

# CITY OF ROCKWALL, TEXAS

PAVING, DRAINAGE, & WATER IMPROVEMENTS  
TO SERVE

## DISCOVERY BOULEVARD EXTENSION TO JOHN KING BOULEVARD

**BILL CECIL - Mayor**

**COUNCIL MEMBERS:**

**STEPHEN STRAUGHAN - Mayor Pro Tem**

**MATT SCOTT**

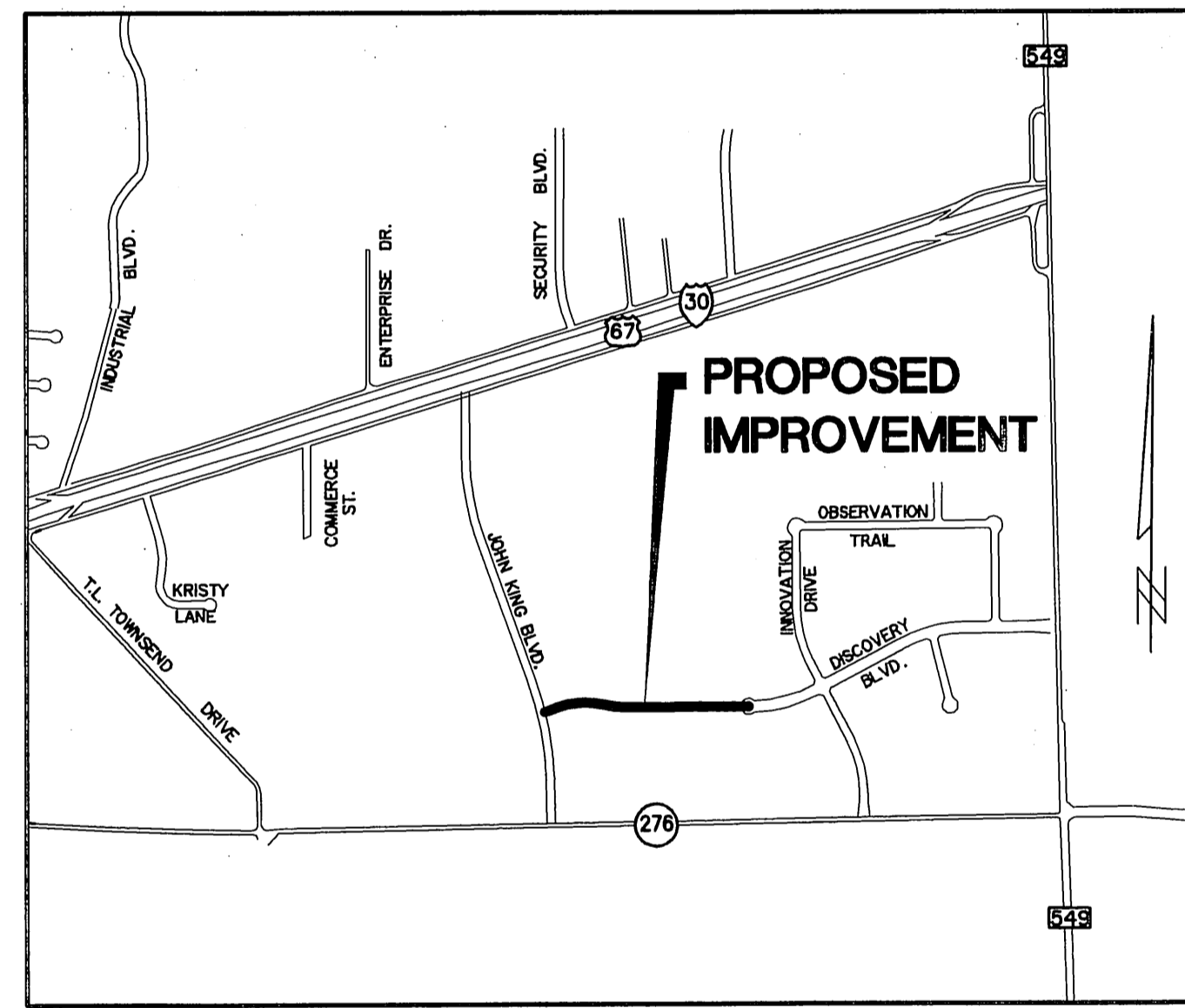
**DAVID SWEET**

**GLEN FARRIS**

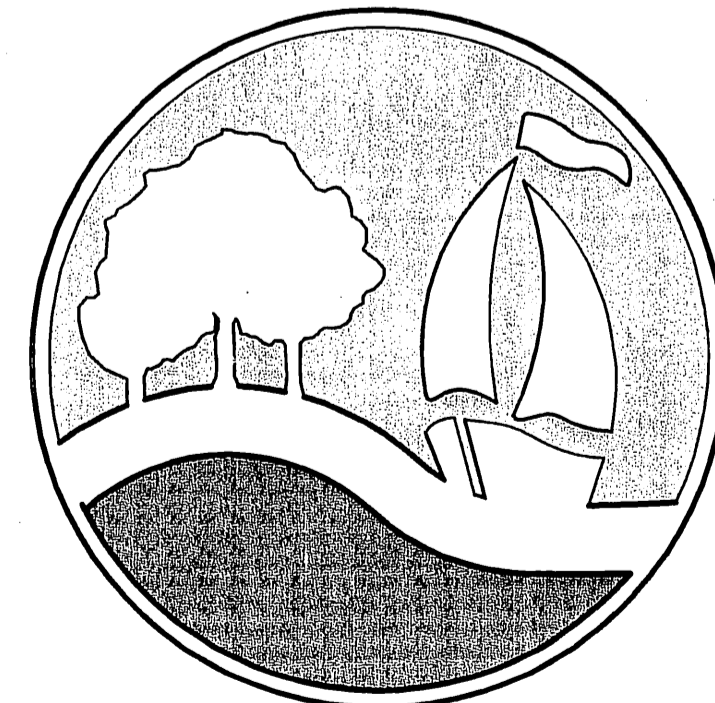
**CLIFF SEVIER**

**MARGO NIELSEN**

**JULIE COUCH - City Manager**



**VICINITY MAP**  
N.T.S.



"THE NEW HORIZON"

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\* PLAN SHEET INCLUDED FROM S.H. 205 BYPASS  
(PHASE I) PLANS PREPARED BY WIER AND  
ASSOCIATES IN 2006

NOTE:  
1. ALL REFERENCES TO "CITY" SHALL MEAN "CITY OF ROCKWALL".  
2. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF ROCKWALL AND NORTH TEXAS COUNCIL OF GOVERNMENT STANDARD SPECIFICATIONS. 3rd Ed.

CITY OF ROCKWALL  
STANDARD DETAIL SHEETS  
INCORPORATED HEREIN  
BY REFERENCE

### RECORD DRAWINGS

THESE AS-BUILT OR RECORD DRAWINGS (OR CORRECTED SPECIFICATIONS) HAVE BEEN PREPARED, IN PART, ON THE BASIS OF INFORMATION COMPILED AND FURNISHED BY OTHERS. THE ENGINEER WILL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS WHICH HAVE BEEN INCORPORATED INTO THIS DOCUMENT AS A RESULT.



*Ronald Ramirez*  
7/29/09

**JULY 2009**

DATE: 07-24-2009  
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W.A. No. 98041.10

PAVEMENT NOTES

- ALL SIGNS, PAVEMENT MARKINGS, AND OTHER TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, AND THE REQUIREMENTS OF THE CITY OF ROCKWALL.
- THE CONTRACTOR SHALL CONSTRUCT AND STATE ALL DRIVEWAY APPROACHES IN CONFORMANCE WITH APPLICABLE CITY STANDARD ORDINANCES AND REQUIREMENTS. CONTRACTOR SHALL OBTAIN APPLICABLE DRIVEWAY OR ACCESS PERMITS PRIOR TO CONSTRUCTION OR SHALL CONFIRM THAT SUCH PERMITS HAVE BEEN OBTAINED BY OTHERS. THIS INCLUDES WORK AT THE INTERSECTION OF JOHN KING BLVD. AND DISCOVERY BLVD.
- CONTRACTOR SHALL SAW-CUT TO PROVIDE SMOOTH TRANSITION AT ALL TIE-INS TO EXISTING EDGE OF PAVEMENT.
- NOTIFY CITY INSPECTOR 72 HOURS BEFORE WORK BEGINS OR EARLIER IF REQUIRED BY PERMITS.
- JOINTS OR SCORE MARKS ARE TO BE SHARP AND CLEAN WITHOUT SHOWING EDGES OF JOINTING TOOL.
- DO NOT POUR ANY CONCRETE BEFORE FORMS ARE INSPECTED AND APPROVED BY THE GENERAL CONTRACTOR AND CITY INSPECTOR.
- ALL CONCRETE FOR PAVEMENT, RIPRAP SHALL BE CLASS A 4200 P.S.I. UNLESS NOTED OTHERWISE. REFER TO STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION PREPARED BY NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS. 3rd. Edition.
- CONTRACTOR SHALL SAW-CUT TIE-INS AT EXISTING CURBS AS NECESSARY TO INSURE SMOOTH TRANSITIONS. CONTRACTOR SHALL SAW-CUT AND TRANSITION TO MEET EXISTING PAVEMENT AS NECESSARY TO INSURE POSITIVE DRAINAGE. (TYP. ALL INTERSECTIONS)
- REFER TO SITE WATER AND SEWER PLAN FOR EXISTING UNDERGROUND UTILITIES AND PROVISIONS FOR UTILITY VERIFICATION PRIOR TO CONSTRUCTION.
- JOINT SHALL INTERSECT CURBS PERPENDICULARLY ± 15 DEGREES. JOINTS SKEWED TO CURBS SHALL STOP AT A JOINT INTERSECTION OR 2 FT. FROM FACE OF CURB AND CONTINUE PERPENDICULAR TO THE CURB.
- CONTINUE JOINTS THROUGH CURBS AND PAVEMENT UNDER PAVERS.
- CONTRACTOR SHALL SEAL ALL JOINTS IN ACCORDANCE WITH THE JOINT DETAILS ON SHEET POOL, THE MANUFACTURER'S RECOMMENDATIONS, AND THE SPECIFICATIONS.
- INSTALL 4" DIA. SCHEDULE 40 PVC SLEEVES WHERE REQUIRED BENEATH PAVING (18" - 30" DEEP) BETWEEN LANDSCAPE AREAS FOR THE INSTALLATION OF LANDSCAPE IRRIGATION. TURN UP ENDS 24" ABOVE GRADE AND MARK.
- ALL DIMENSIONS ARE TO BACK OF CURB, UNLESS NOTED OTHERWISE.
- ALL PAVEMENT MARKINGS SHALL BE FOUR (4) INCHES WIDE AND COLOR WHITE UNLESS SPECIFIED OTHERWISE ON THE DRAWINGS. STRIPING SHALL CONSIST OF TWO (2) APPLICATIONS OF PAINT.
- CONTRACTOR SHALL FURNISH AND INSTALL ALL PAVEMENT MARKINGS AS INDICATED ON THE PLANS.
- CONTRACTOR SHALL COORDINATE INSTALLATION OF ALL SIGNS, PAVEMENT MARKINGS, AND OTHER TRAFFIC CONTROL DEVICES WITH OTHER CONTRACTORS ON SITE. PAYMENT FOR THESE ITEMS SHALL BE INCIDENTAL TO CONSTRUCTION UNLESS SPECIFIED OTHERWISE.
- CONTRACTOR SHALL SUBMIT A JOINTING PLAN FOR APPROVAL BY THE ENGINEER PRIOR TO CONSTRUCTION.
- ALL HANDICAP RAMPS SHALL BE A LAYDOWN CURB TYPE AS SPECIFIED IN THE CITY STANDARD CONSTRUCTION DETAILS. HANDICAP RAMPS SHALL HAVE CONTRASTING COLOR PER REQUIREMENTS OF ADA AND TAS.

UTILITY NOTES

- ALL PIPE LENGTHS ARE HORIZONTAL DISTANCES AND ARE APPROXIMATE.
- CONTRACTOR SHALL PROVIDE ALL THE MATERIALS AND APPURTENANCES NECESSARY FOR THE COMPLETE INSTALLATION OF THE UTILITIES. ALL PIPE AND FITTINGS SHALL BE INSPECTED BY THE WATER DEPARTMENT INSPECTOR PRIOR TO BEING COVERED. THE INSPECTOR MUST ALSO BE PRESENT DURING PRESSURE TESTING AND DISINFECTION OF MAINS AND HIS SIGNATURE OF APPROVAL IS REQUIRED.
- ALL WORK SHALL COMPLY WITH ALL APPLICABLE CODES, REGULATIONS, AND/OR LOCAL STANDARDS IMPOSED BY LOCAL UTILITY AND THE CITY.
- THE CONTRACTOR SHALL MAKE ARRANGEMENTS WITH THE LOCAL UTILITY AUTHORITY FOR CONNECTION TO THE EXISTING MAINS.
- ALL FIRE HYDRANTS ARE 6" DIAMETER WITH A 6" DIAMETER LINE AND A 6" DIAMETER SHUT OFF VALVE. FIRE HYDRANTS SHALL BE SET SUCH THAT NOZZLE CONNECTIONS FACE THE BUILDING, STREET, OR FIRE LANE. FIRE HYDRANTS SHALL BE SET 4' TO 8' BEHIND BACK OF CURB UNLESS OTHERWISE NOTED.
- ALL WATER LINES SHALL HAVE A MINIMUM COVER OF 48" MEASURED FROM TOP OF PIPE TO TOP OF FINISHED PAVEMENT UNLESS A GREATER DEPTH IS REQUIRED BY CITY STANDARDS.
- CONTRACTOR SHALL ADJUST LOCATION OF PROPOSED WATER LINES AS REQUIRED TO AVOID CONFLICTS WITH STORM SEWER OR OTHER UTILITIES. A MINIMUM OF 2' OF CLEARANCE SHALL BE MAINTAINED WITH STORM DRAIN AND SANITARY SEWER CROSSINGS.
- THRUST BLOCKS SHALL BE PROVIDED AT ALL "TEES, ELBOWS, CAPS, PLUGS, FIRE HYDRANTS AND BENDS" OF SUFFICIENT SIZE TO COMPLY WITH MINIMUM STANDARDS OF N.F.P.A. - 24 FOR EXISTING SOIL CONDITIONS.
- ALL GATE VALVES TO BE PROVIDED WITH CAST IRON BOXES. SIZE OF GATE VALVE WHERE TAP IS MADE INTO EXISTING WATER LINE WILL BE DETERMINED BY THE WATER DEPARTMENT.
- SHOULD LATENT SOIL CONDITIONS NECESSITATE, CONTRACTOR SHALL INSTALL SPECIAL SUPPORTS FOR PIPING AND/OR APPURTENANCES INCLUDING THE REMOVAL OF UNSUITABLE MATERIAL AND BACKFILLING WITH GRAVEL OR OTHER MATERIAL.
- ALL STORM DRAIN PIPE TO BE CLASS III REINFORCED CONCRETE PIPE (RCP) UNLESS OTHERWISE NOTED IN PLANS.
- ALL MANHOLES OVER FIVE (5) FEET IN DEPTH SHALL HAVE A STANDARD CONCENTRIC CONE.
- ALL MATERIALS SHALL BE U.L. LISTED AND FACTORY MUTUAL APPROVED UNLESS DIRECTED OTHERWISE BY THE ENGINEER.
- EXISTING UTILITIES AND UNDERGROUND FACILITIES INDICATED ON THESE PLANS HAVE BEEN LOCATED FROM REFERENCE INFORMATION SUPPLIED BY VARIOUS OWNERS OF THE FACILITIES. THE ENGINEER OR THE CITY DOES NOT ACCEPT RESPONSIBILITY FOR THE UTILITY LOCATIONS SHOWN. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY BOTH HORIZONTALLY AND VERTICALLY THE LOCATION OF ALL EXISTING UTILITIES AND UNDERGROUND FACILITIES PRIOR TO CONSTRUCTION, TO TAKE NECESSARY PRECAUTIONS IN ORDER TO PROTECT ALL FACILITIES ENCOUNTERED, AND TO NOTIFY THE ENGINEER PROMPTLY OF ALL CONFLICTS OF THE WORK WITH EXISTING FACILITIES. THE CONTRACTOR SHALL PRESERVE AND PROTECT ALL EXISTING UTILITIES FROM DAMAGE DURING CONSTRUCTION. ANY DAMAGES BY THE CONTRACTOR TO EXISTING UTILITIES SHALL BE REPAIRED BY THE CONTRACTOR AT HIS EXPENSE.
- CONTRACTOR SHALL REFER TO SITE GEOTECHNICAL REPORT FOR DETAILS ON COMPACTING, BACKFILL, PROOFROLLING AND TESTING. IF NO COMPACTION DATA IS PROVIDED, TRENCHES BENEATH PAVEMENT SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY AND TRENCHES OUTSIDE OF PAVED AREAS SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY.
- COORDINATE WITH PUBLIC ELECTRIC UTILITY COMPANY TO STABILIZE EXISTING POWER POLES DURING TRENCH CONSTRUCTION.
- ALL TRENCHES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PROVISIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 AND ALL APPLICABLE STATE AND LOCAL REGULATIONS.
- ALL CONSTRUCTION SHALL COMPLY WITH THE CITY STANDARD CONSTRUCTION DETAILS AND NCTCOG 3rd EDITION.
- CONTRACTOR SHALL ADJUST ALL EXISTING AND PROPOSED SURFACE UTILITIES TO MATCH FINISHED GRADES.
- ALL WATER MAINS SHALL BE C900 PVC, CLASS 200.
- CONCRETE ENCASEMENT SHALL BE INSTALLED WHERE SHOWN IN THE PLANS OR AS DIRECTED BY THE ENGINEER OR THE INSPECTOR. THIS WORK SHALL BE SUBSIDIARY TO THE COST OF THE UTILITY AND NO SEPARATE MEASUREMENT OR PAYMENT SHALL BE MADE.
- BLUE EMS DISKS SHALL BE INSTALLED AT EVERY CHANGE IN DIRECTION, VALVE, AND SERVICE.
- GREEN EMS DISCS SHALL BE INSTALLED AT EVERY MANHOLE, CLEAN OUT, AND SERVICE.
- PIPE USED FOR WASTEWATER COLLECTION SYSTEMS SHALL BE PVC PIPE CONFORMING TO THE STANDARD SPECIFICATIONS FOR CONSTRUCTION. THE WASTEWATER PIPELINE SHALL BE SDR-35, AND SHALL HAVE A MINIMUM EARTH COVER OF THREE FEET (3'). FOR DEPTHS OF TEN FEET (10') OR GREATER, THE WASTEWATER PIPELINE SHALL BE A MINIMUM OF SDR-26.

GRADING & DRAINAGE NOTES

- EXISTING UTILITIES AND UNDERGROUND FACILITIES INDICATED ON THESE PLANS HAVE BEEN LOCATED FROM REFERENCE INFORMATION SUPPLIED BY VARIOUS OWNERS OF THE FACILITIES. THE ENGINEER OR THE CITY DOES NOT ACCEPT RESPONSIBILITY FOR THE UTILITY LOCATIONS SHOWN. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY BOTH HORIZONTALLY AND VERTICALLY THE LOCATION OF ALL EXISTING UTILITIES AND UNDERGROUND FACILITIES PRIOR TO CONSTRUCTION, TO TAKE NECESSARY PRECAUTIONS IN ORDER TO PROTECT ALL FACILITIES ENCOUNTERED, AND TO NOTIFY THE ENGINEER PROMPTLY OF ALL CONFLICTS OF THE WORK WITH EXISTING FACILITIES. THE CONTRACTOR SHALL PRESERVE AND PROTECT ALL EXISTING UTILITIES FROM DAMAGE DURING CONSTRUCTION. ANY DAMAGES BY THE CONTRACTOR TO EXISTING UTILITIES SHALL BE REPAIRED BY THE CONTRACTOR AT HIS EXPENSE. EXISTING TOPOGRAPHIC INFORMATION SHOWN IS BASED ON FIELD SURVEY PREPARED BY WIER & ASSOCIATES, ON OCTOBER, 2008, (EXCLUDES BELOW GRADE PUBLIC UTILITY LOCATIONS PROVIDED BY UTILITY COMPANY AS DESCRIBED ABOVE).
- NEW FINISHED CONTOURS SHOWN ARE TOP OF PAVING IN AREAS TO RECEIVE PAVEMENT AND TOP OF TOPSOIL IN AREAS TO BE SEEDED OR SODDED.
- PARKWAYS SHALL BE SODDED AND AREAS OUTSIDE OF PARKWAYS SHALL BE HYDROMULCHED. AREAS WITHIN LANDSCAPE AREAS SHOWN TO BE SEEDED SHALL RECEIVE 4 INCHES OF TOPSOIL. THIS TOPSOIL TO BE PLACED AND LEVELED BY THE GRADING CONTRACTOR.
- ROUGH GRADING ELEVATIONS SHALL BE DETERMINED BY THE CONTRACTOR AND BASED ON THE FOLLOWING CRITERIA:
  - 4" BELOW FINISHED CONTOURS IN SEEDED OR SODDED AREAS.
  - ROUGH GRADING UNDER ALL PAVEMENT SECTIONS SHALL BE BASED ON THE RECOMMENDATIONS BY THE GEOTECHNICAL INVESTIGATION REPORT.
- GRADING CONTRACTOR SHALL NOTIFY AND COOPERATE WITH ALL UTILITY COMPANIES OR FIRMS HAVING FACILITIES ON OR ADJACENT TO THE PROJECT STREETS BEFORE DISTURBING, ALTERING, REMOVING, RELOCATING, ADJUSTING OR CONNECTING TO SAID FACILITIES. CONTRACTOR SHALL PAY ALL COSTS IN CONNECTION WITH THE ALTERATION OF OR RELOCATION OF THE FACILITIES. CONTRACTOR SHALL RAISE OR LOWER TOPS OF EXISTING MANHOLES AND GATE VALVE BOXES AS REQUIRED TO MATCH FINISHED GRADES IN CONFORMANCE WITH CITY STANDARDS. NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE.
- GRADING CONTRACTOR SHALL COOPERATE AND WORK WITH ALL OTHER CONTRACTORS PERFORMING WORK ON THIS PROJECT TO INSURE PROPER AND TIMELY COMPLETION OF THIS PROJECT.
- THE GRADING CONTRACTOR SHALL USE WHATEVER MEASURES ARE REQUIRED TO PREVENT SILT AND CONSTRUCTION DEBRIS FROM FLOWING ONTO ADJACENT PROPERTIES. THIS CAN BE ACCOMPLISHED BY SMALL TEMPORARY SEDIMENT PONDS, SILT FENCES OF STEEL WIRE & BURLAP OR BARRIERS OF CEDAR TREES AND/OR BALES OF STRAW. CONTRACTOR SHALL COMPLY WITH ALL LOCAL EROSION, CONSERVATION, AND SILTATION ORDINANCES. CONTRACTOR SHALL REMOVE ALL TEMPORARY EROSION CONTROL STRUCTURES UPON COMPLETION OF PERMANENT DRAINAGE FACILITIES AND THE ESTABLISHMENT OF A STAND OF GRASS SUFFICIENT TO PREVENT EROSION.
- FOR THE WORK ON THE STATE OR CITY RIGHT-OF-WAY, THE GRADING CONTRACTOR SHALL:
  - NOT STORE MATERIAL, EXCESS DIRT OR EQUIPMENT ON THE SHOULDERS OF PAVEMENT, OR, IN THE CASE OF MULTI-LANE HIGHWAYS, IN THE MEDIAN STRIPS. THE PAVEMENT SHALL BE KEPT FREE FROM ANY MUD OR EXCAVATION WASTE FROM TRUCKS OR OTHER EQUIPMENT. ON COMPLETION OF THE WORK ALL EXCESS MATERIAL SHALL BE REMOVED FROM THE RIGHT-OF-WAY.
  - PROVIDE ALL NECESSARY AND ADEQUATE SAFETY PRECAUTIONS SUCH AS SIGNS, FLAGS, LIGHTS, BARRICADES AND FLAGMEN AS REQUIRED BY THE LOCAL AUTHORITIES AND IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. THE GRADING CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR AND HOLD HARMLESS THE TEXAS DEPARTMENT OF TRANSPORTATION, THE CITY, WIER & ASSOC. INC., AND THE OWNER FROM ANY CLAIMS FOR DAMAGE DONE TO EXISTING PRIVATE PROPERTY, PUBLIC UTILITIES, OR TO THE TRAVELING PUBLIC.
  - COMPLETE THE WORK TO THE SATISFACTION OF THE CITY PUBLIC WORKS DEPARTMENT AND OBTAIN A LETTER FROM THAT DEPARTMENT STATING THAT THE WORK UNDER PUBLIC JURISDICTION IS ACCEPTABLE.
  - POST NECESSARY BONDS AS REQUIRED BY THE CITY AND/OR STATE.
- GRADING CONTRACTOR SHALL TAKE ALL AVAILABLE PRECAUTIONS TO CONTROL DUST. CONTRACTOR SHALL CONTROL DUST BY SPRINKLING, BY APPLYING CALCIUM CHLORIDE, OR BY OTHER METHODS AS DIRECTED BY ENGINEER AND/OR OWNER'S REPRESENTATIVE, AT NO ADDITIONAL COST TO OWNER.
- REFER TO PAVING DETAILS FOR TYPE OF PAVING AND BASE TO BE USED.
- GRADING CONTRACTOR IS RESPONSIBLE FOR REMOVING ANY EXISTING STRUCTURES, FENCES, DEBRIS, OR TREES REMAINING ON SITE. COORDINATE WITH GENERAL CONTRACTOR. FOR THIS PROJECT ALL FENCES WITHIN THE INTERIOR OF THE SITE SHALL BE REMOVED AND DISPOSED OF. THIS WORK SHALL BE INCIDENTAL TO CONSTRUCTION.
- GRADING CONTRACTOR TO COMPLY WITH ALL STATE AND LOCAL SEDIMENT CONTROL AND AIR POLLUTION ORDINANCES OR RULES.
- A QUALIFIED SOILS LABORATORY SHALL DETERMINE THE SUITABILITY OF THE EXISTING SUBGRADE AND EXISTING ON-SITE MATERIAL PRIOR TO BEGINNING ANY FILLING OPERATION.
- ALL AREAS NOT COVERED BY PAVING OR PLANNED LANDSCAPING SHALL BE PLANTED WITH GRASS WITHIN THE PROJECT LIMITS INCLUDING ADJACENT PARKWAYS, AND DISTURBED AREAS.
- UNSUITABLE EXCAVATED MATERIALS AND ALL WASTE RESULTING FROM CLEARING AND GRUBBING SHALL BE DISPOSED OF OFF-SITE BY GRADING CONTRACTOR.
- ALL EXCAVATING IS UNCLASSIFIED AND SHALL INCLUDE ALL MATERIALS ENCOUNTERED.
- BEFORE ANY MACHINE WORK IS DONE, CONTRACTOR SHALL STAKE OUT AND MARK THE ITEMS ESTABLISHED BY THE STREET PLANS. CONTROL POINTS SHALL BE PRESERVED AT ALL TIMES DURING THE COURSE OF THE PROJECT. LACK OF PROPER WORKING POINTS AND GRADE STAKES MAY REQUIRE CESSATION OF OPERATIONS UNTIL SUCH POINTS AND GRADES HAVE BEEN PLACED TO THE OWNER'S SATISFACTION.
- TEMPORARY EROSION CONTROL DEVICES SHALL BE INSTALLED PRIOR TO BEGINNING OF GRADING. CONTRACTOR SHALL MAINTAIN ALL TEMPORARY EROSION CONTROL DEVICES AND SHALL REMOVE SILT FROM BERM DITCHES, SILT DAMS, AND SILT FENCES AS NEEDED.
- ALL 4:1 SLOPES AND STEEPER, IF ANY, SHALL BE HYDROMULCH SEEDED UNLESS OTHERWISE NOTED. NO SLOPE SHALL BE STEEPER THAN 3:1.
- THE CONTRACTOR SHALL PREVENT SOIL STABILIZATION TREATMENT FROM LEAVING THE SITE FROM STORM WATER RUNOFF AND DAMAGING DOWNSTREAM WATER COURSES, LAKES OR PONDS. ANY DAMAGE TO WILDLIFE OR FISH KILLS SHALL BE CORRECTED BY THE CONTRACTOR AT HIS EXPENSE.
- MAINTAIN AS MUCH EXISTING VEGETATION AS POSSIBLE AS WELL AS RE-ESTABLISHING THE GROUND COVER AS EARLY AS POSSIBLE. GRASS BUFFER STRIPS SHALL BE LEFT AROUND THE PERIMETER TO AID IN FILTERING SEDIMENTATION. A DENSITY OF TEMPORARY OR PERMANENT GROUND COVER SUFFICIENT TO PREVENT EROSION SHOULD BE ESTABLISHED ON ALL BERMS, SWALES, AND SLOPES.
- ALL SITE GRADING AND EARTHWORK CONSTRUCTION SHALL COMPLY WITH THE GEOTECHNICAL REPORT.
- PREPARE AND PROOFROLL SUBGRADE AS PER GEOTECHNICAL REPORT RECOMMENDATION.
- ALL STORM DRAIN CONSTRUCTION SHALL CONFORM TO THE STANDARD CONSTRUCTION DETAILS OF THE CITY OF ROCKWALL AND NCTCOG 3rd EDITION OR TXDOT, AS SPECIFIED.
- ALL FENCING THAT IS REMOVED AND NOT REPLACED SHALL BE SALVAGED AND STORED FOR REMOVAL AT A LATER DATE BY THE OWNER. COORDINATE WITH THE ENGINEER FOR PROPER STORAGE LOCATION.
- ALL COMPACTION SHALL BE ACCOMPLISHED BY THE USE OF A SHEEPS-FOOT ROLLER TO 95% STANDARD DENSITY.

**RECORD DRAWINGS**

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**SPECIAL NOTE**

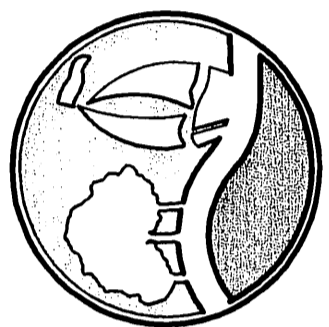
CONTRACTOR SHALL TAKE SPECIAL CARE NOT TO INSTALL A JOINT LONGITUDINALLY WITHIN THE CENTERLINE OF A LOW POINT SWALE.

NOTE:  
ALL REFERENCES TO "THE CITY" SHALL REFER TO "THE CITY OF ROCKWALL"

\* SEE SHEETS E001-E003 FOR EROSION CONTROL NOTES

TIME: 10:54 FILE: A201-GEN-NOTES\_98041.10.dwg

**WIER & ASSOCIATES, INC.**  
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 6849 ELM STREET FRISCO, TEXAS 75034 METRO (214)387-8000  
 www.WierAssociates.com



**DISCOVERY BLVD. EXTENSION TO JOHN KING BLVD.**

**GENERAL NOTES**

STATE OF TEXAS  
 RONALD RAMIREZ  
 81821  
 REGISTERED PROFESSIONAL ENGINEER  
 3/11/09  
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 WIER & ASSOCIATES, INC.  
 LAST SHEET EDIT  
 DATE 03-11-2009  
 WA# 98041.10  
**SHEET NO. A201**

**EXISTING TOPOGRAPHIC LEGEND**

	ASPHALT PAVEMENT
BOL/GP o	BOLLARD/GUARD POST
B/C	DIMENSION TO BACK OF CURB
CATV □	CABLE TV
CM	CONTROL MONUMENT
CONC.	CONCRETE
EAP	EDGE OF ASPHALT PAVEMENT
EB □	ELEC BOX (GROUND)
EM □	ELEC METER
FH ⊕	FIRE HYDRANT
FO ⊕	FIBER OPTIC CABLE
GM △	GAS METER
GMH ⊙	GAS MANHOLE
GTS ▽	GAS TEST STATION
GUY ∩	GUY WIRE
HDWL	CONCRETE HEADWALL
ICV □	IRRIGATION CONTROL VALVE
IRF	IRON ROD FOUND
IRS	IRON ROD SET
LP ⊙	LIGHT POLE
PP ⊙	POWER POLE
PP/LP ⊙	POWER POLE W/LIGHT
SDMH ⊙	STORM DRAIN MANHOLE
SHD ⊙	SPRINKLER HEAD
SN ⊕	SIGN
SSMH ⊙	SANITARY SEWER MANHOLE
SSCO ⊙	SANITARY SEWER CLEANOUT
SWBT	SOUTH WESTERN BELL TELEPHONE
TPD ⊗	TELEPHONE PEDESTAL
TSG □	TELEPHONE SWITCH GEAR
TSB □	TRAFFIC SIGNAL BOX
TSP ⊙	TRAFFIC SIGNAL POLE
TSC	TRAFFIC SIGNAL CONTROLLER
⊗	TRANSFORMER PAD
WM □	WATER METER
WV ⊗	WATER VALVE
— OE —	OVERHEAD ELECTRIC LINE
— UE —	UNDERGROUND ELECTRIC LINE
— W —	WATER LINE
— SS —	SANITARY SEWER LINE
— FO —	FIBER OPTIC LINE
— UT —	UNDERGROUND TELEPHONE
— OT —	OVERHEAD TELEPHONE
— G —	UNDERGROUND GAS
---24" RCP---	EXISTING CONCRETE STORM DRAIN LINE
---24" CMP---	EXISTING CORRUGATED METAL STORM DRAIN LINE
—→—	EXISTING FLOWLINE
—x—	BARBED WIRE FENCE
—o—	CHAIN LINK FENCE
—//—	WOOD FENCE
—o—o—o—	GUARD RAIL / BARRICADE
—o—o—o—	EXISTING TREE LINE
—o—	EXISTING TREE

**PAVING PLAN LEGEND**

	* 4200 PSI. CONC. PAVING
	BRICK PAVING
	LANDSCAPING
	COMPACTED FILL PER CITY STANDARDS
	DIRECTION OF TRAFFIC
	DIRECTION OF FLOW
RP	RADIUS POINT

\* NOTE: MIN 6.5 SACK FOR MACHINE POUR AND 7.0 SACK FOR HAND POUR.

**GRADING PLAN LEGEND**

	PROPOSED CONTOURS
	EXISTING CONTOURS
	PROPOSED SPOT GRADES
	PROPOSED STORM DRAIN
	FLOW ARROWS
T/C	TOP OF CURB
T/P	TOP OF PAVEMENT
H.P.	HIGH POINT

**DRAINAGE PLAN LEGEND**

	DRAINAGE AREA DESIGNATION DRAINAGE AREA (ACRES)
	WATERSHED LIMITS
	MAJOR DRAINAGE AREA DIVIDE
	MAJOR DRAINAGE AREA SUB-DIVIDE
	ZONING BOUNDARY
	FLOW DIRECTION ARROW
L2	LINE IDENTIFIED IN LINE TABLE
C2	CURVE IDENTIFIED IN CURVE TABLE
	INDICATES PROPOSED RECESSED CURB INLET
	INDICATES PROPOSED STANDARD CURB INLET
	INDICATES FUTURE INLET
	INDICATES EXISTING INLET
	INDICATES PROPOSED DROP INLET
	INDICATES PROPOSED JUNCTION BOX
	PROPOSED STORM DRAIN
	FUTURE STORM DRAIN
	PROPOSED SWALE

**EROSION CONTROL LEGEND**

	LIMITS OF OPERATOR DAY TO DAY OPERATIONAL CONTROL
	PROPOSED SWALE
	INDICATES STABILIZED CONSTRUCTION ENTRANCE
	INDICATES REINFORCED SILT FENCE
	INDICATES ROCK BERM
	INDICATES DROP INLET PROTECTION
	INDICATES PROPOSED INLET TREATMENT
	STONE OVERFLOW STRUCTURE
	EXISTING CONTOUR LINE
	PROPOSED CONTOUR LINE
	DRAINAGE AREA DIVIDE

**WATER AND SANITARY SEWER PLAN LEGEND**

	PROPOSED FIRE HYDRANT
	PROPOSED WATER METER
	PROPOSED WATER VALVE
	PROPOSED WATER
	PROPOSED SEWER
	PROPOSED SEWER MANHOLE
	EXISTING WATER LINE
	EXISTING WATER VALVE
	EXISTING WATER METER BOX
	EXISTING FIRE HYDRANT
	EXISTING LIGHT POLE
	EXISTING POWER POLE
	EXIST. SANITARY SEWER MANHOLE
	EXISTING SANITARY SEWER
	EXISTING INLET
	PROPOSED INLET
	FUTURE INLET

FILE: A202-LEGEND\_98041.10.dwg  
TIME: 10:55

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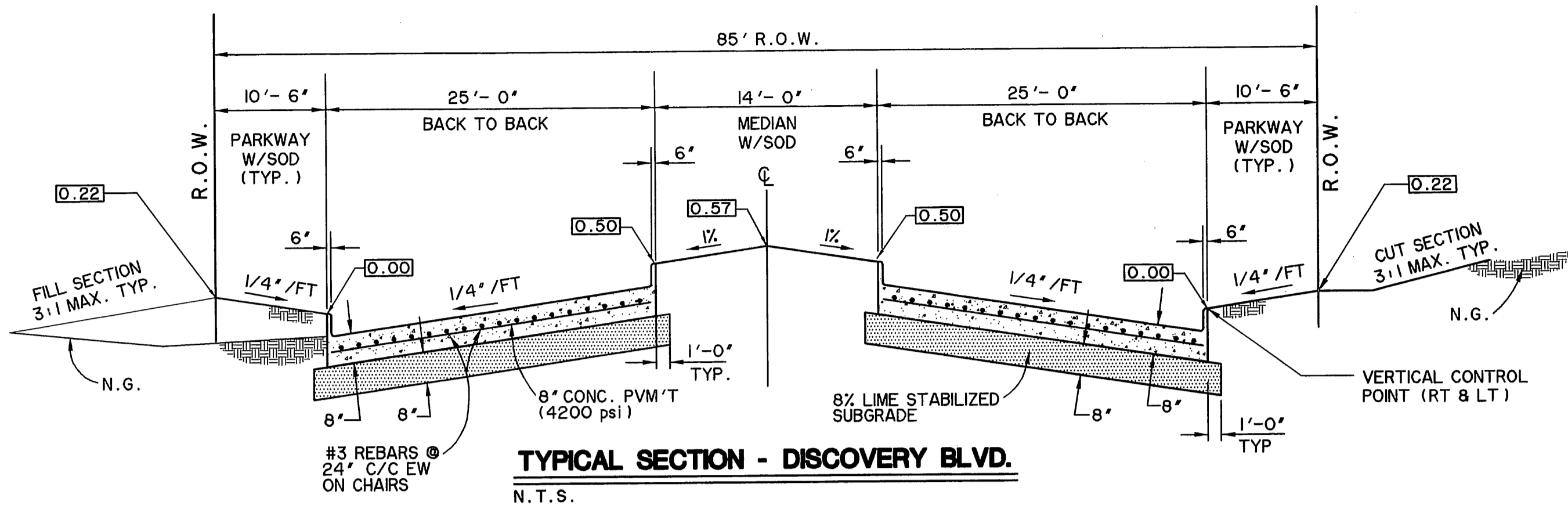
DISCOVERY  
BLVD.  
EXTENSION TO  
JOHN KING BLVD.

TOPOGRAPHIC  
LEGEND

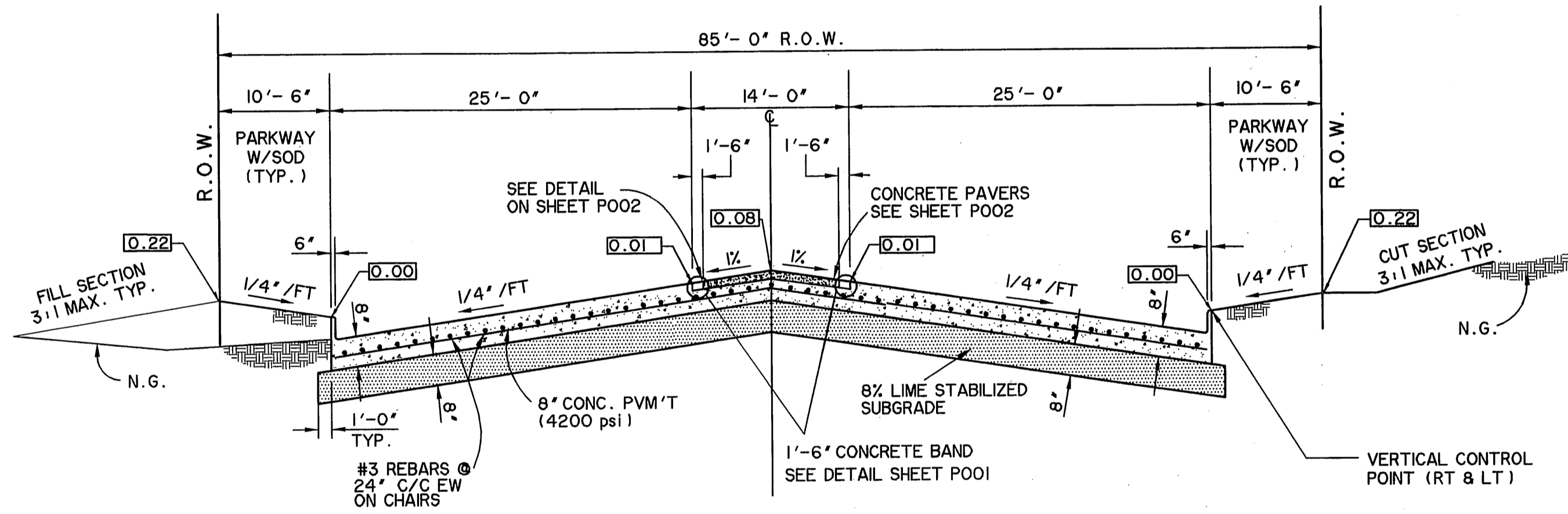
**RECORD DRAWINGS**  
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81821  
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SHEET NO.  
A202

NOTE:  
 I. [0.50] DENOTES DISTANCE IN DECIMAL FEET ABOVE PROFILE GRADE LT.



**TYPICAL SECTION - DISCOVERY BLVD.**  
 N.T.S.  
 CURBED MEDIAN - LANDSCAPE POD  
 (DISCOVERY BOULEVARD)  
 STA 25+81.64 TO 26+81.64  
 STA 34+74.38 TO 35+74.38  
 STA 38+64.00 TO 40+50.00

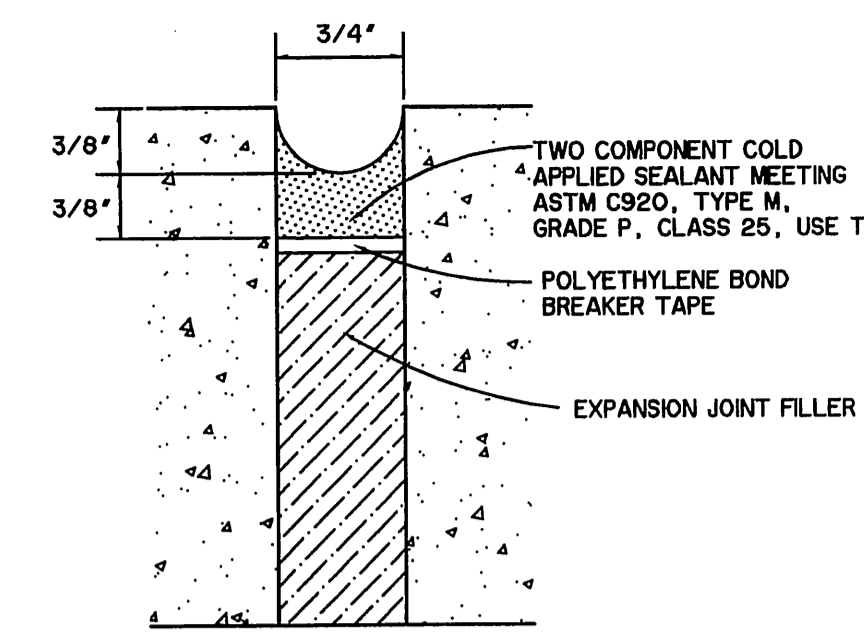


**TYPICAL SECTION - DISCOVERY BLVD.**  
 N.T.S.  
 TWO-WAY LEFT TURN  
 WITH CONCRETE PAVERS  
 NOTE: INCREASE PAVEMENT THICKNESS TO 10'  
 BETWEEN STREET STATIONS 36+25 AND 37+30.  
 THIS SHALL BE CONSIDERED SUBSIDIARY AND NO  
 SEPARATE MEASUREMENT OR PAYMENT SHALL BE MADE.

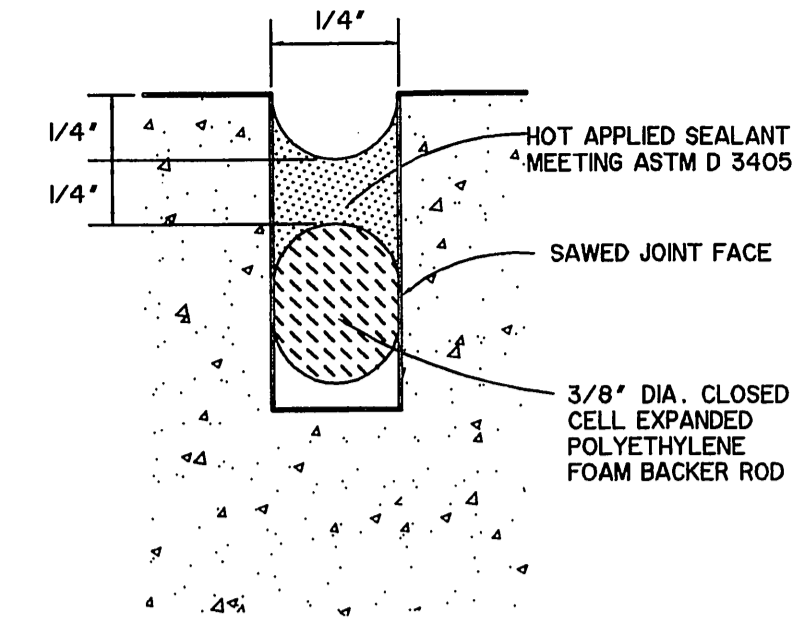
NOTE: 1. ALL CONSTRUCTION SHALL CONFORM TO THE CITY OF ROCKWALL STANDARD CONSTRUCTION DETAILS AND NCTCOG 3rd EDITION. TYPICAL SECTIONS ARE REPLACED BY THOSE SHOWN ON THIS SHEET.

2. PLACE A MIN. 4" OF TOPSOIL IMPORTED FROM AN OFF SITE SOURCE ON PARKWAYS, SLOPES, AND DISTURBED AREAS. SOD WILL BE USED ON ALL PARKWAYS. HYDROMULCH SEED WITH BERMUDA GRASS (PER SPECIFICATIONS) WILL BE USED ON ALL SLOPES AND DISTURBED AREAS. TOPSOIL SHALL BE A SUBSIDIARY ITEM AND NO SEPARATE MEASUREMENT OR PAYMENT SHALL BE MADE.

3. ALL FILLS SHALL BE COMPACTED TO 95% MIN. PROCTOR DENSITY. FILLS SHALL BE PLACED IN 8" MAXIMUM LIFTS, AND COMPACTION SHALL BE ACCOMPLISHED BY THE USE OF A SHEEPS-FOOT ROLLER.



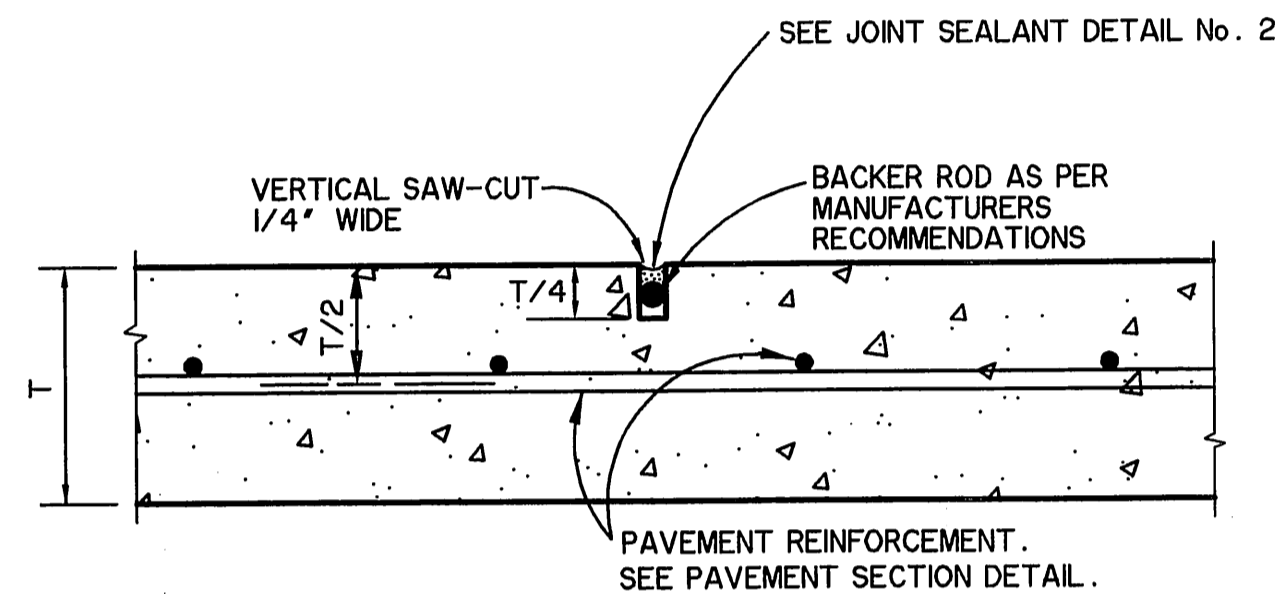
**JOINT SEALANT DETAIL No. 1  
 SEAL FOR EXPANSION JOINT**  
 N.T.S.



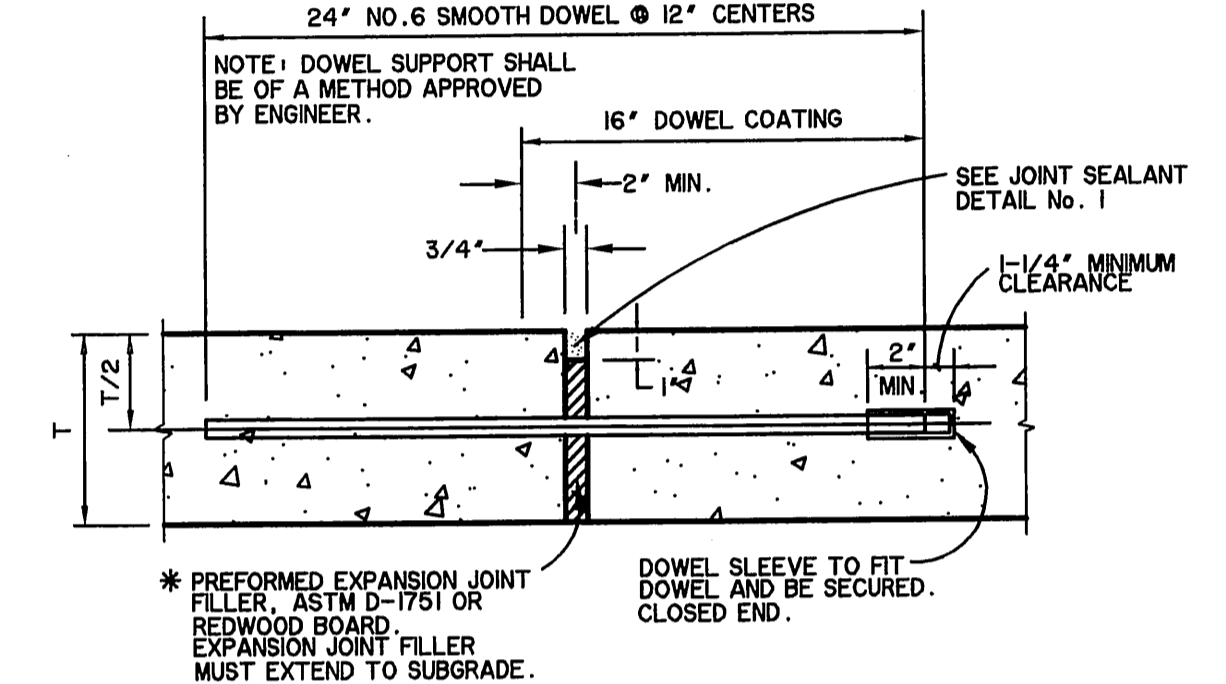
**JOINT SEALANT DETAIL No. 2  
 SEAL FOR SAWED,  
 CONSTRUCTION & BUTT JOINT**  
 N.T.S.

JOINT NOTES:

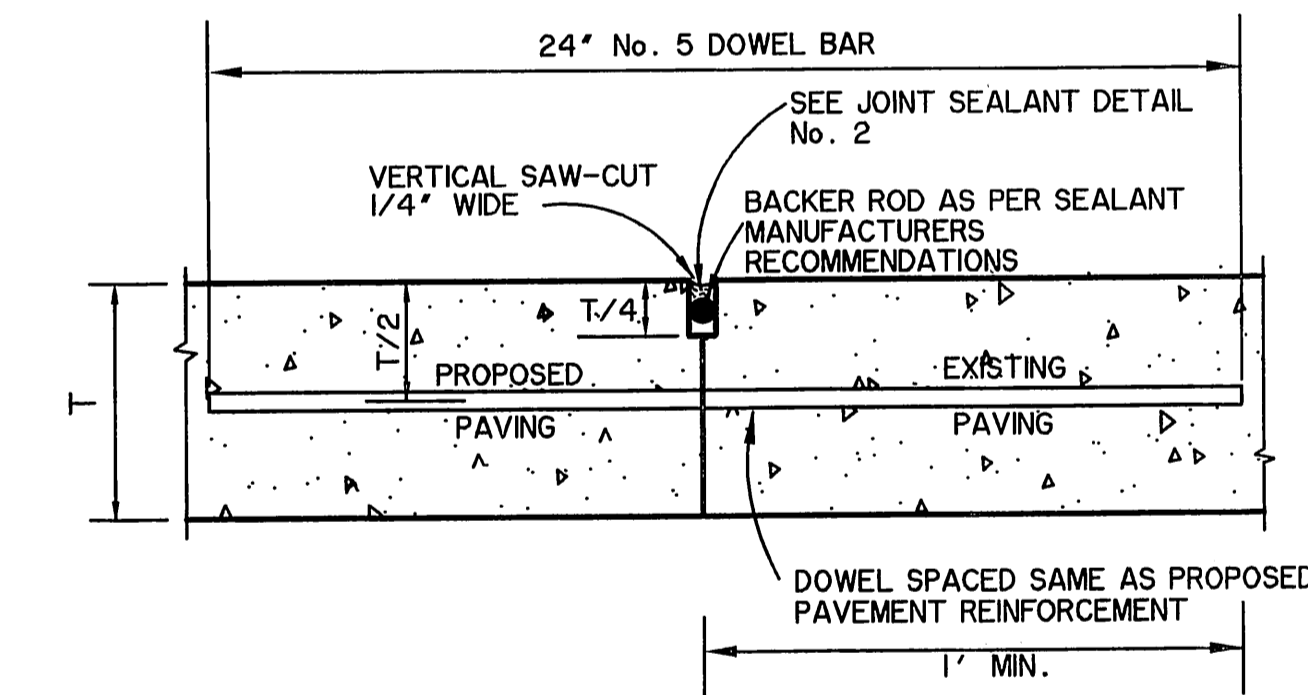
- T = PAVEMENT THICKNESS
1. DOWEL BARS PLACED INTO EXISTING PAVEMENT SHALL BE DRILLED INTO PAVEMENT HORIZONTALLY BY USE OF A MECHANICAL RIG. DRILLING BY HAND IS NOT ACCEPTABLE. PUSHING DOWEL BARS INTO GREEN CONCRETE IS NOT ACCEPTABLE. SECURE DOWEL BARS IN EXISTING PAVING WITH EPOXY GROUT.
  2. POLYETHYLENE FOAM BACKER ROD DOES NOT SIT ON BOTTOM OF SAWCUT JOINT. PLACE AT DEPTH INDICATED IN DETAIL.
  3. IF SEALANT PROTRUDES ABOVE THE SURFACE OF THE PAVEMENT, IT MUST BE REMOVED AND REPLACED.
  4. SUBMIT MANUFACTURER'S LITERATURE FOR SEALANT, DOCUMENTING PRODUCT COMPLIES WITH ASTM SPECIFICATIONS AND PROVIDING MANUFACTURER'S RECOMMENDATIONS FOR APPLICATION. FOLLOW MANUFACTURER'S RECOMMENDATIONS ON USE OF THE PRODUCT.
  5. THE CONSTRUCTION JOINT IS TO BE USED BETWEEN SEPARATE POURS OF PROPOSED PAVEMENT. NOTE THAT IT REQUIRES THE REINFORCEMENT TO BE EXTENDED THROUGH THE FORM TO TIE TO THE NEXT POUR. THE BUTT JOINT IS TO BE USED BETWEEN EXISTING CONCRETE PAVEMENT (STREET OR DRIVEWAY) AND PROPOSED PAVEMENT, UNLESS AN EXPANSION JOINT IS CALLED FOR.
  6. JOINT SEALANTS SHALL BE INSTALLED SOON AFTER JOINTS ARE SAWED AND/OR COMPLETED. THE JOINTS SHALL BE SEALED BEFORE A RAIN EVENT OCCURS AFTER SAWING OR COMPLETING JOINT.



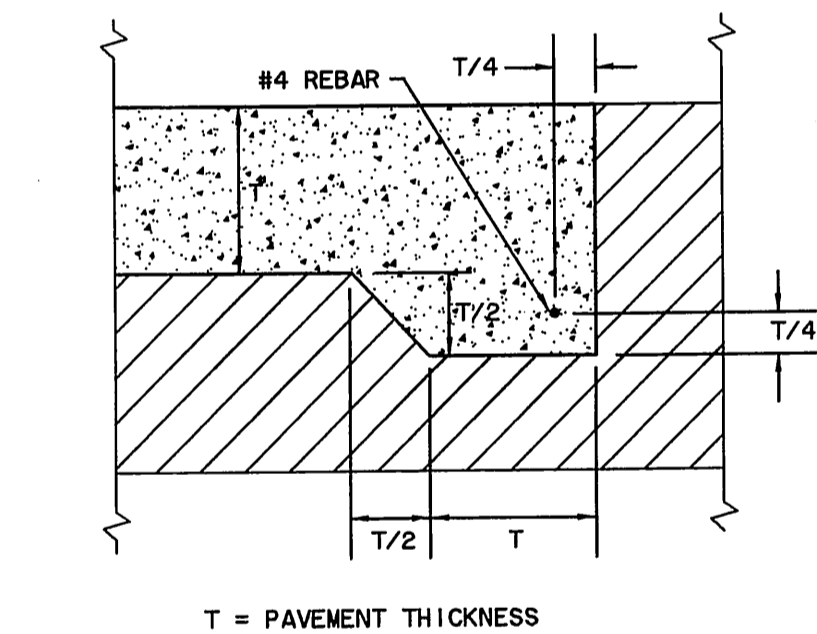
**SAWED CONTRACTION JOINT**  
 N.T.S.



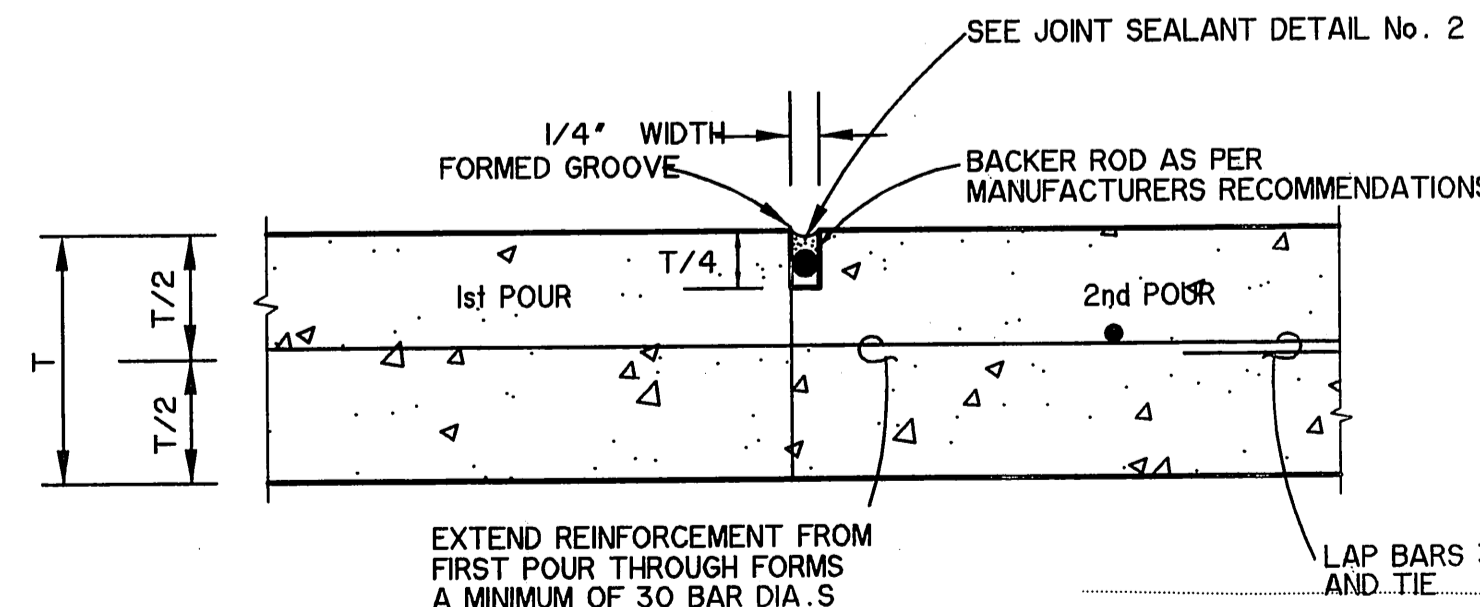
**EXPANSION JOINT**  
 N.T.S.



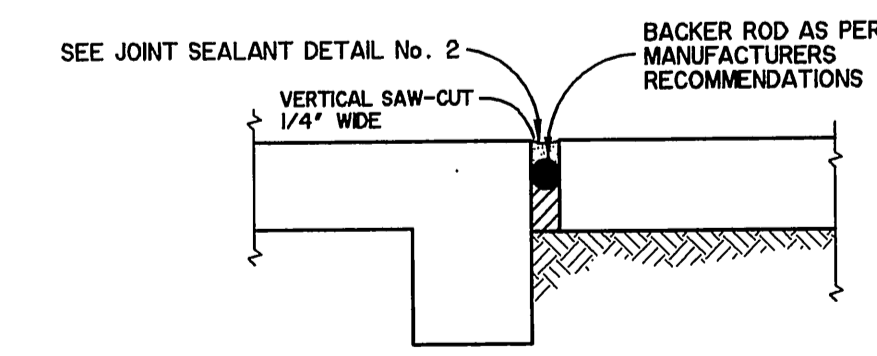
**BUTT JOINT**  
 N.T.S.



**THICKENED EDGE DETAIL**  
 N.T.S.



**CONSTRUCTION JOINT**  
 N.T.S.



**ISOLATION JOINT**  
 N.T.S.

USE CONSTRUCTION JOINT BETWEEN PAVEMENT POURS IF CONCRETE PLACEMENT IS INTERRUPTED OR STOPPED FOR MORE THAN 30 MINUTES.

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REVISIONS
1 SHEET REVISED 4/29/2011 REVISED NOTE #2.

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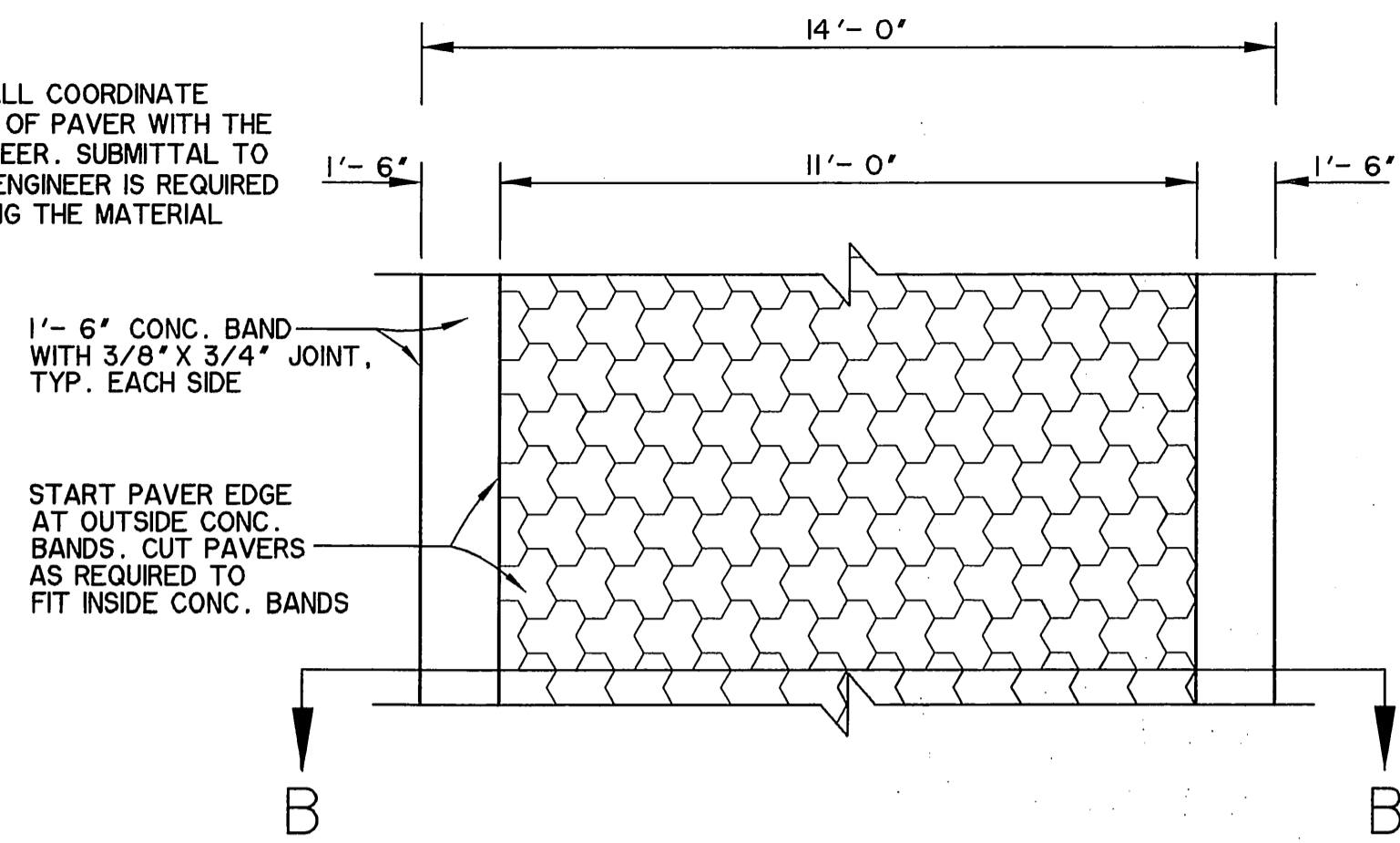


DISCOVERY BLVD.  
 EXTENSION TO  
 JOHN KING BLVD.

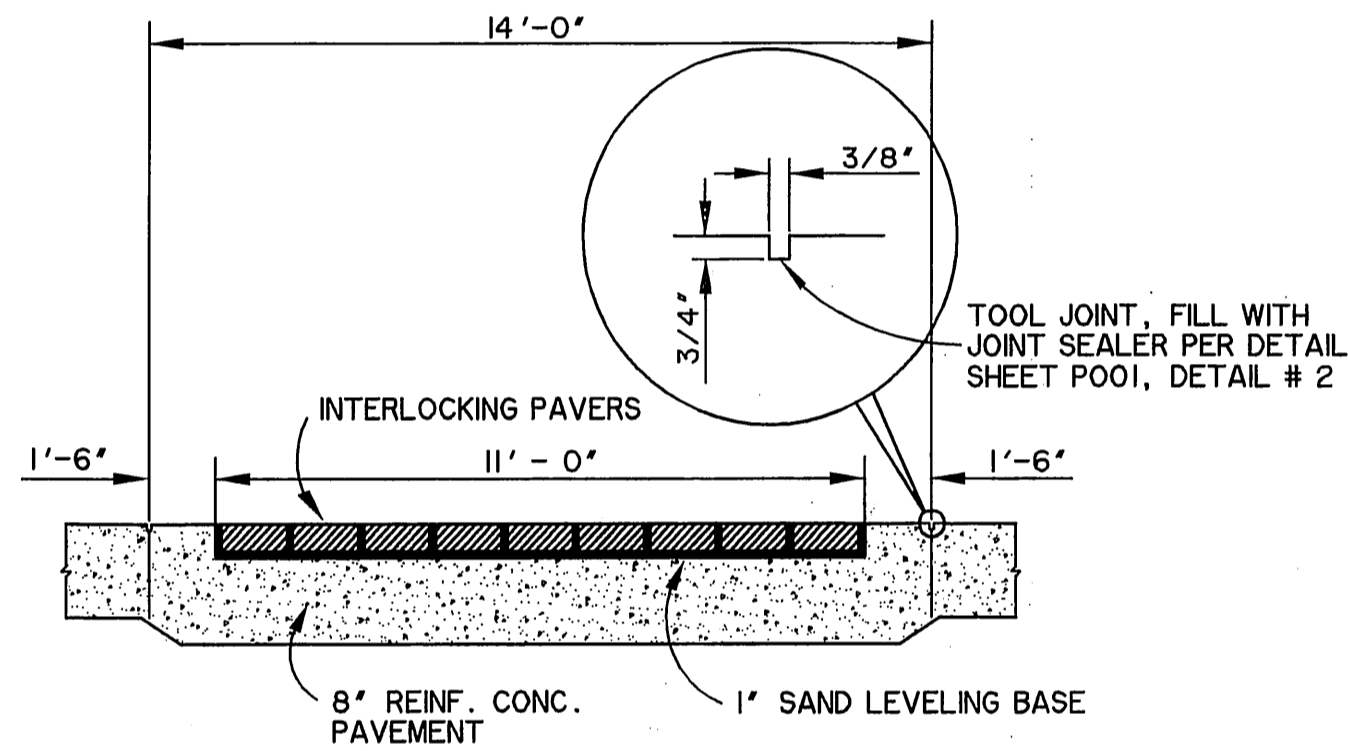
TYPICAL SECTIONS  
 AND  
 PAVING DETAILS

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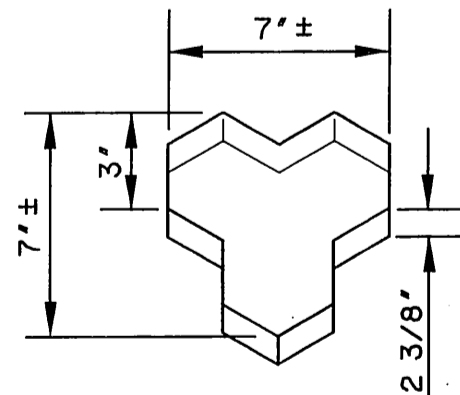
NOTE:  
1. CONTRACTOR SHALL COORDINATE COLOR AND TYPE OF PAVER WITH THE OWNER AND ENGINEER. SUBMITTAL TO THE OWNER AND ENGINEER IS REQUIRED PRIOR TO ORDERING THE MATERIAL.



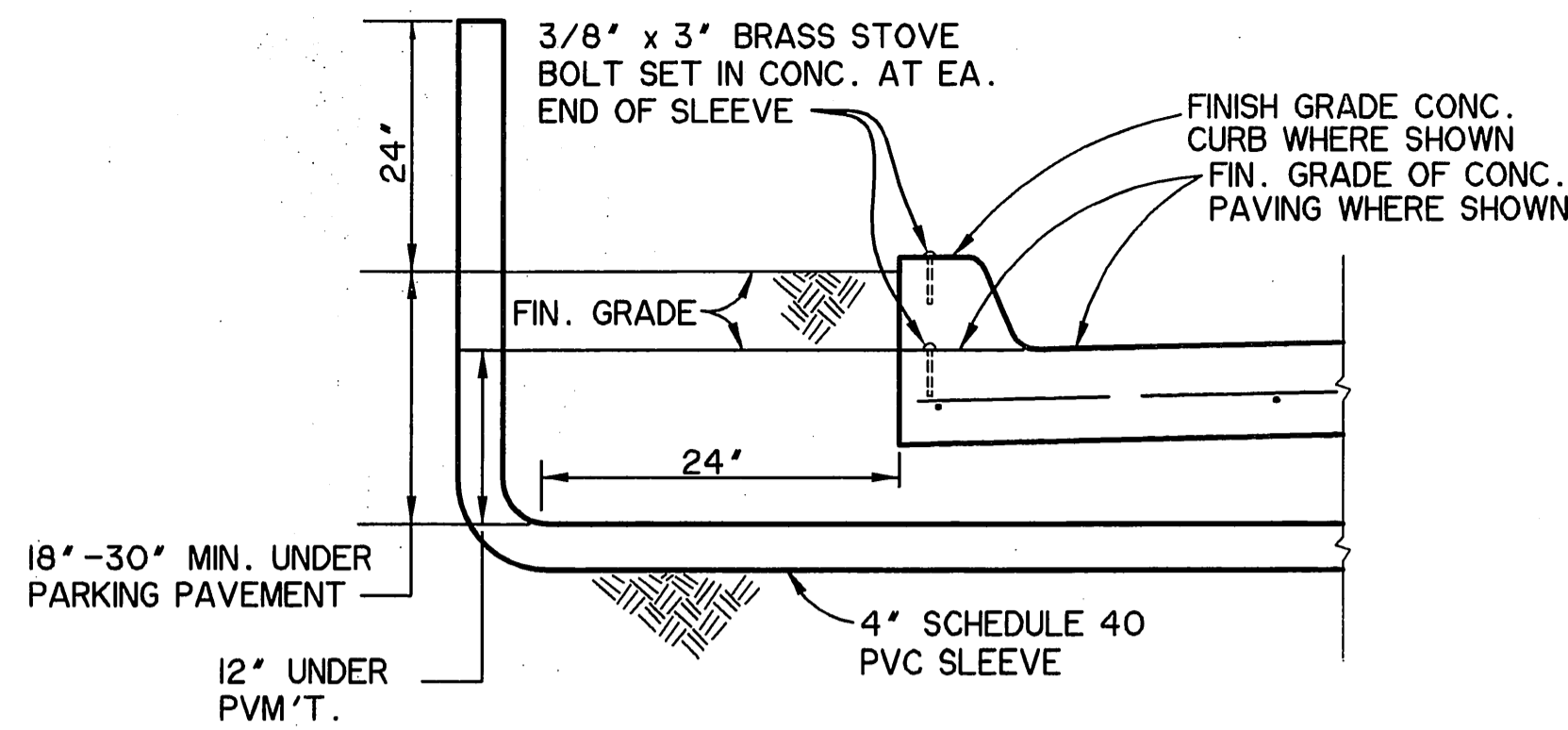
**DIRECTION OF PAVERS**  
N.T.S.  
DISCOVERY BOULEVARD



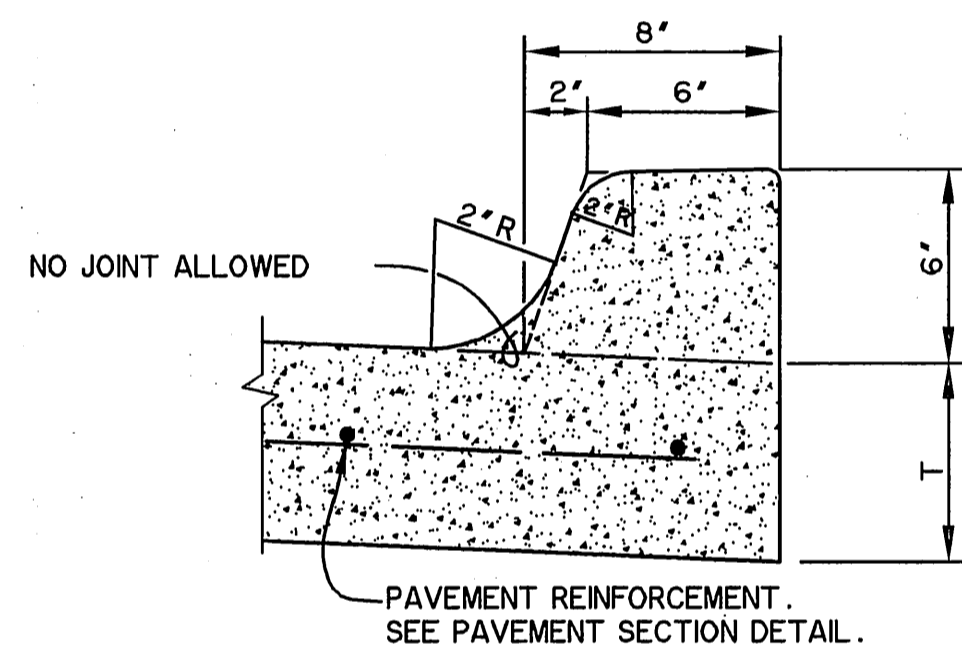
**PAVER SECTION B-B**  
N.T.S.  
DISCOVERY BOULEVARD



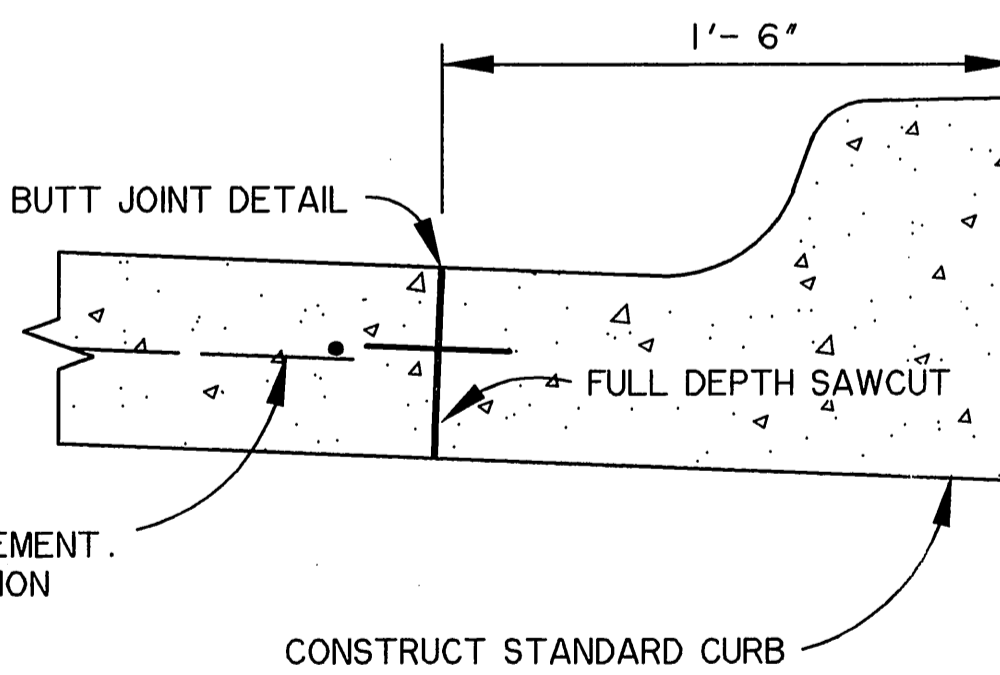
**INTERLOCKING CONCRETE PAVERS**  
N.T.S.  
DISCOVERY BOULEVARD



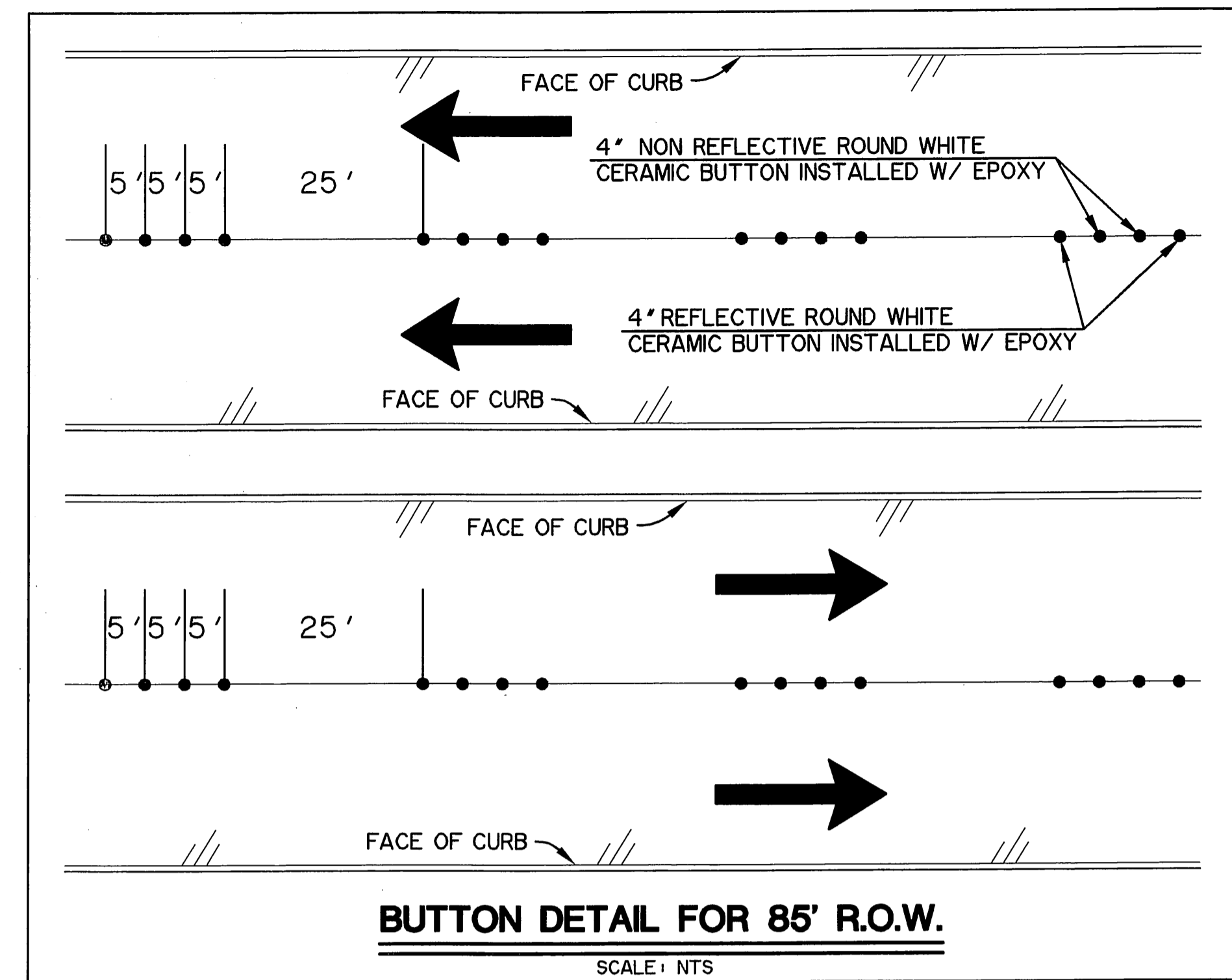
**CONDUIT SLEEVE UNDER PAVEMENT**  
N.T.S.



**MONOLITHIC CURB**  
N.T.S.

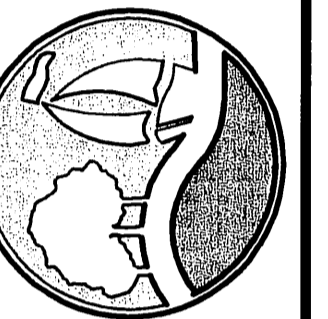


**TYPICAL SECTION - STANDARD CONCRETE CURB AND GUTTER**  
N.T.S. EXISTING DISCOVERY BOULEVARD STA 24+50 TO STA 25+62 (NORTH CURB LINE)



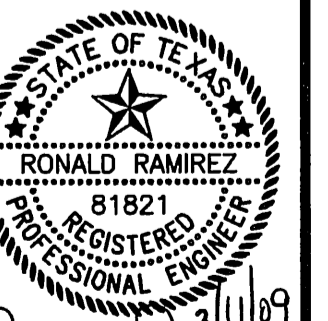
**BUTTON DETAIL FOR 85' R.O.W.**  
SCALE: NTS

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**DISCOVERY BLVD. EXTENSION TO JOHN KING BLVD.**

**PAVING DETAILS**



*Ronald Ramirez*  
3/1/09

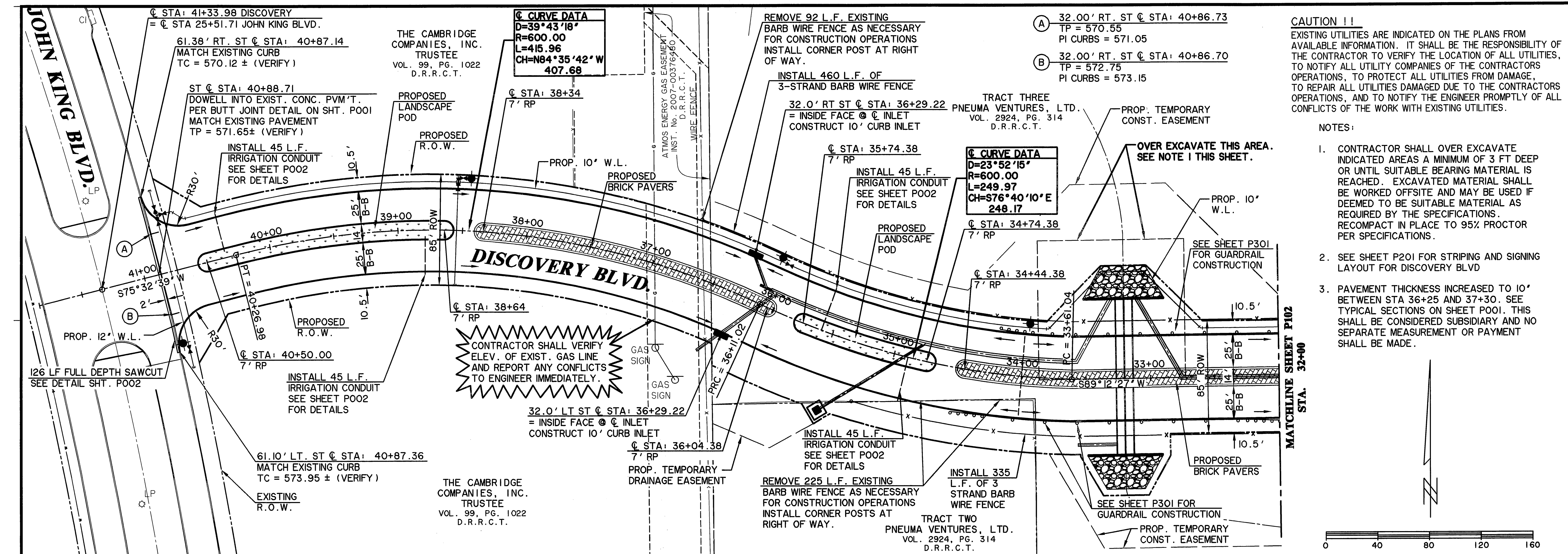
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**SHEET NO. P002**

**RECORD DRAWINGS**

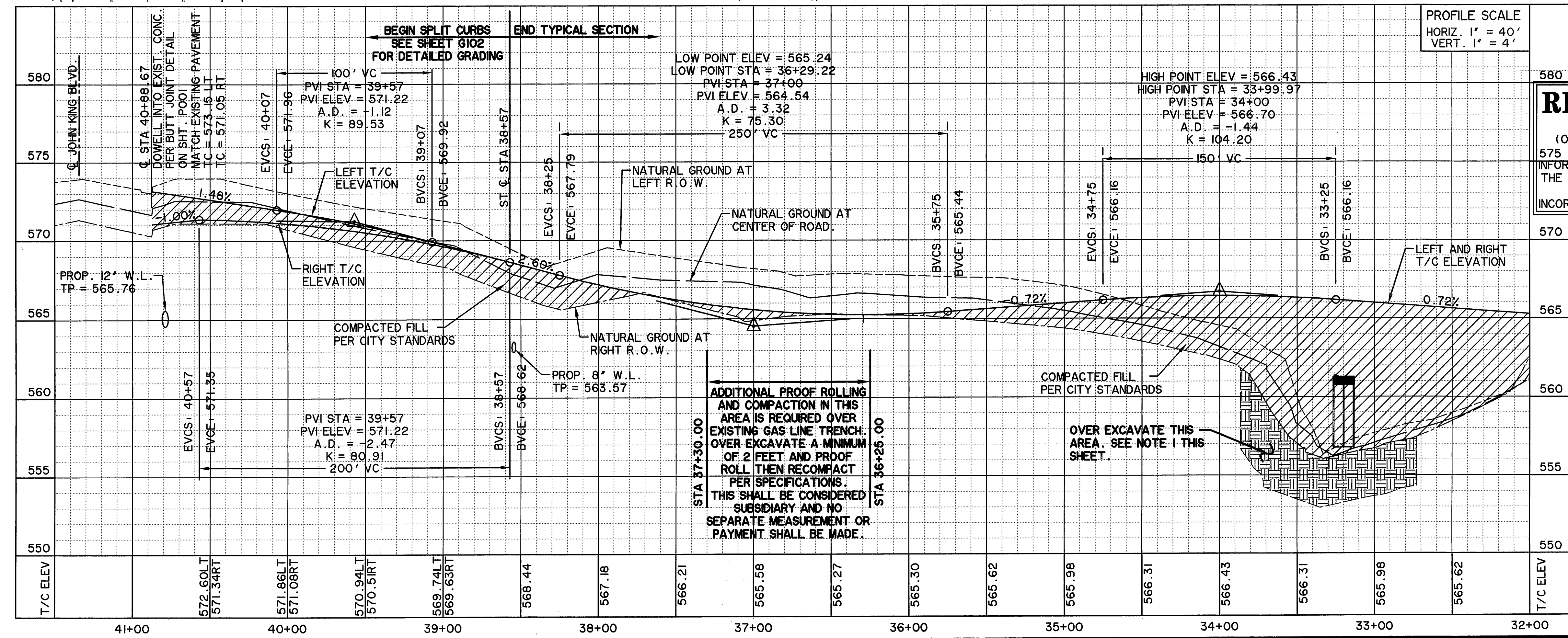
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TIME:10:57 FILE: P002-PAVDETL\_98041.10.dwg



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- NOTES:
- CONTRACTOR SHALL OVER EXCAVATE INDICATED AREAS A MINIMUM OF 3 FT DEEP OR UNTIL SUITABLE BEARING MATERIAL IS REACHED. EXCAVATED MATERIAL SHALL BE WORKED OFFSITE AND MAY BE USED IF DEEMED TO BE SUITABLE MATERIAL AS REQUIRED BY THE SPECIFICATIONS. RECOMPACT IN PLACE TO 95% PROCTOR PER SPECIFICATIONS.
  - SEE SHEET P201 FOR STRIPING AND SIGNING LAYOUT FOR DISCOVERY BLVD
  - PAVEMENT THICKNESS INCREASED TO 10' BETWEEN STA 36+25 AND 37+30. SEE TYPICAL SECTIONS ON SHEET P001. THIS SHALL BE CONSIDERED SUBSIDIARY AND NO SEPARATE MEASUREMENT OR PAYMENT SHALL BE MADE.



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**\* BENCH MARKS \***

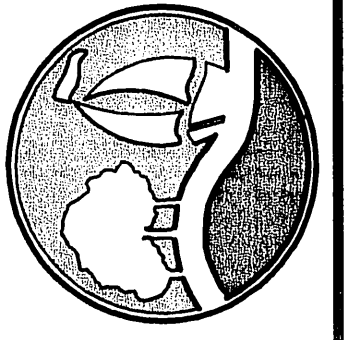
BM A AN "X" ±195' EAST OF THE DEAD END OF DISCOVERY BOULEVARD AT THE WEST SIDE OF ROCKWALL TECHNOLOGY PARK, ±12' EAST OF THE PAVERS IN THE CENTERLINE OF DISCOVERY BOULEVARD. 585.45 FT.

BM B AN "□" CUT ON THE EAST MEDIAN NOSE DISCOVERY BOULEVARD +/- 90 FEET WEST OF THE INTERSECTION OF DISCOVERY BOULEVARD AND F.M. 549. 598.20 FT.

**ADDITIONAL PROOF ROLLING AND COMPACTION IN THIS AREA IS REQUIRED OVER EXISTING GAS LINE. TRENCH OVER EXCAVATE A MINIMUM OF 2 FEET AND PROOF ROLL THEN RECOMPACT PER SPECIFICATIONS. THIS SHALL BE CONSIDERED SUBSIDIARY AND NO SEPARATE MEASUREMENT OR PAYMENT SHALL BE MADE.**

**OVER EXCAVATE THIS AREA. SEE NOTE 1 THIS SHEET.**

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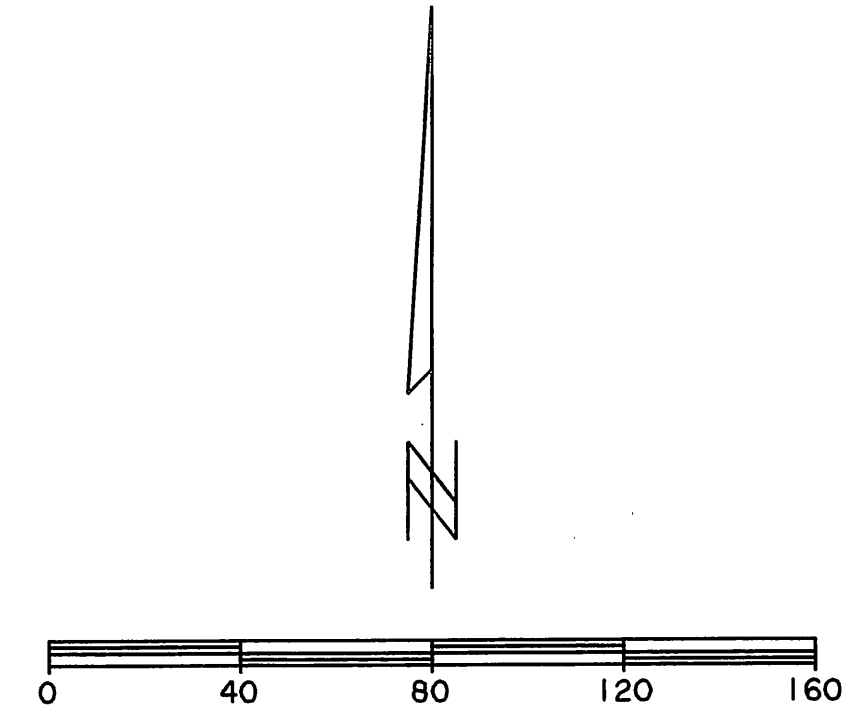
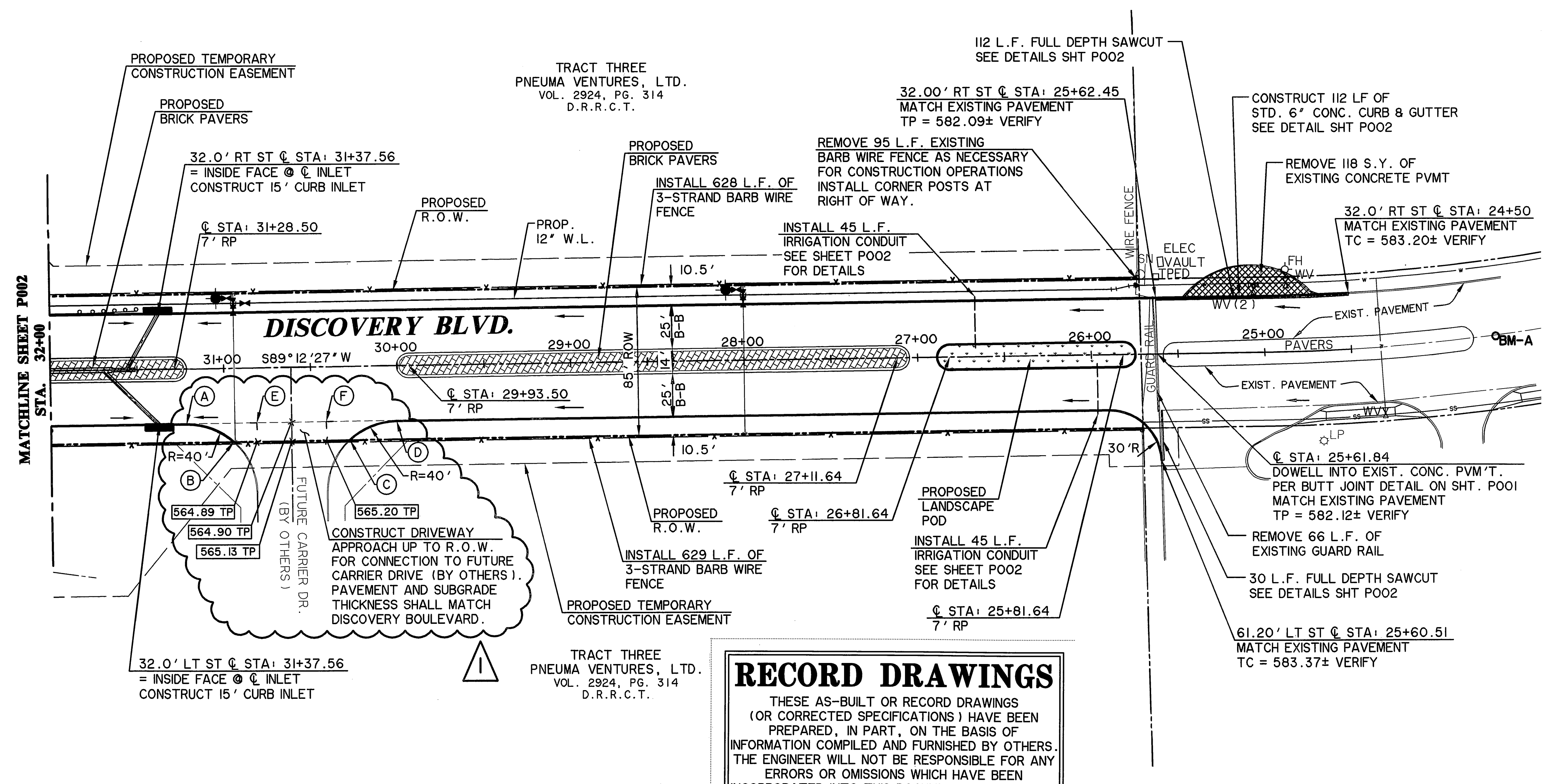


**DISCOVERY BLVD. EXTENSION TO JOHN KING BLVD.**

**DISCOVERY BLVD. PAVING PLAN AND PROFILE STA 40+88.71 TO STA 32+00**

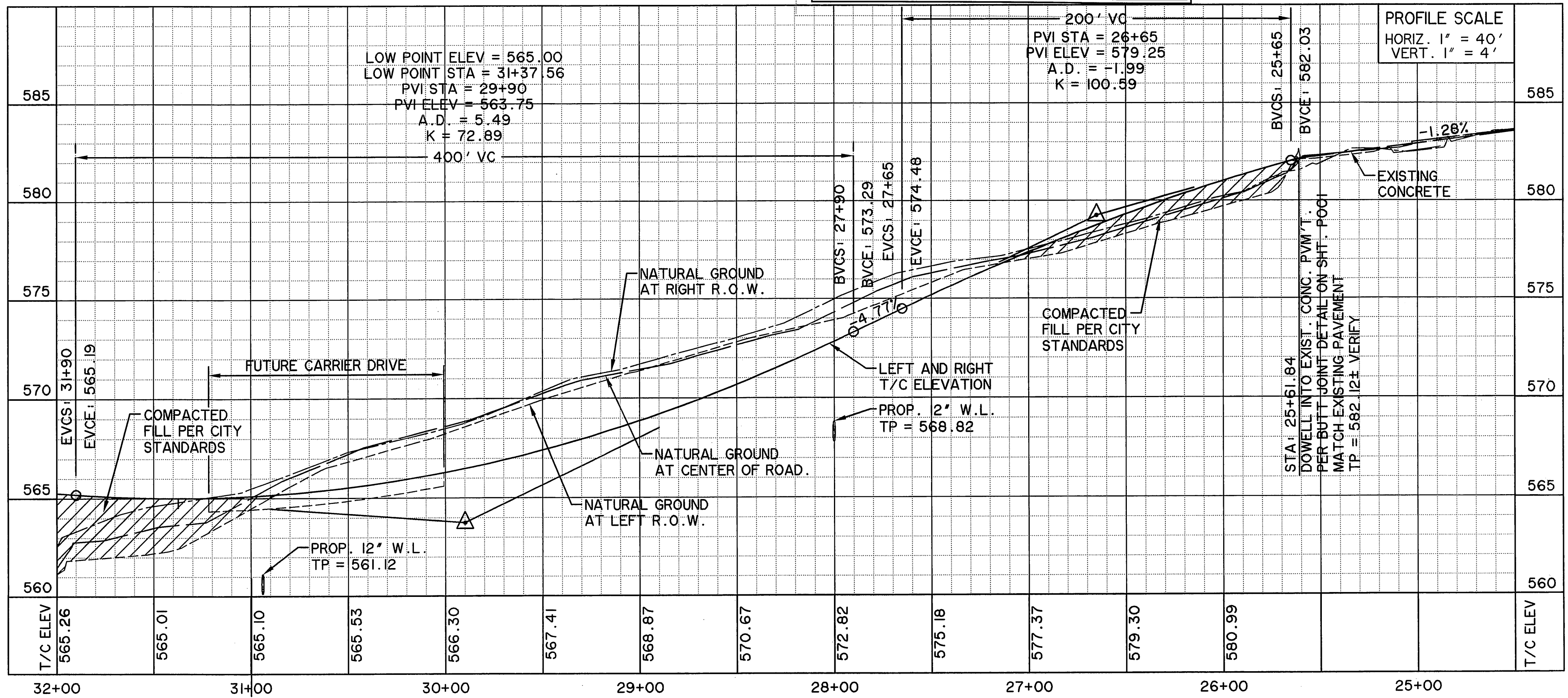
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 WA# 96041.16  
**SHEET NO. P101**

TIME: 10:35 FILE: P102-Pave P-P\_98041.10 REVISED 1-11-11.dwg



- (A) 32.0' LT ST @ STA: 31+21.80  
TC = 565.02
- (B) 42.5' LT ST @ STA: 30+94.79  
TC = 565.91
- (C) 42.5' LT ST @ STA: 30+27.81  
TC = 566.07
- (D) 32.0' LT ST @ STA: 30+00.80  
TC = 566.28
- (E) 31.5' LT ST @ STA: 30+81.30  
TP = 564.72  
PI CURBS = 565.22
- (F) 31.5' LT ST @ STA: 30+41.30  
TP = 565.14  
PI CURBS = 565.64

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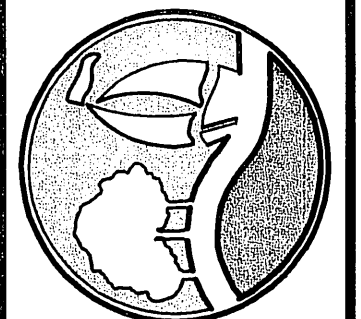
NOTE:  
 1. SEE SHEET P201 FOR STRIPING AND SIGNING LAYOUT FOR DISCOVERY BLVD

**REVISIONS**  
 SHEET REVISED 1/11/2011  
 (A) ADDED DRIVE APPROACH FOR CONNECTION TO FUTURE CARRIER DRIVE CONSTRUCTED BY OTHERS.

**\* BENCH MARKS \***  
 BM A AN 'X' ±195' EAST OF THE DEAD END OF DISCOVERY BOULEVARD AT THE WEST SIDE OF ROCKWALL TECHNOLOGY PARK, ±12' EAST OF THE PAVERS IN THE CENTERLINE OF DISCOVERY BOULEVARD. 585.45 FT.  
 BM B AN 'I' CUT ON THE EAST MEDIAN NOSE DISCOVERY BOULEVARD +/- 90 FEET WEST OF THE INTERSECTION OF DISCOVERY BOULEVARD AND F.M. 549. 598.20 FT.

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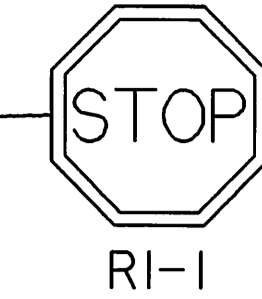
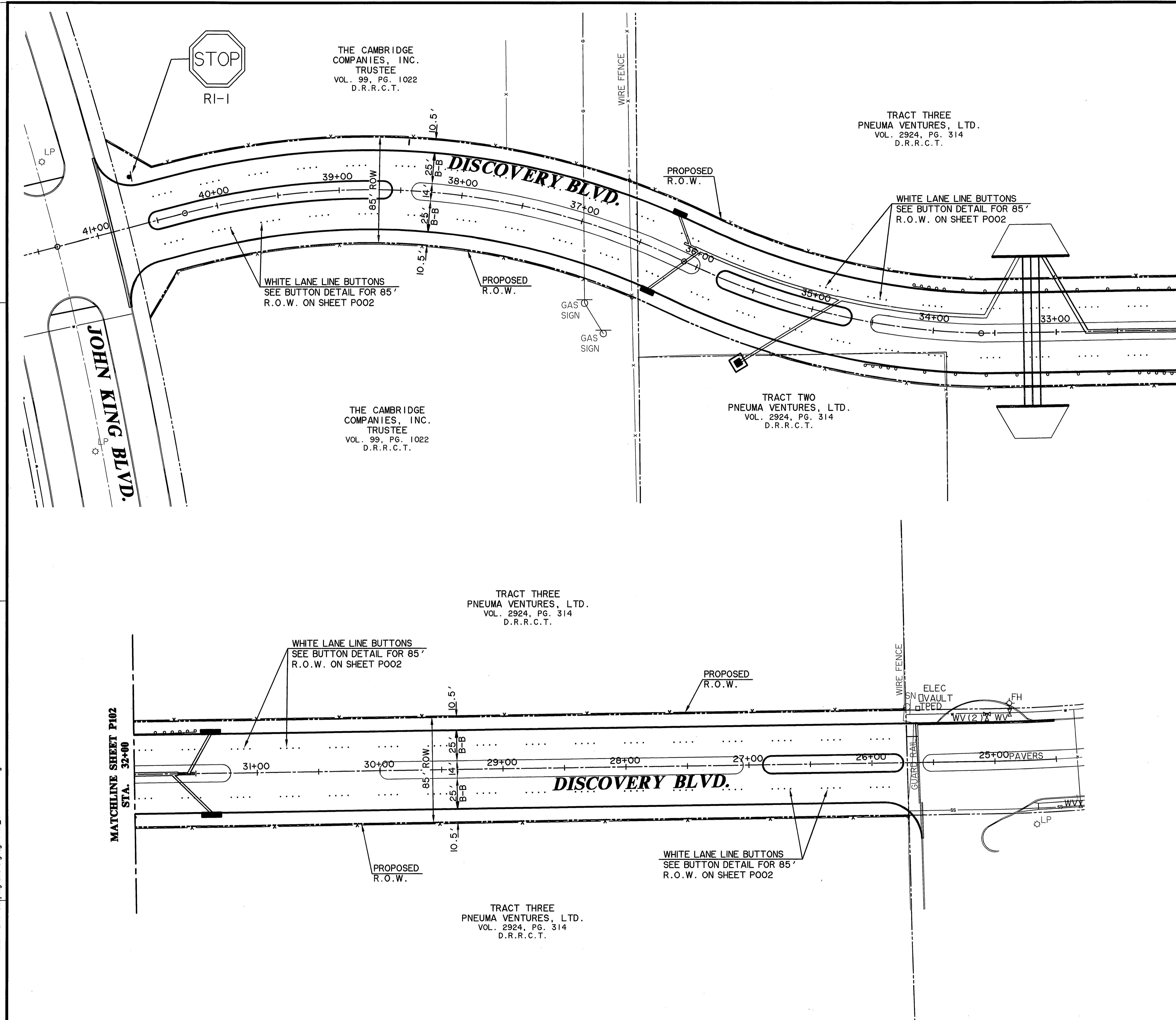


**DISCOVERY BLVD. EXTENSION TO JOHN KING BLVD.**

**DISCOVERY BLVD. AND PROFILE PAVING PLAN AND PROFILE STA 25+61.84 TO STA 32+00**

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 REGISTERED PROFESSIONAL ENGINEER  
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 81821  
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**SHEET NO. P102**

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THE CAMBRIDGE COMPANIES, INC.  
TRUSTEE  
VOL. 99, PG. 1022  
D.R.R.C.T.

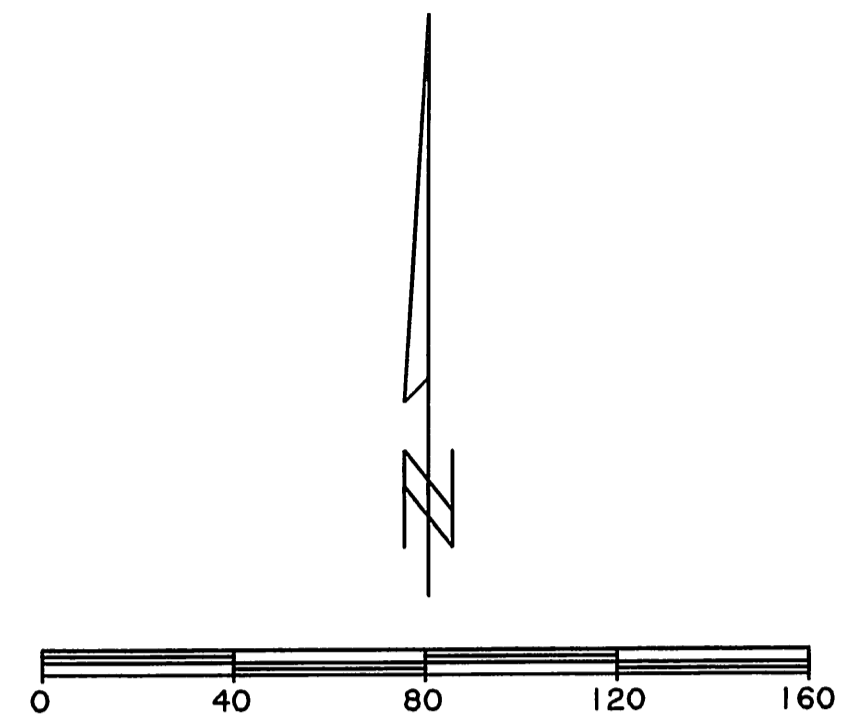
TRACT THREE  
PNEUMA VENTURES, LTD.  
VOL. 2924, PG. 314  
D.R.R.C.T.

THE CAMBRIDGE COMPANIES, INC.  
TRUSTEE  
VOL. 99, PG. 1022  
D.R.R.C.T.

TRACT TWO  
PNEUMA VENTURES, LTD.  
VOL. 2924, PG. 314  
D.R.R.C.T.

TRACT THREE  
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D.R.R.C.T.

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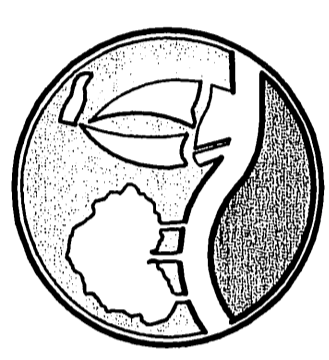


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**\* BENCH MARKS \***  
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BM B AN "C" CUT ON THE EAST MEDIAN NOSE DISCOVERY BOULEVARD +/- 90 FEET WEST OF THE INTERSECTION OF DISCOVERY BOULEVARD AND F.M. 549. 598.20 FT.

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**DISCOVERY BLVD. EXTENSION TO JOHN KING BLVD.**

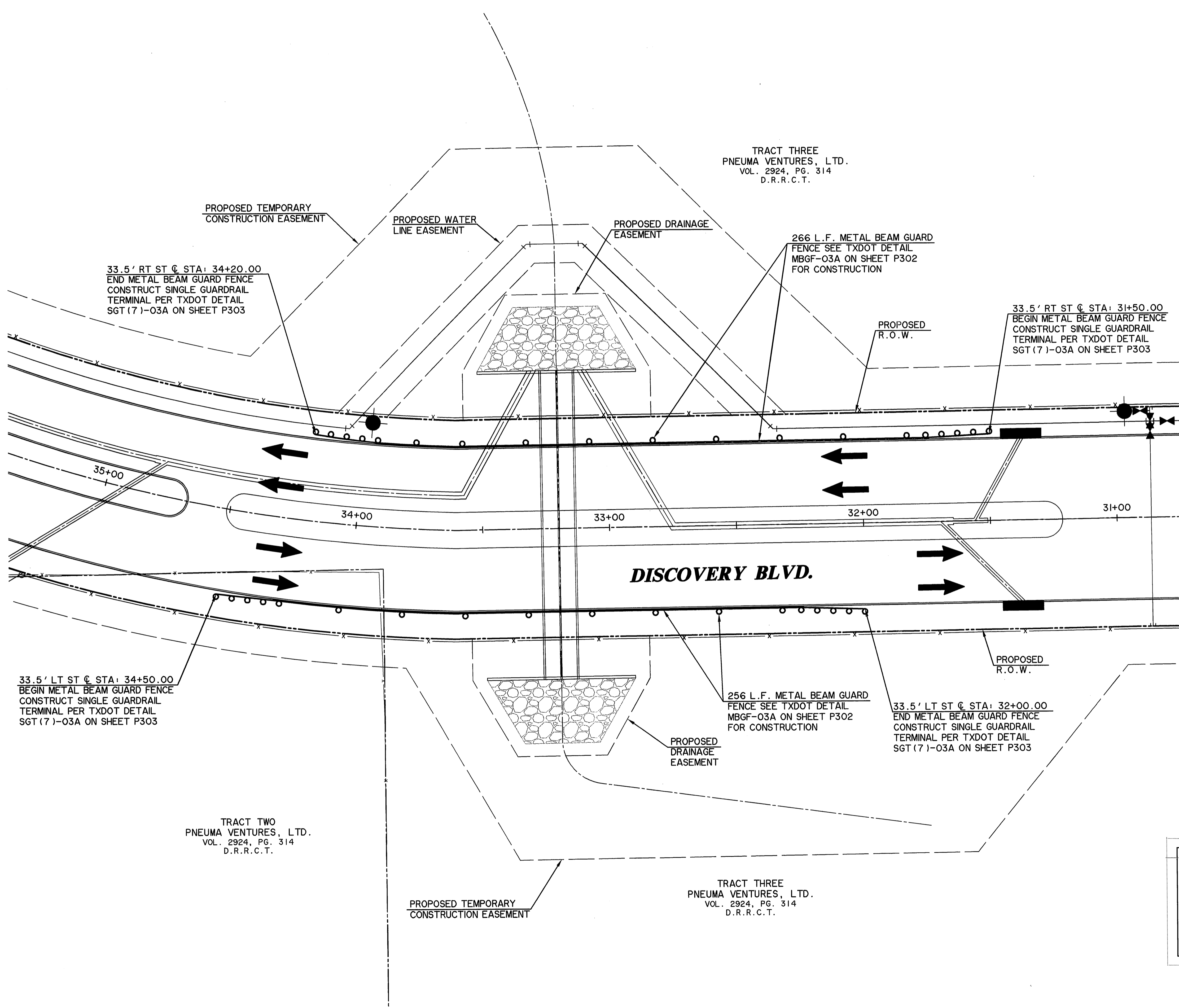
**STRIPING AND SIGNAGE PLAN FOR DISCOVERY BLVD.**



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**SHEET NO. P201**



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TRACT THREE  
PNEUMA VENTURES, LTD.  
VOL. 2924, PG. 314  
D.R.R.C.T.

PROPOSED TEMPORARY  
CONSTRUCTION EASEMENT

PROPOSED WATER  
LINE EASEMENT

PROPOSED DRAINAGE  
EASEMENT

266 L.F. METAL BEAM GUARD  
FENCE SEE TXDOT DETAIL  
MBGF-03A ON SHEET P302  
FOR CONSTRUCTION

PROPOSED  
R.O.W.

33.5' RT ST @ STA: 31+50.00  
BEGIN METAL BEAM GUARD FENCE  
CONSTRUCT SINGLE GUARDRAIL  
TERMINAL PER TXDOT DETAIL  
SGT (7)-03A ON SHEET P303

33.5' RT ST @ STA: 34+20.00  
END METAL BEAM GUARD FENCE  
CONSTRUCT SINGLE GUARDRAIL  
TERMINAL PER TXDOT DETAIL  
SGT (7)-03A ON SHEET P303

**DISCOVERY BLVD.**

PROPOSED  
R.O.W.

33.5' LT ST @ STA: 34+50.00  
BEGIN METAL BEAM GUARD FENCE  
CONSTRUCT SINGLE GUARDRAIL  
TERMINAL PER TXDOT DETAIL  
SGT (7)-03A ON SHEET P303

256 L.F. METAL BEAM GUARD  
FENCE SEE TXDOT DETAIL  
MBGF-03A ON SHEET P302  
FOR CONSTRUCTION

33.5' LT ST @ STA: 32+00.00  
END METAL BEAM GUARD FENCE  
CONSTRUCT SINGLE GUARDRAIL  
TERMINAL PER TXDOT DETAIL  
SGT (7)-03A ON SHEET P303

PROPOSED  
DRAINAGE  
EASEMENT

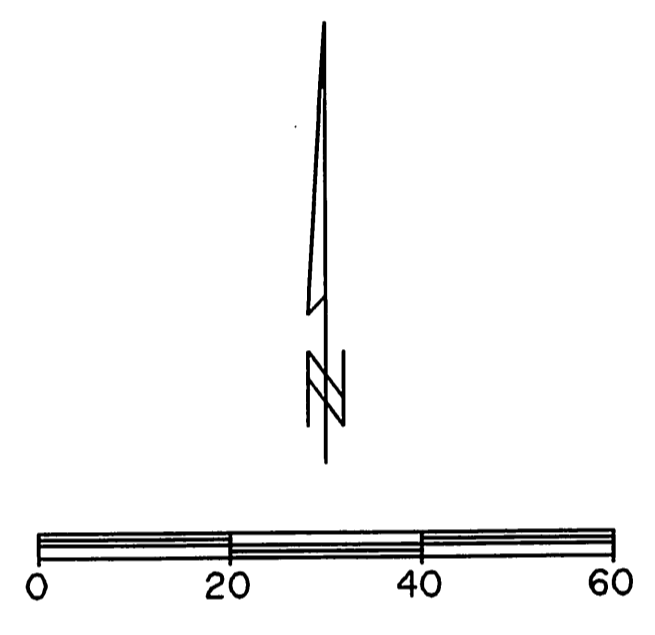
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PNEUMA VENTURES, LTD.  
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D.R.R.C.T.

PROPOSED TEMPORARY  
CONSTRUCTION EASEMENT

TRACT THREE  
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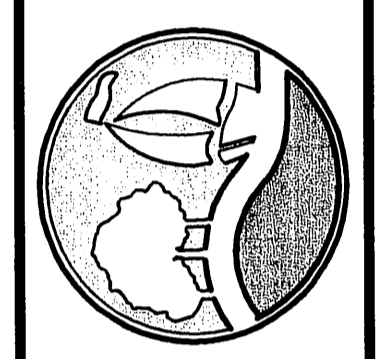
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**\* BENCH MARKS \***  
BM A AN 'X' ±195' EAST OF THE DEAD END OF DISCOVERY BOULEVARD AT THE WEST SIDE OF ROCKWALL TECHNOLOGY PARK, ±12' EAST OF THE PAVERS IN THE CENTERLINE OF DISCOVERY BOULEVARD. 585.45 FT.  
BM B AN 'C' CUT ON THE EAST MEDIAN NOSE DISCOVERY BOULEVARD +/- 90 FEET WEST OF THE INTERSECTION OF DISCOVERY BOULEVARD AND F.M. 549. 598.20 FT.



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PREPARED BY:  
**WIA WIER & ASSOCIATES, INC.**  
ENGINEERS SURVEYORS LAND PLANNERS  
701 HIGHLANDER BLVD., SUITE 300 ARLINGTON, TEXAS 76015 METRO (817)467-7700  
6849 ELM STREET FRISCO, TEXAS 75034 METRO (214)397-8000  
www.wierassociates.com



**DISCOVERY BLVD. EXTENSION TO JOHN KING BLVD.**

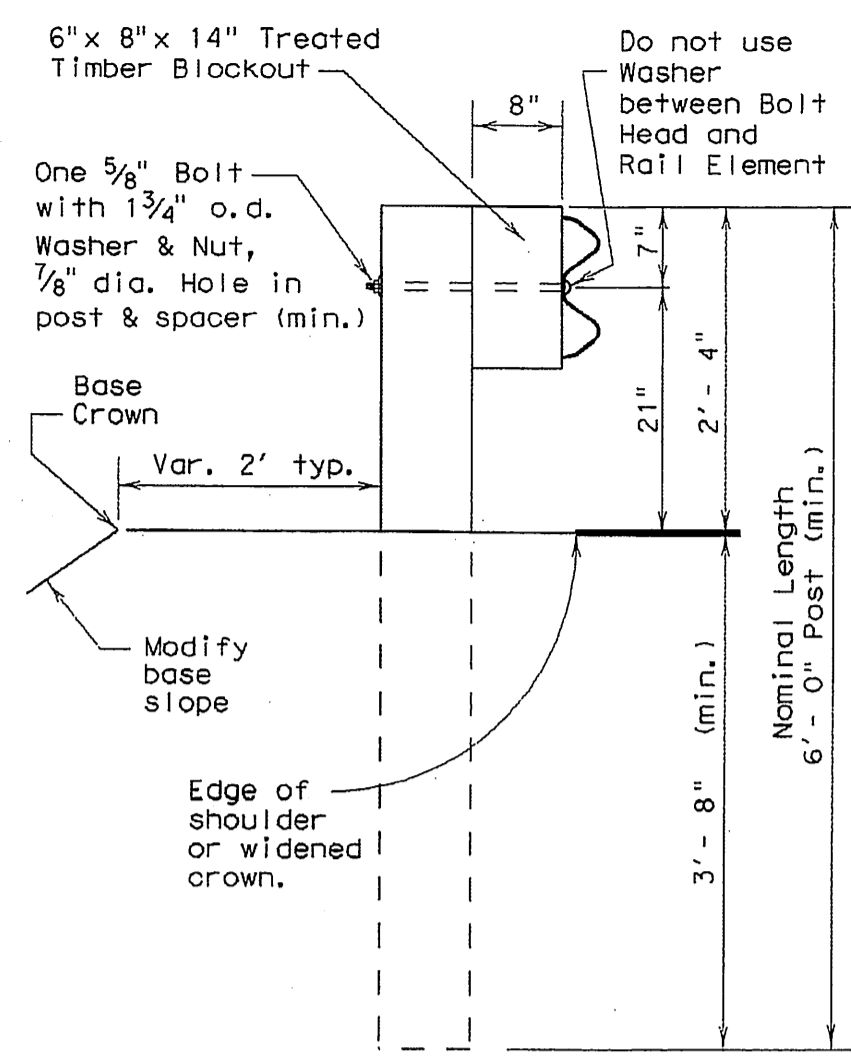
**GUARDRAIL PLAN**

STATE OF TEXAS  
RONALD RAMIREZ  
81821  
REGISTERED PROFESSIONAL ENGINEER

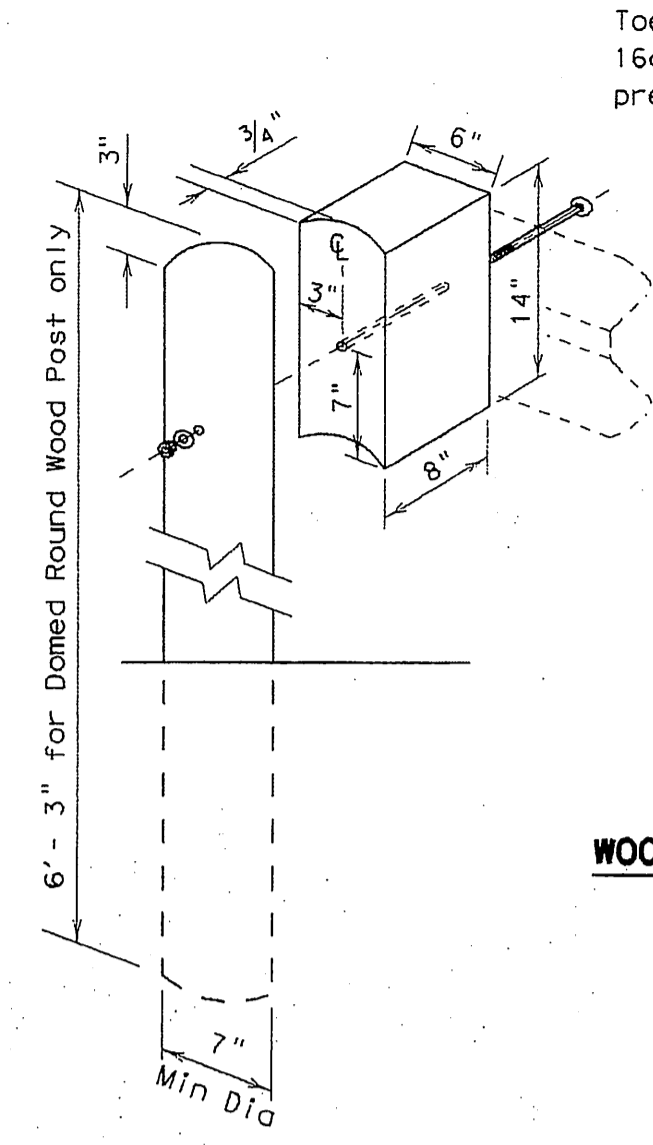
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WA# 98041.10  
**SHEET NO. P301**

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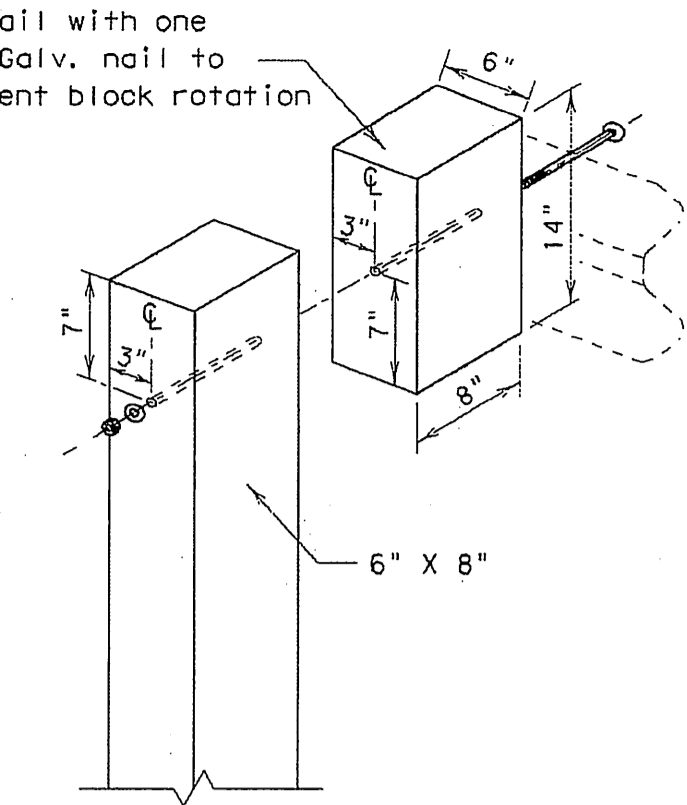
LEVELS DISPLAYED	
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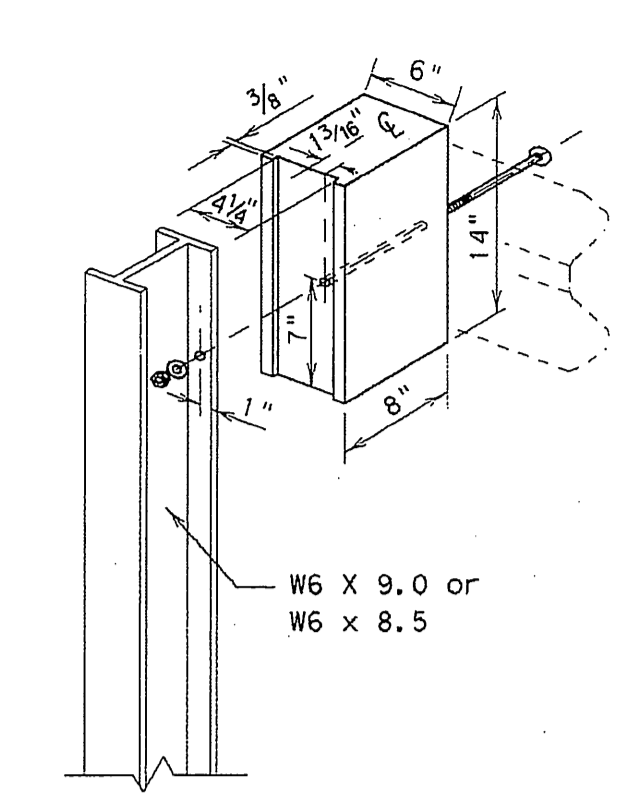
TYPICAL POST



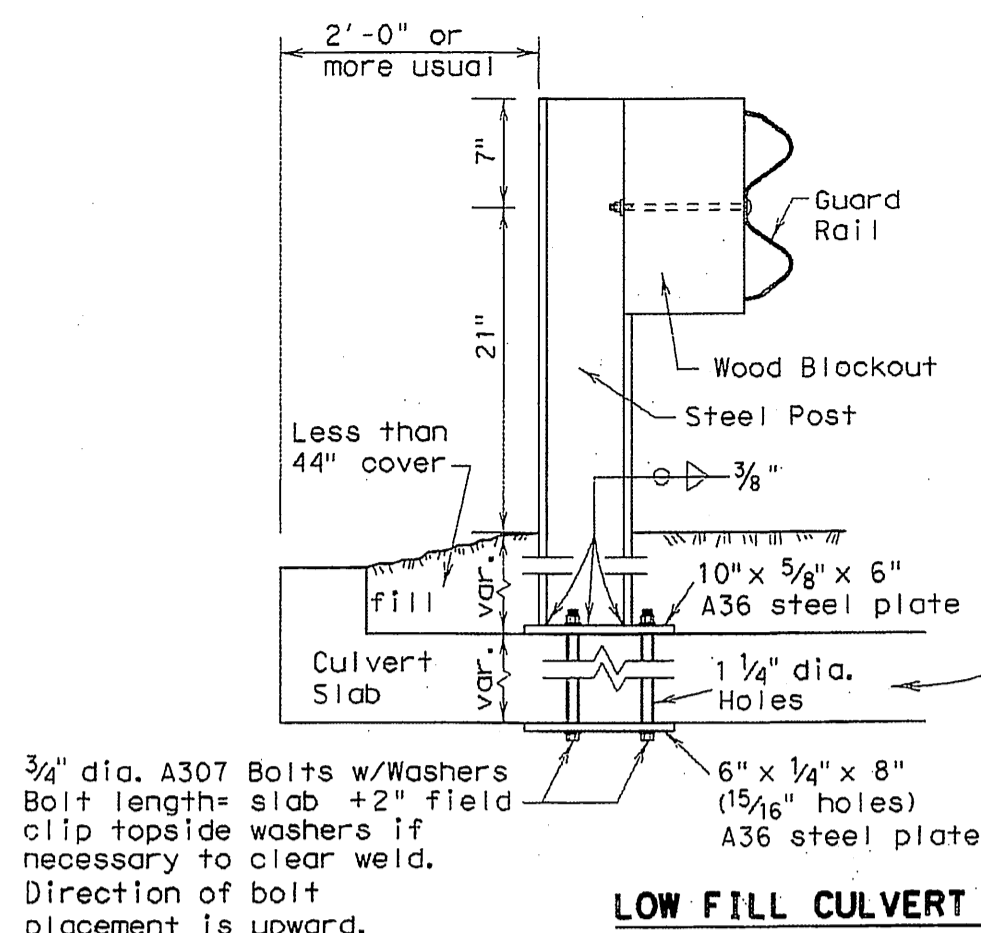
WOOD BLOCKOUT TO ROUND WOOD POST DETAIL



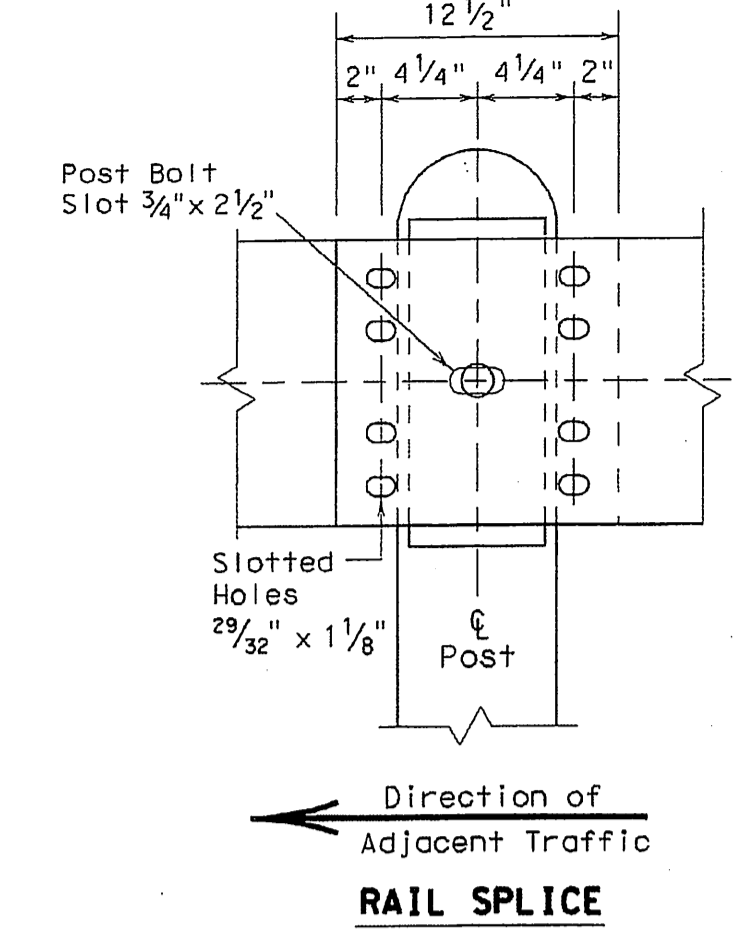
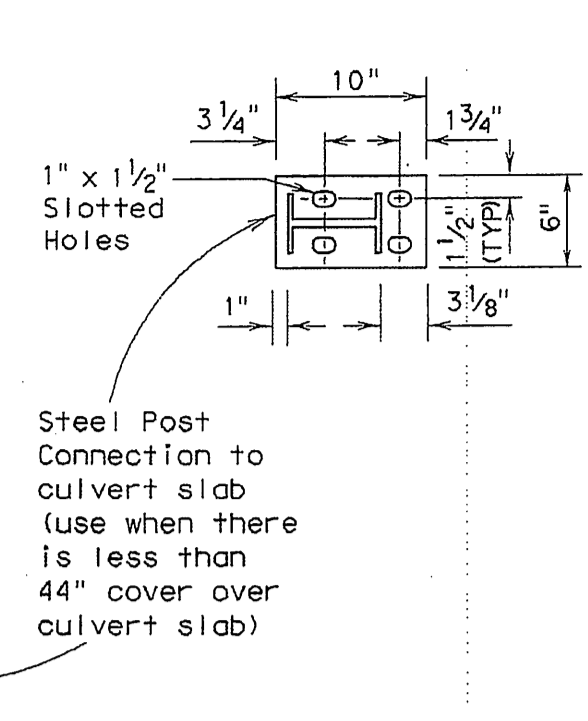
WOOD BLOCKOUT TO RECTANGULAR WOOD POST DETAIL



WOOD BLOCKOUT TO STEEL POST DETAIL

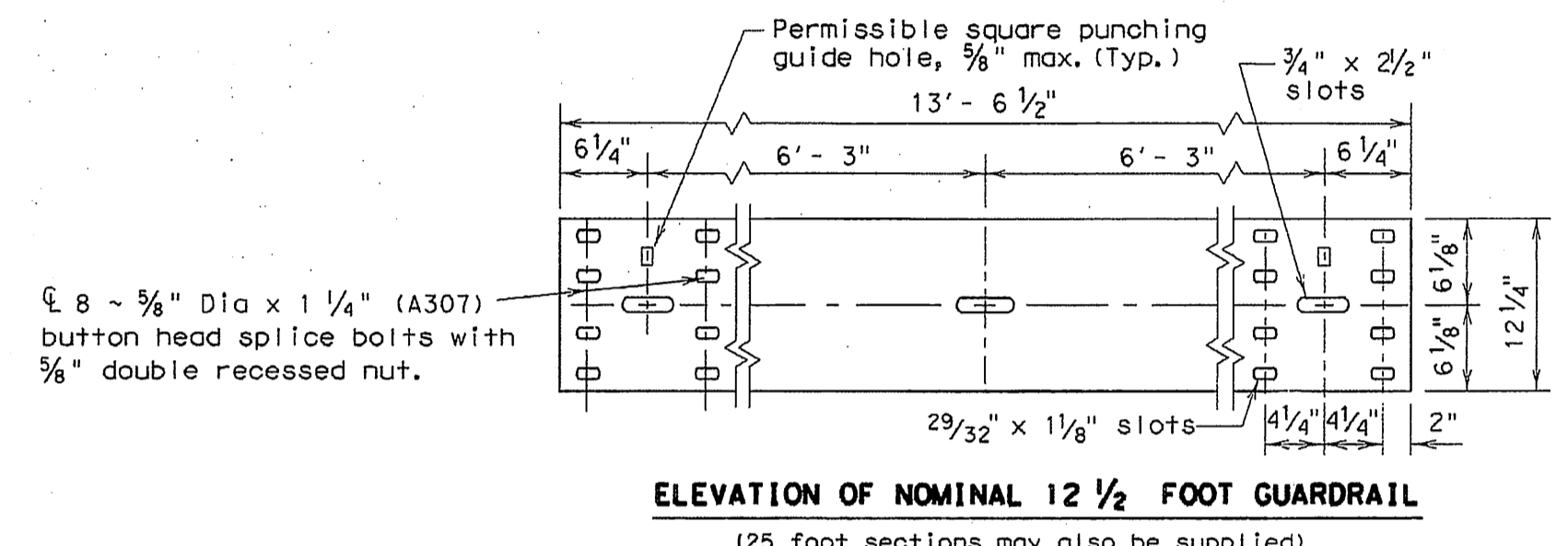


LOW FILL CULVERT POST MOUNTING OPTION



RAIL SPLICE

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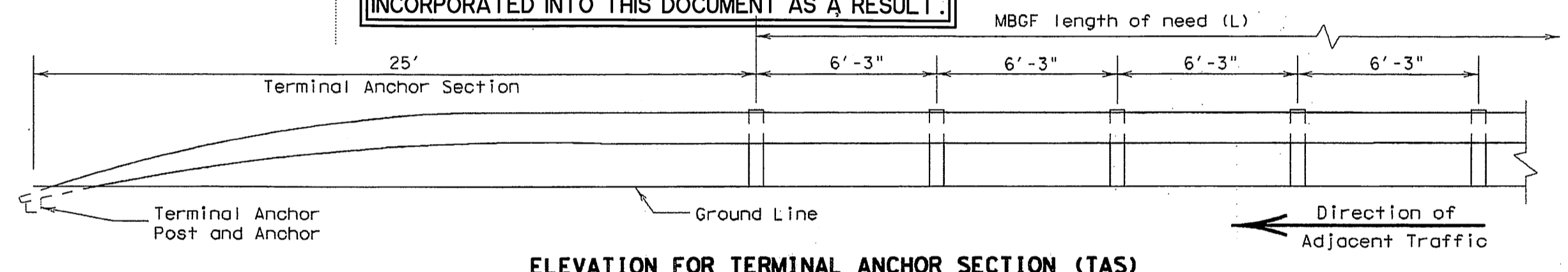


ELEVATION OF NOMINAL 12 1/2 FOOT GUARDRAIL

(25 foot sections may also be supplied)

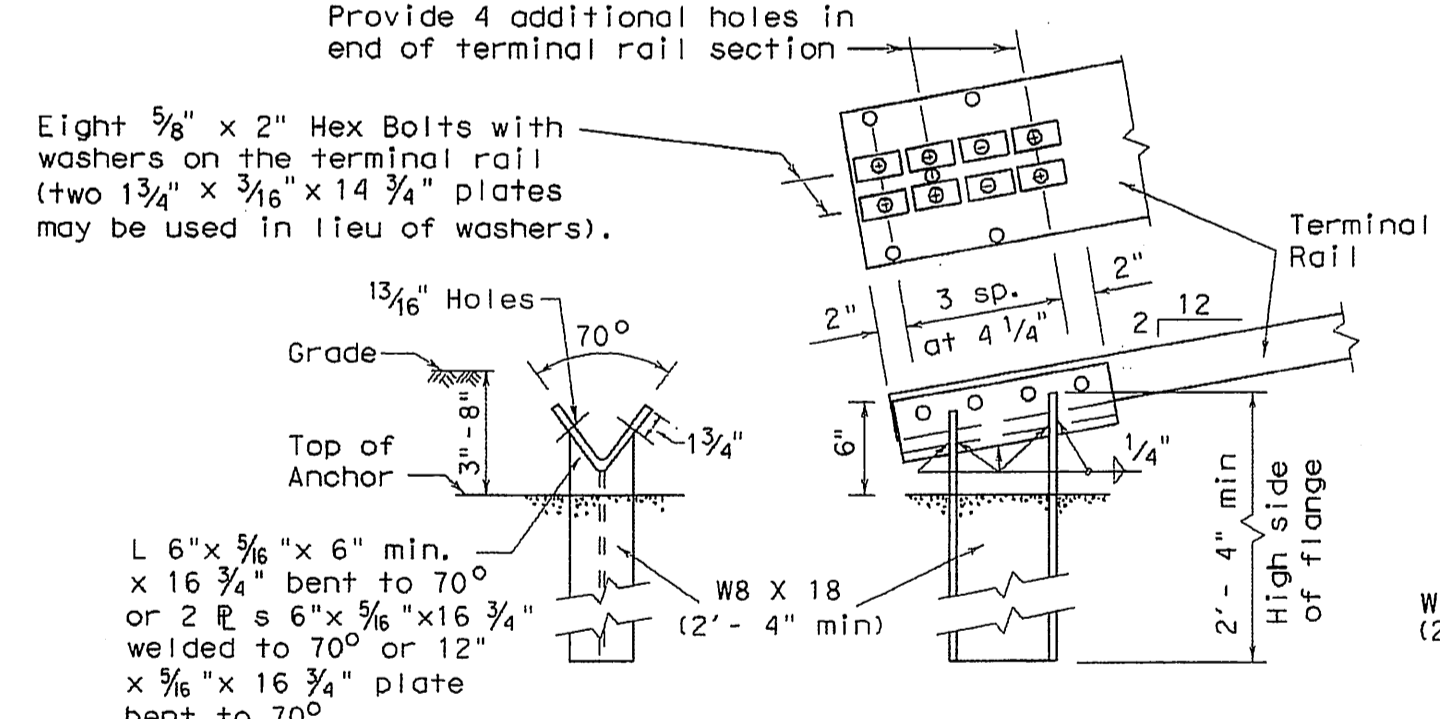
**GENERAL NOTES**

- The exact position of guard fence shall be as shown elsewhere on the plans or as directed by the Engineer. Guard fence shall be transitioned to a smooth connection with other guard fence or structure railing as shown elsewhere on plans.
- Rail element shall meet all requirements of AASHTO M-180 except as modified on the plans. The terminal connectors shall be of the same material, but shall not be less than 10 gauge. Contractor shall verify that the locations of bolt holes match those in the Terminal Connector prior to ordering of materials.
- Unless otherwise shown in the plans, guard fence placed in the vicinity of curbs shall be blocked out so that the face of curb is located directly below or behind the face of the blockout. Rail placed over curbs shall be installed so that the post bolt is located approximately 21-inches above the gutter pan or roadway surface.
- Unless otherwise shown in the plans, MBGF shall be placed with the face of rail directly above the shoulder edge (or curbface) except for upstream end treatments.
- At the option of the Contractor, the rail elements for the guard fence may be furnished in either 12 1/2 or 25 foot nominal lengths with post bolt slots for connection to posts.
- The terminal anchor post shall be set in Class "A" concrete in (unless otherwise shown on plans) in accordance with Item, "Portland Cement Concrete". Concrete shall be subsidiary to the bid item requiring construction of the terminal rail section and anchorage system.
- An anchor other than to a terminal anchor post shall consist of a connection similar to the rail splice or similar to the terminal connector.
- Galvanized washers used with the eight 5/8 inch splice bolts and nuts that are provided for terminal connectors and/or terminal anchor posts shall be 1 3/4 x 3 x 3/16, or 1 inch i.d. and 2 inch o.d. x 0.134 (ANSI B27.2) narrow Type A plain washers.
- Special fabrication will be required at installations having a curvature of less than 150' radius.
- Button head post bolts (A307) shall be of sufficient length to extend through the full thickness of the nut and no more than 3/4 inch beyond it. Button head splice bolts (A307) are 5/8 x 1 1/4 with a 5/8 inch double recessed nut. Fittings (bolts, nuts, and washers) shall be in accordance with Item, Metal for Structures". Fittings shall be subsidiary.
- Crown will be widened to accommodate guard fence.
- If guardrail is placed on a side slope away from the pavement edge, then the slope rate between the edge of the pavement and the face of the barrier will be 1V:10H or flatter.
- Posts shall not be set full depth in concrete.
- Where solid rock is encountered or where shown on the plans, the diameter of the holes shall be approximately 12 inches, the backfilling shall be with a cohesionless material, and embedment depth shall be 1'-6" or more as directed by the Engineer.
- Unless otherwise directed by the Engineer, a composite material post and/or blockout from the Department approved list of suppliers may be substituted for a post and/or blockout of similar dimensions. The list of approved suppliers of posts and blockouts will be maintained by the Construction Division, TxDOT.

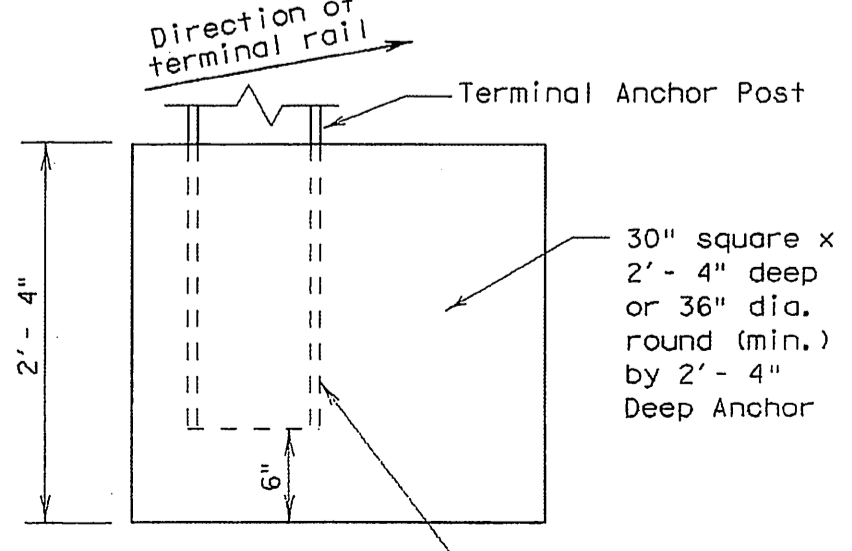


ELEVATION FOR TERMINAL ANCHOR SECTION (TAS)

(Terminal anchor sections are only for downstream guardrail end anchorage usage outside the horizontal clearance area of opposing traffic)

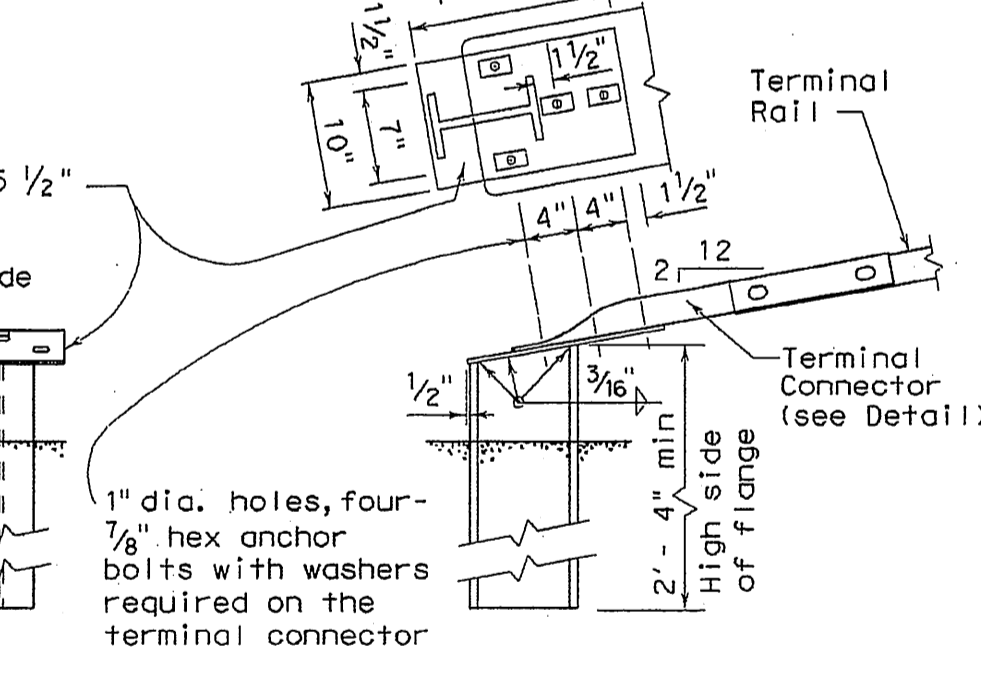


TERMINAL ANCHOR POST OPTIONS

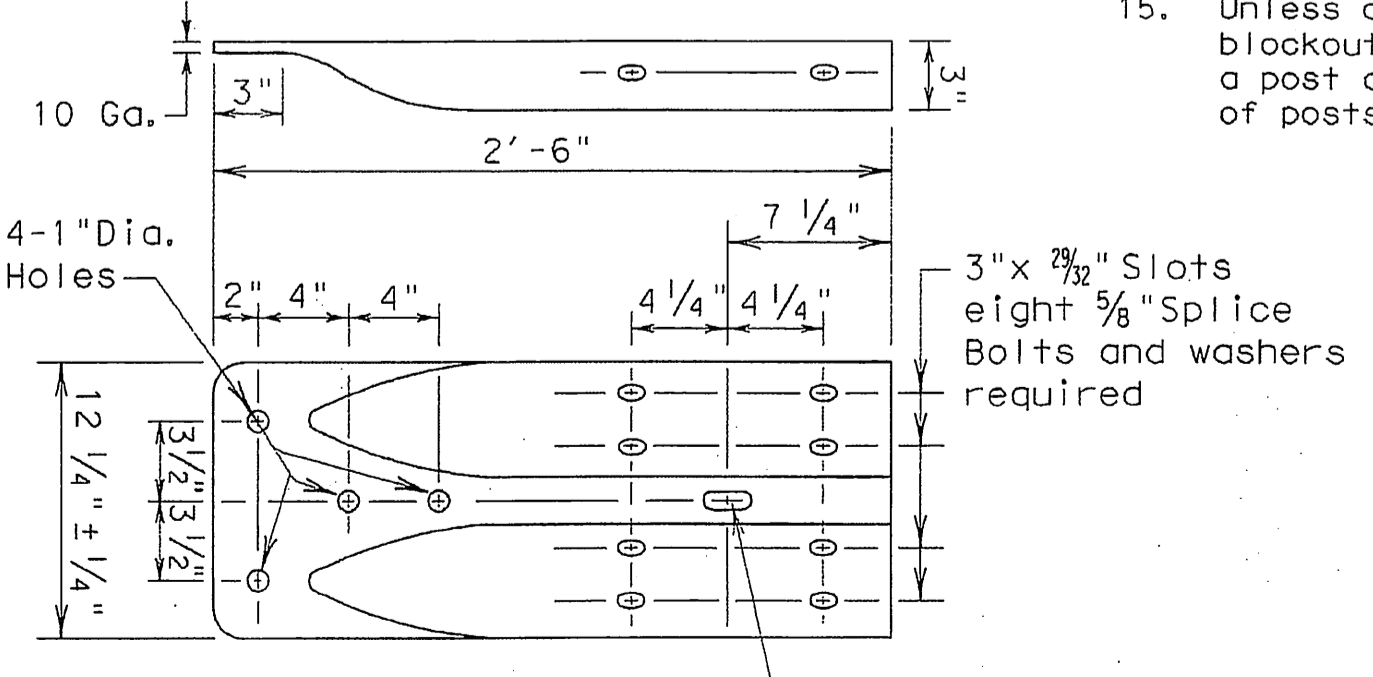


TERMINAL CONCRETE ANCHOR OPTIONS

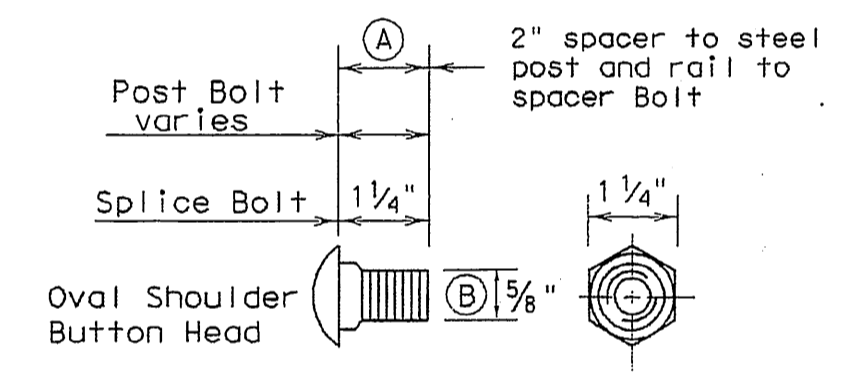
Notes:  
 Either post may be used with either anchor.  
 No construction joint is allowed in the concrete anchor.  
 Terminal rail may be bolted to post and in twist position prior to placing concrete anchor.  
 If concrete anchor is precast, the area should be compacted as directed by the Engineer, when placed in the field.



**TERMINAL CONNECTOR:** The terminal connector may also be used on the MBGF (TL2) transition (See MBGF (TL2) Standard Sheet), or on the downstream end of a concrete rail located outside the horizontal clearance area of opposing traffic. (See BED Standard Sheet)



TERMINAL CONNECTOR



SPLICE BOLT

- (A) 1 1/4 inch spacer to steel post hex bolt, 2 inch rail to spacer button head bolt.
- (B) 5/8 inch hex bolts required for terminal connector

Texas Department of Transportation  
 Design Division (Roadway)

**METAL BEAM GUARD FENCE**  
 MBGF-03A

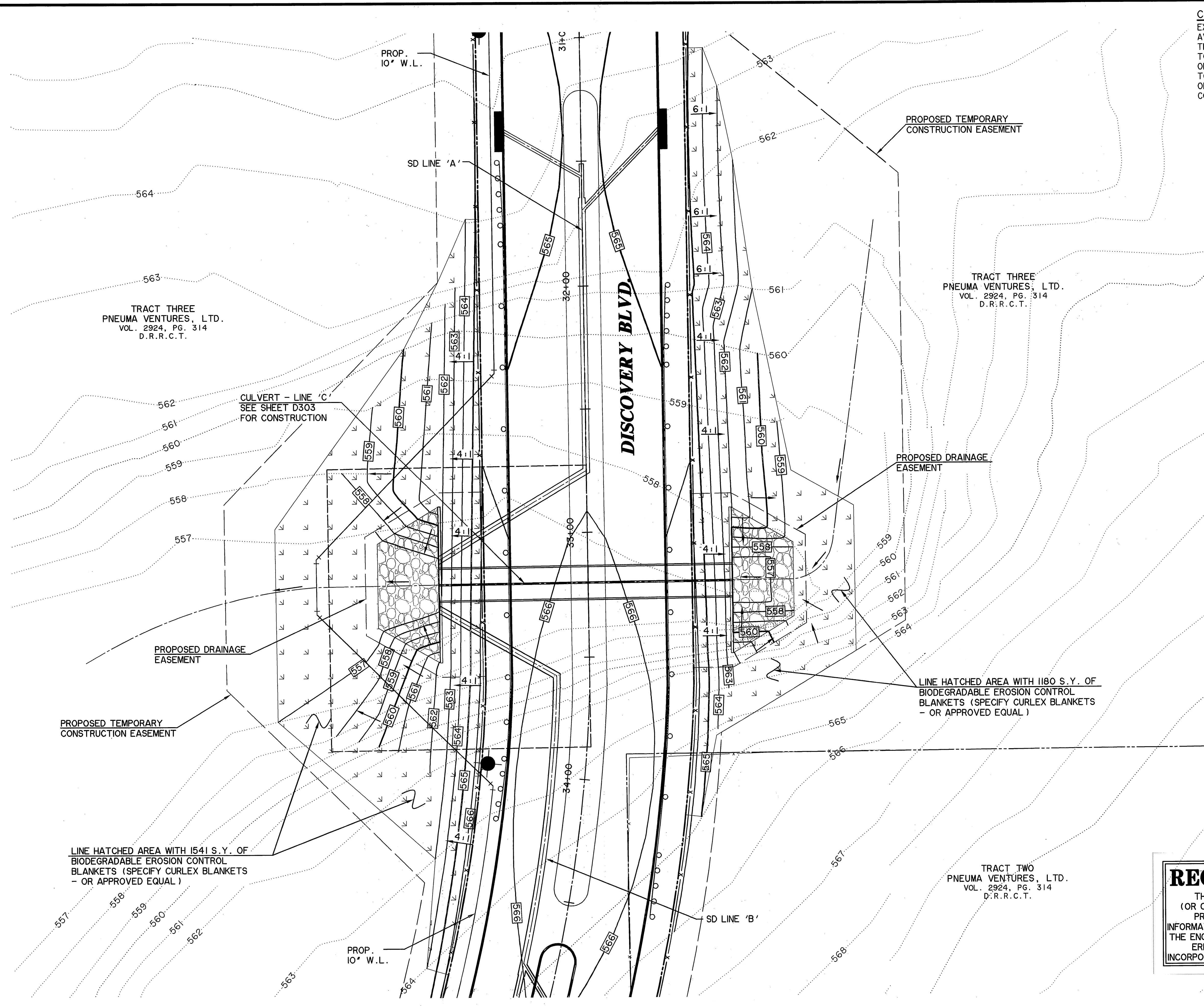
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REVISIONS				P302
	COUNTY	CONTROL	SECT	JOB
				HIGHWAY

R = Radius  
 D = Diameter



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TIME: 13.35



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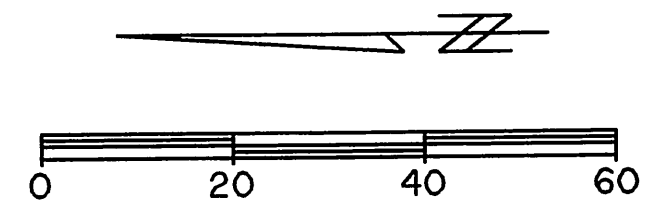
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585.45 FT.

BM B AN "□" CUT ON THE EAST MEDIAN NOSE DISCOVERY BOULEVARD +/- 90 FEET WEST OF THE INTERSECTION OF DISCOVERY BOULEVARD AND F.M. 549.  
598.20 FT.



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6849 ELM STREET FRISCO, TEXAS 75034 METRO (214)387-8000  
www.wierassociates.com



**DISCOVERY  
BLVD.  
EXTENSION TO  
JOHN KING BLVD.**

**GRADING PLAN  
CULVERT-LINE 'C'**

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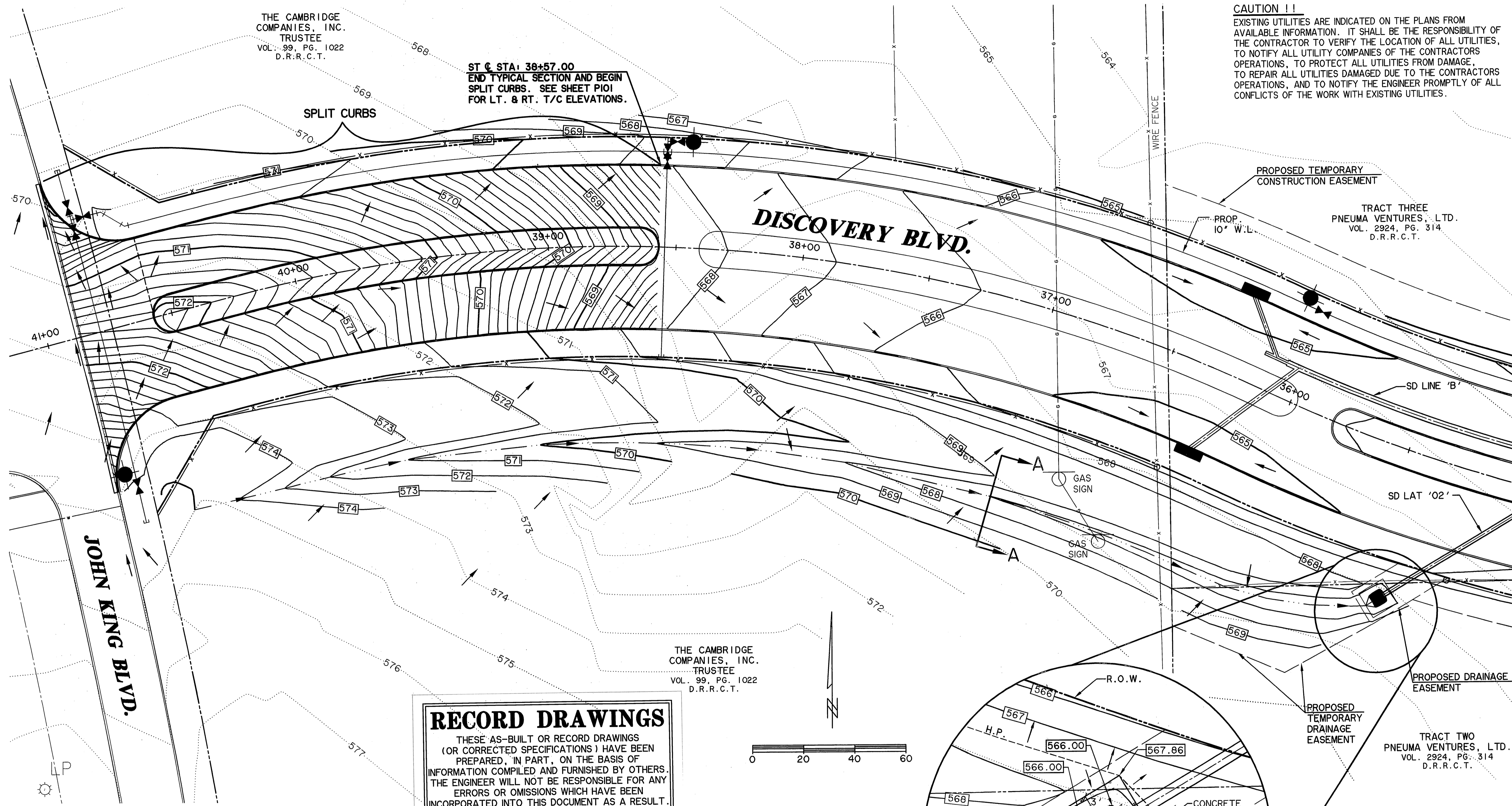
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WA# 98041.10  
**SHEET NO.  
G101**

FILE: G102-GRADING PLAN-DISCOVERY AND 205\_98041.10.dwg

THE CAMBRIDGE COMPANIES, INC. TRUSTEE VOL. 99, PG. 1022 D.R.R.C.T.

ST @ STA: 38+57.00 END TYPICAL SECTION AND BEGIN SPLIT CURBS. SEE SHEET P101 FOR LT. & RT. T/C ELEVATIONS.

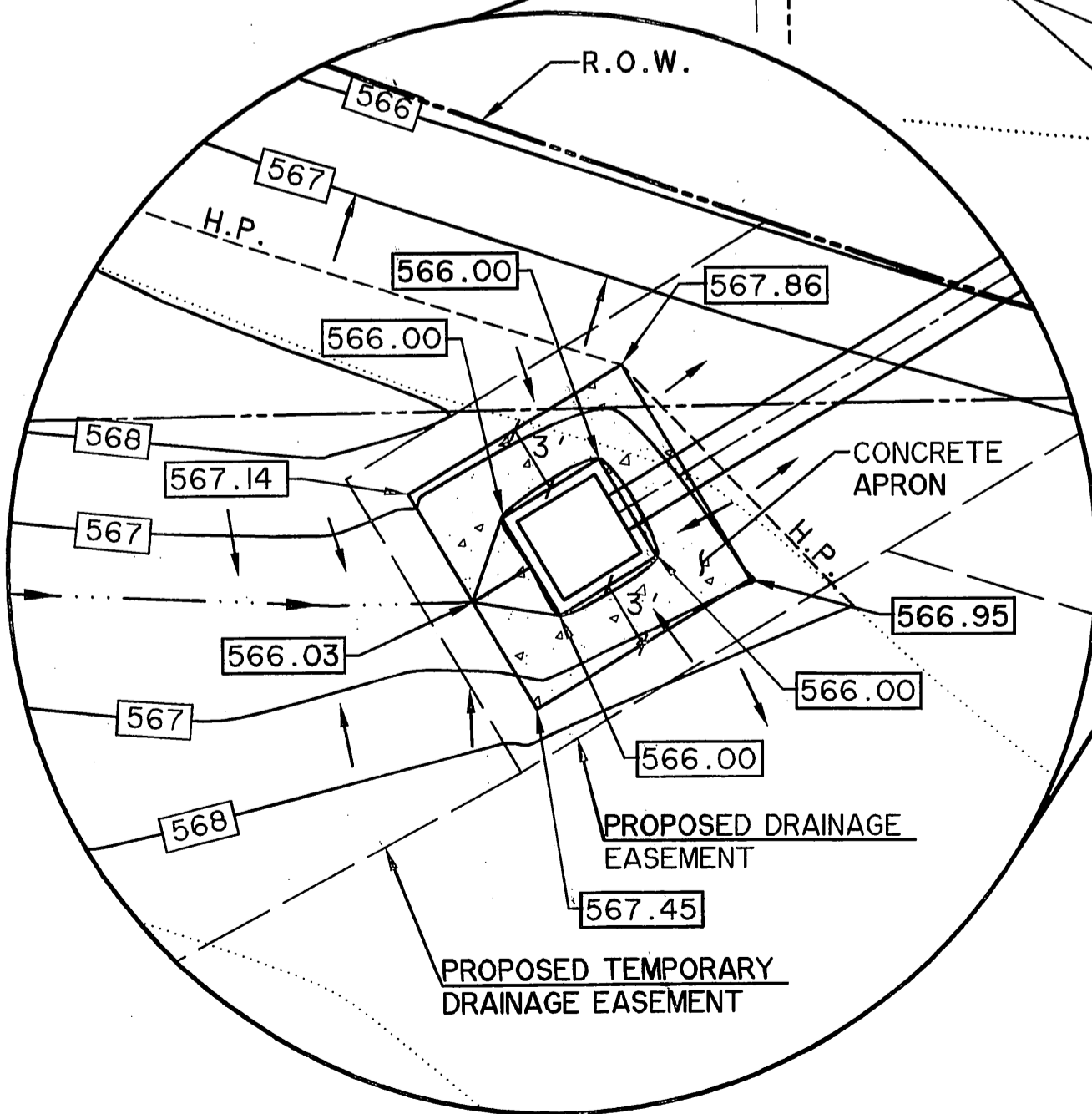
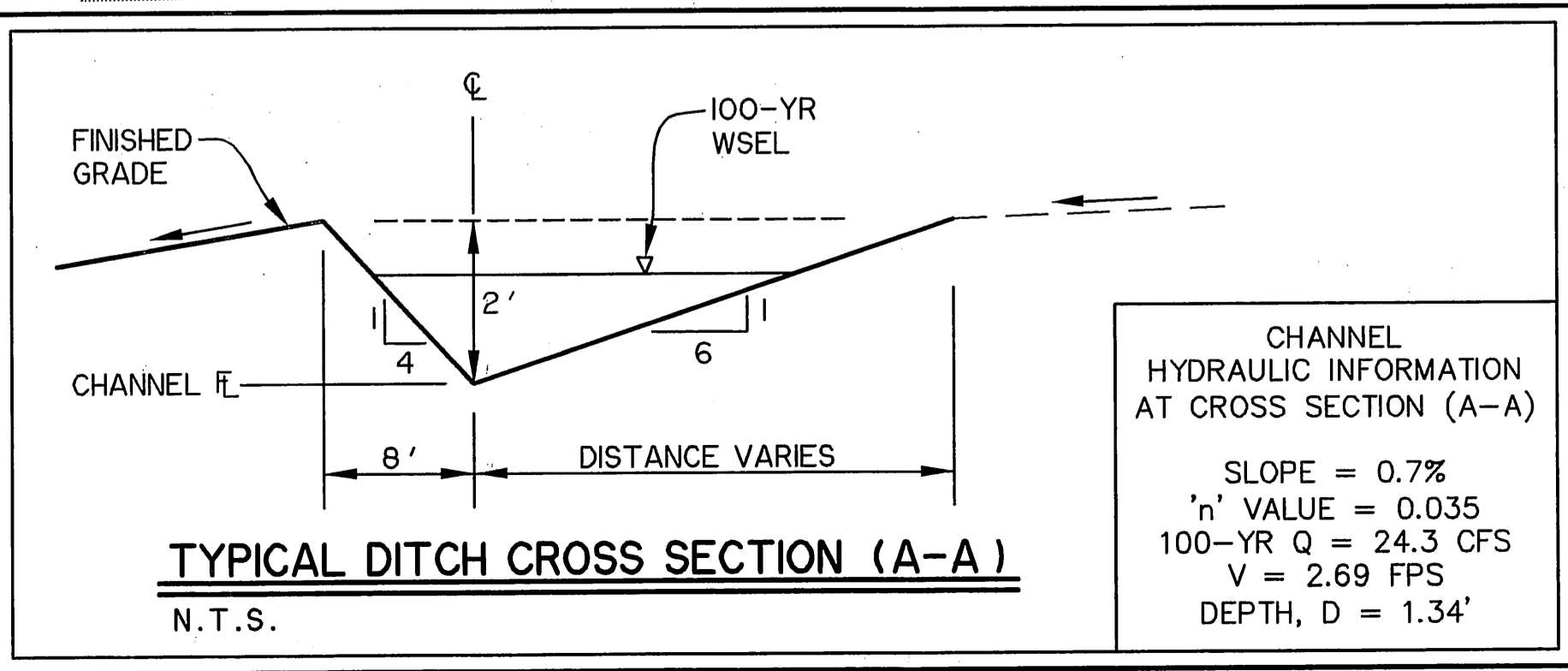
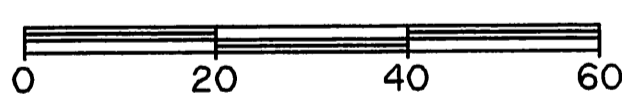
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THE CAMBRIDGE COMPANIES, INC. TRUSTEE VOL. 99, PG. 1022 D.R.R.C.T.

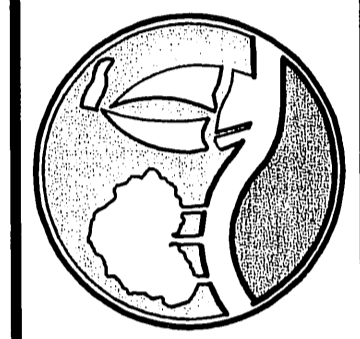
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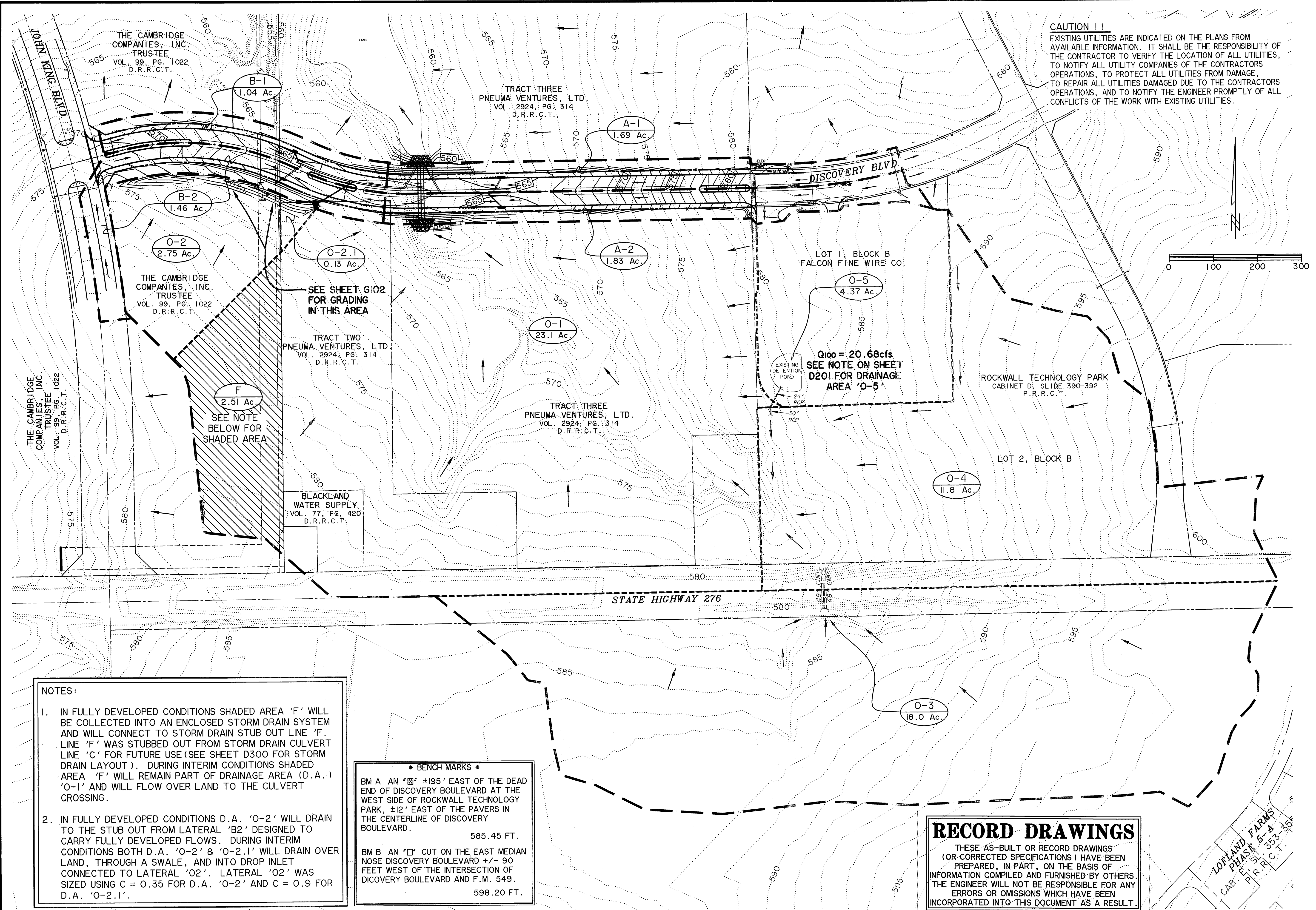


**DISCOVERY BLVD. EXTENSION TO JOHN KING BLVD.**

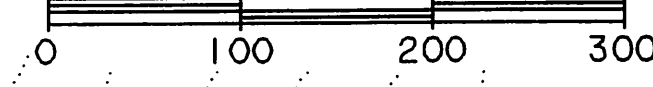
**GRADING PLAN OF DISCOVERY AND JOHN KING BLVD. AT INTERSECTION OF**

STATE OF TEXAS  
RONALD RAMIREZ  
81821  
REGISTERED PROFESSIONAL ENGINEER  
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DATE 03-11-2009  
WA# 98041.10  
**SHEET NO. G102**

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**NOTES:**

- IN FULLY DEVELOPED CONDITIONS SHADED AREA 'F' WILL BE COLLECTED INTO AN ENCLOSED STORM DRAIN SYSTEM AND WILL CONNECT TO STORM DRAIN STUB OUT LINE 'F'. LINE 'F' WAS STUBBED OUT FROM STORM DRAIN CULVERT LINE 'C' FOR FUTURE USE (SEE SHEET D300 FOR STORM DRAIN LAYOUT). DURING INTERIM CONDITIONS SHADED AREA 'F' WILL REMAIN PART OF DRAINAGE AREA (D.A.) 'O-1' AND WILL FLOW OVER LAND TO THE CULVERT CROSSING.
- IN FULLY DEVELOPED CONDITIONS D.A. 'O-2' WILL DRAIN TO THE STUB OUT FROM LATERAL 'B2' DESIGNED TO CARRY FULLY DEVELOPED FLOWS. DURING INTERIM CONDITIONS BOTH D.A. 'O-2' & 'O-2.1' WILL DRAIN OVER LAND, THROUGH A SWALE, AND INTO DROP INLET CONNECTED TO LATERAL 'O2'. LATERAL 'O2' WAS SIZED USING C = 0.35 FOR D.A. 'O-2' AND C = 0.9 FOR D.A. 'O-2.1'.

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 6849 ELM STREET FRISCO, TEXAS 75034 METRO (214)387-8000  
 Texas Firm Registration No. F-2776 www.wiaassociates.com



**DISCOVERY BLVD. EXTENSION TO JOHN KING BLVD.**

**OVERALL DRAINAGE AREA MAP**

STATE OF TEXAS  
 RONALD RAMIREZ  
 81821  
 REGISTERED PROFESSIONAL ENGINEER  
 7/24/09  
 Ronald Ramirez  
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 DATE 07-24-2009  
 WA# 98041.10  
**SHEET NO. D101**

DRAINAGE AREA CALCULATIONS								
Drainage Area Designation	Acreage (ac)	C Factor		C x A	Time of Concentration (min)	I (in/hr) 100 Yr	Q <sub>100</sub> (cfs)	
		Existing	Developed				Existing	Developed
A-1	1.69	0.35	0.90	1.52	10	9.80	5.80	14.9
A-2	1.83	0.35	0.90	1.65	10	9.80	6.28	16.1
B-1	1.04	0.35	0.90	0.94	10	9.80	3.57	9.2
* B-2	1.46	0.35	0.90	1.31	10	9.80	5.01	12.9
O-1	23.1	0.35	0.90	20.8	15	9.00	72.8	187.1
*** O-2	2.62	0.35	0.90	2.36	10	9.80	8.99	23.1
*** O-2.1	0.13	0.35	0.90	0.12	10	9.80	0.45	1.2
O-3	18.0	0.35	0.50	9.00	15	9.00	56.7	81.0
O-4	11.8	0.35	0.90	10.6	15	9.00	37.2	95.6
** O-5	4.37	-	-	-	-	-	-	20.7
*** F	2.51	0.35	0.90	2.26	10	9.80	8.61	22.1

**Notes:**

- \* DRAINAGE AREA B-2 INCLUDES 0.44 ACRES OF EXISTING DRAINAGE AREA A-5.1 FROM THE PHASE II S.H. 205 BYPASS PLANS PREPARED BY WIER AND ASSOCIATES IN 2007. THE ADDITIONAL FULLY DEVELOPED FLOW OF 3.88 CFS WAS INCLUDED IN THE DESIGN OF STORM DRAIN LINE 'B', COL
- \*\* SEE CONSTRUCTION PLANS FOR FALCON FINE WIRE CO., PREPARED BY PACHECO KOCH CONSULTING ENGINEERS IN 1999, FOR DRAINAGE/DETENTION CALCULATIONS FOR OFFSITE DRAINAGE AREA O-5.
- \*\*\* SEE SHEET D101 OVERALL DRAINAGE AREA MAP FOR NOTES PERTAINING TO THE DESIGNATED DRAINAGE AREA'S

100 YR. STORM INLET AND STREET FLOW CALCULATIONS																			
STREET STA	INLET NO.	CONTRIBUTING DRAINAGE AREAS	DESIGN STORM FREQUENCY (yr)	TIME OF CONC (min)	RAINFALL INTENSITY (in/hr)	DRAINAGE AREA (Ac)	C FACTOR	CxA	CA INTERCEPTED	GUTTER FLOW (cfs)	GUTTER SLOPE (%)	STREET SECTION	CROWN	DEPTH OF FLOW AT INLET (ft)	WIDTH OF FLOW IN STREET @ GUTTER (ft)	INLET LENGTH (ft)	FLOW COLLECTED (cfs)	FLOW BYPASSED (cfs)	REMARKS
31+37.56	A1	A1	100	10	9.8	1.69	1.52	14.9	0.00	14.9	-	TRIANGULAR	0.02	0.47	-	15	14.9	0	
31+37.56	A2	A2	100	10	9.8	1.83	1.65	16.1	0.00	16.1	-	TRIANGULAR	0.02	0.48	-	15	16.1	0	
36+29.22	B1	B1	100	10	9.8	1.04	0.94	9.2	0.00	9.2	-	TRIANGULAR	0.02	0.39	-	10	9.2	0	
36+29.22	B2	B2	100	10	9.8	1.46	1.31	12.9	0.00	12.9	-	TRIANGULAR	0.02	0.44	-	10	12.9	0	

STORM DRAIN CALCULATIONS FOR STORM DRAIN LINE A																		
FROM	TO	LENGTH (FT)	CxA	INLET TIME (min.)	TOTAL INTERCEPTED CxA	TIME AT UPSTREAM OF REACH (min)	DESIGN STORM FREQUENCY (yrs)	RAINFALL INTENSITY (in/hr)	INTERCEPTED FLOW (cfs)	STORM DRAIN DIAMETER (in)	VELOCITY (ft/s)	SLOPE OF FRICTION GRADIENT (ft/ft)	STRUCTURE LOSS COEFFICIENT	STRUCTURE LOSS AT UPSTREAM OF REACH	FLOW TIME IN DRAIN (min)	TIME AT DOWNSTREAM OF REACH (min)	H.G. AT UPSTREAM OF REACH (ft)	REMARKS
INLET A1	2+39.36	36.95	1.52	10	1.52	10.0	100	9.80	14.9	21	6.2	0.0088	1.25	0.74	0.00	10.0	563.49	
2+39.36	2+25.84	13.53	-	-	1.52	10.0	100	9.80	14.9	21	6.2	0.0088	0.75	0.15	0.00	10.0	561.02	
INLET A2	2+25.84	45.25	1.65	10	1.65	10.0	100	9.80	16.1	21	6.7	0.0103	1.25	0.87	0.10	10.1	563.62	
2+25.84	1+20.44	105.40	-	-	3.17	10.1	100	9.78	31.0	33	5.2	0.0034	0.75	0.00	0.30	10.4	560.75	
1+20.44	0+50.00	70.44	-	-	3.17	10.4	100	9.72	30.8	33	5.2	0.0034	0.35	0.15	0.20	10.6	560.37	

STORM DRAIN CALCULATIONS FOR STORM DRAIN LINE B																		
FROM	TO	LENGTH (FT)	CxA	INLET TIME (min.)	TOTAL INTERCEPTED CxA	TIME AT UPSTREAM OF REACH (min)	DESIGN STORM FREQUENCY (yrs)	RAINFALL INTENSITY (in/hr)	INTERCEPTED FLOW (cfs)	STORM DRAIN DIAMETER (in)	VELOCITY (ft/s)	SLOPE OF FRICTION GRADIENT (ft/ft)	STRUCTURE LOSS COEFFICIENT	STRUCTURE LOSS AT UPSTREAM OF REACH	FLOW TIME IN DRAIN (min)	TIME AT DOWNSTREAM OF REACH (min)	H.G. AT UPSTREAM OF REACH (ft)	REMARKS
INLET B1	3+53.39	25.78	0.94	10	0.94	10.00	100	9.80	9.2	18	5.2	0.0077	1.25	0.53	0.10	10.1	563.68	
3+53.39	3+43.91	9.48	-	-	0.94	10.10	100	9.78	9.2	18	5.2	0.0077	0.75	0.10	0.00	10.1	562.95	
INLET B2	3+43.91	52.59	1.31	10	1.31	10.00	100	9.80	12.9	21	5.4	0.0066	1.25	0.56	0.20	10.2	563.69	
3+43.91	2+22.25	121.66	-	-	2.25	10.20	100	9.76	22.1	27	5.5	0.0050	0.75	0.15	0.40	10.6	562.78	
INLET O2	2+22.25	96.64	2.47	10	2.47	10.00	100	9.80	24.3	21	10.1	0.0235	1.25	1.98	0.20	10.2	566.27	
2+22.25	1+04.85	117.40	-	-	4.73	10.60	100	9.68	45.7	33	7.7	0.0075	0.75	0.57	0.30	10.9	562.02	
1+04.85	0+50.00	54.85	-	-	4.73	10.90	100	9.62	45.5	33	7.7	0.0074	0.35	0.32	0.10	11.0	560.57	

STORM DRAIN CALCULATIONS FOR STORM DRAIN STUB OUT LINE F																		
FROM	TO	LENGTH (FT)	CxA	INLET TIME (min.)	TOTAL INTERCEPTED CxA	TIME AT UPSTREAM OF REACH (min)	DESIGN STORM FREQUENCY (yrs)	RAINFALL INTENSITY (in/hr)	INTERCEPTED FLOW (cfs)	STORM DRAIN DIAMETER (in)	VELOCITY (ft/s)	SLOPE OF FRICTION GRADIENT (ft/ft)	STRUCTURE LOSS COEFFICIENT	STRUCTURE LOSS AT UPSTREAM OF REACH	FLOW TIME IN DRAIN (min)	TIME AT DOWNSTREAM OF REACH (min)	H.G. AT UPSTREAM OF REACH (ft)	REMARKS
0+20.00	0+00.00	20	2.26	10	2.26	10	100	9.8	22.1	24	7	0.0095	0	0	0	10	560.28	0

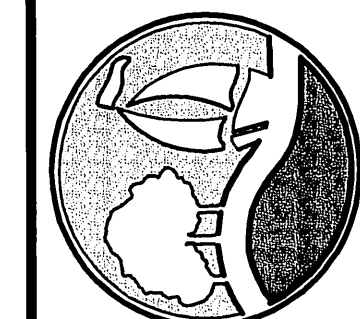
CULVERT - LINE 'C' DESIGN CALCULATIONS										
Culvert Location:	Culvert - Line 'C'				RDWY. Elev.	566.12	U.S. Culv. F.L.	556.95		
Total Discharge, Q (cfs)	384.40	Design Storm Freq.	100 yr	U.S. Culv. F.L.	556.95	D.S. Culv. F.L.	556.59			
Roughness Coeff., n	0.015	Max. Vel. (ft/s)	12.0	Difference	9.17	ft	Difference	0.36		
Tailwater (ft)	1.4	D.S. Channel Width (ft)	20.0	Req'd Freeboard	1.00	ft	Length (ft)	120		
Entrance Description:	Type 2A, 90° Headwall				Allow. Headwater	8.17	ft	Culv. Slope, s <sub>c</sub> = $\frac{D_{diff}}{Length}$	0.30%	

**RECORD DRAWINGS**

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Trial Area of Opening T*A=Q/V (sq. ft.)	Channel Width "W" (feet)	TRIAL CULVERT								HEADWATER CALCULATION																The Greater Controlling Head Water (Inlet or Outlet) (feet)	Selected Conduit Size (feet)	
		DEPTH RANGE		POSSIBLE CULVERT SIZES						INLET CONTROL				OUTLET CONTROL														
		T*Ac/W (feet)	AHW (feet)	Trial Depth "D" (feet)	No. Openings	Width of Box "B" (feet)	Box Depth or Pipe Diameter "D" (feet)	Total Culvert Area "Ac" (sq.ft.)	"Q" Each Opening (c.f.s.)	Entrance Type	Case NO.	Q/B (c.f.s.)	HWD	"HW" (feet)	Entrance Coeff. Ke	"H" (feet)	"TW" (feet)	LxSo (feet)	"HW" (feet)	"H" (feet)	CASE IV ho=dc+D/2 or ho=TW (use larger)							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
32.03	20.00	1.60	8.17	3.00	3.00	6.00	3.00	54.00	128.13	Type 2A	Case 2	21.36	1.50	4.50	0.50	1.40	1.40	0.36	2.44	1.40	2.40	2.70	1.40	2.70	0.36	3.74	4.50	6'x3' Box

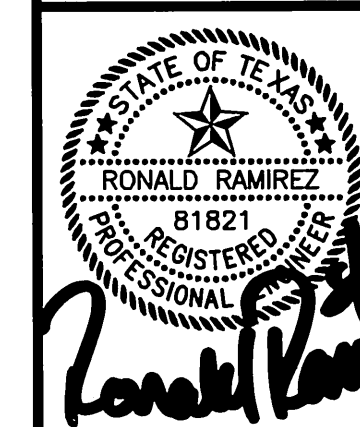
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DISCOVERY BLVD. EXTENSION TO JOHN KING BLVD.

DRAINAGE CALCULATIONS

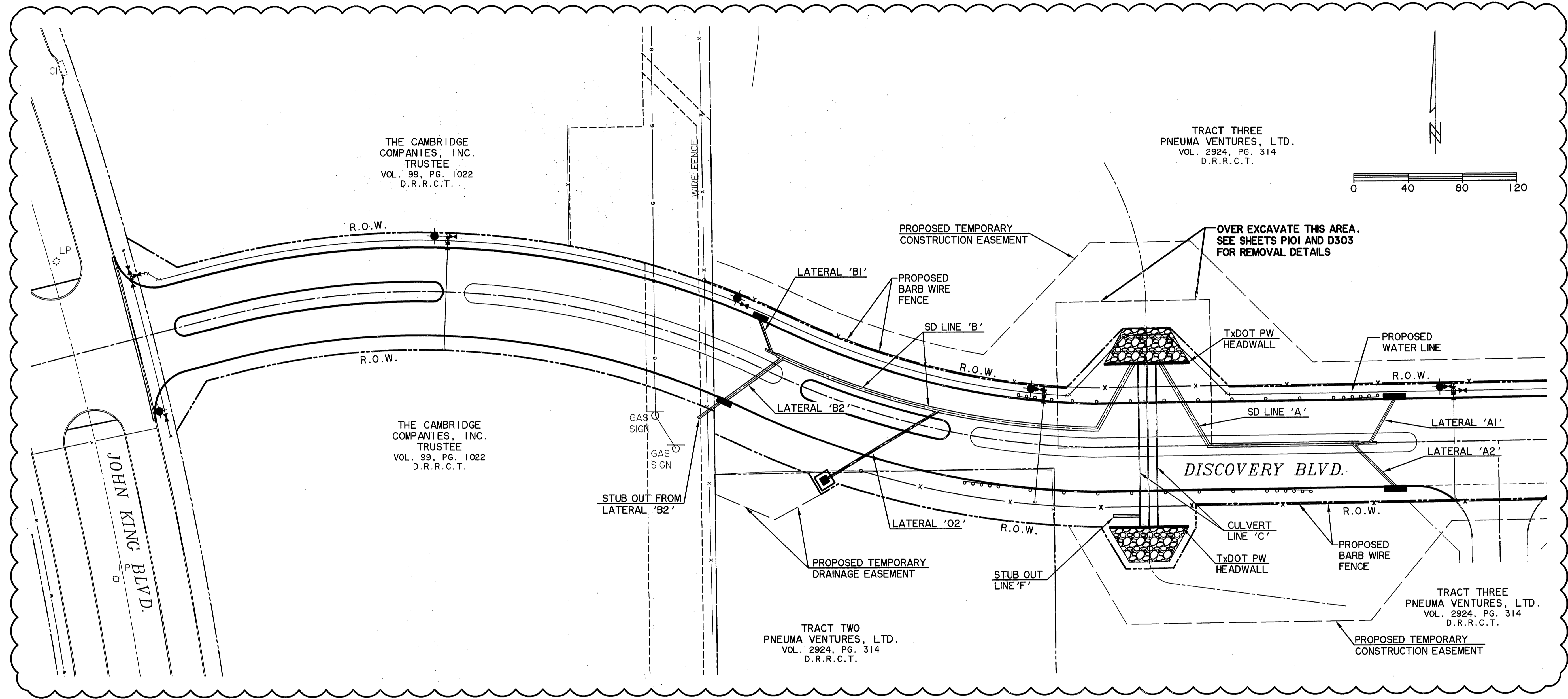


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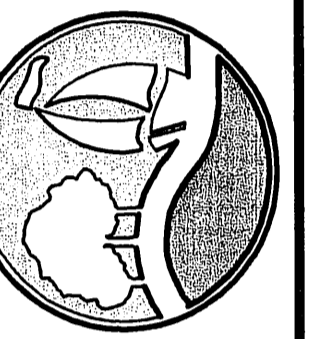
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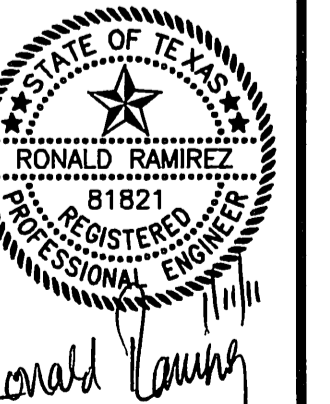


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**DISCOVERY BLVD. EXTENSION TO JOHN KING BLVD.**

**STORM DRAIN LAYOUT**



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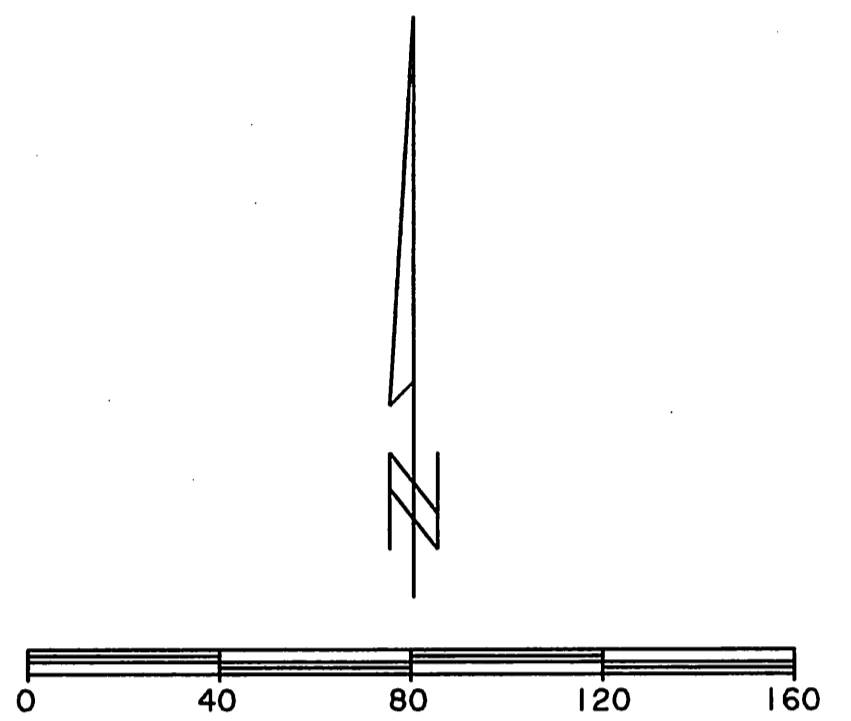
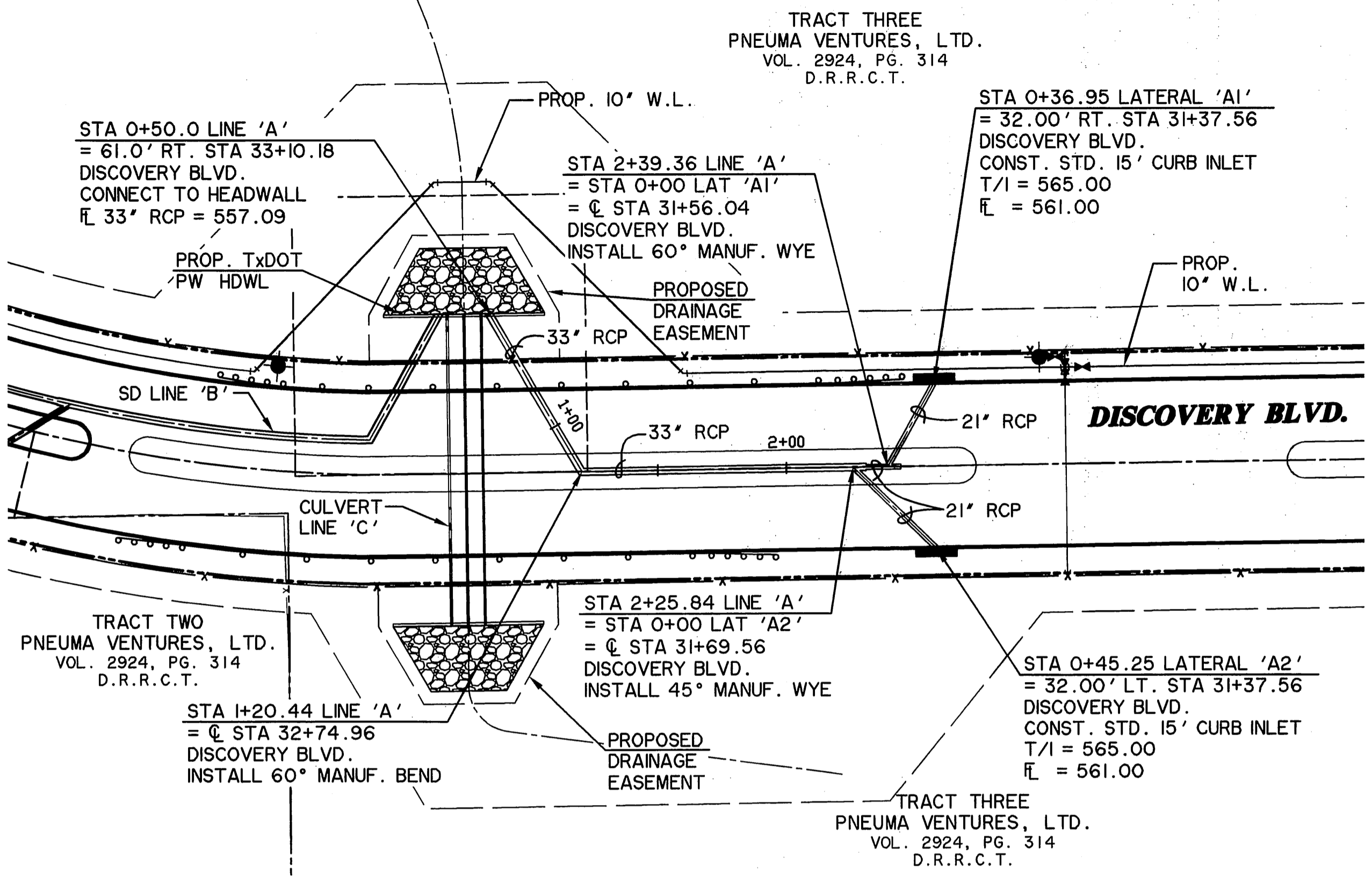
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**REVISIONS**  
 SHEET REVISED 1/11/2011  
 REVISION 1: REVISED SHEET TO SHOW UPDATED DISCOVERY BOULEVARD R.O.W. AND EASEMENTS.

**\* BENCH MARKS \***  
 BM A AN 'X' ±195' EAST OF THE DEAD END OF DISCOVERY BOULEVARD AT THE WEST SIDE OF ROCKWALL TECHNOLOGY PARK, ±12' EAST OF THE PAVERS IN THE CENTERLINE OF DISCOVERY BOULEVARD. 585.45 FT.  
 BM B AN '□' CUT ON THE EAST MEDIAN NOSE DISCOVERY BOULEVARD +/- 90 FEET WEST OF THE INTERSECTION OF DISCOVERY BOULEVARD AND F.M. 549. 598.20 FT.



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**\* BENCH MARKS \***  
 BM A AN "X" ±195' EAST OF THE DEAD END OF DISCOVERY BOULEVARD AT THE WEST SIDE OF ROCKWALL TECHNOLOGY PARK, ±12' EAST OF THE PAVERS IN THE CENTERLINE OF DISCOVERY BOULEVARD. 585.45 FT.  
 BM B AN "C" CUT ON THE EAST MEDIAN NOSE DISCOVERY BOULEVARD +/- 90 FEET WEST OF THE INTERSECTION OF DISCOVERY BOULEVARD AND F.M. 549. 598.20 FT.

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**STORM DRAIN LINE 'A'**

PROP FL OF PIPE	STATION	DESCRIPTION	PROFILE SCALE
557.09	0+00	STA 0+50.00 SD LINE 'A' = TXDOT RW HEADWALL = 33' RCP = 557.09	PROFILE SCALE HORIZ. 1" = 40' VERT. 1" = 4'
557.36	1+00	STA 1+20.44 SD LINE 'A' = 60° MANUF. BEND = 33' RCP = 557.47	
557.62	2+00	STA 2+25.84 SD LINE 'A' = STA 0+00 LAT 'A2' = 45° MANUF. WYE = 33' RCP = 558.00	
557.87	2+00	STA 2+39.36 SD LINE 'A' = STA 0+00 LAT 'A1' = 60° MANUF. WYE = 21' RCP = 559.07	
559.02	2+00	STA 2+30.64 SD LINE 'A' = CONST. STD COLLAR = 21' RCP = 559.02	
559.10	2+00	STA 2+44.36 SD LINE 'A' = PLUG STORM DRAIN = 21' RCP = 559.10	
561.02	3+00	STA 0+45.25 LATERAL 'A2' = 32.00' LT. STA 3+37.56 DISCOVERY BLVD. CONST. STD 15' CURB INLET T/I = 565.00	
561.02	3+00	STA 0+36.95 LATERAL 'A1' = 32.00' RT. STA 3+37.56 DISCOVERY BLVD. CONST. STD 15' CURB INLET T/I = 565.00	
561.02	3+00	STA 2+25.84 SD LINE 'A' = STA 0+00 LAT 'A2' = 45° MANUF. WYE = 33' RCP = 558.00	
561.02	3+00	STA 2+39.36 SD LINE 'A' = STA 0+00 LAT 'A1' = 60° MANUF. WYE = 21' RCP = 559.07	
560.00	3+00	70 LF OF 33' RCP @ 0.54% 10 LF OF 33' RCP @ 0.5% 9 LF OF 21' RCP @ 0.57% 37 LF OF 21' RCP @ 5.22% 45 LF OF 21' RCP @ 5.52%	
560.84	3+00	H.G. = 560.37 H.G. = 560.22 H.G. = 560.75 H.G. = 561.02 H.G. = 561.02 H.G. = 561.02 H.G. = 563.49 H.G. = 562.75 H.G. = 563.62 H.G. = 562.75	
560.00	3+00	Q <sub>100</sub> = 31.0 cfs Sf = 0.34% V = 5.2 fps V <sup>2</sup> /2g = 0.42'	
560.00	3+00	Q <sub>100</sub> = 31.0 cfs Sf = 0.34% V = 5.2 fps V <sup>2</sup> /2g = 0.42'	
560.00	3+00	Q <sub>100</sub> = 14.9 cfs Sf = 0.88% V = 6.2 fps V <sup>2</sup> /2g = 0.6'	
560.00	3+00	Q <sub>100</sub> = 16.1 cfs Sf = 1.03% V = 6.7 fps V <sup>2</sup> /2g = 0.70'	
559.07	3+00	STA 0+00 LAT 'A1' = STA 2+39.36 SD LINE 'A' = 21' RCP = 559.07	
559.07	3+00	STA 0+36.95 LAT 'A1' = CONST. STD 15' CURB INLET = 21' RCP = 561.00	
559.07	3+00	STA 0+45.25 LAT 'A2' = CONST. STD 15' CURB INLET = 21' RCP = 565.00	
558.00	3+00	STA 0+00 LAT 'A2' = STA 2+25.84 SD LINE 'A' = 33' RCP = 558.00	
558.00	3+00	STA 0+45.25 LAT 'A2' = CONST. STD 15' CURB INLET = 21' RCP = 565.00	
557.09	3+00	STA 0+50.00 SD LINE 'A' = TXDOT RW HEADWALL = 33' RCP = 557.09	

**LAT. 'A1'**

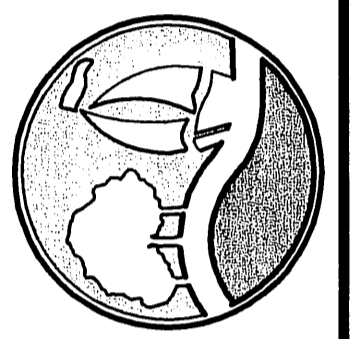
PROP FL OF PIPE	STATION	DESCRIPTION	PROFILE SCALE
559.07	0+00	STA 0+00 LAT 'A1' = STA 2+39.36 SD LINE 'A' = 21' RCP = 559.07	PROFILE SCALE HORIZ. 1" = 40' VERT. 1" = 4'
559.07	0+00	STA 0+36.95 LAT 'A1' = CONST. STD 15' CURB INLET = 21' RCP = 561.00	
559.07	0+00	STA 0+45.25 LAT 'A2' = CONST. STD 15' CURB INLET = 21' RCP = 565.00	
560.00	0+00	STA 0+00 LAT 'A2' = STA 2+25.84 SD LINE 'A' = 33' RCP = 558.00	
560.00	0+00	STA 0+45.25 LAT 'A2' = CONST. STD 15' CURB INLET = 21' RCP = 565.00	
560.84	0+00	H.G. = 560.37 H.G. = 560.22 H.G. = 560.75 H.G. = 561.02 H.G. = 561.02 H.G. = 561.02 H.G. = 563.49 H.G. = 562.75 H.G. = 563.62 H.G. = 562.75	
560.00	0+00	Q <sub>100</sub> = 31.0 cfs Sf = 0.34% V = 5.2 fps V <sup>2</sup> /2g = 0.42'	
560.00	0+00	Q <sub>100</sub> = 31.0 cfs Sf = 0.34% V = 5.2 fps V <sup>2</sup> /2g = 0.42'	
560.00	0+00	Q <sub>100</sub> = 14.9 cfs Sf = 0.88% V = 6.2 fps V <sup>2</sup> /2g = 0.6'	
560.00	0+00	Q <sub>100</sub> = 16.1 cfs Sf = 1.03% V = 6.7 fps V <sup>2</sup> /2g = 0.70'	

**LAT. 'A2'**

PROP FL OF PIPE	STATION	DESCRIPTION	PROFILE SCALE
558.00	0+00	STA 0+00 LAT 'A2' = STA 2+25.84 SD LINE 'A' = 33' RCP = 558.00	PROFILE SCALE HORIZ. 1" = 40' VERT. 1" = 4'
558.00	0+00	STA 0+45.25 LAT 'A2' = CONST. STD 15' CURB INLET = 21' RCP = 565.00	
560.00	0+00	STA 0+00 LAT 'A2' = STA 2+25.84 SD LINE 'A' = 33' RCP = 558.00	
560.00	0+00	STA 0+45.25 LAT 'A2' = CONST. STD 15' CURB INLET = 21' RCP = 565.00	
560.84	0+00	H.G. = 560.37 H.G. = 560.22 H.G. = 560.75 H.G. = 561.02 H.G. = 561.02 H.G. = 561.02 H.G. = 563.49 H.G. = 562.75 H.G. = 563.62 H.G. = 562.75	
560.00	0+00	Q <sub>100</sub> = 31.0 cfs Sf = 0.34% V = 5.2 fps V <sup>2</sup> /2g = 0.42'	
560.00	0+00	Q <sub>100</sub> = 31.0 cfs Sf = 0.34% V = 5.2 fps V <sup>2</sup> /2g = 0.42'	
560.00	0+00	Q <sub>100</sub> = 14.9 cfs Sf = 0.88% V = 6.2 fps V <sup>2</sup> /2g = 0.6'	
560.00	0+00	Q <sub>100</sub> = 16.1 cfs Sf = 1.03% V = 6.7 fps V <sup>2</sup> /2g = 0.70'	
559.07	0+00	STA 0+00 LAT 'A1' = STA 2+39.36 SD LINE 'A' = 21' RCP = 559.07	

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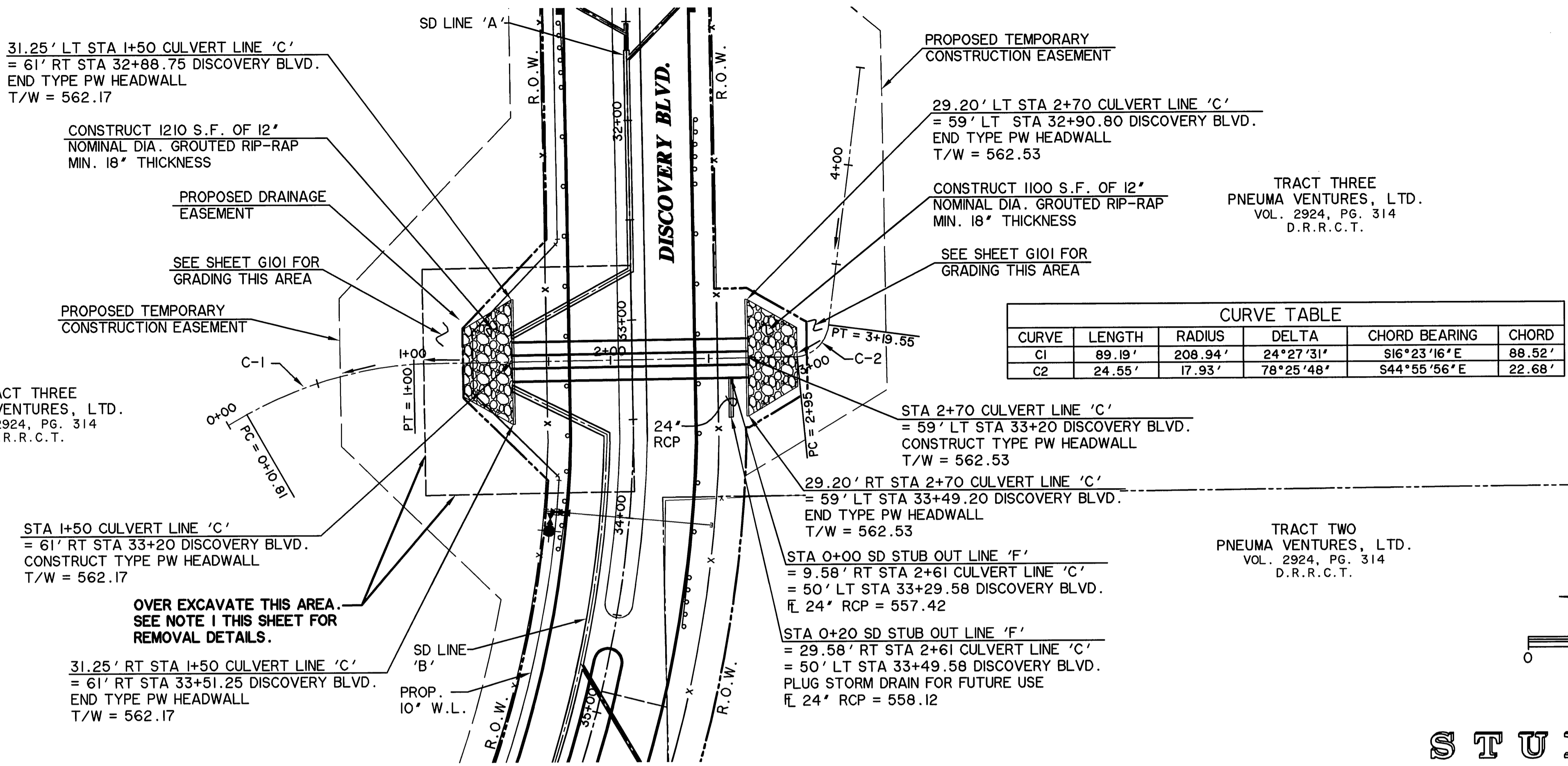
**DISCOVERY BLVD. EXTENSION TO JOHN KING BLVD.**

**STORM DRAIN PLAN AND PROFILE LINE 'A'**

STATE OF TEXAS  
 RONALD RAMIREZ  
 81821  
 REGISTERED PROFESSIONAL ENGINEER  
 3/11/09  
 Ronald Ramirez  
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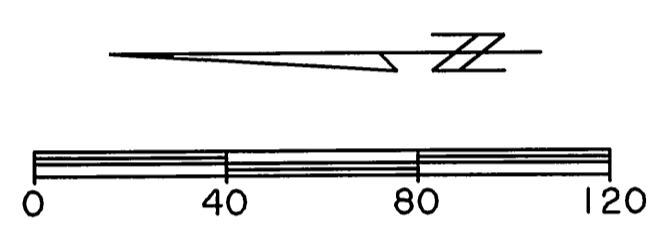


TRACT THREE  
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VOL. 2924, PG. 314  
D.R.R.C.T.

TRACT THREE  
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TRACT TWO  
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D.R.R.C.T.

CURVE	LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD
C1	89.19'	208.94'	24°27'31"	S16°23'16"E	88.52'
C2	24.55'	17.93'	78°25'48"	S44°55'56"E	22.68'

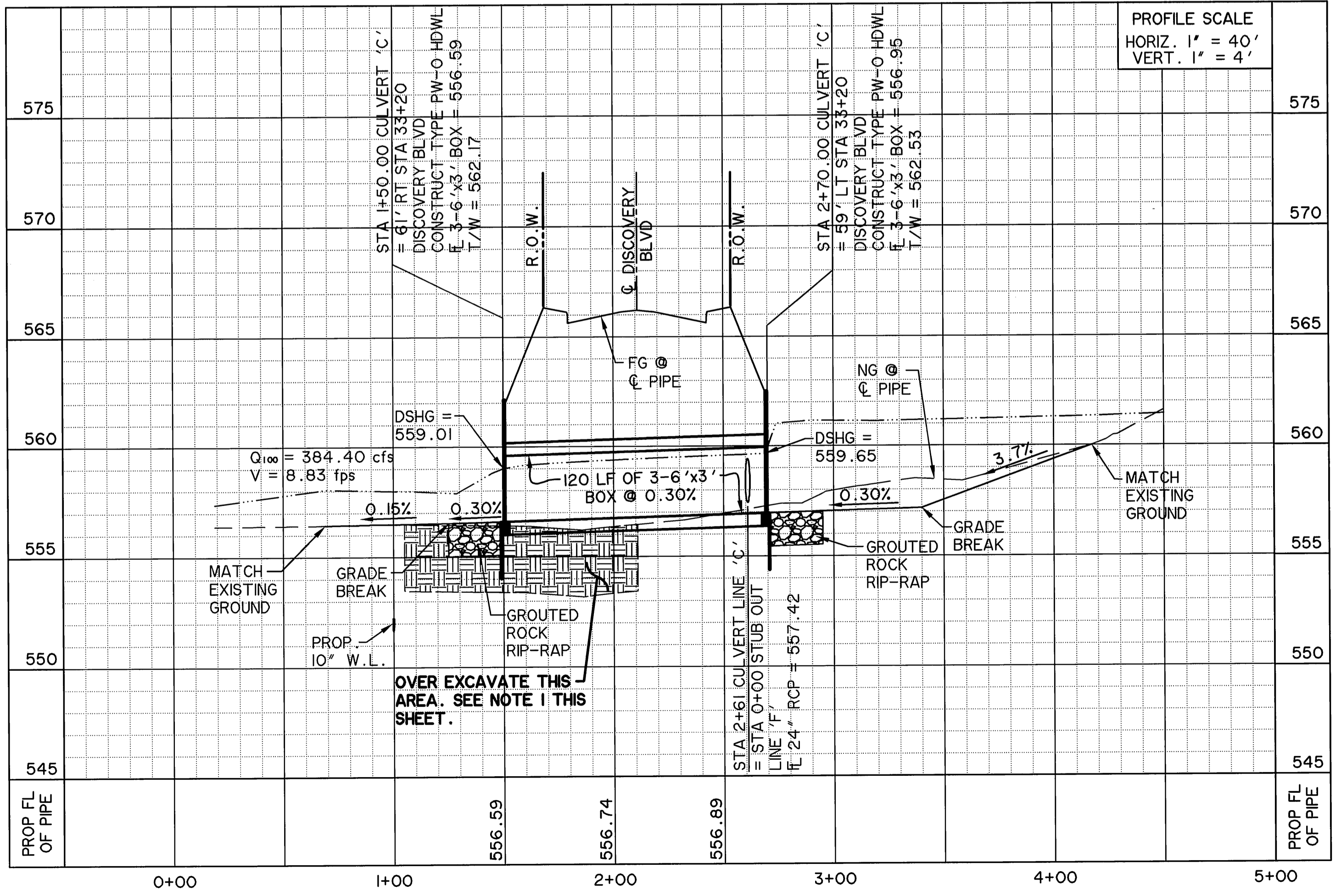


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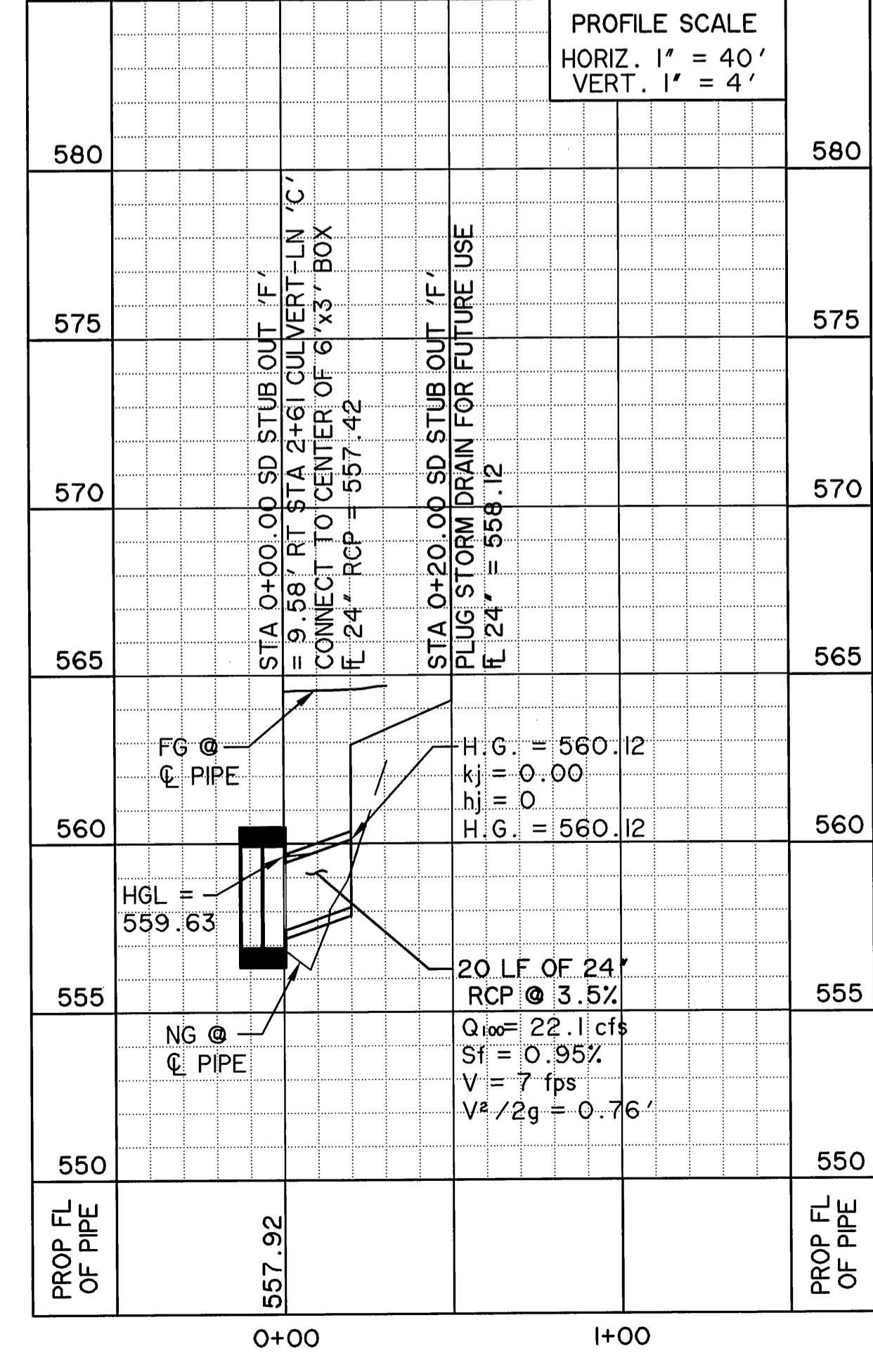
**\* BENCH MARKS \***  
BM A AN "X" ±195' EAST OF THE DEAD END OF DISCOVERY BOULEVARD AT THE WEST SIDE OF ROCKWALL TECHNOLOGY PARK, ±12' EAST OF THE PAVERS IN THE CENTERLINE OF DISCOVERY BOULEVARD. 585.45 FT.  
BM B AN "□" CUT ON THE EAST MEDIAN NOSE DISCOVERY BOULEVARD +/- 90 FEET WEST OF THE INTERSECTION OF DISCOVERY BOULEVARD AND F.M. 549. 598.20 FT.

**NOTE:**  
1. CONTRACTOR SHALL OVER EXCAVATE INDICATED AREAS A MINIMUM OF 3 FT DEEP OR UNTIL SUITABLE BEARING MATERIAL IS REACHED. EXCAVATED MATERIAL SHALL BE WORKED OFFSITE AND MAY BE USED IF DEEMED TO BE SUITABLE MATERIAL AS REQUIRED BY THE SPECIFICATIONS. RECOMPACT IN PLACE TO 95% PROCTOR PER SPECIFICATIONS.

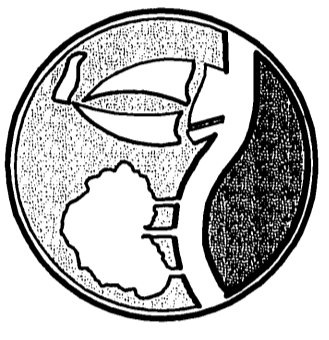
**CULVERT - LINE 'C'**



**STUB OUT - LINE 'F'**

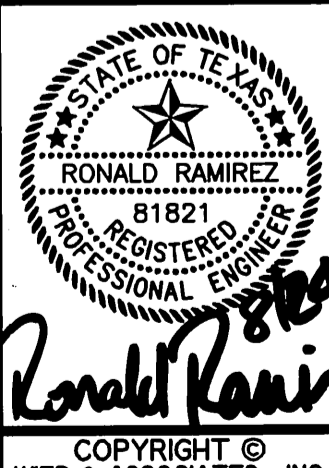


PREPARED BY:  
**WIER & ASSOCIATES, INC.**  
ENGINEERS SURVEYORS LAND PLANNERS  
701 HIGHLANDER BLVD., SUITE 300 ARLINGTON, TEXAS 76015 METRO (817)467-7700  
www.wierassociates.com  
Registration No. F-2776  
Texas Firm



**DISCOVERY BLVD. EXTENSION TO JOHN KING BLVD.**

**STORM DRAIN PLAN AND PROFILE CULVERT - LINE 'C' STUB OUT - LINE 'F'**



**RECORD DRAWINGS**  
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SHEET NO. **D303**

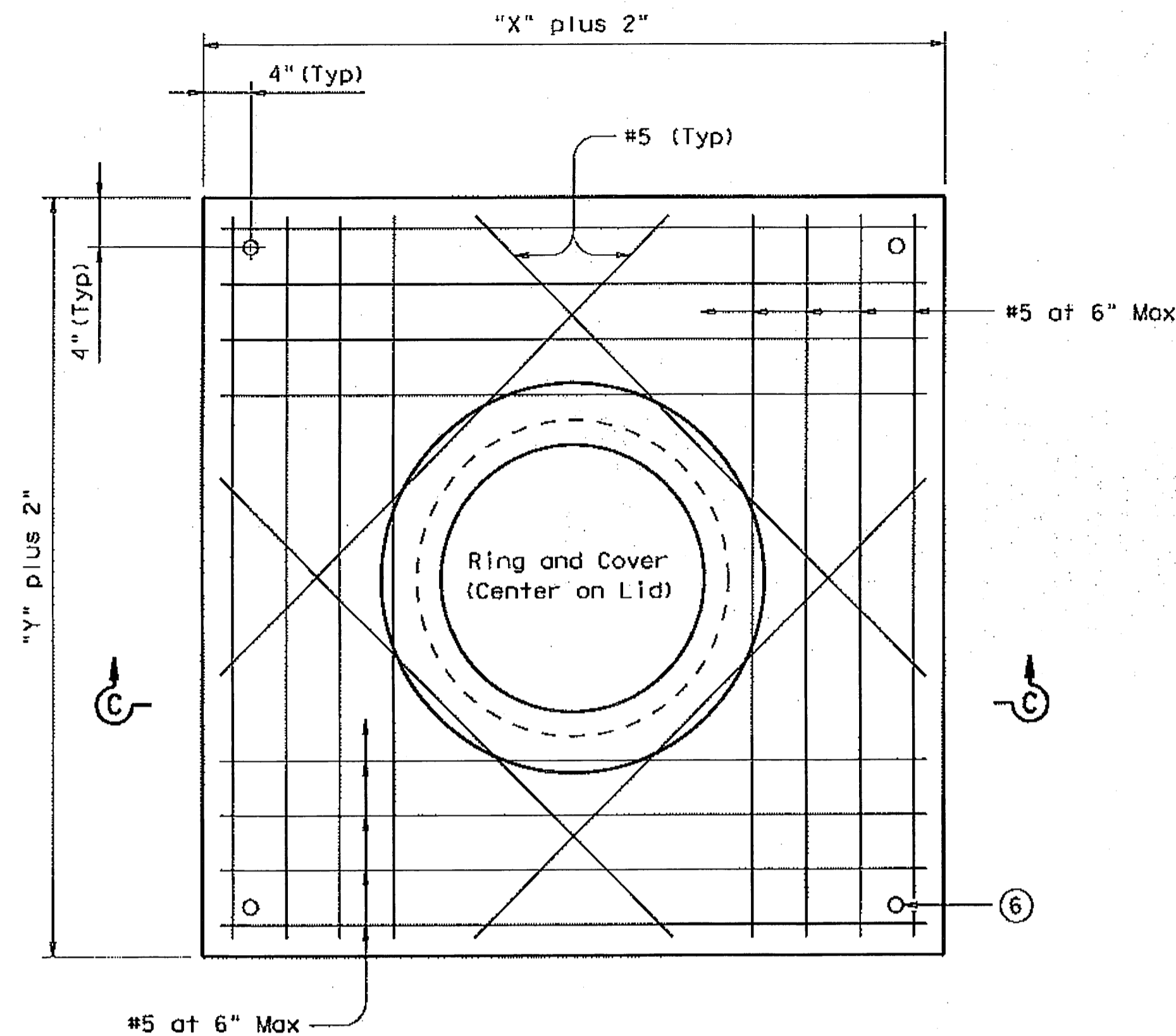


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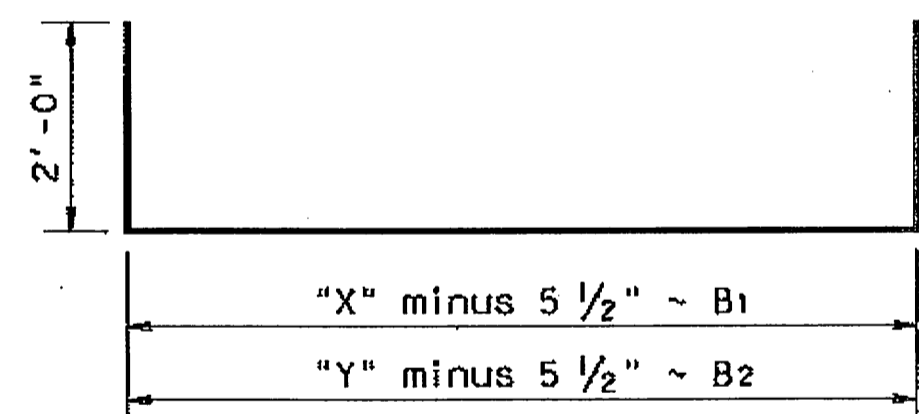
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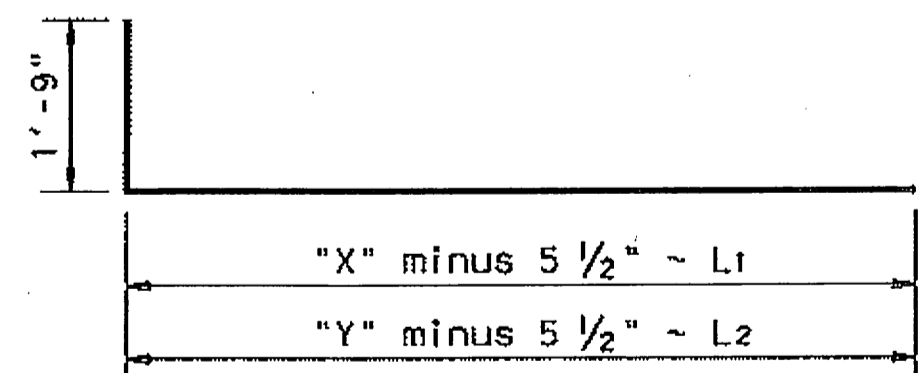
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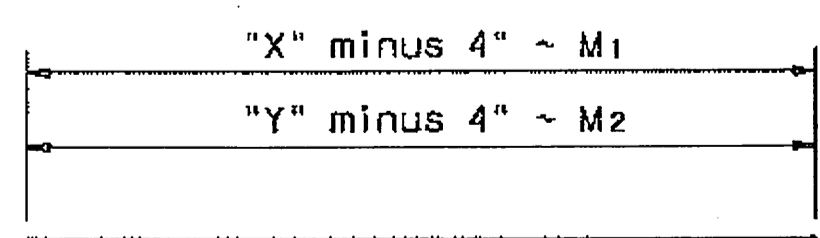
**TYPICAL PRECAST LID PLAN**



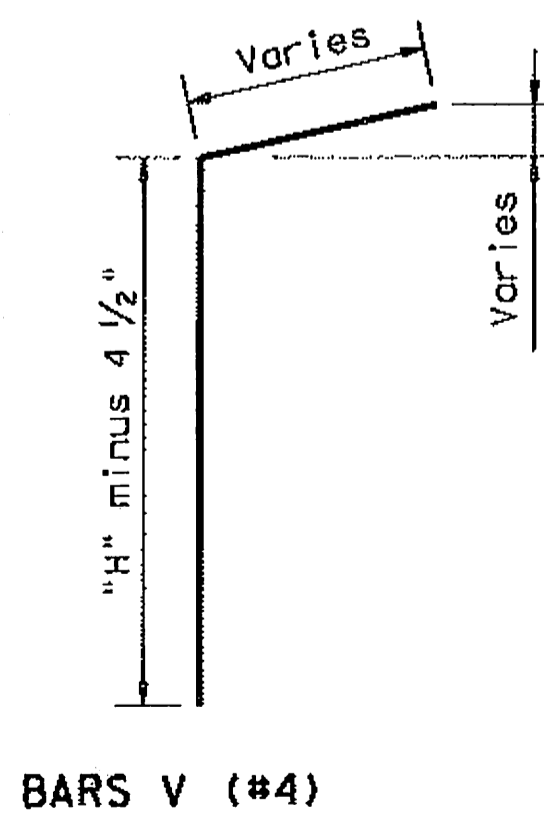
**BARS B (#4)**



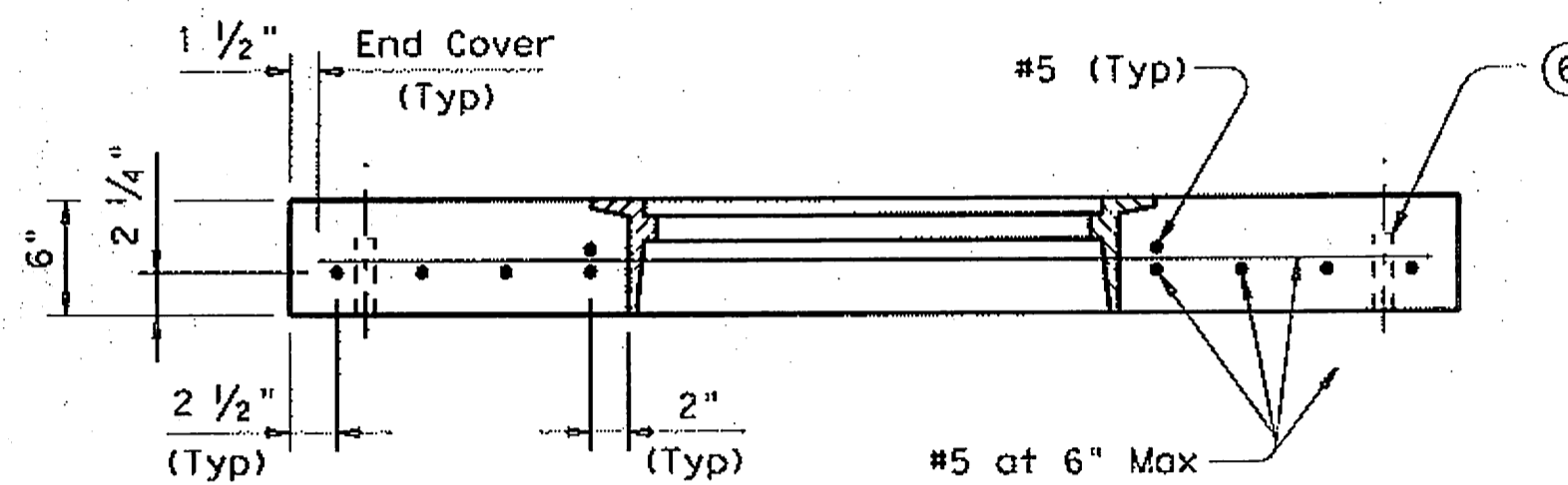
**BARS L (#4)**



**BARS M (#4)**

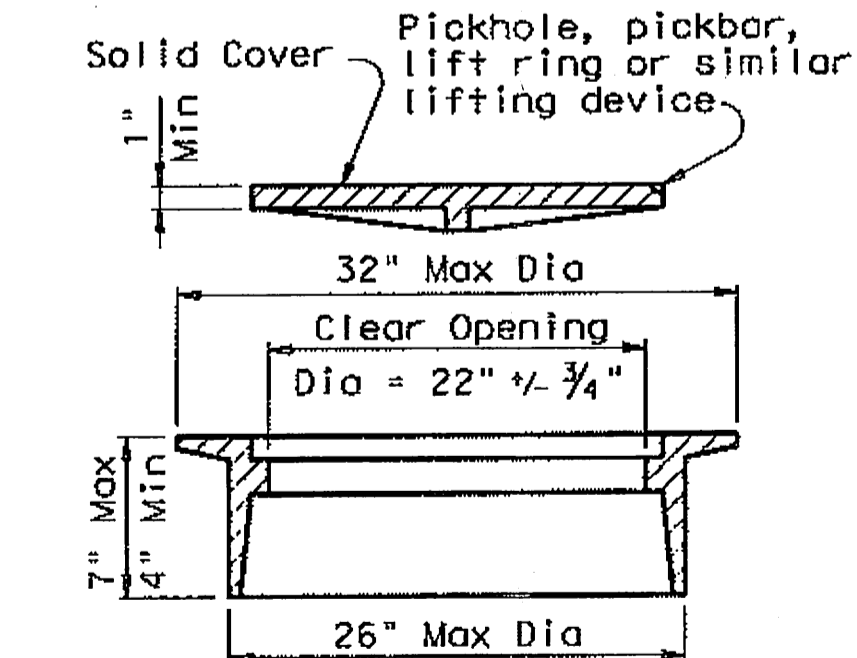


**BARS V (#4)**



**SECTION C-C**

⑥ Form holes in lid for Dowels D using 1" Dia x 4" PVC Pipe (SCH 40) (Typ)



**RING AND COVER DETAILS**

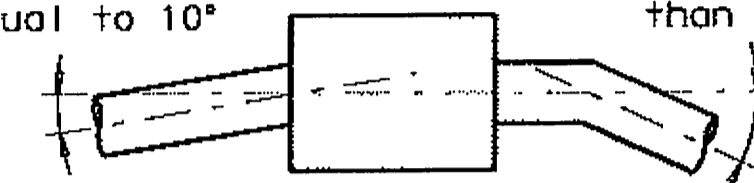
Approximate Weight = 245 lb

**RECORD DRAWINGS**

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Angle of entry is less than or equal to 10°

Angle of entry is greater than 10°



**PIPE CONNECTION DETAIL**

Connecting pipes should enter within 10° of normal to inlet wall. If necessary, pipe elbow or curved approach alignment should be used to stay within this limit.

**GENERAL NOTES:**

- When approved, precast inlets with equivalent structural capacity may be furnished. Sealed engineering calculations and drawings shall be submitted for approval prior to construction. Shop drawings will not be required.
- Apron will be cast-in-place.
- Lid will be precast.
- In areas of conflict between reinforcing steel, blockouts, pipes, anchor bolts or other reinforcing steel, the reinforcement shall be bent or adjusted to clear as directed by the Engineer.
- Structural Steel for grates shall conform to the requirements of ASTM Designation A-36 or AISI Designation M1010-M1020.
- All reinforcing steel shall be Grade 60 unless otherwise noted.
- All concrete shall be Class "A" (f'c = 3,000 psi).
- All steel components except reinforcing, shall be galvanized after fabrication.
- Galvanizing damaged during transport or construction shall be repaired in accordance with the specifications.
- Inlet is to be used in ditches and medians away from the roadway.

Texas Department of Transportation  
Bridge Division

**HORIZONTAL INLET  
TYPE H WITH LID  
(MAX 48" DIA PIPES)**

**IL-H-L**

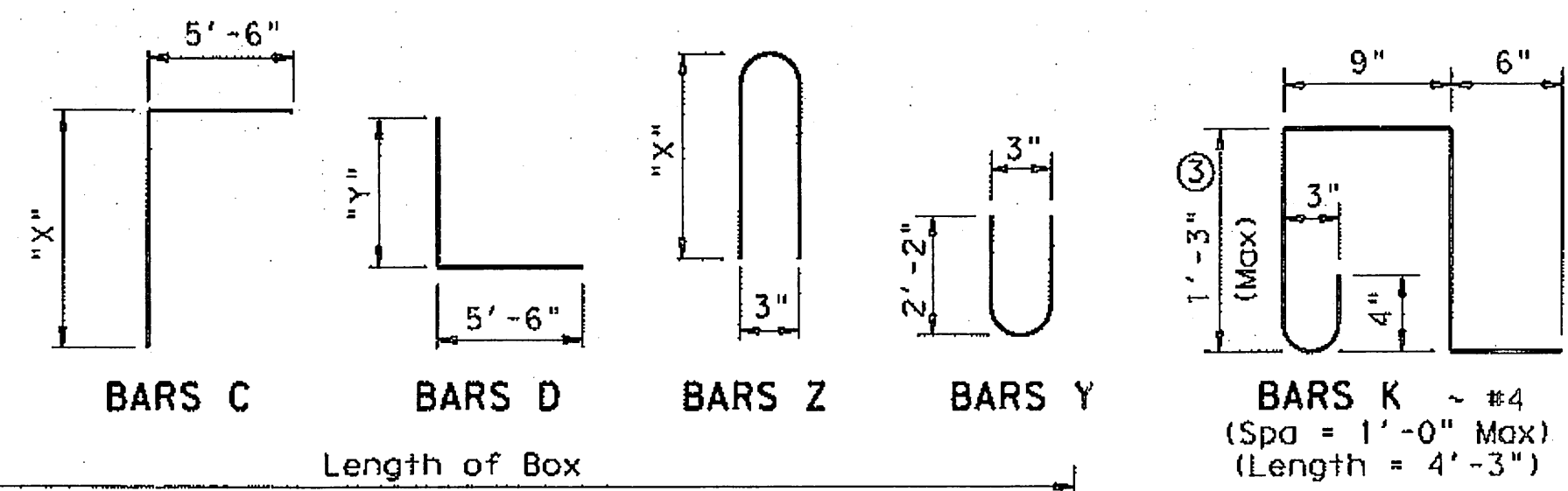
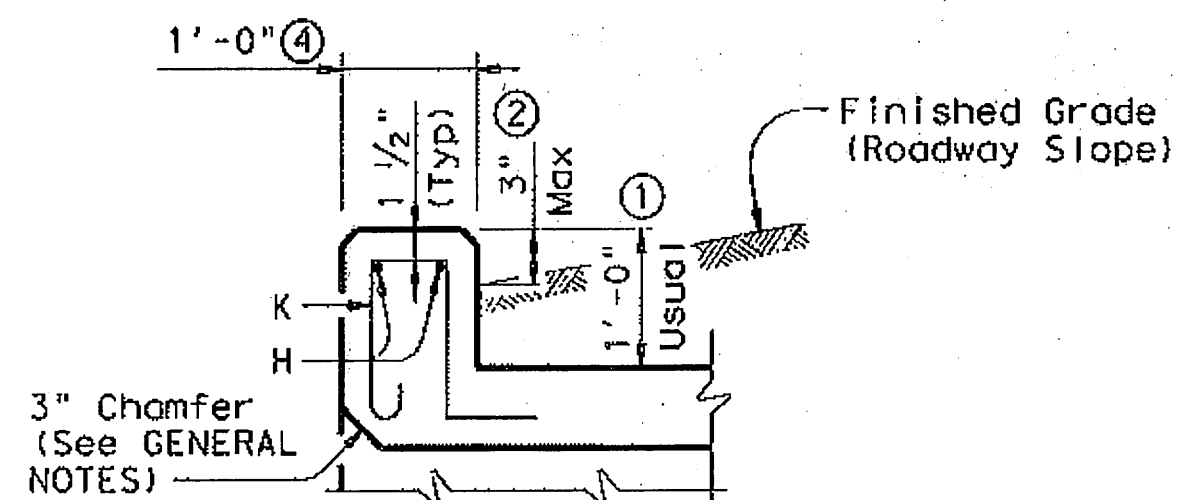
FILE: I1hs1e02.dgn	DN: TxDOT	CK: TxDOT	DR: TxDOT	CC: TxDOT
© TxDOT May 2005	DISTRICT	FEDERAL AID PROJECT		SHEET
REVISIONS				D501
	COUNTY	CONTROL SECT	CON	HIGHWAY

**BILLS OF REINFORCING STEEL (For Box Length = 40 feet)**

NUMBER OF SPANS	SECTION DIMENSIONS		BILLS OF REINFORCING STEEL (For Box Length = 40 feet)																								QUANTITIES																			
			Bars B				Bars C & D				Bars E				Bars F <sub>1</sub> ~ #4				Bars F <sub>2</sub> ~ #4 at 1'-6" Max				Bars M ~ #4 at 1'-6" Max				Bars Y & Z ~ #4 at 1'-0" Max				Bars H 4~#4		Bars K		Per foot of Barrel		Curb		Total							
			S	H	T	U	No.	Size	Spa	Length	Wt	No.	Size	Spa	Length	Wt	No.	Size	Spa	Length	Wt	No.	Spa	Length	Wt	No.	Length	Wt	No.	Length	Wt	No.	Length	Wt	No.	Bar Y Length	Bar Y Wt	Bar Z Length	Bar Z Wt	Length	Weight	No.	Weight	Conc (CY)	Reinf (Lb)	Conc (CY)
2	6'-0"	3'-0"	7"	7"	162	#5	6"	13'-6"	2,281	162	#4	6"	8'-11"	965	7'-8"	830	194	#5	5"	6'-0"	1,214	16	9"	39'-9"	425	50	39'-9"	1,328	56	3'-0"	112	41	4'-6"	123	7'-0"	192	13'-6"	36	30	85	0.789	186.8	1.0	121	32.6	7,591
3	6'-0"	3'-0"	7"	7"	162	#5	6"	20'-1"	3,393	162	#4	6"	8'-11"	965	7'-8"	830	194	#5	5"	12'-7"	2,546	24	9"	39'-9"	637	71	39'-9"	1,885	56	3'-0"	112	82	4'-6"	246	7'-0"	383	20'-1"	54	42	119	1.138	274.9	1.5	173	47.0	11,170
4	6'-0"	3'-0"	7"	7"	162	#5	6"	26'-8"	4,506	162	#4	6"	8'-11"	965	7'-8"	830	194	#5	5"	19'-2"	3,878	32	9"	39'-9"	850	92	39'-9"	2,443	56	3'-0"	112	123	4'-6"	370	7'-0"	575	26'-8"	71	56	159	1.487	363.2	2.0	230	61.5	14,759
5	6'-0"	3'-0"	7"	7"	162	#5	6"	33'-3"	5,618	162	#4	6"	8'-11"	965	7'-8"	830	194	#5	5"	25'-9"	5,210	40	9"	39'-9"	1,062	113	39'-9"	3,000	56	3'-0"	112	164	4'-6"	493	7'-0"	767	33'-3"	89	70	199	1.836	451.4	2.5	288	75.9	18,345
6	6'-0"	3'-0"	7"	7"	162	#5	6"	39'-10"	6,730	162	#4	6"	8'-11"	965	7'-8"	830	194	#5	5"	32'-4"	6,542	48	9"	39'-9"	1,275	134	39'-9"	3,558	56	3'-0"	112	205	4'-6"	616	7'-0"	959	39'-10"	106	82	233	2.186	539.7	3.0	339	90.4	21,926
2	6'-0"	4'-0"	7"	7"	162	#5	6"	13'-6"	2,281	162	#4	6"	9'-11"	1,073	7'-8"	830	194	#5	5"	6'-0"	1,214	16	9"	39'-9"	425	50	39'-9"	1,328	56	4'-0"	150	41	4'-6"	123	9'-0"	246	13'-6"	36	30	85	0.853	191.8	1.0	121	35.1	7,791
3	6'-0"	4'-0"	7"	7"	162	#5	6"	20'-1"	3,393	162	#4	6"	9'-11"	1,073	7'-8"	830	194	#5	5"	12'-7"	2,546	24	9"	39'-9"	637	71	39'-9"	1,885	56	4'-0"	150	82	4'-6"	246	9'-0"	493	20'-1"	54	42	119	1.224	281.3	1.5	173	50.5	11,426
4	6'-0"	4'-0"	7"	7"	162	#5	6"	26'-8"	4,506	162	#4	6"	9'-11"	1,073	7'-8"	830	194	#5	5"	19'-2"	3,878	32	9"	39'-9"	850	92	39'-9"	2,443	56	4'-0"	150	123	4'-6"	370	9'-0"	739	26'-8"	71	56	159	1.595	371.0	2.0	230	65.8	15,069
5	6'-0"	4'-0"	7"	7"	162	#5	6"	33'-3"	5,618	162	#4	6"	9'-11"	1,073	7'-8"	830	194	#5	5"	25'-9"	5,210	40	9"	39'-9"	1,062	113	39'-9"	3,000	56	4'-0"	150	164	4'-6"	493	9'-0"	986	33'-3"	89	70	199	1.966	460.6	2.5	288	81.1	18,710
6	6'-0"	4'-0"	7"	7"	162	#5	6"	39'-10"	6,730	162	#4	6"	9'-11"	1,073	7'-8"	830	194	#5	5"	32'-4"	6,542	48	9"	39'-9"	1,275	134	39'-9"	3,558	56	4'-0"	150	205	4'-6"	616	9'-0"	1,232	39'-10"	106	82	233	2.337	550.2	3.0	339	96.5	22,345
2	6'-0"	5'-0"	7"	7"	162	#5	6"	13'-6"	2,281	162	#4	6"	10'-11"	1,181	7'-8"	830	194	#5	5"	6'-0"	1,214	16	9"	39'-9"	425	56	39'-9"	1,487	56	5'-0"	187	41	4'-6"	123	11'-0"	301	13'-6"	36	30	85	0.918	200.7	1.0	121	37.7	8,150
3	6'-0"	5'-0"	7"	7"	162	#5	6"	20'-1"	3,393	162	#4	6"	10'-11"	1,181	7'-8"	830	194	#5	5"	12'-7"	2,546	24	9"	39'-9"	637	79	39'-9"	2,098	56	5'-0"	187	82	4'-6"	246	11'-0"	603	20'-1"	54	42	119	1.311	293.0	1.5	173	53.9	11,894
4	6'-0"	5'-0"	7"	7"	162	#5	6"	26'-8"	4,506	162	#4	6"	10'-11"	1,181	7'-8"	830	194	#5	5"	19'-2"	3,878	32	9"	39'-9"	850	102	39'-9"	2,708	56	5'-0"	187	123	4'-6"	370	11'-0"	904	26'-8"	71	56	159	1.703	385.4	2.0	230	70.1	15,644
5	6'-0"	5'-0"	7"	7"	162	#5	6"	33'-3"	5,618	162	#4	6"	10'-11"	1,181	7'-8"	830	194	#5	5"	25'-9"	5,210	40	9"	39'-9"	1,062	125	39'-9"	3,319	56	5'-0"	187	164	4'-6"	493	11'-0"	1,205	33'-3"	89	70	199	2.096	477.6	2.5	288	86.3	19,393
6	6'-0"	5'-0"	7"	7"	162	#5	6"	39'-10"	6,730	162	#4	6"	10'-11"	1,181	7'-8"	830	194	#5	5"	32'-4"	6,542	48	9"	39'-9"	1,275	148	39'-9"	3,930	56	5'-0"	187	205	4'-6"	616	11'-0"	1,506	39'-10"	106	82	233	2.488	569.9	3.0	339	102.5	23,136
2	6'-0"	6'-0"	7"	7"	162	#5	6"	13'-6"	2,281	194	#4	5"	11'-11"	1,544	7'-8"	994	194	#5	5"	6'-0"	1,214	16	9"	39'-9"	425	62	39'-9"	1,646	56	6'-0"	224	41	4'-6"	123	13'-0"	356	13'-6"	36	30	85	0.983	220.2	1.0	121	40.3	8,928
3	6'-0"	6'-0"	7"	7"	162	#5	6"	20'-1"	3,393	194	#4	5"	11'-11"	1,544	7'-8"	994	194	#5	5"	12'-7"	2,546	24	9"	39'-9"	637	87	39'-9"	2,310	56	6'-0"	224	82	4'-6"	246	13'-0"	712	20'-1"	54	42	119	1.397	315.2	1.5	173	57.4	12,779
4	6'-0"	6'-0"	7"	7"	162	#5	6"	26'-8"	4,506	194	#4	5"	11'-11"	1,544	7'-8"	994	194	#5	5"	19'-2"	3,878	32	9"	39'-9"	850	112	39'-9"	2,974	56	6'-0"	224	123	4'-6"	370	13'-0"	1,068	26'-8"	71	56	159	1.811	410.2	2.0	230	74.4	16,638
5	6'-0"	6'-0"	7"	7"	162	#5	6"	33'-3"	5,618	194	#4	5"	11'-11"	1,544	7'-8"	994	194	#5	5"	25'-9"	5,210	40	9"	39'-9"	1,062	137	39'-9"	3,638	56	6'-0"	224	164	4'-6"	493	13'-0"	1,424	33'-3"	89	70	199	2.225	505.2	2.5	288	91.5	20,495
6	6'-0"	6'-0"	7"	7"	162	#5	6"	39'-10"	6,730	194	#4	5"	11'-11"	1,544	7'-8"	994	194	#5	5"	32'-4"	6,542	48	9"	39'-9"	1,275	162	39'-9"	4,302	56	6'-0"	224	205	4'-6"	616	13'-0"	1,780	39'-10"	106	82	233	2.639	600.2	3.0	339	108.6	24,346

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H	Bar Dimensions	
	"X"	"Y"
3'-0"	3'-5"	2'-2"
4'-0"	4'-5"	2'-2"
5'-0"	5'-5"	2'-2"
6'-0"	6'-5"	2'-2"



**GENERAL NOTES:**

Designed according to current AASHTO Standard and Interim Specifications. Designed to the maximum fill height shown. All reinforcing steel shall be Grade 60. All concrete shall be Class "C" with these exceptions: use Class "S" for top slabs of culverts with overlay, with 1-to-2 course surface treatment, or with the top slab as the final riding surface. Class "C" concrete shall have a minimum compressive strength of 3,600 psi. Class "S" concrete shall have a minimum compressive strength of 4,000 psi. The use of permanent forms is not allowed. The bottom edge of the top slab shall be chamfered 3" at the entrance. Reinforcing bars shall be adjusted to provide a minimum of 1/4" clear cover. Construction joints shown at the flow line may be raised a maximum of 6" at the Contractor's option. If this option is used, Bars M may be cut off or raised, Bars C and D may be reversed, and Bars Y and Z may be reversed. See standard MC-MD for skewed ends, angle sections and lengthening details.

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**HS20 LOADING**

Texas Department of Transportation  
Bridge Division

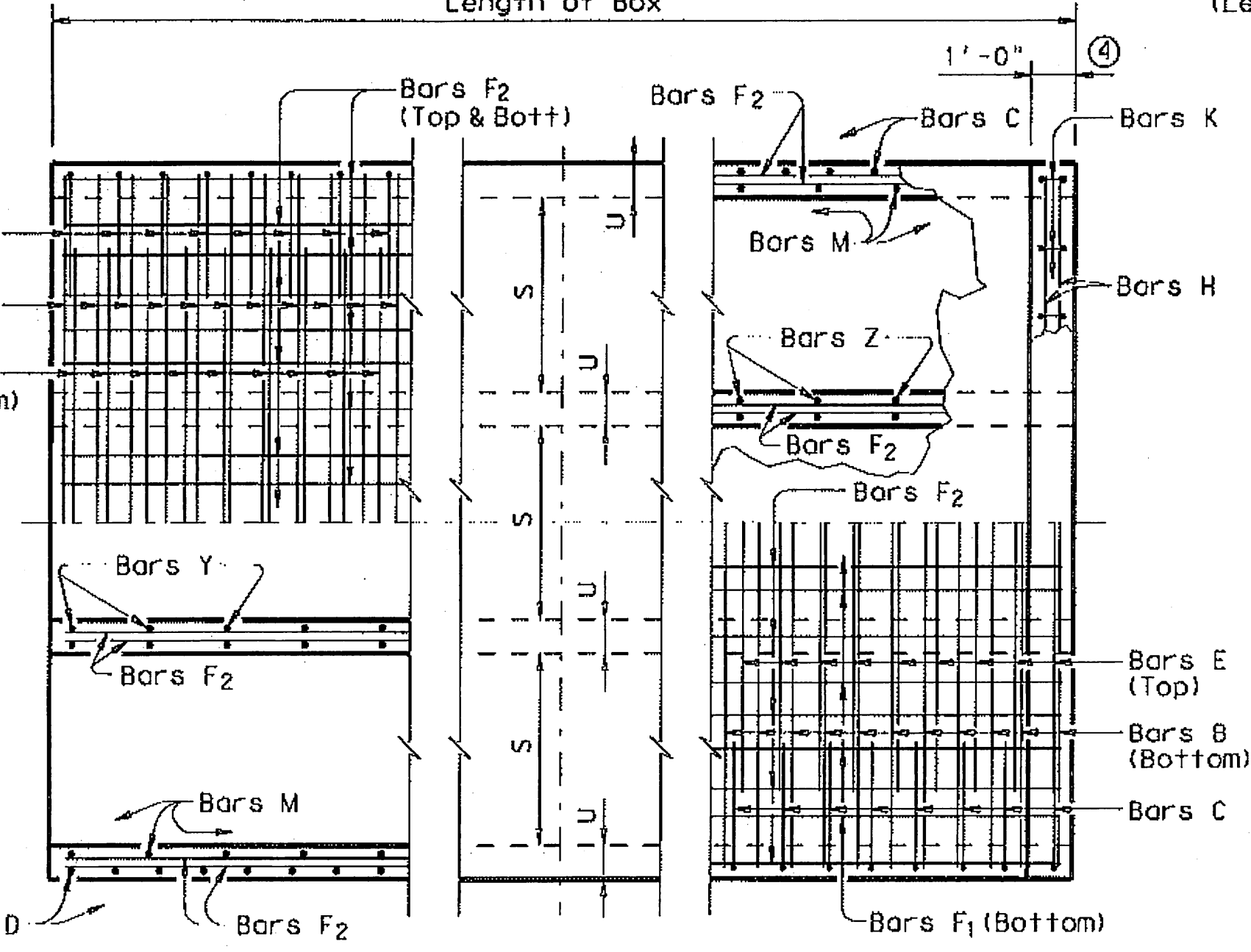
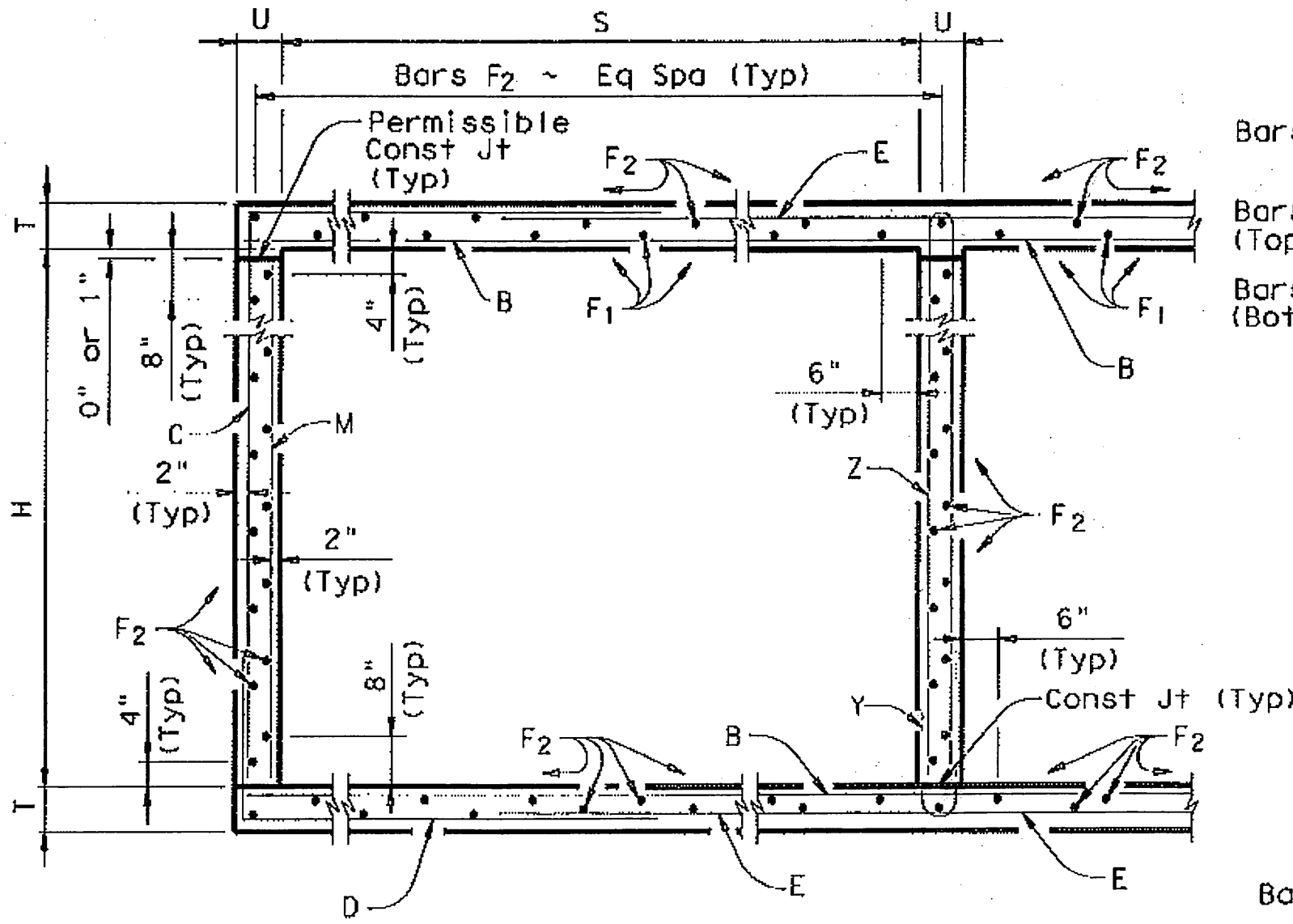
**MULTIPLE BOX CULVERTS  
CAST-IN-PLACE  
6'-0" SPAN  
0' TO 16' FILL**

**MC-6-16**

FILE: ifc616ste.dgn	DATE: GAF	CHK: LMA	DATE: BAH/TxDOT	CHK: GAF
© TxDOT May 2005	DISTRICT:	FEDERAL AID PROJECT:	SHEET:	
REVISED:	COUNTY:	CONTROL SECT:	JOB:	HIGHWAY:

D502

LEVELS DISPLAYED
ACC:

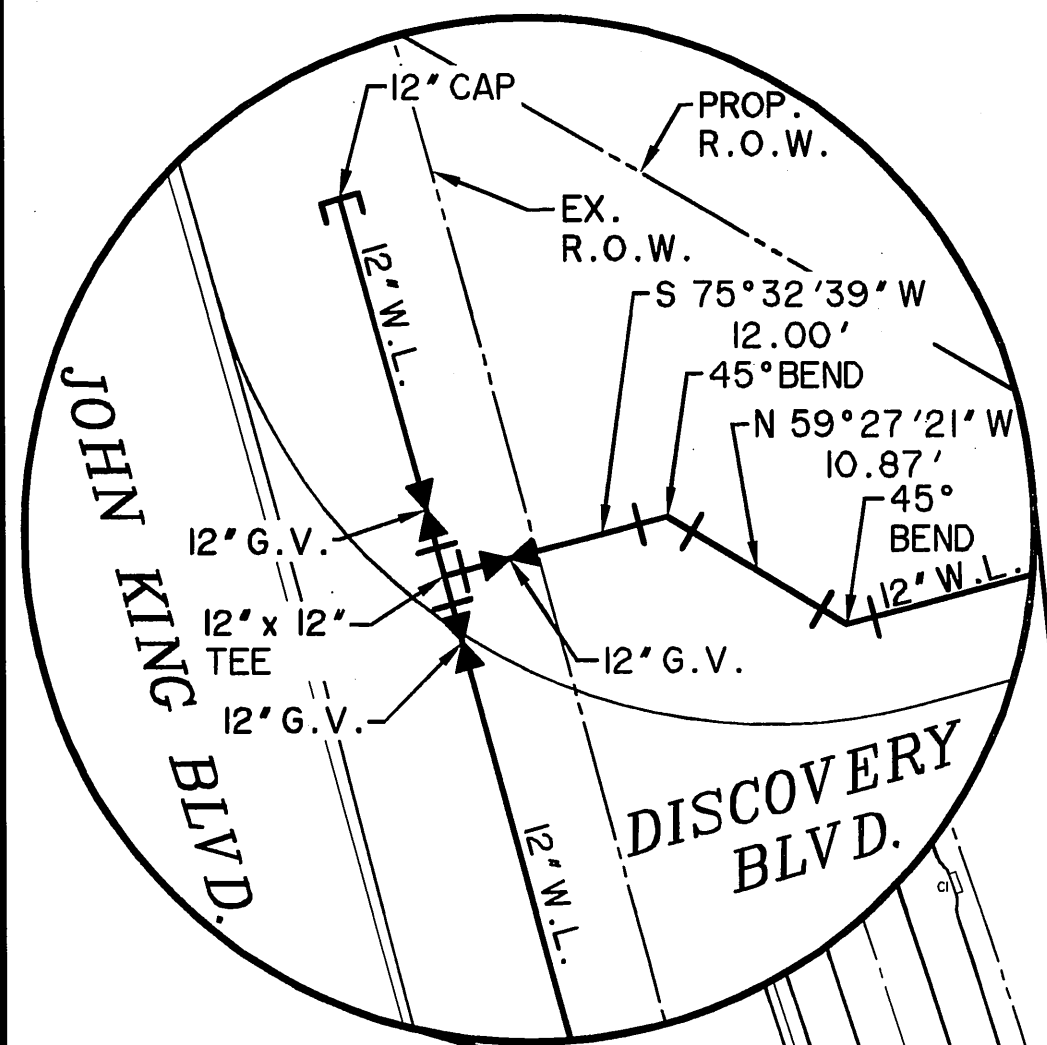


**BOTTOM SLAB PART PLANS TOP SLAB**

- 0" min to 5'-0" max. Estimated curb heights are shown elsewhere in the plans. For structures without railing and curbs taller than 1'-0", refer to ECD standard. For structures with T6 bridge rail, refer to T6-CM standard. For structures with bridge rail, other than T6, refer to RAC standard.
- For vehicle safety, the following requirements must be met:
  - For structures without bridge rail, curbs shall project no more than 3" above finished grade.
  - For structures with bridge rail, curbs shall be flush with finished grade. Curb heights shall be reduced, if necessary, to meet the above requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.
- For curbs less than 1'-0" high, tilt bars K or reduce bar height as necessary to maintain cover. For curbs less than 3" high, bars K may be omitted.
- 1'-0" typical. 2'-0" when RAC standard is referred to elsewhere in the plans.



FILE: U101-WATER-LAYOUT\_98041.10 REVISED 1-11-11.dwg



THE CAMBRIDGE COMPANIES, INC. TRUSTEE VOL. 99, PG. 1022 D.R.R.C.T.

TRACT THREE PNEUMA VENTURES, LTD. VOL. 2924, PG. 314 D.R.R.C.T.

STA 15+94.13 W.L. 'A' = 44.68' RT. STA 40+67.27 DISCOVERY BLVD. INSTALL: 1 - 12" 45° BEND

STA 13+67.55 W.L. 'A' = 37.0' RT. STA 38+54.50 DISCOVERY BLVD. INSTALL: 1 - 12" x 12" CROSS 1 - 12" x 6" TEE 2 - 12" GATE VALVES 1 - 6" GATE VALVE 1 - STD F.H. ASSEMBLY 2 - 12" CAPS 10 L.F. 6" PVC PIPE 85 L.F. 12" PVC PIPE

PRC STA 11+09.05 W.L. 'A' = 37.0' RT. STA 36+11.02 DISCOVERY BLVD.

STA 9+11.04 W.L. 'A' = 37.0' RT. STA 34+00.00 DISCOVERY BLVD. INSTALL: 1 - 12" x 12" CROSS 1 - 12" x 6" TEE 2 - 12" GATE VALVES 1 - 6" GATE VALVE 1 - STD F.H. ASSEMBLY 2 - 12" CAPS 10 L.F. 6" PVC PIPE 85 L.F. 12" PVC PIPE

STA 7+39.36 W.L. 'A' = 37.0' RT. STA 32+60.51 DISCOVERY BLVD. INSTALL: 1 - 12" 45° BEND

STA 8+01.59 W.L. 'A' = 81.0' RT. STA 33+04.51 DISCOVERY BLVD. INSTALL: 1 - 12" 45° BEND

STA 8+32.57 W.L. 'A' = 81.0' RT. STA 33+35.49 DISCOVERY BLVD. INSTALL: 1 - 12" 45° BEND

STA 5+72.86 W.L. 'A' = 37.0' RT. STA 30+94.00 DISCOVERY BLVD. INSTALL: 1 - 12" x 12" CROSS 1 - 12" x 6" TEE 3 - 12" GATE VALVES 1 - 6" GATE VALVE 1 - STD F.H. ASSEMBLY 2 - 12" CAPS 10 L.F. 6" PVC PIPE 85 L.F. 12" PVC PIPE

STA 0+65.25 W.L. 'A' = 37.0' RT. STA 25+86.40 DISCOVERY BLVD. INSTALL: 1 - 12" 11.25° BEND

STA 0+55 W.L. 'A' = 39.0' RT. STA 25+76.34 DISCOVERY BLVD. INSTALL: 1 - 12" 11.25° BEND

STA 0+50.00 W.L. 'A' = 39.0' RT. STA 25+71.34 DISCOVERY BLVD. REMOVE EXISTING CAP AND THRUST BLOCK (SUBSIDIARY TO CONSTRUCTION). CONNECT TO EXISTING 10" W.L. INSTALL: 1 - 12" x 10" REDUCER

STA 16+06.13 W.L. 'A' = 44.68' RT. STA 40+79.27 DISCOVERY BLVD. INSTALL: 1 - 12" x 12" TEE 3 - 12" GATE VALVE 2 - 12" CAPS 20 L.F. 12" STUB NORTH 120 L.F. 12" STUB SOUTH

CURVE DATA D=39°43'18" R=637.00 L=441.62 CH=N84°35'42"W 432.82

CURVE DATA D=21°56'57" R=563.00 L=215.68 CH=N75°42'31"W 214.36

PT STA 15+50.66 W.L. 'A' = 37.0' RT. STA 40+26.98 DISCOVERY BLVD.

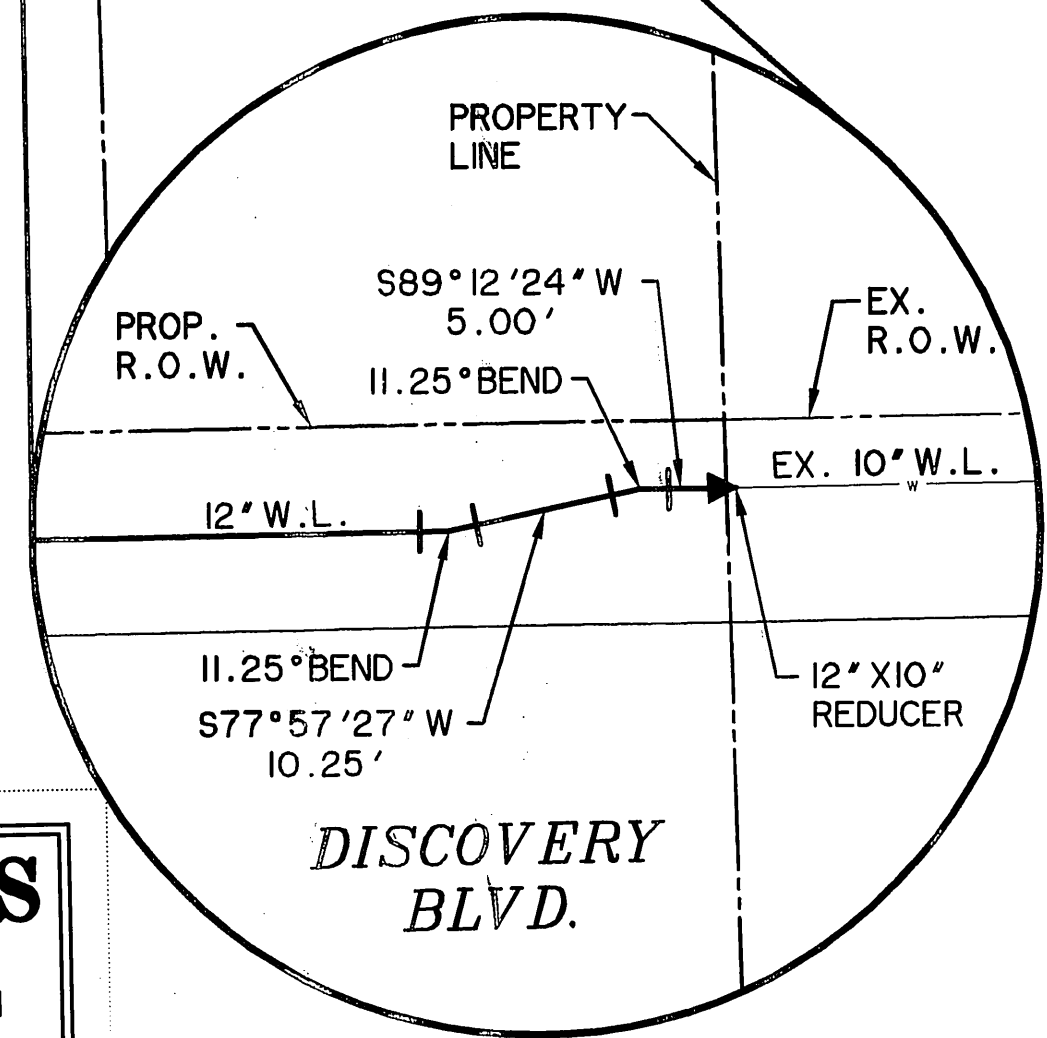
S75°32'39"W 32.60'

STA 15+83.27 W.L. 'A' = 37.0' RT. STA 40+59.59 DISCOVERY BLVD. INSTALL: 1 - 12" 45° BEND

STA 11+49.37 W.L. 'A' = 37.0' RT. STA 36+49.00 DISCOVERY BLVD. INSTALL: 1 - 12" x 6" TEE 1 - 12" GATE VALVE 1 - 6" GATE VALVE 1 - STD F.H. ASSEMBLY 3 L.F. 6" PVC PIPE

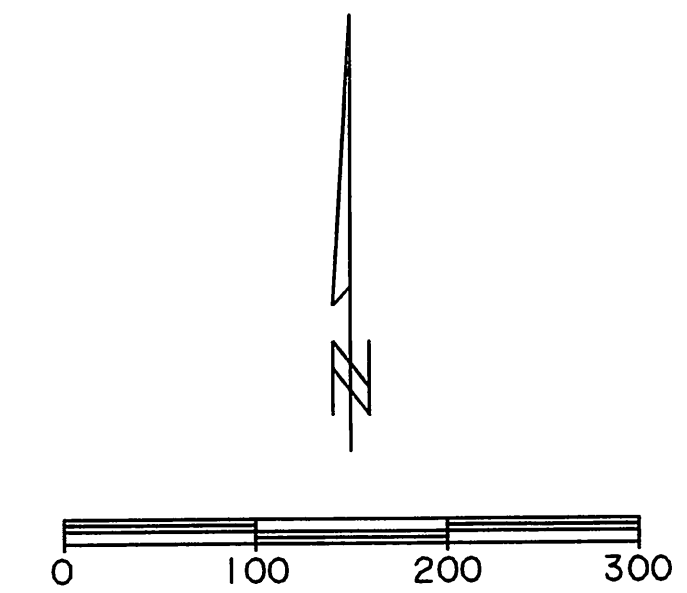
PC STA 8+93.37 W.L. 'A' = 37.0' RT. STA 33+81.17 DISCOVERY BLVD. INSTALL: 1 - 12" 45° BEND

STA 2+78.86 W.L. 'A' = 37.0' RT. STA 28+00.00 DISCOVERY BLVD. INSTALL: 1 - 12" x 12" CROSS 1 - 12" x 6" TEE 2 - 12" GATE VALVES 1 - 6" GATE VALVE 1 - STD F.H. ASSEMBLY 2 - 12" CAPS 10 L.F. 6" PVC PIPE 85 L.F. 12" PVC PIPE

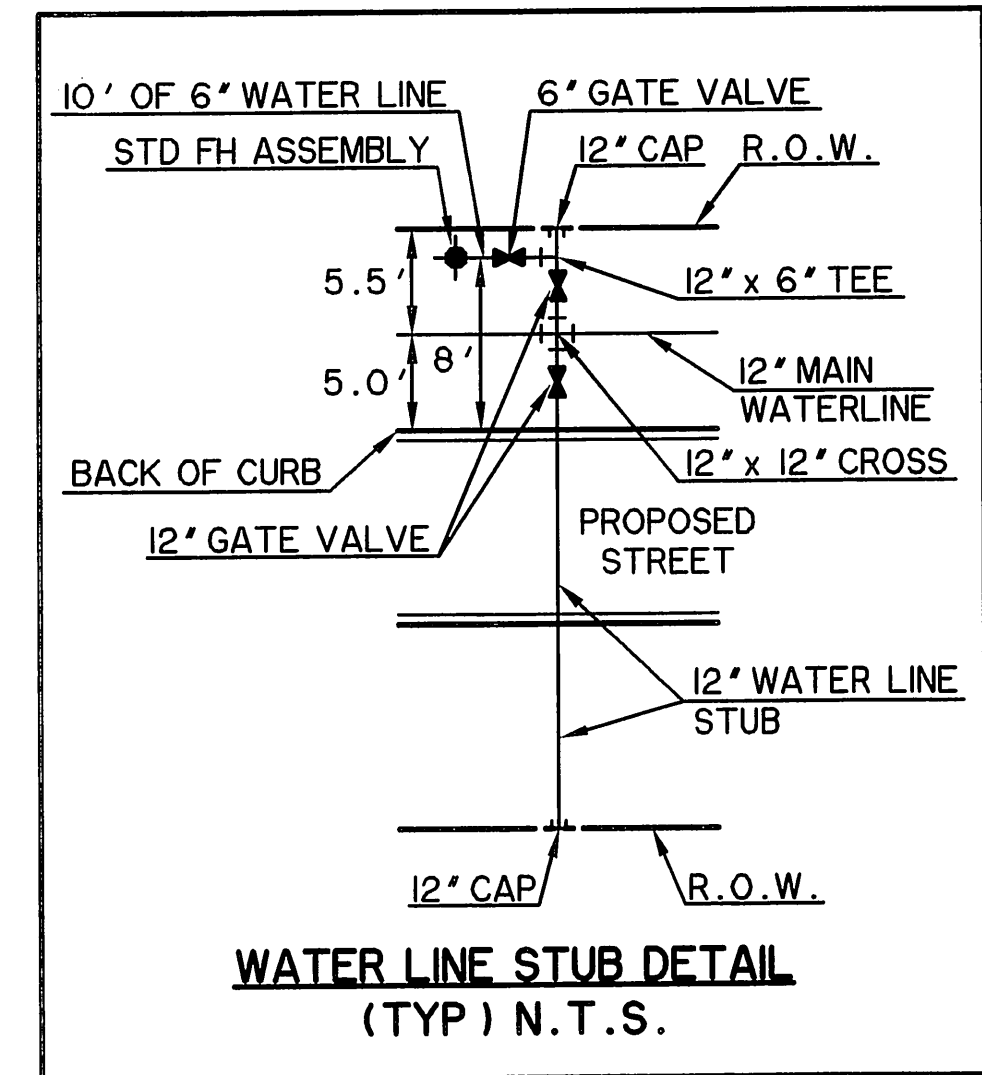


\* BENCH MARKS \*  
BM A AN 'X' ±195' EAST OF THE DEAD END OF DISCOVERY BOULEVARD AT THE WEST SIDE OF ROCKWALL TECHNOLOGY PARK, ±12' EAST OF THE PAVERS IN THE CENTERLINE OF DISCOVERY BOULEVARD. 585.45 FT.  
598.20 FT.  
BM B AN 'I' CUT ON THE EAST MEDIAN NOSE DISCOVERY BOULEVARD +/- 90 FEET WEST OF THE INTERSECTION OF DISCOVERY BOULEVARD AND F.M. 549.

CAUTION !!  
EXISTING UTILITIES ARE INDICATED ON THE PLANS FROM AVAILABLE INFORMATION. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION OF ALL UTILITIES, TO NOTIFY ALL UTILITY COMPANIES OF THE CONTRACTORS OPERATIONS, TO PROTECT ALL UTILITIES FROM DAMAGE, TO REPAIR ALL UTILITIES DAMAGED DUE TO THE CONTRACTORS OPERATIONS, AND TO NOTIFY THE ENGINEER PROMPTLY OF ALL CONFLICTS OF THE WORK WITH EXISTING UTILITIES.



- NOTES:
- CONTRACTOR SHALL ADJUST LOCATION OF PROPOSED WATER LINES AS REQUIRED TO AVOID CONFLICTS WITH STORM SEWER OR OTHER UTILITIES.
  - ALL WATER LINES SHALL HAVE A MINIMUM COVER OF 48" MEASURED FROM TOP OF PIPE UNLESS A GREATER DEPTH IS REQUIRED BY CITY STANDARDS.



12" WATER LINE CROSSING DISCOVERY BLVD. SHALL BE CONSTRUCTED PER S.H. 205 BYPASS (PHASE I) PLANS SEE SHEET U109 FOR CONSTRUCTION

100.04' LT. STA 16+06.35 W.L. 'A' = 55.36' RT. STA 40+79.48 DISCOVERY BLVD. INSTALL: 1 - 12" x 6" TEE 1 - 6" GATE VALVE 1 - STD F.H. ASSEMBLY 1 - 12" GATE VALVE 4 L.F. 6" PVC PIPE

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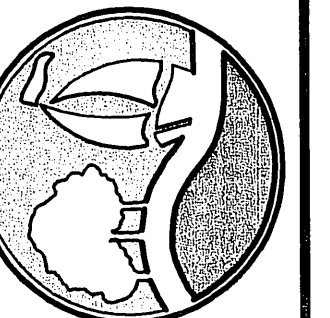
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**RECORD DRAWINGS**  
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**REVISIONS**  
SHEET REVISED 1/11/2011  
1 CHANGED PROPOSED WATER LINE FROM 10" TO 12".  
2 ADDED STUB OUTS AT WATER LINE STATIONS 9+11.04 AND 2+78.86

PREPARED BY:  
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6849 ELM STREET FRISCO, TEXAS 75034 METRO (214) 387-8000  
Texas Firm Registration No. F-2776 www.wierassociates.com



DISCOVERY BLVD. EXTENSION TO JOHN KING BLVD.

WATER LAYOUT

STATE OF TEXAS  
RONALD RAMIREZ  
81821  
REGISTERED PROFESSIONAL ENGINEER  
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LAST SHEET EDIT  
DATE 01/11/2011  
WA# 98041.10  
SHEET NO. U101



CURVE TABLE						
NO.	RADIUS	DELTA	ARC	TANGENT	CHORD	BEARING
204	2555.00	19°35'45"	873.84	441.23	869.59	S 10°52'11"E

MATCH LINE STA 6+00

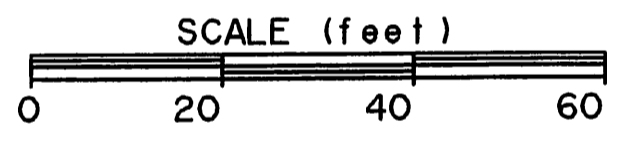
MATCH LINE STA 11+00

S.H. No. 205 BYPASS

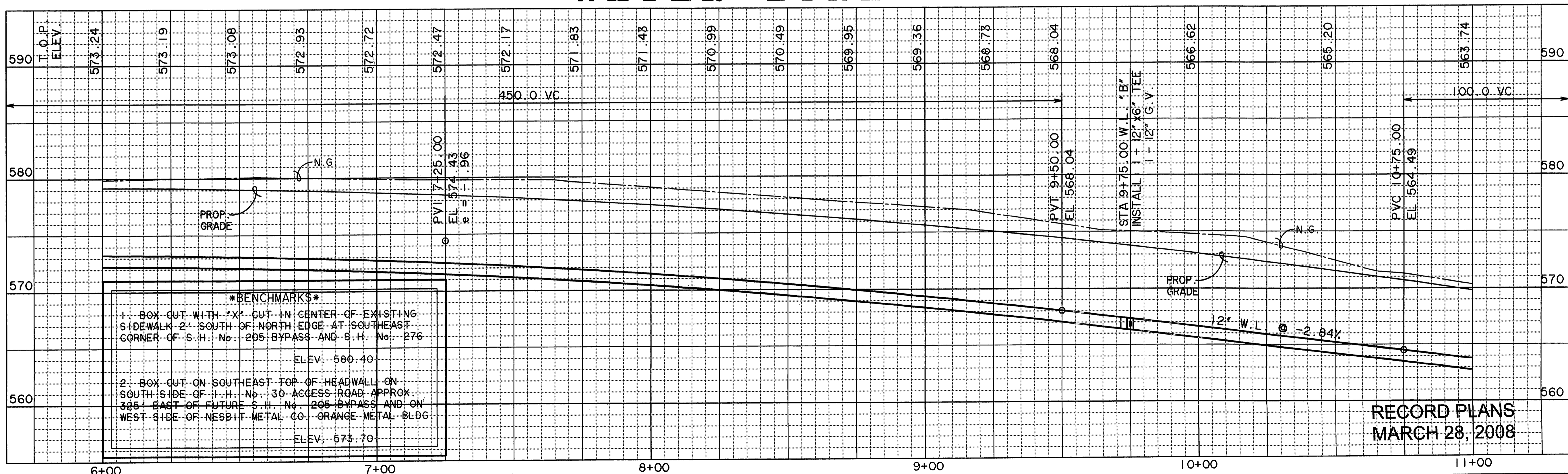
**CAUTION I-1**  
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THE CAMBRIDGE COMPANIES, INC. TRUSTEE  
 VOL. 99, PG. 1022  
 D.R.R.C.T.

**NOTE:** ALL PVC WATER LINES SHALL BE C-900 CLASS 200 PIPE. ALL CHANGES IN WATER LINE DIRECTION (BENDS) SHALL BE RESTRAINED (MEGA-LUG OR EQUAL) AND CONCRETE BLOCKED. THE NEXT JOINT EITHER SIDE OF THE CHANGE OF DIRECTION SHALL ALSO BE RESTRAINED.



**WATER LINE "B"**



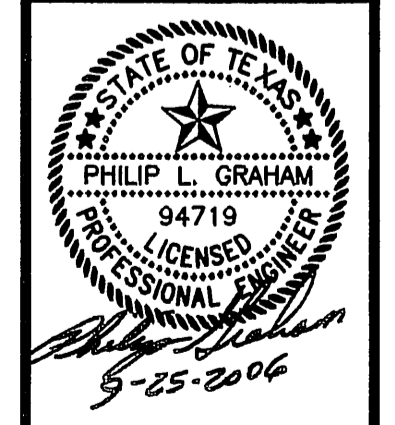
**\*BENCHMARKS\***  
 1. BOX CUT WITH "X" CUT IN CENTER OF EXISTING SIDEWALK 2' SOUTH OF NORTH EDGE AT SOUTHEAST CORNER OF S.H. No. 205 BYPASS AND S.H. No. 276  
 ELEV. 590.40  
 2. BOX CUT ON SOUTHEAST TOP OF HEADWALL ON SOUTH SIDE OF I.H. No. 30 ACCESS ROAD APPROX. 325' EAST OF FUTURE S.H. No. 205 BYPASS AND ON WEST SIDE OF NESBIT METAL CO. ORANGE METAL BLDG  
 ELEV. 573.70

RECORD PLANS  
 MARCH 28, 2008

PREPARED BY:  
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 6849 ELM STREET FRISCO, TEXAS 75034 METRO (214)387-8000  
 www.WierAssociates.com



PHASE I S.H. 205 BYPASS  
 FROM S.H. 276 TO INTERSTATE 30  
 FUTURE WATER LINE "B"  
 PLAN & PROFILE  
 STA 6+00 TO 11+00



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