgrass	Agropyron smithii "Arriba"	Cool	Sod	110,000	7.0
Total					15.5

Common Name	Botanical Name	Growth Season	Growth Form	Seeds/Pound	Pounds of PLS/acre
High Water Table Seed Mix					
Meadow foxtail	Alopecurus pratensis	Cool	Sod	900,000	.05
Redtop	Agrostis alba	Warm	Open sod	5,000,000	.25
Reed canary grass	Phalaris arundinacea	Cool	Sod	68,000	.5
Lincoln smooth brome	Bromus inermis leys "Lincoln"	Cool	Sod	130,000	3.0
Pathfinder switchgrass	Panicum virgatum "Pathfinder"	Warm	Sod	389,000	1.0
Alkar tall wheatgrass	Agropyron elongatum "Alkar"	Cool	Bunch	79,000	5.5
Total					10.75

Common Name	Botanical Name	Growth Season	Growth Form	Seeds/Pound	Pounds of PLS/acre
Sandy Soil Seed Mix					
Blue grama	Bouteloua gracilis	Warm	Sod-forming bunchgrass	825,000	.5
Camper little bluestem	Schizachyrium scoparium	Warm	Bunch	240,000	1.0
Prairie sandreed	Calamovilfa longifolia	Warm	Open sod	274,000	1.0
Sand dropseed	Sporobolus cryptandrus	Cool	Bunch	5,298,000	.25
Vaughn sideoats gramma	Bouteloua curtipendula	Warm	Sod	191,000	2.0
Arriba western wheatgrass	Agropyron smithii "Arriba"	Cool	Sod	100,000	5.5
Total					10.25

Common Name	Botanical Name	Growth Season	Growth Form	Seeds/Pound	Pounds of PLS/acre
Heavy Clay, Rocky Foothill Seed Mix					
Ephriam crested wheatgrass	Agropyron cristatum "Ephriam"	Cool	Sod	175,000	1.5
Oahe Intermediate wheatgrass	Agropyron intermedium "Oahe"	Cool	Sod	115,000	5.5
Vaughn sideoats grammae	Bouteloua curtipendula	Warm	Sod	191,000	2.0
Lincoln smooth brome	Bromus inermis leys "Lincoln"	Cool	Sod	130,000	3.0
Arriba western wheatgrass	Agropyron smithii "Arriba"	Cool	Sod	110,000	5.5
Total					17.5

Seeding Dates	Annual Grasses		Perennial Grasses	
	Warm	Cool	Warm	Cool
January 1-March 15				
March 16-April 30	4	1, 2, 3		
May 1-May 15	4			
May 16-June 30	4, 5, 6, 7			
July 1-July 15	5, 6, 7			
July 16-August 31				
September 1-September 30		8, 9, 10, 11		
October 1-December 31				

NUMBER CODES FOR ANNUAL SPECIES REFER TO SPECIFIC SEEDING PERIODS FOR: (1) OATS; (2) SPRING WHEAT; (3) SPRING BARLEY; (4) ANNUAL RYEGRASS; (5) MILLET; (6) SUNDANGRASS; (7) SORGHUM; (8) WINTER WHEAT; (9) WINTER BARLEY; (10) WINTER RYE; AND (11) TRITICALE.

TO PROVIDE TEMPORARY EROSION CONTROL BETWEEN THE SEEDING DATES SPECIFIED, UTILIZE SURFACE ROUGHENING (ON THE CONTOUR OR PERPENDICULAR TO PREVAILING WINDS) AND APPLY A MULCH.

THE SEEDING DATES FOR PERENNIAL SPECIES ARE GENERALLY IN THE SPRING FROM MARCH THROUGH EARLY MAY, AND IN THE FALL AFTER MID-OCTOBER UNTIL SNOW COVER PRECLUDES PLANTING. FALL SEEDING IS REFERRED TO AS "DORMANT SEEDING" BECAUSE THE SEEDS WILL LIE DORMANT THROUGH THE WINTER AND GERMINATE IN THE SPRING.

PERENNIAL GRASSES CAN BE SEEDING USING A DRILL SEEDER IN AREAS PREVIOUSLY PLANTED WITH TEMPORARY GRASS COVER. IN THIS CASE, THE ANNUAL GRASS MAY NEED TO BE MOVED FOR THE DRILL TO OPERATE. BROADCAST SEEDING OR HYDRO SEEDING OF PERMANENT GRASSES SHOULD NOT BE DONE WITH A LIVE CROP OF ANNUAL GRASSES WITHOUT FIRST REWORKING AND PREPARING THE TOPSOIL.

- ACCUMULATED SEDIMENT AND DEBRIS SHALL BE REMOVED FROM A BMP WHEN THE SEDIMENT LEVEL REACHES ONE-HALF THE HEIGHT OF THE BMP OR AT ANYTIME THAT SEDIMENT OR DEBRIS ADVERSELY IMPACTS THE FUNCTIONING OF THE BMP. COST OF CLEANING SHALL BE INCLUDED IN THE LUMP SUMP BID FOR EROSION & SEDIMENT CONTROL.
- THE DISCHARGING OF CEMENT, CONCRETE, OR MORTAR FROM READY MIX DELIVERY TRUCKS, PUMP TRUCKS, BATCH PLANTS OR SMALL MECHANICAL MIXERS DIRECTLY ONTO PAVED SURFACES OR DISTURBED GROUND HAVING NO CONTAINMENT IS PROHIBITED. THE DISPOSAL OF ANY LIQUID WASTES OR WASH WATER FROM ANY OPERATIONS SUCH AS PAINTING, DRYWALL, OR TILE INSTALLATIONS DIRECTLY ONTO PAVED SURFACES OR THE GROUND WITHOUT CONTAINMENT IS PROHIBITED.
- THE DISCHARGE OF ANY WATER CONTAMINATED BY WASTE PRODUCTS FROM CUTTING OPERATIONS TO STORM DRAINS, ADJACENT WATERWAYS, WETLANDS, OTHER PROPERTIES, ETC., IS PROHIBITED. THE CONTRACTOR AND/OR THEIR AUTHORIZED AGENTS SHALL PROTECT ALL ADJACENT WATERWAYS, WETLANDS, OTHER PROPERTIES, ETC., ADJACENT TO ANY LOCATION WHERE PAVEMENT CUTTING OPERATIONS INVOLVING WHEEL CUTTING, SAW CUTTING OR ABRASIVE WATER JET CUTTING ARE TO TAKE PLACE. THE CONTRACTOR AND/OR THEIR AUTHORIZED AGENTS SHALL REMOVE AND PROPERLY DISPOSE OF ALL WASTE PRODUCTS GENERATED BY SAID CUTTING OPERATIONS ON A DAILY BASIS.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND/OR THEIR AUTHORIZED AGENTS TO RESOLVE CONSTRUCTION PROBLEMS DUE TO CHANGED CONDITIONS OR DESIGN ERRORS ENCOUNTERED BY THE CONTRACTOR DURING THE PROGRESS OF ANY PORTION OF THE WORK. IF, IN THE OPINION OF THE CITY'S EROSION CONTROL INSPECTOR, THE PROPOSED MODIFICATIONS TO THE APPROVED PLANS INVOLVE SIGNIFICANT CHANGES TO THE CHARACTER OF THE WORK OR TO FUTURE CONTIGUOUS PUBLIC OR PRIVATE IMPROVEMENTS, THE CONTRACTOR SHALL BE RESPONSIBLE TO REVISE PLANS AND SUBMIT THEM TO THE CITY OF AURORA FOR APPROVAL BY THE WATER DEPARTMENT PRIOR TO ANY FURTHER CONSTRUCTION RELATED TO THAT PORTION OF THE WORK. ANY IMPROVEMENTS NOT CONSTRUCTED IN ACCORDANCE WITH THE APPROVED PLANS, OR THE APPROVED REVISED PLANS, SHALL BE REMOVED AND THE IMPROVEMENTS SHALL BE RECONSTRUCTED.
- ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES MAY BE REQUIRED DURING AND AFTER CONSTRUCTION AND SHALL BE EXECUTED AND COMPLETED AS DIRECTED BY THE CITY ON THE ENVIRONMENTAL INSPECTOR'S REPORTS. THE CONTRACTOR, AND/OR THEIR AUTHORIZED AGENTS SHALL PLAN, INSTALL, AND MAINTAIN ALL EROSION CONTROL MEASURES AS INDICATED ON THIS PLAN AND AS NECESSARY TO PREVENT SEDIMENT DEPOSITION OFF-SITE. THE COST OF ADDITIONAL ITEMS SHALL BE INCLUDED IN THE EROSION & SEDIMENT CONTROL LUMP SUMP BID ITEM.
- ALL POTENTIAL POLLUTION SOURCES ON-SITE SHALL BE IDENTIFIED AND CONTROL MEASURES INSTALLED AND PRACTICED TO MINIMIZE THE LIKELIHOOD OF A RELEASE. A SPILL PREVENTION, CONTROL, AND COUNTERMEASURE (SPCC) PLAN SHALL BE DEVELOPED FOR THE SITE WITH MEASURES IN PLACE TO RESPOND TO ANY SPILLS, LEAKS OR OTHER RELEASES. SECONDARY CONTAINMENT FEATURES SHALL BE IN PLACE FOR ANY BULK FUEL STORAGE THAT REMAINING ONSITE FOR A PERIOD LONGER THAN 7 CALENDAR DAYS.
- STRAW BALES ARE NOT A CITY OF AURORA ACCEPTED SEDIMENT CONTROL BMP AND MAY NOT BE USED.
- HYDRAULIC MULCHING AS A MEANS TO COVER AND PROTECT SEEDING IS NOT AN ACCEPTABLE MEANS OF SEEDING OR APPLYING MULCH IN THE CITY OF AURORA UNLESS A PREVIOUSLY INSTALLED IRRIGATION SYSTEM IS USED TO AID GERMINATION AND GROWTH. HYDRAULIC SEEDING IS NOT PERMITTED.
- INLET PROTECTION SHALL BE INSTALLED WITHIN 72 HOURS OF POURING OR INSTALLING STORM DRAIN INLETS. INLET PROTECTION SHALL BE INSTALLED PRIOR TO CURB AND GUTTER POURING AND/OR STREET PAVING SHALL BE INSTALLED AS TO BLOCK THE THROAT OF THE INLET TO PREVENT DIRT AND OTHER DEBRIS FROM ENTERING THE STORM DRAIN. APPROPRIATE INLET PROTECTION SHALL BE INSTALLED AS DEPICTED ON CITY DETAIL DRAWINGS AND CORRESPOND TO THE TYPE AND LOCATION OF THE STORM DRAIN; IN A SUMP LOCATION, ON A CONTINUOUS GRADE OR AS AN AREA OR DROP INLET.

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.

DESIGNED BY:	H. TRAN
CAD BY:	JTC
CHECKED BY:	
SCALE:	AS SHOWN
PROJECT No.:	05048

CITY OF AURORA ENGINEERING DIVISION
15151 E. ALAMEDA PKWY., AURORA, COLORADO 80012
PHONE (303) 739-7300
HAVANA ST NB ACCELERATION LANE
FOR RIGHT TURN FROM PARKER RD (SH 83)
COA STANDARD EROSION & SEDIMENT CONTROL NOTES
SHEET 18

COA Project Manager Signature Block			
The Public Works Department has reviewed the information contained within the Erosion and Sediment Control Plan and accepts responsibility for the enforcement set forth.			
APPROVED FOR ONE YEAR FROM THIS DATE 03.28.07			
Cesar Sanchez 3-8-07 Project Manager Date	Cesar Sanchez 3-8-07 SENIOR ENGINEER DATE		
Plan Preparer Signature Block			
I have prepared and reviewed the Erosion and Sediment Control Plan.			
Hoanh Tran 3/8/07 Professional Engineer Date	[Signature] 3-14-07 CITY ENGINEER DATE		

19
0206228

STANDARD

NOTES:
 1. ROCK SOCK SHALL BE 1 1/2" CRUSHED ROCK FILL (RECYCLED CONCRETE NOT ACCEPTABLE)
 • BOTH SIDES OF INLET

LENGTH OF SEDIMENT CONTROL LOG

STREET SLOPE	LENGTH OF SEDIMENT CONTROL LOG (L)
0.5%	100
1.0%	50
2.0% OR STEEPER	25

NOTES:
 1. INTERIM CONFIGURATION OF INLET PROTECTION IN STREETS SHALL BE INSTALLED WITHIN 48-HOURS OF POURING INLET.
 2. CRUSHED ROCK SHALL BE FRACTURED FACE (ALL SIDES) AND SHALL BE 1 1/2" CRUSHED ROCK.
 3. WIRE MESH SHALL BE FABRICATED OF 10 GAUGE WIRE TWISTED INTO A MESH WITH A MAXIMUM OPENING OF 1/2" (COMMONLY TERMED "CHICKEN WIRE"). ROLL WIDTH SHALL BE 48"
 4. WIRE MESH SHALL BE SECURED USING "HOG RINGS" OR WIRE TIES AT 6" CENTERS ALONG ALL JOINTS AND AT 2" CENTERS ON ENDS OF BERM.
 5. ROCK SOCK SHALL BE CONSTRUCTED IN ONE PIECE OR SHALL BE CONSTRUCTED USING ROCK SOCK JOINT DETAIL.
 6. TUBULAR MARKERS SHALL MEET REQUIREMENTS OF MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), AS AMENDED.
 7. THE TOP OF THE REINFORCED ROCK SOCK SHALL BE 1/2" - 1" BELOW TOP OF CURB.
 8. SEDIMENT ACCUMULATED UPSTREAM OF THE INLET PROTECTION SHALL BE REMOVED WHEN THE SEDIMENT DEPTH UPSTREAM OF ROCK SOCK IS WITHIN 2-1/2" OF THE CREST.
 9. INLET PROTECTION IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND GRASS COVER IS APPROVED.

CITY OF AURORA, COLORADO 1 OF 1
 AURORA WATER DEPARTMENT DATE
 CITY ENGINEER DATE

SUMP INLET LOCATION
INLET PROTECTION

(IPS)

STANDARD

NOTES:
 1. ROCK SOCKS SHALL BE 1 1/2" CRUSHED ROCK FILL (RECYCLED CONCRETE NOT ACCEPTABLE)

INLET PROTECTION INSTALLATION NOTES

- INTERIM CONFIGURATION OF INLET PROTECTION IN STREETS SHALL BE INSTALLED WITHIN 48-HOURS OF POURING INLET.
- CRUSHED ROCK SHALL BE FRACTURED FACE (ALL SIDES) AND SHALL BE 1 1/2" CRUSHED ROCK.
- WIRE MESH SHALL BE FABRICATED OF 10 GAUGE WIRE TWISTED INTO A MESH WITH A MAXIMUM OPENING OF 1/2" (COMMONLY TERMED "CHICKEN WIRE"). ROLL WIDTH SHALL BE 48"
- WIRE MESH SHALL BE SECURED USING "HOG RINGS" OR WIRE TIES AT 6" CENTERS ALONG ALL JOINTS AND AT 2" CENTERS ON ENDS OF BERM.
- ROCK SOCK SHALL BE CONSTRUCTED IN ONE PIECE OR SHALL BE CONSTRUCTED USING ROCK SOCK JOINT DETAIL.
- TUBULAR MARKERS SHALL MEET REQUIREMENTS OF MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), AS AMENDED.
- THE TOP OF THE REINFORCED ROCK SOCK SHALL BE 1/2" - 1" BELOW TOP OF CURB.
- SEDIMENT ACCUMULATED UPSTREAM OF THE INLET PROTECTION SHALL BE REMOVED WHEN THE SEDIMENT DEPTH UPSTREAM OF ROCK SOCK IS WITHIN 2-1/2" OF THE CREST.
- INLET PROTECTION IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND GRASS COVER IS APPROVED.

NOTE:
 THIS CURB SOCK SPACING IS IN ADDITION TO THE 3 CURB SOCKS REQUIRED AT THE INLET.

STREET SLOPE	CURB SOCK SPACING (ft)
0.5%	200
1.0%	150
2.0%	100
3.0%	75
4.0%	50
5.0%	50
6.0%	25
7.0%	25
8.0%	25

CITY OF AURORA, COLORADO 1 OF 2
 AURORA WATER DEPARTMENT DATE
 CITY ENGINEER DATE

ON-GRADE INLET LOCATION
INLET PROTECTION

(IPO)

STANDARD

GRADATION TABLE

SIEVE SIZE	MASS PERCENT PASSING SQUARE MESH SIEVES
No. 4	100
2"	100
1 1/2"	90 - 100
1"	20 - 55
3/4"	0 - 15
3/8"	0 - 5

DETAIL 2

STREET SLOPE	CURB SOCK SPACING (ft)
0.5%	100
1.0%	100
2.0%	75
3.0%	50
4.0%	50
5.0%	50
6.0%	25
7.0%	25
8.0%	25

NOTES:
 1. SOCKS WILL BE USED UPGRADIENT OF INLET ANGLED AS SHOWN AND FLUSH WITH CURB. (SEE IPS & IPO DETAILS FOR SPACING.)
 2. NO LESS THAN TWO 6-INCH DIAMETER SOCKS MUST BE USED IN SEQUENCE, SPACED NO MORE THAN FIVE FEET APART, WHEN SHOWN ON SPEC PLAN.
 3. INCLINE AT 30 DEGREES FROM PERPENDICULAR, OPPOSITE THE DIRECTION OF FLOW (SEE DETAIL 2).
 4. EROSION CONTROL MEASURES SHALL BE MAINTAINED AT ALL TIMES AS DIRECTED BY CITY OF AURORA.
 5. SOCKS WILL BE USED AT ANY LOCATION ALONG A CURB TO CONTROL SEDIMENT AS DIRECTED BY CITY.

CITY OF AURORA, COLORADO 1 OF 1
 AURORA WATER DEPARTMENT DATE
 CITY ENGINEER DATE

CURB SOCKS

(CS)

STANDARD

INLET PROTECTION INSTALLATION NOTES

- INLET PROTECTION AT AREA INLETS SHALL BE INSTALLED WITHIN 48-HOURS OF POURING INLET.
- CRUSHED ROCK SHALL BE FRACTURED FACE (ALL SIDES) AND SHALL BE 1-1/2". (COMMONLY TERMED "CHICKEN WIRE") ROLL WIDTH SHALL BE 48-INCHES.
- WIRE MESH SHALL BE FABRICATED OF 10 GAUGE WIRE TWISTED INTO A MESH WITH A MAXIMUM OPENING OF 1/2-INCH.
- WIRE MESH SHALL BE SECURED USING "HOG RINGS" OR WIRE TIES AT 6-INCH CENTER ALONG ALL JOINTS AND AT 2-INCH CENTERS ON ENDS OF SOCK.
- SEDIMENT ACCUMULATED UPSTREAM OF INLET PROTECTION SHALL BE REMOVED WHEN THE SEDIMENT DEPTH UPSTREAM OF ROCK BERM IS WITHIN 2-1/2 INCHES OF THE CREST.

CITY OF AURORA, COLORADO 1 OF 2
 AURORA WATER DEPARTMENT DATE
 CITY ENGINEER DATE

DROP / AREA
INLET PROTECTION

(IPA)

STANDARD

NOTES:
 1. SILT FENCE MUST BE PLACED AWAY FROM TOE OF SLOPE TO ALLOW FOR WATER PONDING.
 2. SILT FENCE MAY BE USED ALONG PERIMETERS SO LONG AS SLOPES DO NOT EXCEED 5% IF SLOPE IS GREATER THAN 5%, THEN SILT FENCE MAY BE INSTALLED ALONG THE CONTOUR OR A DIVERSION DIKE MAY BE REQUIRED.
 3. ANCHOR TRENCH SHALL BE EXCAVATED WITH TRENCHER, OR WITH SILT FENCE INSTALLATION MACHINE; NO ROAD GRADERS, BACKHOES, ETC. SHALL BE USED. TRENCH SHALL BE COMPACTED BY HAND WITH "JUMPING JACK", OR BY WHEEL ROLLING, COMPACTION SHALL BE SUCH THAT SILT FENCE RESISTS BEING PULLED OUT OF ANCHOR TRENCH BY HAND.
 4. SILT FENCE INDICATED ON PLAN SHALL BE INSTALLED PRIOR TO ANY LAND-DISTURBING ACTIVITIES UNLESS NOTED OTHERWISE.
 5. SEDIMENT ACCUMULATED UPSTREAM OF SILT FENCE SHALL BE REMOVED WHEN THE UPSTREAM SEDIMENT REACHES A DEPTH OF 6-INCHES.

CITY OF AURORA, COLORADO 1 OF 1
 AURORA WATER DEPARTMENT DATE
 CITY ENGINEER DATE

SILT FENCE

(SF)

STANDARD

NOTES:
 1. VEHICLE TRACKING CONTROL PADS SHALL BE AT EVERY ACCESS POINT TO SITE AND ALL STABILIZED STORAGE AREAS AND CONCRETE WASHOUT AREAS.
 2. VEHICLE TRACKING CONTROL PADS SHALL CONSIST OF HARD, DENSE, DURABLE STONE, ANGULAR IN SHAPE AND RESISTANT TO WEATHERING, ROUNDED STONE OR BOULDERS WILL NOT BE ACCEPTABLE. THE STONES SHALL BE 4" WITH A MAXIMUM SIZE OF 6". THE STONE SHALL HAVE A SPECIFIC GRAVITY OF AT LEAST 2.6. CONTROL OF GRADATION WILL BE BY VISUAL INSPECTION.
 3. ANY CRACKED OR DAMAGED CURB AND GUTTER AND SIDEWALK SHALL BE REPLACED BY PERMITTEE.
 4. GRAVEL SURFACE SHALL BE CLEAN AND LOOSE ENOUGH TO RUT SLIGHTLY UNDER WHEEL LOADS AND CAUSE LOOSE GRAVEL TO DISLODGE MUD FROM TIRES. WHEN GRAVEL BECOMES COMPACTED OR FILLED WITH SEDIMENT SO THAT THE EFFECTIVENESS OF THE PAD IS DIMINISHED, CONTRACTOR SHALL RIP, TURN OVER, OR OTHERWISE LOOSEN GRAVEL, PLACE ADDITIONAL NEW GRAVEL, OR REPLACE WITH NEW GRAVEL AS NECESSARY TO RESTORE EFFECTIVENESS.

CITY OF AURORA, COLORADO 1 OF 1
 AURORA WATER DEPARTMENT DATE
 CITY ENGINEER DATE

VEHICLE TRACKING
CONTROL

(VTC)

STANDARD

NOTE FOR CONCRETE WASHOUT DETAIL
 CONTRACTOR SHALL USE PLASTIC KIDDIE POOLS FOR THIS PROJECT AS A SUBSTITUTION TO (SW).

NOTES:
 1. EXCAVATED MATERIAL, SHALL BE UTILIZED IN PERIMETER BERM CONSTRUCTION.
 2. THE CONCRETE WASHOUT AREA WILL BE REPAIRED, ENLARGED OR CLEANED OUT AS NECESSARY TO MAINTAIN CAPACITY FOR WASTE CONCRETE.
 3. AT THE END OF CONSTRUCTION ALL CONCRETE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF AT AN APPROVED WASTE SITE.
 NOTE: PLASTIC KIDDIE POOLS MAY BE USED AS A SUBSTITUTION TO SMALL SITE

CITY OF AURORA, COLORADO 1 OF 1
 AURORA WATER DEPARTMENT DATE
 CITY ENGINEER DATE

SMALL SITE / SINGLE LOT
CONCRETE WASHOUT

(SW)

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.

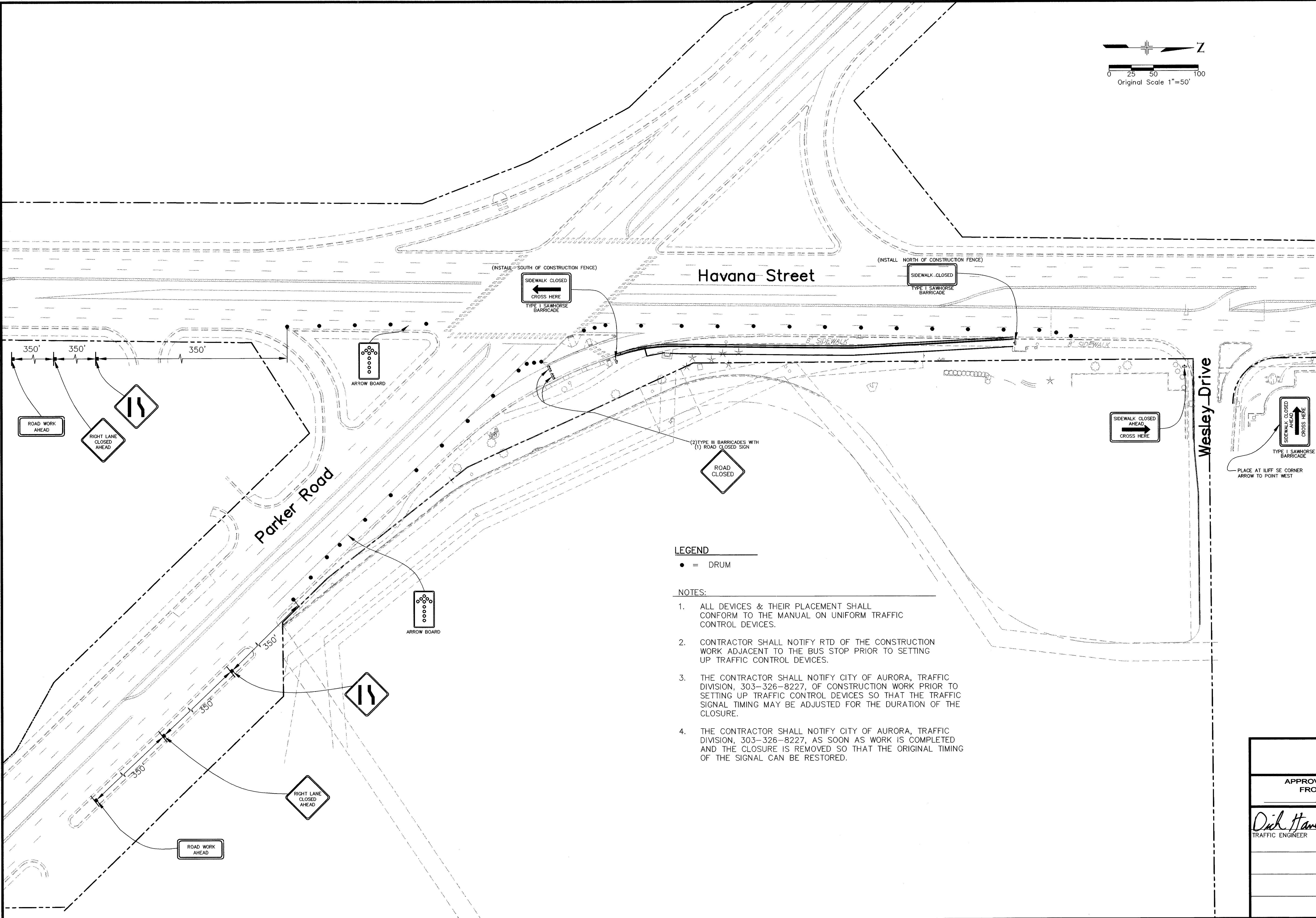
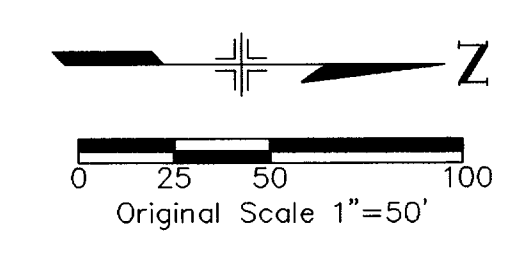
DESIGNED BY: H. TRAN
 CAD BY: JTC
 CHECKED BY:
 SCALE: AS SHOWN
 PROJECT No.: 06046

CITY OF AURORA ENGINEERING DIVISION
 15151 E. ALAMEDA PKWY., AURORA, COLORADO 80012
 PHONE (303) 739-7300
 HAVANA ST NB ACCELERATION LANE
 FOR RIGHT TURN FROM PARKER RD (SH 83)
 COA STANDARDS EROSION & SEDIMENT CONTROL DETAILS
 SHEET 19

APPROVED FOR ONE YEAR
FROM THIS DATE
03-28-07

Cesar Sanchez 3-8-07
 SENIOR ENGINEER DATE
 Aurora Water Department 3-14-07
 CITY ENGINEER DATE
 Aurora Water Department 3-14-07
 CITY ENGINEER DATE

204228 20



LEGEND

• = DRUM

NOTES:

1. ALL DEVICES & THEIR PLACEMENT SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
2. CONTRACTOR SHALL NOTIFY RTD OF THE CONSTRUCTION WORK ADJACENT TO THE BUS STOP PRIOR TO SETTING UP TRAFFIC CONTROL DEVICES.
3. THE CONTRACTOR SHALL NOTIFY CITY OF AURORA, TRAFFIC DIVISION, 303-326-8227, OF CONSTRUCTION WORK PRIOR TO SETTING UP TRAFFIC CONTROL DEVICES SO THAT THE TRAFFIC SIGNAL TIMING MAY BE ADJUSTED FOR THE DURATION OF THE CLOSURE.
4. THE CONTRACTOR SHALL NOTIFY CITY OF AURORA, TRAFFIC DIVISION, 303-326-8227, AS SOON AS WORK IS COMPLETED AND THE CLOSURE IS REMOVED SO THAT THE ORIGINAL TIMING OF THE SIGNAL CAN BE RESTORED.

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.

DESIGNED BY: H. TRAN	CAD BY: JTC	CHECKED BY:	SCALE: AS SHOWN	PROJECT No.:
				05048

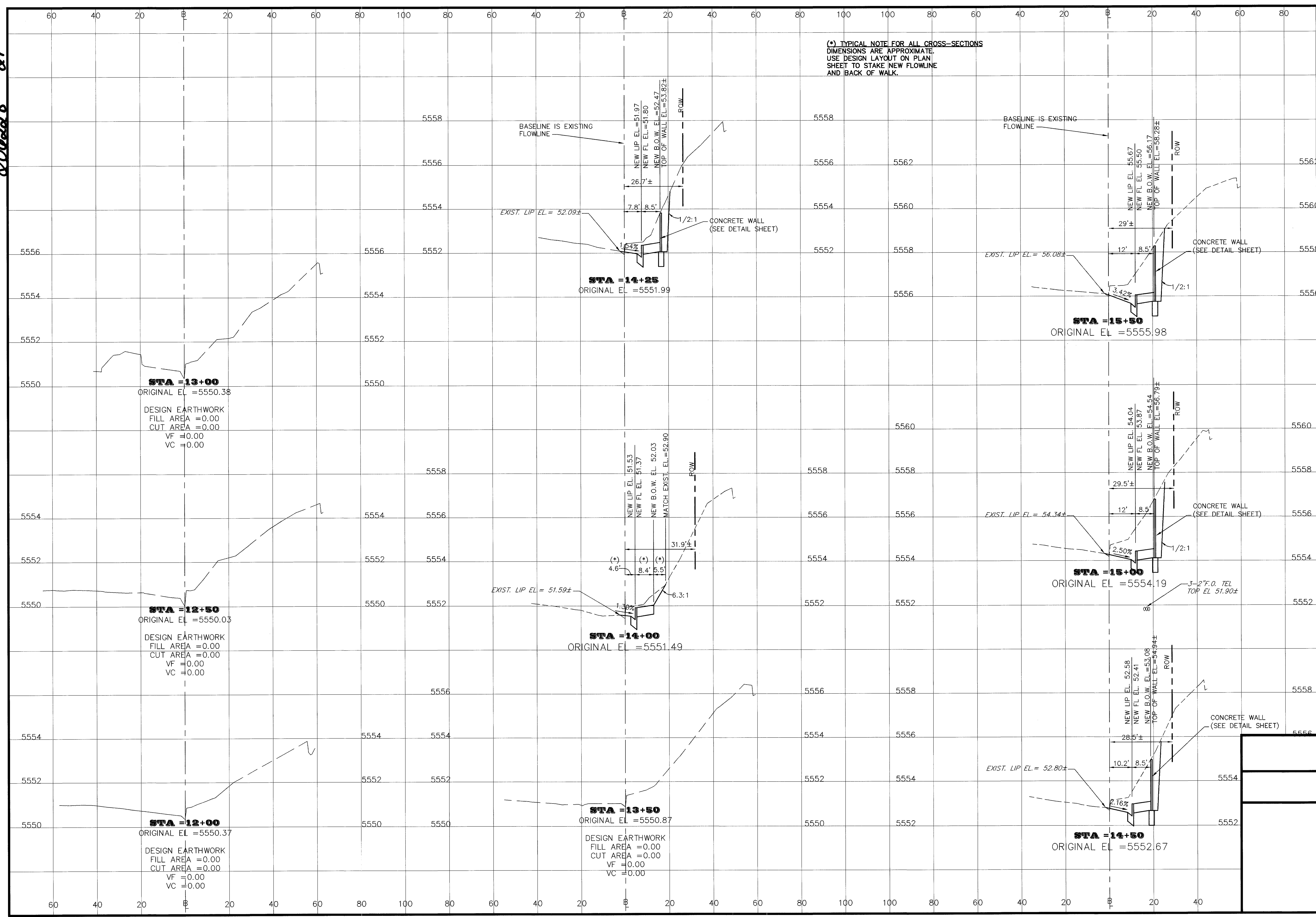
CITY OF AURORA ENGINEERING DIVISION
15151 E. ALAMEDA PKWY., AURORA, COLORADO 80012
PHONE (303) 739-7300

HAVANA ST NB ACCELERATION LANE
FOR RIGHT TURN FROM PARKER RD (SH 83)
TRAFFIC CONTROL PLAN

SHEET 20

APPROVED FOR ONE YEAR FROM THIS DATE <i>03.28.07</i>	
<i>Dick Hansen</i> TRAFFIC ENGINEER	<i>3/16/07</i> DATE

206228 21



(*) TYPICAL NOTE FOR ALL CROSS-SECTIONS
 DIMENSIONS ARE APPROXIMATE
 USE DESIGN LAYOUT ON PLAN
 SHEET TO STAKE NEW FLOWLINE
 AND BACK OF WALK.

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.

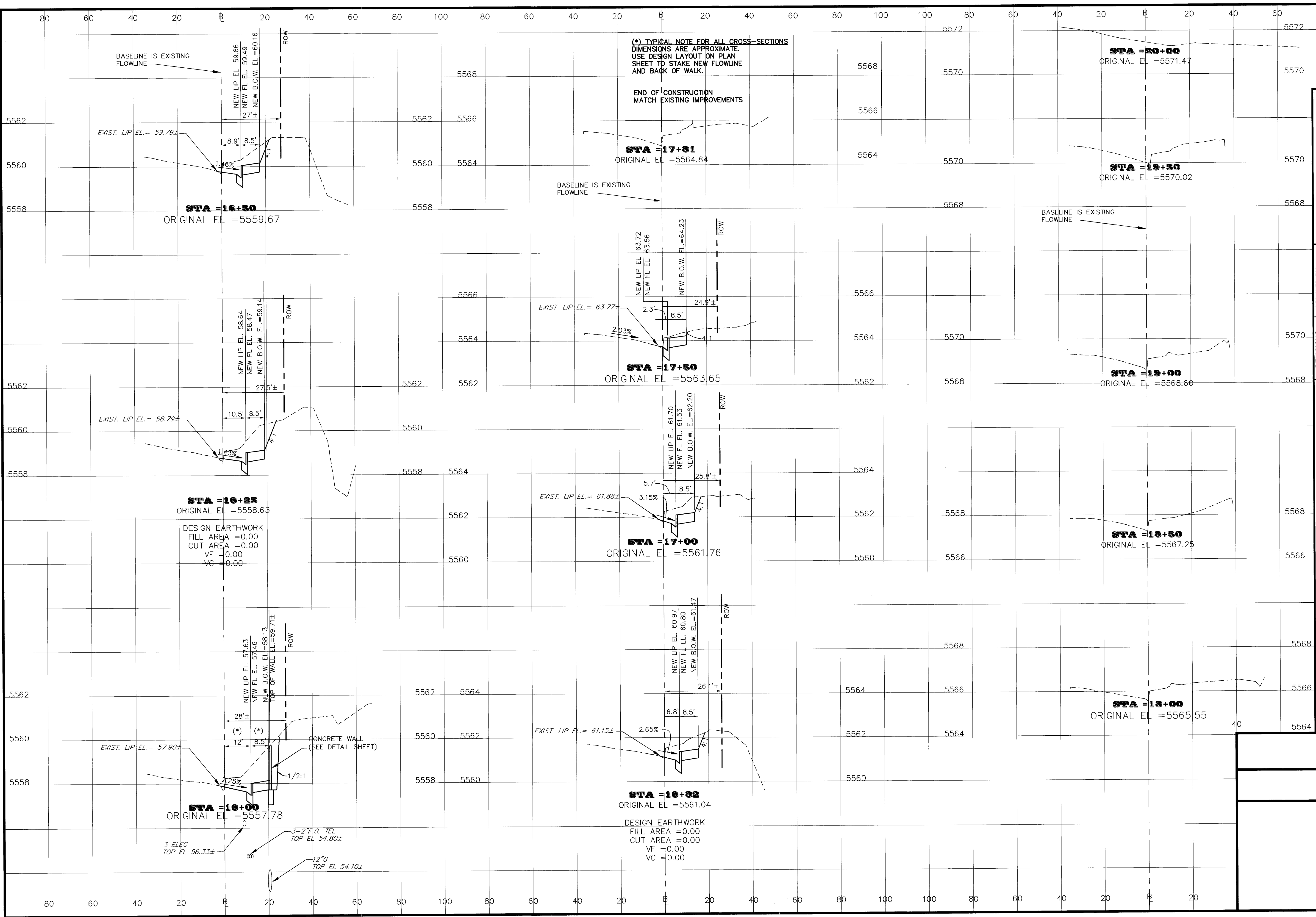
DESIGNED BY:	H. TRAN
CAD BY:	JTC
CHECKED BY:	
SCALE:	AS SHOWN
PROJECT No.:	05048

CITY OF AURORA ENGINEERING DIVISION
 15151 E. ALAMEDA PKWY., AURORA, COLORADO 80012
 PHONE (303) 739-7300

HAVANA ST NB ACCELERATION LANE
 FOR RIGHT TURN FROM PARKER RD (SH 83)
 CROSS SECTIONS

SHEET 21

206228 02



(* TYPICAL NOTE FOR ALL CROSS-SECTIONS
DIMENSIONS ARE APPROXIMATE.
USE DESIGN LAYOUT ON PLAN
SHEET TO STAKE NEW FLOWLINE
AND BACK OF WALK.

END OF CONSTRUCTION
MATCH EXISTING IMPROVEMENTS

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.

DESIGNED BY:	H. TRAN
CAD BY:	JTC
CHECKED BY:	
SCALE:	AS SHOWN
PROJECT No.:	06048

CITY OF AURORA ENGINEERING DIVISION
15151 E. ALAMEDA PKWY., AURORA, COLORADO 80012
PHONE (303) 739-7300
HAVANA ST NB ACCELERATION LANE
FOR RIGHT TURN FROM PARKER RD (SH 83)
CROSS SECTION

SHEET 22